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JOE BIDEN CAMPAIGN TWITTER ACCOUNT

« While any president is a major user of business aviation–both before and after the election–the November elections in the U.S. could have a profound effect on the many stakeholders that make aviation work, including various congressional committees, the FAA, and state politicians as well as aviation groups that support business aviation activities.

Elections alter flight plan

by Kerry Lynch

Results from the November 3 elections in the U.S. are bringing changes to the aviation industry and new faces to Washington, D.C.

By mid-November, President-elect Joe Biden was beginning to establish a transition team while awaiting certification of the elections. On Capitol Hill, the balance of power narrowed as the Democrats barely captured the necessary majority in the House and the Republicans maintained a 50-48 edge, with run-off elections to be held in January in Georgia to determine the final two seats and control of the Senate. Regardless of that outcome, the elections will bring a shuffling of committees with more even committee memberships in both chambers.

Given the number of challenges that the Trump administration has made in the aftermath of the election, most aviation industry groups remained quiet awaiting final word. However, those who did have reactions gave clues of what the expectations might be for the next four years under a Biden administration.

The National Air Traffic Controllers Association, representing the largest sector of the FAA workforce, immediately offered congratulations to the president-elect and his Vice President running-mate Kamala Harris. "We look forward to working with the new administration to continue the very successful collaborative relationship we've built with the FAA and the Department of Transportation over the last 12 years," said NATCA president Paul Rinaldi and executive v-p Trish Gilbert in a joint statement. "That relationship started with then-Vice President Biden in office. He understands the importance of solid labor-management relationships and fair collective bargaining rights for workers."

They further pledged to work with the administration to "usher in a rebound" of an industry harmed by the Covid pandemic and "to secure a stable, predictable funding stream for the NAS" since the Airport and Airway Trust currently is solvent under a temporary legislative measure.

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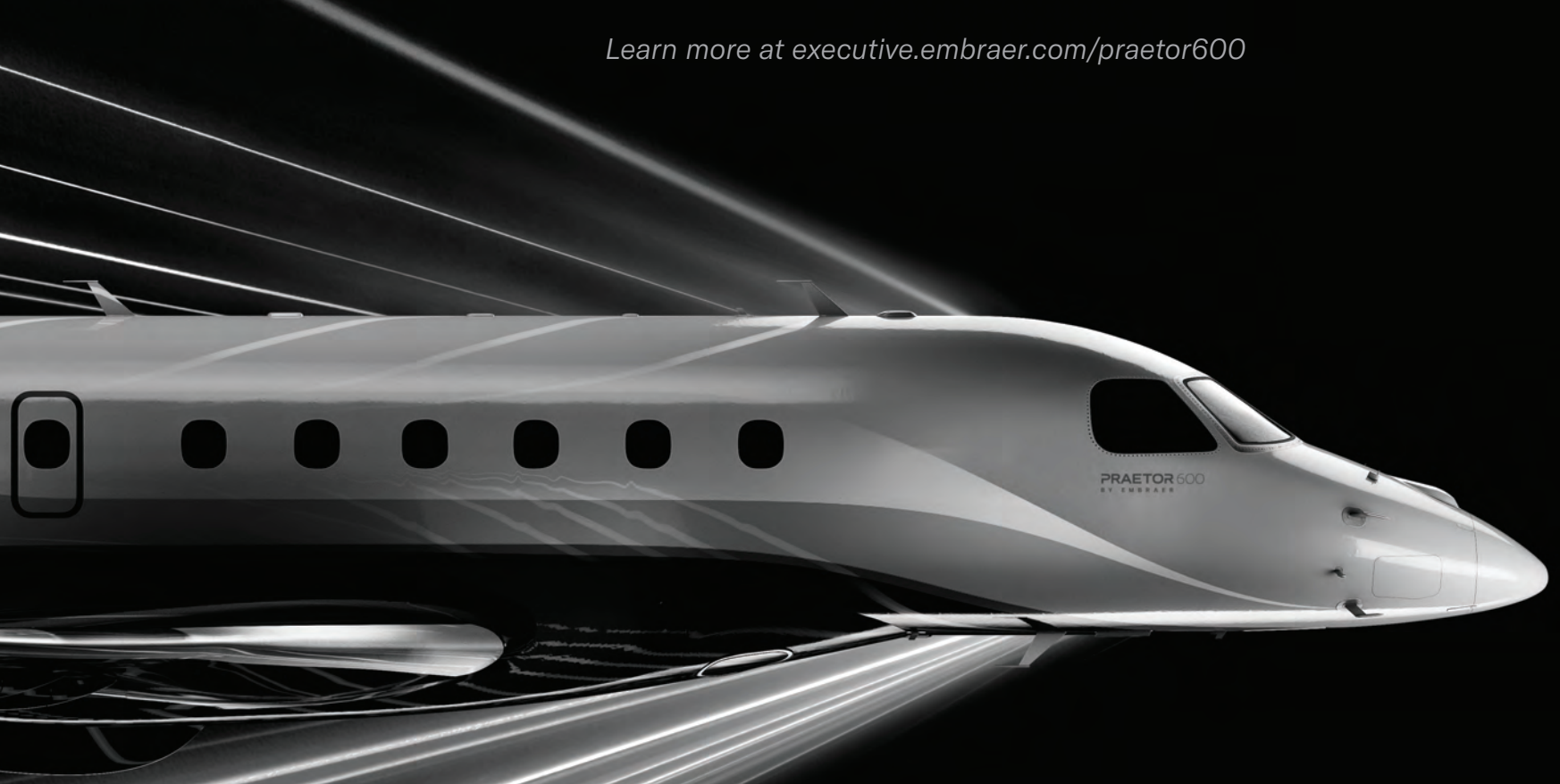

LEADING THE WAY

PRAETOR 600
BY EMBRAER

INSIDE this issue

SPECIAL REPORT

The 2020 AIN Top Flight Awards Nominees.

Important Events Note

While there have been many cancellations and postponements of important events during the Covid-19 crisis, **AIN** remains committed to covering the business aviation industry. Please send any news and press releases, especially related to events you had been planning to attend, to ctrautvetter@ainonline.com and we will endeavor to help share your news.

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As We Go To Press

ACA WARNS AOCS TO PREP FOR HARD BREXIT

Concerned over the number of unresolved issues still outstanding in the waning weeks before Brexit is set to take effect on January 1, the Air Charter Association is advising that operators take steps to ensure they have EU third-party operator approvals in place, permit questions resolved, and other approvals in the case of a non-negotiated exit (NNE). "We urge the regulators to avoid a non-negotiated exit from the EU at any cost. Anything else would be catastrophic for the UK's aviation industry," added Luxaviation UK CEO George Galanopoulos. Following a meeting with the UK's Department for Transport and Civil Aviation Authority, the ACA has outlined an "action plan" covering a number of steps that can be taken in the absence of further Brexit clarity, including reminding air operator certificate (AOC) holders to ensure they have a valid third-country operator approval in the case of an NNE.

TEXTRON AVIATION HANDS OVER FIRST KING AIR 360

Beechcraft King Air 360 launch customer Stamoules Produce took delivery of the first refreshed copy of the venerable turboprop twin on November 11 at Textron Aviation's east Wichita campus. Announced in early August and certified by the FAA in October, the King Air 360/360ER improves upon and replaces the 350i with features such as Innovative Solutions & Support's ThrustSense autothrottle, a new digital pressurization controller, and a 10 percent lower cabin altitude than the 350i. Cabin improvements include craftsman-built cabinetry, partitions, and side ledges, as well as upgraded materials and finishes and new interior options. "We're very proud to be the launch customer of the new Beechcraft King Air 360," said Katie Stefanopoulos, a family member of California-based Stamoules Produce who will also serve as its corporate pilot.

R-R TO TEST 100 PERCENT SAF IN ULTRAFAN DEMONSTRATOR

Rolls-Royce plans to use 100 percent sustainable aviation fuel (SAF) to power a Trent turbofan during ground tests as part of its UltraFan next-generation engine demonstrator program. If successful, the tests would confirm that unblended SAF makes a significant contribution to improving the environmental performance of gas turbine engines, the company said. World Energy produced the SAF Rolls-Royce plans to use for the tests in the coming weeks. Sourced by Shell Aviation and delivered by SkyNRG, the unblended fuel can reduce CO_2 lifecycle emissions by more than 75 percent compared with conventional jet fuel, said Rolls-Royce. The tests aim to demonstrate that Rolls-Royce's current engines can operate with 100 percent SAF as a full "drop-in" option, laying the groundwork for moving such fuels towards certification. Current certification allows for use of blends of up to 50 percent

SHELTAIR FXE HANGAR COMPLEX NOW FULLY OPERATIONAL

Sheltair has completed its major hangar complex on the north side of Fort Lauderdale Executive Airport (FXE). The $30 million project, which was begun in 2018, includes eight hangars of up to 22,500 sq ft with 28-foot doors. The nearly five-acre development just off Taxiway November also has 31,000 sq ft of office space and a private access road for its tenants. Sheltair is providing potential lessees the option to choose between private or community hangar space, along with the ability to customize spaces with build-to-suit options. Managed by Banyan Air Service, this new complex will be served 24/7 by Banyan's recently-finished, dedicated north side satellite terminal.

HONDAJET PILOT TRAINING BEGINS IN EUROPE AT FSI F'BORO

FlightSafety International is now offering factory-authorized training for the HondaJet HA-420 in Europe at its Farnborough learning center. For the HondaJet, the UK facility provides initial and recurrent pilot training, as well as other courses. This marks the second installation of a HondaJet simulator, with the first at FlightSafety's HondaJet learning center in Greensboro, North Carolina. For now, training for maintenance technicians is offered only at the Greensboro facility. This training meets EASA (B1 and B2) and FAA requirements with courses covering initial, update, and practical needs, along with avionics, taxi movements, and engines.

GULFSTREAM DISPLACES EMBRAER IN Q3 JET OUTPUT

With the Covid-19 pandemic eroding airliner orders and deliveries, Gulfstream has displaced Embraer as the world's third-largest jet manufacturer in terms of output. In the third quarter, Embraer delivered 28 jets, seven of which were regional airliners, while Gulfstream, handed over 32 business jets. Richard Aboulafia, vice president of analysis at the Teal Group, noted the switch but believes this turn is not a permanent one: "Embraer will be back, particularly since they're now the world's only provider of regional jets, and that market, along with the commercial transport market, will recover in time." He also noted Embraer had a softer third quarter last year and believes its military work will ramp up as well. Meanwhile, Aboulafia believes Gulfstream is facing a down year next year with the transition between the G650ER and new ultra-long-range G700.

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Elections alter flight plan

"We continue to focus on the long term," they said. "A stable, predictable funding stream, as the aviation industry rebounds, will be essential to protecting the system and the workforce that safeguards it."

Airports Council International-North America also extended congratulations, encouraged that Biden has appeared supportive of increasing the passenger facility charge for airports. But ACI-NA president and CEO Kevin Burke said, "Before that work can start, Congress still needs to pass a comprehensive Covid relief package that includes much-needed funds for airports struggling to finance operations, make debt payments, and respond to the pandemic by retrofitting their facilities and adopting enhanced sanitation and health protocols. The entire travel industry is still suffering from the abrupt, sustained drop in tourism and business travel."

During a November 12 National Air Transportation Association webinar to assess the impact of the elections, two staff members—Alexander Beckmann, deputy chief of staff for the outgoing congressman and House aviation subcommittee member Dan Lipinski (D-Illinois), and Kerry Knot, chief of staff for House Appropriations Committee member Robert Aderholt (R-Alabama)—agreed that the first order of business will be to address issues surrounding Covid. That could come in the form of a mask mandate for airlines, something the Trump administration would not back but Biden has supported, they said.

It also could mean passage of another Covid relief bill, which has been hung up by House and Senate wrangling. While Senate majority leader Mitch McConnell (R-Kentucky) and House Speaker Nancy Pelosi (D-California) have been unable to reach an agreement, dimming prospects for passage of a relief package during the lame-duck session, many in Washington expect McConnell and Biden to work more collaboratively should Republicans maintain control.

While ACI-NA is holding out hopes for an increase in the PFC and Beckmann believes there might be more opportunity for momentum on the issue under the new administration, both he and Knott also believe that the tight margins in the House and Senate might make comprehensive tax changes difficult, including repeals of tax cuts put in place under the Trump administration. Likewise, tight margins or a Republican-controlled Senate pave a more difficult road for more dramatic proposals surrounding the environment. However, Biden has been a proponent of clean energy and more changes could come through executive order, as well as support for initiatives along those lines.

On Capitol Hill, the Senate aviation subcommittee is set to see a few new faces in the upcoming year. Colorado freshmen Senate Republican and member of the Senate aviation subcommittee member Cory Gardner lost his bid for reelection to Democrat John Hickenlooper. Meanwhile, Tom Udall, a Democrat from New Mexico and Senate aviation subcommittee member, had announced in early 2019 his plans to retire from the Senate.

Michigan Democrat and fellow subcommittee member Gary Peters hung on in a close race against Republican John James. However, Republican Shelley Moore Capito, another Senate aviation subcommittee member, coasted through her bid for reelection. Neither aviation subcommittee chairman Ted Cruz (R-Texas) nor ranking Republican Kyrsten Sinema (D-Arizona) were up for reelection.

Elsewhere in the Senate, Susan Collins (R-Maine), Senate transportation appropriations subcommittee chair, won a closely contested challenge against Democrat Sara Gideon in what had become a nationally watched race. However, Jim Inhofe (R-Oklahoma), a strong general aviation advocate, easily prevailed.

In the House, Transportation and Infrastructure Committee chairman Pete DeFazio (D-Oregon) fended off Republican contender Alek Skarlatos with 51.6 percent of the vote in what was said to be the tightest race in his 34-year congressional career. The ranking Republican on the committee and General Aviation Caucus co-chair Sam Graves (Missouri) easily won reelection, as did aviation subcommittee chairman Rick Larsen (D-Washington) and subcommittee ranking Republican Garret Graves (Louisiana). However, House Appropriations Committee chair Nita Lowey (D-New York) retired, requiring a shuffling of that powerful committee.

Along with Graves, Democrat General Aviation Caucus co-chair Marc Veasey (Texas) also won his bid for reelection. But that caucus lost about 40 members, mainly to retirements, requiring a rebuilding.

As the new faces emerge in their places, Knot and Beckmann both stressed the importance of reaching out to continue its education campaign. "Both parties are going through major changes," Knot said. "Now's not the time to step back. Now's the time to redouble all the efforts."

Beckmann agreed and suggested to look at staffers as well as lawmakers: "People underestimate the impact that shooting one personalized email to staff that represents your district makes. We do read our emails." This is especially important as new staff that might not understand aviation issues comes on board, he added.

AOPA agreed that focus must be on reaching out to newly elected, as well as returning members, particularly on the caucuses. "The General Aviation Caucus, one of the largest in Congress, provides a resource for members and staff to learn about GA's impact on their respective communities," said Jim Coon, AOPA senior v-p of government affairs. ■

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Bombardier debt climbs, deliveries drop during Covid

by Kerry Lynch

The Covid-19 pandemic continued to take its toll on Bombardier as deliveries fell seven units to a total of 24 in the third quarter. The company further has taken roughly a $2.25 billion hit on liquidity, putting it in a position to be $4.5 billion in debt after it sheds its remaining non-business aviation activities.

Releasing the airframer's third-quarter results this morning, Bombardier president and CEO Eric Martel noted the "broad and deep impact on the global economy and in our industry," but said he sees stabilization for now with more encouraging signs long-term.

On the positive side, Bombardier's business aircraft revenues climbed 10 percent in the most recent three months to $1.225 billion, thanks to the delivery of eight Global 7500s. That delivery number is anticipated to grow some 50 percent to about 12 in the fourth quarter, positioning the business aviation unit for further revenue expansion and near break-even on cash flow.

In the third quarter, Bombardier delivered 13 Globals, up from nine a year ago. But the nine-month tally of 31 Global deliveries lagged the 33 handed over in the first nine months of 2019.

Also, the nine Challenger deliveries were down by nearly half of the 17 handed over in third-quarter 2019. For the year so far, 32 Challengers have been delivered, compared with 48 in the same period last year. Martel, however, noted that Challenger sales activity strengthened in the third quarter.

Just two Learjets were delivered in the third quarter, down from five a year ago. Seven have been delivered through the first three quarters of the year, compared with nine a year ago. In total, Bombardier delivered 70 aircraft through the first three quarters, a 20-aircraft delta from a year earlier.

Martel said Bombardier would remain at the lower delivery totals into the next year, predicting between 100 and 120 business jet shipments next year. This compares with the 142 handed over in 2019.

The Global 7500 will account for a significant chunk of next year's totals, with Martel estimating about 35 would be delivered as Bombardier works through a backlog that still stretches nearly two years.

In addition, the company noted it was working with a customer on "reclaiming" 12 Global 7500 delivery positions slated for 2023. While that could cause the backlog to take a hit, Martel said Bombardier has been able to sell every freed-up delivery position and at a higher price. "The ability to remarket these aircraft at more favorable terms provides an opportunity to improve further profitability," the company said.

However, as Bombardier continues to work through that backlog and new sales activity has suffered under the pandemic, business aircraft backlog fell from $14.4 billion at the end of 2019 to $12.2 billion at the end of the third quarter, and the company expects deliveries will outpace orders for the near-term.

As for the costs of the pandemic, Martel conceded that once Bombardier sells its transportation unit to Alstom, it will move forward as a "pure-play" business aviation company with $4.5 billion in net debt, far greater than the $2.5 billion originally anticipated. This was a direct result of lost order and delivery activity, restructuring, and other pandemic-related costs.

Martel promised to take aggressive steps to address that with details to be forthcoming early next year, following the sale of the transportation unit.

But he said handling this debt-load will require managing the interest costs and learning how to operate profitably in the current environment. Martel also said the company's future costs are anticipated to be lower because, except for perhaps a product update, he doesn't anticipate significant capital investment in new products in the next five years. He expects such investment would be "very minimal because we've refreshed our product line pretty much across the board."

Martel further believes cash flow will continue to strengthen with increased Global 7500 deliveries, and along with it, profitability as the company manages pricing and gains efficiencies from operational lessons learned through the ramp-up period.

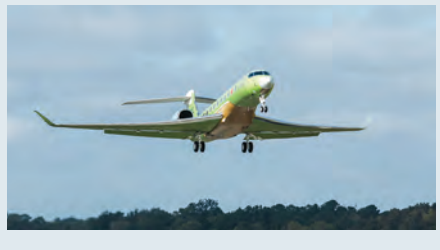
When asked if the Montreal-based company would consider selling to another manufacturer "south of the border," he said that is not in the plans. ■

Fifth G700 joins Gulfstream test program

Less than a month after the fourth flight test aircraft in Gulfstream's new flagship G700 program took to the skies, it was joined by a fifth on October 23. The first flight of T5, which will be used to test avionics and provide flight training simulator data, lasted three hours and eight minutes. Gulfstream Aerospace said the twinjet, registered as N703GD, reached an altitude of 48,000 feet and exceeded the type's Mach 0.925 Mmo during the flight.

The official unveiling of the G700 occurred last year at NBAA-BACE, and since its first flight back in February, the Savannah, Georgia-based airframer has made significant progress in the test program, including cold weather, flutter, aerodynamic stalls, and envelope expansion. During the series of test flights, the twinjet has reached Mach 0.99 and 54,000 feet, 3,000 feet more than its maximum cruise altitude.

"The G700 flight-test program is progressing exceptionally well," said company president Mark Burns, adding the program is steadily increasing flights, flight hours, and the completion of numerous company tests. "Every day we come closer to our goal of delivering this revolutionary aircraft to our customers."



A stretch derivative of the ultra-long-range G650 with the G500/600's Symmetry flight deck, the G700 is expected to enter service in 2022. **C.E.**

News Briefs

Private Aviation Ripe for Consolidation, Banker Argues

The private aviation industry, particularly charter operators, is ripe for consolidation, according to investment banker Brooks Crankshaw, managing director of Balmoral Advisors. Because of the Covid-19 pandemic, he argues that private aviation has become a "popular alternative" to the airlines. However, he explained, the industry is highly fragmented, with a strong divide between major players and smaller operators. "Industry players can benefit from [consolidation]," he said. "Smaller or midsize players can get a leg up in the competitive landscape with technological advances that they otherwise could not afford. Operators can overcome the barriers to growth... [and] owners can diversify by offering an expanded portfolio to include jet card, maintenance repair, or brokerage."

Pilatus PC-12 NGX Training Device Gets FAA Nod

The first FAA level-6 flight training device (FTD) for the new Pilatus PC-12 NGX is now available for pilot training at Simcom's facility in Scottsdale, Arizona. Built by Frasca International, the FTD was delivered to Simcom—Pilatus's factory-approved training provider—earlier this summer. The device replicates the Pilatus Advanced Cockpit Environment (ACE)—based on the Honeywell Primus Epic 2.0 avionics system—and features the new touchscreen avionics controller, single power control lever, and autothrottle system on PC-12 NGX. A second PC-12 NGX FTD is currently under construction for service in Europe.

New Jet Fuel Brokerage Launches in Switzerland

A new global aviation fuel broker has entered the market with the launch of Switzerland-based iFuel. With a focus on providing its business aviation, commercial, cargo, and military customers with the ability to source SAF as well as conventional jet fuel, the company believes sustainable fuel should be the ultimate power source for any flight. To help those customers reduce their carbon footprint, iFuel is partnering exclusively with fuel providers who believe in those same goals.

XO Adds Light Citations to Fleet

Citing a nearly doubled membership base since April, on-demand charter provider XO is adding 15 Cessna Citation V Ultras, a 30 percent fleet expansion, to fly short-haul trips to non-hub airports. As a result, its dedicated fleet of light and super-midsize twinjets will soon number 58. XO also plans to add more Ultras, along with the Citation Encore, a spokeswoman told **AIN**. They will join a fleet that includes Citation Xs and Bombardier Challenger 300s operated by sister company XOJet Aviation.

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CAE forecasts need in next decade for 260K new pilots

by Kerry Lynch

Despite the Covid-19 pandemic's toll on the current civil aviation market, CAE forecasts a global demand for 260,000 new pilots over the next decade. Releasing the 2020-2029 CAE Pilot Demand Outlook on November 9, the international training specialist said its analysis shows that the active pilot population is expected to return to 2019 levels in 2022. But retirements and attrition are expected to become a challenge as air travel recovers and will create an "acute demand" with a short-term need for some 27,000 new pilots as of late 2021, growing to 260,000 over a 10-year period.

In business aviation alone, CAE is predicting that 41,000 new pilots will be needed over the next decade to make up for anticipated retirements and attrition. This is projected as CAE notes the business aviation market is facing "massive retirements" as "the percentage of pilots over the age of 50 continues to increase versus the total civil aviation industry pilot pool. Currently, this pilot population age represents a disproportionally high rate."

It further sees the airlines scooping up a portion of business aviation pilots. On top of this, CAE projected a need for another 4,000 to accommodate growth for a total need of 45,000 new business aviation professional pilots over the forecast period. The airlines, meanwhile, need 126,000 new pilots to offset attrition and retirements and then 93,000 to accommodate growth.

CAE acknowledged that the sudden drop in air travel demand hindered the industry's growth trajectory. "Airlines and operators around the world have adjusted their operations to align with lower demand. Thousands of pilots have been furloughed in recent months," the company noted. But it wondered whether this ultimately might play into stronger pilot needs in the future.

"Many of them have pivoted to other professions and might not want to resume their pilot careers," CAE said. "On the one hand, airlines and operators have reduced the pilot workforce to offset the financial impact of the pandemic. On the other hand, data indicates that the industry will face significant challenges in the upcoming years to meet the demand for pilots."

CAE further stresses that fundamental factors driving pilot demand before the pandemic remain in place. "Age-based retirement combined with fleet growth were and remain the main drivers of pilot demand," the company said. "Third-party analysis shows that commercial aviation and business aviation markets are forecast to continue growing over the next decade—over 11,000 additional business and commercial aircraft are expected to join the active world fleet during that period." Of this, CAE anticipates that 3,600 additional aircraft will come from the business aviation market.

The anticipated demands are going to put pressure on the civil training industry, CAE said. "The industry is experiencing an unexpected change of course and facing unprecedented challenges, driving us to reconsider how we can develop and train better pilots," it said. "One smart approach for coming together as an industry to meet the demand for pilots, as well as instructors, is to embrace training partnerships."

Finding adequate instructors was an issue before the pandemic, it added. "As growth returns to the industry, the availability of high-quality instructors will pose a challenge for years to come."

The training provider also expressed concern about a lack of funding for prospective students, noting that less than 10 percent of eligible aspiring pilots have access to direct funding. "Rather than leaving talent on the bench due to funding, we can work as facilitators for access to direct funding by educating the financial industry on the job outlook for pilots and the reality of training," CAE said, pointing to its recent launch of a financing initiative in collaboration with financial institutions for prospective pilots.

"With the 2020-2029 CAE Pilot Demand Outlook, we hope to arm the industry with the insights that will help the global aviation community understand, rethink, and learn about how to continue to build and grow the supply of highly qualified pilots as the industry emerges from the downturn," said Nick Leontidis, group president of CAE's Civil Aviation Training Solutions. "Disruptive events are opportunities to innovate and collaborate." ■

DAVID McINTOSH

Demand for the G650 remains strong, according to Phebe Novakovic, chairman and CEO of Gulfstream Aerospace parent General Dynamics. She also said the ultra-long-range model accounts for the biggest share of the 25 large-cabin jets that Gulfstream handed over in the third quarter.

Gulfstream 3Q shipments down from 2019

Third-quarter aircraft deliveries at Gulfstream Aerospace continued to edge closer to pre-Covid levels, but were still down 15.8 percent from a year ago, parent company General Dynamics announced last month. The Savannah, Georgia-based business jet manufacturer handed over 32 aircraft (seven midsize G280s and 25 large-cabin jets) in the quarter versus 38 (nine G280s and 29 large cabins) in the same period a year ago.

In the first nine months, Gulfstream shipped 87 jets (16 G280s and 71 large cabins), compared with 103 (24 G280s and 79 large cabins) in the same period last year. General Dynamics chair and CEO Phebe Novakovic indicated that Gulfstream is expected to deliver 130 aircraft in 2020, which would put fourth-quarter shipments at 43 units—pretty much on par from the 44 handed over in the final quarter a year ago.

Though she noted that business jet demand is a bit weaker in the U.S., book-to-bill in the quarter was 0.92:1 thanks to better demand from international customers. Novakovic said G650 deliveries and sales remain strong, with the model making up the biggest share of large-cabin shipments in the third quarter.

She added that deliveries will be somewhat lower in 2021 due to G550 production ending and fewer expected G280 shipments. However, she anticipates demand picking up as the pandemic wanes, so Gulfstream could bump up large-cabin production next year if that scenario plays out. **C.T.**

News Briefs

Embraer Steps Up Plans for New Regional Turboprop

Embraer is firming up plans to introduce a twin-turboprop regional aircraft to respond to airlines' need to significantly reduce operating costs. Rodrigo Silva e Souza, marketing v-p of the commercial aviation division, said the new design could be ready to enter service in 2027. Embraer also released conceptual images of what looks like a reworked version of its 78-seat E175 twinjet, with a pair of turboprops in place of its turbofans. Silva said work on the new program will be stepped up in 2021 and that Embraer is already in serious discussions with a number of undisclosed business partners.

Foley: Autonomy To Factor into Long-term Pilot Demand

As organizations such as Boeing release their forecasts for pilot demand, analyst Brian Foley cautioned that long-term factors such as automation must be taken into account. In particular, he questioned Boeing's forecast for 763,000 new pilots over 20 years. "That may be, but only if the world of cockpit technology stands still for the next two decades, which would seem highly unlikely," Foley contended, noting some aircraft already are at least partially flying autonomously, pointing to the approval of Garmin Autoland and calling the technology a "baby step" in autonomy. Military aircraft may be the first to downsize crew requirements, he said. But "towards the end of Boeing's forecast period, this trend will inevitably spill over into the civil aircraft arena," Foley said.

Orgs Urge Congress To Halt Ligado Network

Nearly 80 organizations across aviation and other industries are appealing to key U.S. Senate leaders to step up pressure for the FCC to reconsider its approval for Ligado to use a band of spectrum that would bump against that used by aviation and others. According to the groups, the FCC's "flawed Ligado order...would upend decades of sound spectrum policy, negatively impact a significant cross-section of commercial, federal, and academic users who rely on the many different L-band satellite services, and threaten the safety of most Americans." This includes the possibility of disruption of many GPS applications, they added.

AOPA Vows Fight To Save Oahu Airport

AOPA has teamed up with Save Dillingham Airfield to help stave off an attempt to shutter general aviation facility Dillingham Airfield in Oahu, Hawaii. The airfield, which is a joint GA-military airport, is expected to close on June 30, 2021, and the groups recently expressed concerns that the state DOT agency is planning to take preliminary steps toward that end in January by prematurely exiting out of its FAA Airport Improvement Program obligations and ending the airport lease, which would not have expired until 2025.

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Textron Aviation saw an increase in orders for its Citation light and midsize jets in the third quarter and sees encouraging signs of growing flight activity and "new order flow," according to Textron Inc. CEO Scott Donnelly.

Textron boss encouraged by light, midsize jet activity

by Jerry Siebenmark

Despite posting back-to-back quarterly losses for the first time in several years, Textron Inc. CEO Scott Donnelly is bullish on subsidiary Textron Aviation's prospects in the next quarter, which, based on order activity between July 1 and September 30, should soften the impact of the losses the Wichita-based airframer recorded in the second and third quarters. "While the pandemic impacted volume in the quarter we did see aircraft utilization levels continue to recover and we're encouraged by new order flow," Donnelly told analysts on a conference call following last month's release of financial results.

He added that a "nice pickup in light and midsize jet activity," as well as "pretty strong order activity" for the Beechcraft King Air, increased its backlog in the third quarter by $400 million, to $1.8 billion. During the quarter, Textron Aviation delivered 25 Cessna Citations and 21 commercial turboprops. That was lower than the 45 jets and 39 turboprops the company delivered in the same quarter last year.

Fewer aircraft deliveries and lower aftermarket volume drove Textron Aviation to post a quarterly loss of $29 million on revenue of $795 million, compared with $104 million in profit on revenue of $1.20 billion in the third quarter of 2019. For the first nine months of the year, Textron Aviation recorded a loss of $92 million on revenue of $2.4 billion, compared with $315 million in profit on revenue of $3.45 billion in the same period a year ago.

Financial results notwithstanding, Donnelly said increased utilization, a robust used market, and new users of business jets are driving optimism for "a decent recovery coming out of" the pandemic. "Just as you're seeing more people opting to use business aviation for personal reasons, you're going to see more people choose to use business aviation for business reasons," he explained. "That's what I say drives a better macro environment than we've seen in a long time."

Donnelly also told analysts that Textron Aviation's newest aircraft, the SkyCourier, has accumulated more than 240 hours and that the twin-turboprop utility is on track for certification and entry-into-service in the second half of 2021. ■

Third-quarter deliveries slide at Embraer

Embraer's Phenom 300E continues to be the Brazilian airframer's most-delivered business jet.

Embraer's business jet deliveries slipped by six aircraft in the third quarter, according to numbers released on November 10 by the Brazilian aircraft manufacturer. The total for the third quarter includes 19 light jets (three Phenom 100s and 16 Phenom 300s) and two large jets (two Praetor 500s) versus 15 Phenom light jets (one 100 and fourteen 300s) and 12 large jets (four Legacy 450s, one Legacy 500, and seven Praetor 600s) in the same quarter a year ago.

Year-to-date, Embraer's business jet deliveries declined more sharply by 20 aircraft. The total for the current nine-month period was 43 business aircraft—33 light jets (five Phenom 100s and 28 Phenom 300s) and 10 large jets (one Legacy 650, four Praetor 500s, and five Praetor 600s). That compares with last year's nine-month period in which Embraer delivered a total of 63 aircraft—42 Phenom light jets (seven 100s and thirty-five 300s) and 21 large jets (two Legacy 650s, five Legacy 450s, six Legacy 500s, and eight Praetor 600s).

Highlights of the more recent quarter were the deliveries of a Phenom 100EV and Phenom 300E to two different Brazilian customers that helped it reach the milestone of the 250th Embraer Phenom in operation in Latin America. Embraer also delivered the first enhanced Phenom 300E with a Bossa Nova interior to Patient Airlift Services co-founder Joe Hawley. **J.S.**

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Spirit Closes on Sale of Bombardier Assets

Spirit AeroSystems has closed on its $865 million acquisition of select Bombardier assets that will give it additional work with Airbus and the Canadian airframer. Under the deal, the Wichita-based aircraft supplier gains Bombardier's aerostructures and aftermarket businesses in Belfast, Northern Ireland (Short Brothers); Casablanca, Morocco; and Dallas. Long-term contracts from those sites include work on the A220 (formerly C Series) and Bombardier business jets. Combined, the sites employ 3,300 people and encompass 3.4 million sq ft of covered space.

NBAA Guide Eases Mx Events for Small Operators

NBAA has created a guide for small flight departments and aircraft maintenance workers—"Best Practices for Small Flight Department Maintenance"—that offers ways for organizations with limited maintenance resources to increase efficiency without significantly raising costs. Managing time spent on maintenance tasks, preparing for maintenance events through detailed plans, documenting maintenance practices and maintaining good records, and understanding how to find the correct external resources are among the practices the guide recommends.

Honeywell Unveils New Dassault FalconConnect Platform

Honeywell Aerospace has reconfigured the FalconConnect portal for owners and operators of Dassault Falcon business jets that includes a new dashboard bringing together in-flight connectivity, flight planning and optimization, and flight database services in a single platform. Powered by Honeywell's Forge analytics platform, the new portal includes high-speed airborne connectivity, hardened aviation cybersecurity, real-time data and alerts, aircraft tracking and monitoring, flight planning, and efficiency tools. Current offerings include flight planning, flight database, and cabin connectivity software, services, and applications, but more features will be added in the coming months, Dassault said.

UAM's Challenges Outlined at Bavarian Conference

Safety, noise, and economics are among some of the key challenges in developing an infrastructure for urban air mobility (UAM), according to a panel of experts speaking at a session on infrastructure at Invest in Bavaria's Urban Air Mobility 2020 virtual conference. Panelist Adrienne Lindgren of Hyundai Motor Group's UAM division said UAM users would have to first be comfortable flying in a vehicle much smaller than a commercial jet. UAM vehicles and vertiports also will have to produce a minimum of noise, which will affect routing. "If the operations aren't quiet they won't be allowed," said panelist and VerdeGo Aero CEO Eric Bartsch.

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German eVTOL aircraft manufacturer Lilium is partnering with property developer Tavistock to build a vertiport in the new Lake Nona community near Orlando.

Lilium unveils plans for Florida air mobility port

by Charles Alcock

The new Orlando-area Lake Nona development is set to be the site of the first vertiport in a planned air mobility network for Florida. In a November 11 announcement, German eVTOL aircraft manufacturer Lilium said it will partner with Tavistock Development Company and the city of Orlando to build a vertiport at the heart of the new residential community as part of the wider Aerotropolis business park, which is adjacent to Orlando International Airport.

According to Lilium, the Lake Nona vertiport will be the first hub for a network that will provide flight connections for more than 20 million Floridians living within a radius of 185 miles. The company says its five-seat, all-electric Lilium Jet eVTOL will be ready to begin commercial operations in 2025. The company is working towards type certification on both sides of the Atlantic under EASA and FAA Part 23 rules.

Tavistock's plans for the Lake Nona community call for between 20,000 and 30,000 new homes. The adjoining Aerotropolis zone includes existing business aviation operations, such as the headquarters for the BBA Aviation/Signature Flight Support FBO group and SimCom Aviation Training, which is due to be expanded to have the capacity to train approximately 10,000 pilots each year. Tavistock managing director Ben Weaver was formerly chief financial officer of Signature Flight Support.

According to Lilium chief operating officer Remo Gerber, the company will offer flights that can be booked via its app, providing connections to other Florida cities such as Tampa (85 miles) and West Palm Beach (160 miles). The Lilium Jet will cruise at speeds of up to 185 mph, providing quick connections to multiple locations on Florida's Atlantic and Gulf of Mexico coasts. For now, Lilium's partnership with Tavistock only covers the Lake Nona site.

Gerber told **AIN** that Lilium has no interest in providing short-range air taxi services within cities and believes that eVTOL aircraft will be far more viable as part of longer-range networks with sectors of 20 miles or more. He said that the company's goal is to work with multiple partners to develop "ecosystems" consisting of multiple routes.

Regional Mobility

"We are thrilled to partner with Tavistock and build the first stretch of Florida's high-speed electric transportation network with Central Florida at its core," commented Gerber. "It shows that regional high-speed air mobility can be built by private initiative and give communities such as Lake Nona, which can also serve Orlando and arrivals from its international airport, the ability to determine whether they want a link into a high-speed transportation network."

The footprint for each of the planned vertiports will be almost 60,000 square feet and Gerber explained that these could be part of a parking garage for cars. He estimated the cost of building new structures at around $10 million and said that each facility will have an annual throughput of more than one million passengers.

"Lilium has been working on a lean, modular design that will help make vertiports accessible to developers large and small," the company told **AIN**. "Whether they are placing a vertiport at an existing transport terminal, next to a shopping center, or on top of a busy car park, Lilium wanted to make it easy and affordable for developers to design and build a suitable vertiport."

Central Florida has long had an inadequate public transportation system and growing road traffic congestion, making it an ideal environment for launching new air mobility services, according to Lilium. "Over time we will make these flights competitive with driving private cars," said Gerber. Around two million people now live in the Orlando area.

On November 9, Orlando City Council approved tax rebates worth $831,250 over 9 years for Lilium. It estimates that the new operation at Lake Nona will have a $1.7 million economic impact over 10 years and will create 100 jobs.

Lilium and Tavistock claim their plans will make Florida the site for "the first advanced aerial mobility region in the U.S." In fact, ride-hailing giant Uber is still planning to have initial operations of its planned air taxi networks operating in Dallas and/or Los Angeles by the end of 2023. However, these services would be relatively short range in comparison to what Lilium has in mind. ■

FutureFlight

This story comes from FutureFlight.aero, a resource developed by **AIN** to provide objective, independent coverage of new aviation technology, including electric aircraft developments.

Autonomous electric tugs could cut costs

San Francisco-based Moonware is developing a family of electrically powered tow tugs it says could transform aircraft ground handling. Moonware expects to field tugs that could tow business aircraft and eVTOLs up to 10,000 pounds in 2023, to be followed later by larger tugs for airliners with pulling power of up to around 600,000 pounds.

The company's vehicles will move autonomously between pre-determined waypoints such as parking stands, taxiways, and runways. Any required path updates will be set via the company's cloud-based traffic management network that will draw on real-time data showing each vehicle's position and status. The system will use this data to update each vehicle's route to tow a particular aircraft, avoid a potential hazard, or recharge the batteries.

Moonware's tugs will use a patented mechanism that leverages the weight of each aircraft's front nose gear to generate the necessary torque for towing operations, allowing the vehicle to accommodate different types of landing gear. Onboard Lidar sensors help the tugs avoid collisions with other aircraft, ground support vehicles, or buildings. **C.A.**

News Briefs

Bombardier Biggin Hill Facility on Track

Expansion of Bombardier Aviation's service center at London Biggin Hill is on track as the Canadian airframer named key leaders. Greg Hoggett has been named general manager of the service center while Corey Trudgen moves over to support the Biggin Hill expansion and future expansion across the services network. Hoggett was most recently group operations director for AJW Group and, before that, managing director and COO for TAG Aviation Europe/TAG Aviation UK. Announced in February, the Biggin Hill project involves the construction of a new and larger facility encompassing nearly 250,000 sq ft and accommodating up to 14 Global 7500s. The new facility is expected to be complete by 2022.

WEF Report Examines SAF Need

A newly-released report from the World Economic Forum (WEF) says a transition to carbon-neutral flying is possible, with sustainable aviation fuel (SAF) as the most promising decarbonization option in the near-term. While enough feedstock supplies such as municipal waste, agricultural residues, and cooking oil waste, currently exist to reach production of 500 million tonnes annually—enough to fuel all aviation by 2030—the report said planned production capacity investments will only yield four million tonnes a year by 2030, representing 1 percent of the projected global jet fuel demand in 2030. The report urges that action must be taken now to mitigate climate change.

Court Dismisses NBAA Case To Preserve SMO

Business and general aviation leaders faced another setback in their efforts to preserve Santa Monica Municipal Airport (SMO) with the U.S. District Court for the District of Columbia dismissal of a case seeking to overturn an FAA agreement that paved the way for the closure of the airport after Dec. 31, 2028. The FAA struck a settlement agreement with the city of Santa Monica in 2017, essentially freeing the city from any legal obligations that it must run the airport in perpetuity after 2028. NBAA joined local airport advocates in challenging this agreement but was rebuffed on procedural grounds. The groups then in 2018 turned to the U.S. District Court for the District of Columbia, but that court also dismissed the case.

Thrive Grows Citation Fleet with Sovereign+s

Charter operator Thrive Aviation will take delivery of three preowned Cessna Citation Sovereign+s from Textron Aviation to meet demand. With these additions, Thrive will operate an expanded fleet of Citations beyond two M2s, four CJ3+s, and one XLS+. Based at Henderson (Nevada) Executive Airport and with an expanded 21,000-sq-ft hangar at Las Vegas McCarran International, Thrive will take delivery of the new Citations by month's end.

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Safety Stand Down

Virtual safety standdown highlights safety amid struggle

by Kerry Lynch

Bombardier kicked off its day-long Safety Standdown seminar on October 21 with the return of well-known and widely revered safety expert Dr. Tony Kern, who shared a message of turning the challenges, or the "battle" of life, into an opportunity for improvement and strengthening.

Usually held over a span of four days, the annual Safety Standdown typically has involved an opening reception followed by three days of keynotes and dozens of breakout sessions delving into the multiple facets of aviation safety issues. This year's event, however, was spread out over a number of weeks, beginning with four "safety talks" that were released in August and September, culminating in four keynote sessions and the presentation of the annual Bombardier Safety Standdown Award condensed into a five-hour virtual seminar on October 21.

Andy Nureddin, v-p of customer support for Bombardier, welcomed attendees to the company's first-ever virtual Safety Standdown. "The format is indeed much different this year," he acknowledged. "The virtual format is particularly exciting because it helps create a broader sense of community [bringing] our safety message to more aviation professionals."

Calling Safety Standdown one of the most comprehensive human factors safety events in the industry, Nureddin said the lessons of this year's event, which carried a theme of "Safety in Focus 20/20," is all the more important this year. "The past few months have challenged us in more ways than one," he said, "providing us with a unique opportunity to carefully analyze and bring all aspects of our operation into clearer focus safety et all."

Andy Nureddin, Bombardier v-p of customer support

"The past few months have challenged us in more ways than one..."

Kern, who is CEO of Convergent Performance, returned for his 24th Safety Standdown and is one of the perennial favorite keynotes. He discussed the "infinite battle" of how life is a series of challenges and how people need to recognize this and learn to fight through it rather than focusing on being victorious.

He added this is important in 2020 given the challenges confronting people during the Covid-19 pandemic. All the stressors associated with the virus absolutely play a role in aviation safety, he said. "Aviation professionals do not live in a bubble."

Dr. Tony Kern, CEO, Convergent Performance

"Let's thrive in the chaos that we've been given."

Kern further said the essence of a battle is the transition between "who we are and who we're becoming" and stressed this transition "is still the most important fight in our industry for survival and success." While the Covid-19 pandemic can cloud vision, he cautioned that focus must remain on safety because aviation remains a high-risk industry. "Make no mistake about it. One mistake...can quickly escalate."

While aviation professionals cannot control the pandemic, they can control their response to the stresses of the pandemic, he said.

"Let's thrive in the chaos that we've been given," he added. "2020 offers us many opportunities. It gives us a chance to look deep at the gaps between our current performance and what we're capable of. It gives us an opportunity to commit or recommit, to improve in where we are with the resources at hand. We have the opportunity to stay committed, optimistic, and savor the challenge that we're building of our own design and the challenges of the world."

Another favorite Standdown speaker, FBI special assistant to the chief information officer Amy Grubb, returned this year as well, providing a keynote on the "design thinking" approach to effect changes in organizational culture. She provided an outline of steps that could be taken and factors that must be taken into account in an effort to achieve cultural change. These include being aware that words matter. Grubb noted that people might not be enticed by the use of improving "safety," but they may be motivated by improving "performance."

Amy Grubb, FBI special assistant to the CIO

"There's always more than one solution that people can use."

Also, she said, change must be made as easy as possible. She gave the example of an organization that wanted to introduce recycling but had little success. The manager had placed a recycling bin out near his office, but several hangars away from where many of the would-be users worked. This served as a disincentive for those workers to recycle, she said.

In turn, she added that organizations should make the change hard for people not to do.

Also, she cautioned managers to remember that the change is designed for the workers. Even if it is something fascinating and of interest to the manager, it might not be in the best interest of the worker. She also advised that it can be helpful to get fresh input from outside the industry or organization and that the outcome should be framed but not necessarily the solution—"there's always more than one solution that people can use."

Finally, she mentioned that managers need to reach common definitions of what success is and what safety means.

Dr. Steven Stein, executive chair and founder of Multi-Health Systems

"People with high emotional intelligence...don't run and hide [under stress]"

Appearing for the first time at Safety Standdown was Dr. Steven Stein, executive chair and founder of Multi-Health Systems, who has provided consulting services to clients ranging from American Express and the Amazing Race Canada to Air Canada. Stein provided insight on emotional intelligence and how leaders of today exhibit the qualities of those with higher emotional intelligence, including the ability to express themselves, have good interpersonal decisions, are self-aware, make good decisions, handle stress well, and are flexible.

He discussed the differences between fixed mindsets and those that are more adaptable and open to inspiration. Stein noted that Top Gun pilots have been shown to fall in the category of higher emotional intelligence and said these attributes can play an important role in safety leadership. "People with high emotional intelligence know how to manage stress. They don't run and hide when things get too stressful and they don't get overly emotional and panic when things are too stressful; they are very good at being calm," Stein said.

Antonio Cortés, senior advisor, GMR Aviation Consulting

"You can truly only pay attention to one thing at a time."

Rounding out Wednesday's panel was this year's Bombardier Safety Standdown Award winner, Antonio Cortés, who was recognized for his "outstanding leadership in aviation safety management." A senior advisor (U.S., Canada, and South America) for GMR Aviation Consulting, Cortés, has been a long-time Safety Standdown supporter, delivering presentations and teaching workshops, along with serving as chair of the Safety Standdown Advisory Council.

His message centered on attentiveness and distractions. He opened with a reminder that the Safety Standdown was held on the 11th anniversary of the Northwest Airlines Flight 188 incident, which arrived late by more than one hour after overshooting its destination by more than 150 miles. NTSB cited distraction in that Oct. 21, 2009 incident.

Cortés outlined stages of attention, ranging from preoccupied, or lack of attentiveness; to the active and focused stages where a person is monitoring; to the absorbed stage that comes with channeled attention. He stressed that the ideal stages should be between active and focused, noting that both preoccupied and absorbed could be detrimental to safety.

He also highlighted that aviators are multi-taskers but warned, "You can truly only pay attention to one thing at a time," and reminded the audience of the importance of staying focused on the task at hand.

NBAA president and CEO Ed Bolen also made an appearance during the day, lauding consistent focus on safety regardless of current industry challenges. ■

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Full-throttle opinion from former NTSB member John Goglia

Safety culture matters more than ever in aviation

As I write, a number of events surrounding the wearing—or not wearing—of masks and social distancing, particularly at large indoor events, have dominated the news. Some occurred at nationally recognized landmarks but many occurred in various communities across the U.S. What these events had in common was that they resulted in many people becoming infected with the coronavirus, and they were termed "super spreader" events. Without getting into a political debate about masks—but to be clear, I wear them myself in line with CDC guidelines to prevent the spread of Covid-19—I am interested in the various workplaces identified in media reports. Of particular interest to me were reports that employees who wanted to wear masks in some of these workplaces were discouraged or outright forbidden from doing so, putting their health and the health of others at risk. Of course, I don't know the particulars of any given workplace situation but photos of some of these events made clear that wearing masks and social distancing were the exception and far from the rule.

Reading about these events, my thoughts were with the employees working in these places. Those who wanted to wear masks but also wanted to keep their jobs were forced to choose between a safety precaution and a culture that downplayed that safety risk. And then there were likely those employees who may have misunderstood the safety risks because they weren't required to take precautions. These scenarios are all too familiar in my experience in aviation, where protection of employees from the risk of injuries is not always taken as seriously as it should be, including by the employees themselves. A safety culture that focuses on preventing employee injuries has always been important in aviation, although sometimes given more lip service than actual practice. Unfortunately, some companies over the years have seemed to support safety practices in theory but not so much when it means taking a delay.

For those of us who have worked in aviation for decades, we all knew places where safety—for the flying public and employees—was taken seriously and places where the "just get it done" attitude prevailed, even if we didn't have a name for those attitudes. Even before safety management systems became the norm throughout aviation and the term "safety culture" gained prominence, there were places where a culture of protecting employees from injuries was standard practice and places where taking appropriate protective measures was more or less actively discouraged, especially when it affected the bottom line.

Some commonly ignored safety precautions have more serious consequences on employees than others. For many years after we knew that exposure to aircraft engine noise on the ramp had long-term effects on employees, many employers refused to provide ear protection and, in cases where ear protectors were provided, many employees failed to wear them, perhaps not understanding the long-term consequences. Many supervisors allowed this practice to go unchallenged. The failure to enforce this particular safety precaution is one I and many of my coworkers from those years have lived to regret as our hearing reflects decades of unprotected exposure to engine and other loud airport noises. Even today, I occasionally see workers on the ramp without ear protection, although it is now more the exception than the rule of years past.

As a mechanic, other safety precautions were also not always adhered to at places where I worked, such as wearing a safety harness when performing tasks at dangerous heights. In some places those harnesses weren't even made available to employees and in other places, employees would regularly disregard those safety measures for expediency without fear that their supervisors would call them out on it. Often, if a mechanic was on the ramp and the safety gear was stored in a distant hangar, the decision would be made to forego the safety equipment. Supervisor attitudes in many of these places was to turn a blind eye as long as the airplane was fixed for an on-time departure. Making the schedule seemed to be all that mattered in some of these places, with unfortunate consequences at times.

While exposure to noise without ear protection had no immediate consequences on employee health or safety, as the damage usually only occurs from exposure over time, some failures to use protective gear did have immediate serious consequences. On more than one occasion, I saw mechanics working on aircraft wings without taking proper safety precautions, slipping off and injuring themselves. While in my days on the ramp these were DC-9s with wings not that high off the ground, the people who fell off suffered a range of injuries, including broken bones. Using chemical cleaners—for example, to clean the landing gear—is another area where employees would often neglect to put on protective gear. It takes time, the gear makes you hot and sweaty, and often you can get away with not donning it without any negative consequences. But once in a while you would see the burnt red complexion of a mechanic who had gotten blowback on his face from the chemicals, and he would be lucky if he didn't have lasting damage to his eyes.

Today, as the aviation industry reels from the impacts of Covid-19, the pressure on employees to save time and money is greater than ever. But promoting a safety culture for the protection of employees, as well as passengers, is also more important than ever. Passengers are closely observing how compliant airline workers—gate agents, flight attendants, pilots, mechanics, and cleaners who board their aircraft—are with wearing masks, a simple practice to prevent the spread of the virus. And people are calling out on social media airlines and employees who don't comply, complete with video evidence of whatever transgressions they record. Now is a good time to recommit to safety precautions for employees and promote a safety culture that protects employees, as well as passengers. ■

The opinions expressed in this column are those of the author and not necessarily endorsed by ***AIN****.*

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The Gulfstream G600 and G500 previously saw their ranges increase as a result of their performance during flight testing, those numbers have grown again.

Gulfstream increases ranges of G500, G600

Gulfstream Aerospace has increased the ranges of its G500 and G600 by 100 nm at both long-range and high-speed cruise speeds based on real-time operations, the Savannah, Georgia-based airframer announced on October 30. According to Gulfstream, the G500 can now fly 5,300 nm at Mach 0.85 and 4,500 nm at Mach 0.90, while the G600 increases its range to 6,600 nm at long-range and 5,600 nm at high-speed cruise.

"The G500 and G600 have been exceeding expectations since they entered service," said Gulfstream president Mark Burns. "This latest demonstrated range increase provides further proof of the tremendous efficiency and versatility of these aircraft. The Gulfstream team is always looking for opportunities to improve aircraft capabilities and the customer experience, and we are pleased to deliver another performance enhancement."

Also getting a performance bump is the G600's payload capacity with full fuel, which increases to 2,600 pounds thanks to a reduction of 570 pounds in the twinjet's basic operating weight. "What's exciting for existing customers is that these improvements already exist on their in-service aircraft with no modifications required," Burns added.

Both the G500 and G600 exceeded range expectations in their flight-test programs, with the G600 adding 700 nm of high-speed-cruise range before entering service. In late October, Phebe Novakovic—chairman and CEO of Gulfstream parent General Dynamics—said more than 90 G500/600s will be in service by year-end. **J.S.**

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AIN 2020
Top Flight Awards Nominees

by AIN staff

In this special report, **AIN** is highlighting the nominees for the first annual **AIN** Top Flight Awards. The awards honor creativity and innovation in design and technology in business aviation, as well as quality and passion in business aviation services and people.

The main criteria for qualifying as a nominee are service entry (in the case of new aircraft) or availability (for products and services) during the applicable time period, from Oct. 1, 2019 through Sept. 30, 2020, and the awards highlight new and unique advances in safety and performance, as well as contributions to aviation, public benefit, and more.

AIN's editorial team selected the nominees, as outlined in this issue, and will choose the award winners in each category. The winners will be published in **AIN**'s January issue and online and in the Jan. 4, 2021 edition of the AINalerts enewsletter.

NEW JET

Light Jet: Embraer Enhanced Phenom 300E

Innovation: Embraer's enhanced 300E updates the world's best-selling light jet with a completely restyled interior, updated avionics, and more engine performance.

Cabin: The enhanced 300E's new "Bossa Nova" interior, first introduced on Embraer's Praetor 600 super-midsize jet, features larger cabin windows and piano black finish with gold trim on the tables, monuments, and side ledges. Additional features include carbon-fiber accents, unique diamond stitching, and an upper tech panel that reflects light and color like a mirror that serves as a touchscreen, providing flight information and other options to passengers. The Bossa Nova package adds $150,000 for trim and finishing only.

Cabin 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, with new valve geometry and materials that eliminate metallic flapper noise during descent and final approach. A new muffler in the vapor-cycle air-conditioning 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.

Performance and Efficiency: More powerful Pratt & Whitney PW535E1 engines (3,478 pounds of thrust, an increase of 118 pounds per engine) enable faster time to climb and a new top speed of Mach .80 or 464 knots true airspeed, up from Mach .78 and 446 knots. Time to climb to the maximum altitude of FL450, which can be done directly, is 24 minutes, one minute less than the previous 300E. Fuel volume is increased by 50 pounds, bringing maximum range to more than 2,100 nm at long-range cruise power. Payload with maximum fuel is 26 pounds more, increasing to 1,387 pounds. Direct hourly operating costs are slightly less than $1,800.

Safety: Moving the bulkheads farther aft behind the pilot seats increases cockpit seat track length by 40 percent and now taller pilots are more comfortable. The Garmin G3000-based Prodigy Touch flight deck is more capable with new avionics display hardware with faster processors, higher resolution, and improved map panning. Emergency descent mode (EDM) autonomously flies the airplane to a lower altitude in case of decompression at high altitudes. New software enables the addition of standard graphical weight and balance, takeoff and landing data, performance calculations, stabilized approach and autopilot-coupled go-arounds. Optional features include predictive windshear, FAA datacomm, Garmin FliteCharts, VFR/IFR en route charts, and a Runway Overrun and Awareness Alerting System (ROAAS) that uses neural network algorithms to calculate runway distance in real-time and advises the pilot to perform a go-around or to use maximum braking action once on the runway.

Design Significance: The enhanced 300E packs a light jet with large jet features for less than $10 million.

Midsize Jet: Embraer Praetor 500

Innovation: With the Praetor 500, Embraer has retooled its midsize jet with new interiors, more fuel capacity, new winglets, increased engine thrust, and updated avionics.

Cabin: The Praetor 500 offers a 5,800-foot cabin altitude and a six-foot-high flat-floor cabin that seats seven to nine. The New "Bossa Nova" interior incorporates redesigned seat stitching, carbon-fiber accents, and a minimum of visible switchology. The latter is largely thanks to the upper tech panel, which displays flight information and provides cabin-management-system features for Honeywell's Ovation Select. In addition to the Gogo

MARK WAGNER

Avance L5 air-to-ground connectivity system, connectivity is also available via a new global option with the Viasat Ka-band satcom and IPTV.

Performance and Efficiency: New, larger winglets and additional fuel capacity help to boost the range in the 500 by 350 nm to 3,340 nm (four passengers). With the extra fuel's weight comes the need for more pavement, however: fully loaded, the 500 requires 4,222 feet of runway for takeoff. Payload with full fuel is 1,600 pounds and the baggage capacity is a generous 150 cubic feet. High speed cruise is 466 knots and the service e ceiling is 45,000 feet. Power comes from a pair of Honeywell HTF7500E turbofans rated at 6,540 pounds of thrust.

Safety: The Collins Pro Line Fusion avionics have new capabilities, including Multi-Scan radar that adds vertical weather and predictive wind shear, cockpit display of ADS-B In traffic, and a synthetic vision guidance system (SVGS) that enables approaches in lower visibility. Embraer's enhanced vision system, the Collins HGS-3500 compact head-up display, and a

Honeywell inertial reference system are options that give the 500 navigation and safety features typically found only in large-cabin jets. Embraer's path-stable fly-by-wire (FBW) controls are similar to those found on Falcon and Airbus jets.

Design Significance: The Praetor 500 provides the cabin feel, range and safety features typically only found on super-medium cabin jets at a midsize price.

Super-Midsize: Cessna Citation Longitude

Innovation: The Citation Longitude delivers the quietest cabin in its class at a competitive price.

Cabin: The Citation Longitude's flat-floor cabin cross section—six feet tall and more than six feet wide—makes it the narrowest in class. Cabin length is 25 feet. A variety of configurations are available, with passenger seating for up to 12, although eight to nine is typical; a full forward galley; and an aft lav with vacuum flushing toilet. The trailing-link landing gear sits the airframe fairly low, so there is no need for a ladder to access the aft baggage compartment from the outside. Standard Iridium satcom allows high speed Wi-Fi. Passengers can operate the system via onboard touchscreens, controllers, or smart devices.

Performance and Efficiency: The Longitude's Honeywell's HTF7700L engines each deliver 7,665 pounds of thrust and propel the aircraft to a high speed cruise

BARRY AMBROSE

velocity of 483 knots. The Honeywell 36-150 APU can be run up to 35,000 feet. Maximum altitude is 45,000 feet. The maximum range with four passengers is 3,500 nm. Full fuel payload is 1,600 pounds.

Takeoff distance at the Longitude's 39,500-pound maximum takeoff weight is estimated at 4,810 feet. The regular maintenance interval is 800 hours—the longest in class—and Textron Aviation estimates direct hourly operating costs are $2,191.

Safety: The Longitude is equipped with the Garmin G5000 flight deck, which includes four touchscreen controllers. The Garmin GSR 56 Iridium satcom provides datalink for FANS and ATN-B1 services. The GSR 56 can download weather via Iridium satcom. Flight controls feature mechanical ailerons and elevator with fly-by-wire rudder and spoilers. Brakes are brake-by-wire dual hydraulic carbon brakes.

Design Significance: The Citation Longitude combines efficiency with an intelligent mix of technologies to deliver an attractive value in the super-midsize category.

Large Cabin: Bombardier Global 5500/6500

Innovation: The new Globals mate time-tested fuselages with more efficient wings and engines and modern avionics and a redesigned cabin to deliver superior performance and comfort.

Cabin: The new airplanes feature Rockwell Collins's Venue cabin-management and entertainment system, upgraded with the ability to distribute ultra-high-definition 4K content. Ka-band satcom enables worldwide seamless coverage. The cabins can be configured to seat 12 to 17 and are available with many custom options, including steam ovens in the galley, newly styled cabinets and countertops, and a stand-up shower in the aft lav.

The cabins in both aircraft feature the "Nuage" seat that Bombardier developed for the larger Global 7500, with a "floating base" that keeps the center of gravity over the swivel mechanism, sculpted foam, tight stitch lines, and hard-shell backs. The conference/dining areas are fitted with a related new seat design called the "Nuage Chaise," which allows for the appropriate posture for dining/business meetings but can recline into a lounge chair.

Performance and Efficiency: The Globals are Powered by the new Rolls-Royce Pearl 15 engine (15,125 pounds of thrust), which discharges 48 percent less smoke and 20 percent less nitrous oxide, is two decibels quieter, burns 7 percent less fuel, and has 9 percent more thrust than the BR710 engines on the old Globals. The latest Globals feature a "re-profiled" wing and other aerodynamic cleanups that combine with the new engines to boost fuel efficiency by up to 13 percent compared with the legacy Globals. Maximum cruise speed increased from Mach 0.89 to Mach 0.9 and the airplanes have longer legs than their predecessors: maximum range on the Global 5500 is 5,900 nm (500 more than on the Global 5000) and 6,600 nm on the Global 6500 (600 more than on the Global 6000).

Safety: In the cockpit, the new Globals feature the Rockwell Collins combined vision system, which merges infrared enhanced vision and synthetic vision system imagery into a single conformal view—you can take off and land in just about any visibility. Other safety capabilities of the avionics system include advanced weather radar that can predict wind shear, airport moving maps, real-time traffic, and an improved terrain database.

Design Significance: By utilizing an existing fuselage cross section and combining it with advanced technologies, Bombardier is able to offer the marketplace two new large cabin, long-range jets at a lower price than their legacy predecessors. ■

NEW TURBOPROP

TBM 940

Innovation: Daher's $4.3 million, six-seat, single-engine TBM 940 is the first turboprop weighing less than 12,500 pounds to offer a standard, factory-installed integrated autothrottle and automatic deicing. The aircraft also offers the optional emergency HomeSafe Autoland system that can autonomously land the aircraft in the event of an in-flight emergency.

Cabin: Available in eight standard "harmony" color combinations, the cabin features a new design and heated seats, additional thermal insulation in the sidewalls, a central shelf with side storage, an additional 115-volt outlet at the right rear seat panel, and an extra USB port (bringing the total number of ports to six for passengers and three for the pilots). Custom paint and interior is also available. New-production TBMs have better environmental controls, vapor-cycle air conditioning, avionics upgrades, a small beverage cabinet, a wider main cabin entry door well-suited for loading outsized cargo, and an optional separate forward pilot's door. A single club table deploys from the righthand sidewall, and there are power outlets for laptops.

Performance and Efficiency: The TBM 940's Pratt & Whitney Canada PT6A-66D engine (850 shp) propels the aircraft to a near light jet maximum cruise speed of 330 knots (at 28,000 feet) and the aircraft can climb to its maximum altitude of 31,000 feet in just 18 minutes. The aircraft can cruise in the high-teens at speeds up to 290 knots. Lightly loaded, the aircraft can easily operate from runways as short as 1,500 feet and at the maximum takeoff weight of 7,394 pounds the TBM 940 requires just 2,380 feet of runway, thanks to the 940's five-bladed swept Hartzell propeller. The propeller also helps ameliorate takeoff noise, which is just 76.4 dB. Maximum range is 1,730 nm (pilot, no passengers). Average fuel burn is 60 gph. .

Safety: Most TBMs are operated single pilot and Daher has moved aggressively to incorporate the latest technology into the aircraft built around the Garmin G3000 avionics package that both reduces pilot workload and improves safety. Single-lever power control and the Garmin autothrottle allows the 940's Pratt & Whitney PT6A-66D engine to be operated simply, safely, and efficiently. It uses software to analyze many aircraft and atmospheric variables and automatically control engine power to produce a selected and safe airspeed. The automatic de-icing system displays a message to alert the crew when ice is detected and activates if the pilot does not take appropriate action. The system provides airframe, propeller, and windshield deicing and triggers the inertial particle separator to prevent engine icing. Most notable, the 940 now offers the HomeSafe emergency autoland system Based on Garmin's Autoland system. The the system can be activated manually via an orange button atop the cockpit instrument panel, or semi-automatically if the emergency descent mode has been engaged.

Design Significance: The TBM 940 keeps a time-tested airframe that dates back to the 1980s relevant and competitive via the timely incorporation of the latest technologies and interior upgrades.

PIPER M600 SLS

Innovation: The new, six-seat $2.994 million Piper M600 SLS (safety, luxury, and support) sports the new Autoland/Halo system from Garmin with new interior refinements and an "Ultimate Care Program" that covers all scheduled maintenance and hourly calendar-based inspections.

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Cabin: Interior features include Piper's EXP interior with a selection of materials, stitching patterns, and contrasting threads, as well as optional two-tone leather seats, choice of veneers, and Alacantra fabric. EXP offers more ways to customize the aircraft's appearance including embroidered or embossed logos, customized cockpit and threshold plates, custom ceiling bezels, leather-wrapped control yokes, new exterior-paint schemes, and luggage to match the scheme selected. The aircraft is also available with a Hartzell, five-blade, swept-tip propeller that reduces cabin noise and vibration.

Performance and Efficiency: A derivative of Piper's M500, the M600 features a Pratt & Whitney Canada PT6A-42A engine rated for 600 shp, a Hartzell four-bladed propeller, and a redesigned wing that packs more fuel—908 pounds more than on the M500—and yields more speed. The new wing is also home to a wider-track main landing gear design that makes strong crosswinds—up to 17 knots—easier to handle. The aircraft has a maximum range of 1,658 nm, a top cruising speed of 274 knots, and a maximum altitude of 30,000 feet. Fuel burn at cruise power is 39 gph and available payload with full fuel is 422 pounds. This is an airplane that can easily use runways shorter than 3,500 feet (sea level, standard temperature). Starting in mid-2018, the M600 received additional upgrades, including a new fuel control unit that facilitates starting temperatures that are up to 100 degrees Fahrenheit cooler. Piper is offering free fuel, maintenance, training, consumables, inspections, and Jeppesen charts for the next five years for M600s purchased through December.

Safety: The M600 SLS features the Halo Safety System that provides Autoland capability enabled by the Garmin G3000 avionics package including autothrottle. In a situation where a pilot becomes incapacitated, Halo either automatically, or by a passenger pushing a button, engages and finds a nearby suitable airport, flies an approach to that airport, lowers landing gear and flaps, lands, stops, then shuts down the engine. Halo comprises Autoland, the autothrottle (required for Autoland), Garmin Emergency Descent Mode and Enhanced Stability and Protection, Surface Watch, Safe Taxi, and Flight Stream wireless gateway.

Design Significance: The EXP interior package and Halo features give the M600 SLS a fresh-looking interior coupled to the latest safety technology.

Pilatus PC-12 NGX

Innovation: At $5.4 million, the latest iteration of the PC-12 isn't the least expensive single-engine turboprop, but it is arguably the most versatile. This fresh update of this strong-selling turboprop single features single-lever power control, more cruise speed, and optional autothrottle combined with a restyled and quieter cabin and larger passenger windows.

Cabin: The NGX's new cabin refinements include windows that have been reshaped and enlarged 10 percent and redesigned executive seats with more headroom, full recline, and improved lumbar support. Quick-release seat attachments enable cabin reconfiguration without the help of maintenance crews. A new headliner provides indirect lighting, more uniform and quiet air distribution, and increased headroom. Passenger positions now feature dual cupholders and integrated sidewall USB ports. Six different interiors—designed by BMW Group's Designworks—are offered with the executive NGX, as are bespoke interiors and paint schemes. The engine can be operated in a low-prop-speed mode, lowering cabin noise without compromising performance due to an electronic propeller and engine control system.

Performance and Efficiency: Since 1994, the Pilatus PC-12 has combined go-anywhere utility with creature comforts that include a large, pressurized cabin, near 300-knot speed, and more than five hours of endurance. Stall speed at maximum takeoff weight is 67 knots, remarkable for a 10,000-pound airplane. The trailing-link landing gear smooths

out the sloppiest of landings and facilitates touchdown on paved or unpaved surfaces. The NGX is powered by the new Pratt & Whitney PT6E-67XP, which features full digital flight envelope protection, precise and intuitive engine control, reduced pilot workload, and optimized power. Controlled by a single power lever, the PT6E-67XP produces 1,825-shp and is flat rated to 1,100 shp in cruise flight, a 10 percent increase from the PC-12's PT6A-67P. It allows the NGX to reach a maximum cruise speed of 290 knots. The new engine will have a 5,000 hour TBO with hot section inspections only required on-condition and be able to transmit data on more than 100 engine parameters that are continuously monitored, adjusted, and recorded. The NGX is certified to fly without fuel anti-ice additive.

Safety: The NGX's Advanced Cockpit Environment (ACE) is built around Honeywell's Epic 2.0 avionics suite with a new touchscreen avionics controller with integrated bezel contour grips intended to stabilize the pilot's hand in turbulence. ACE's standard safety features include emergency descent mode and tactile feedback to aid in avoiding unintentional excessive bank angles. Other NGX flight deck features include brighter, more vivid color flight displays; night-mode charts; pilot-defined visual approaches; high resolution 2D airport moving maps; Honeywell's SmartLanding and SmartRunway safety awareness systems; 3D intelligent audio system with air traffic controller message playback and Bluetooth interface; electronic checklists linked to crew alerting system (CAS) messages; worldwide graphical weather; support for European protected mode-controller pilot data link communications (PM-CPDLC) mandates; and faster database loading. A fully-integrated digital autothrottle is an optional feature for the PC-12 NGX.

Design Significance: Significant updates and upgrades will keep The Pilatus PC-12 NGX a strong entry in the single-engine turboprop market for years to come.

EPIC E1000

Innovation: The speedy, all-composite, six-seat Epic E1000 is a certified aircraft that delivers significant performance capabilities along with a relatively large cabin for a single-engine turboprop.

Cabin: The E1000's cabin and cockpit take the latest automotive styling cues and offer all the modern conveniences. The leather reclining passenger seats are each equipped with side pockets, small item and technology storage, headset jacks, power ports, beverage holders, heat and air conditioning vents, and LED reading lights. Entry is via a rear airstair door, up a center aisle through the facing club-four passenger seat array. The 15-foot-long cabin offers more space than a twin-engine Beechcraft King Air C90.

Performance and Efficiency: Priced at $3.25 million, the E1000 has a maximum cruise speed of 325 knots. The Pratt & Whitney PT6-67A engine (derated to 1,200 shp) propels the aircraft to its maximum cruise altitude of 34,000 feet in just 15 minutes and burns 60 gallons per hour at cruise speeds of 300 knots down low, and 40 gallons per hour at 300 knots up at 34,000 feet. Full fuel payload is 1,100 pounds with a range of 1,650 nm. The E1000 is a short-field champ, needing just 1,600 feet of runway for takeoff.

Safety: The E1000 features the three-screen Garmin G1000 NXi glass-panel avionics system and Garmin GFC 700 digital autopilot with radar, radar altimeter, and Iridium satellite transceiver options.

Design Significance: The Epic E1000 delivers high-performance in a stylish package for a very competitive price. ■

NEW HELICOPTER

Airbus Helicopters H160

Innovation: The new Airbus H160 medium twin incorporates a variety of new technologies, including "Blue Edge" active-tracking main rotor blades in a five-blade system with a double sweep design that reduces noise and improves ride smoothness; new Safran Arrano engines that offer 10 to 15 percent better fuel consumption; and the Helionix avionics system with four large touchscreens, the architecture of which already is flying on other Airbus twins. The H160 also represents the catalyst through which the European company is trying to transform the way it makes and supports helicopters. The final assembly line in Merignane in the south of France integrates five major component assemblies that are completed and tested before they reach the line. The flow is automated and moves down two production lines, each with several workstations capable of assembling the various H160 configurations. Airbus intends to ramp up to 50 helicopters per year.

Cabin: The H160 combines futuristic styling

with a flat-floor cabin, oversized windows, and a generous baggage compartment that can swallow 661 pounds. The cabin can be configured to seat four or eight passengers—with all the bells and whistles you'd find in the latest large corporate jets—or it can offer utility seating for 12.

Performance & Efficiency: The Arrano engines (1,300 shp each) feature a two-stage centrifugal compressor and variable inlet guide vanes, which cut fuel consumption in all phases of flight and particularly at cruise power. They help propel the H160 to its maximum cruise speed of 150 knots, a service ceiling of 20,000 feet, and a maximum range of 475 nm. Airbus Helicopters also maintains that the Arranos will have lower maintenance costs than other engines in their class. The Blue Edge blades feature tips with a bend that resemble the business end of a hockey stick. As rotor blades spin, the tips emit vortices. Bending the tips disrupts the "blade vortex interaction" from one blade to the next, reducing the helicopter's noise signature by as much as 5 dB. The canted Fenestron and

the biplane horizontal stabilizer on the tailboom combine to improve lift. Electrically activated landing gear and brakes in place of the traditional hydraulic systems reduce weight and improve reliability. A health usage and monitoring system tracks key maintenance parameters and can transmit them to technicians on the ground while the helicopter is in flight, with the proper datalink. To control costs, Airbus decided to skip a pricey fly-by-wire flight-control system and to make rotor-blade deicing an option.

Safety: Helionix avionics are designed to reduce workload by providing pilots with the information they need when they need it. The avionics couple to a four-axis autopilot and a first-limit indicator that shows all engine instrument data. Other advanced features include traffic and weather advisories, terrain-avoidance, and a synthetic-vision system. H160 is equipped with the world's first ground helipad assisted take-off procedure and vortex pre-alerting that warns pilots when they fly into conditions that could lead to vortex ring state. The H160 also includes a tail fin camera, Sea State 6 emergency floatation system, and windows that exceed EASA Type IV emergency egress size requirements.

Design Significance: The H160 combines an all-composite airframe, futuristic, styling and modern digital flight control technologies to produce a helicopter that is safer and more economical to operate and maintain.

Airbus H145D3

Innovation: Airbus Helicopters added a new, foldable, five-bladed main rotor system and Fadec engine controls to its popular H145 twin.

Cabin: The H145D3 comes standard with

a wireless airborne communications system that provides Wi-Fi. In executive configuration the cabin can seat four to nine people.

Performance and Efficiency: The D3 features the new bearingless main rotor design that provides a smoother ride, requires less maintenance, and increases useful load by 330 pounds. Compared to the four-bladed H145D2, it has a slightly smaller main rotor disk, from 36 feet to 35.4 feet. The new bearingless design has no rotor head, requires no oil, no grease, and very little maintenance. The foldable main rotors take only 10 minutes to stow/deploy, making it ideal for hangar or

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shipboard storage scenarios. All blades fold backward within the wingspan of the horizontal stabilizer by simply removing one bolt from each blade. The avionics will provide a guide as to where to position the cyclic and collective before blade folding begins. The D3's twin Safran Arriel 2E engines now incorporate Fadec.

Existing H145D2 can be upgraded to the D3 via a kit that includes the new composite five-bladed main rotor blades, a transmission kit consisting of rotor mast, swashplate, scissors, control rods with associated assembly, oil cooler, and rotor brake, an additional electrical hydraulic pump whose sole function is to test the hydraulic controls during preflight checks, the Helionix software, a new forward cross-tube, and modification/tuning of the horizontal stabilizer. The kit deletes the 3-Hz landing gear dampers and the light active vibration control system found on the D2. H145D2 owners will be credited for the trade-in of their replaced H145D2 components based on condition. The upgrade takes about 220 hours.

Safety:

The digital Helionix avionics suite incorporates a four-axis autopilot and Wi-Fi to the cockpit, imports navigation and mission databases from tablets, establishes automatic connections via Wi-Fi or cell, automatically exports data from previous flights, generates flight reports, launches automatic downloads, and exports a previous flight's data.

Design Significance:

The H145D3's new main rotor system, engine controls and avionics bring added performance and safety to one of Airbus Helicopter's best-selling models. ■

TECHNOLOGY

Garmin GI 275 Displays

While the concept of glass displays replacing legacy electromechanical instruments isn't new, Garmin has taken it a step further with the GI 275 series, basically creating nearly an integrated cockpit without having to redesign the panel for larger displays. The result is a product that can replace attitude indicators, attitude direction indicators, horizontal situation indicators (HSIs), and course deviation indicators (CDIs), and it can also replace engine instruments as a primary engine indication system (EIS) as well as connect with Garmin and third-party autopilots.

Information on the GI 275 includes synthetic vision (optional), traffic, weather, terrain, SafeTaxi airport diagrams, and multifunction display-type maps. One GI 275 can also be a four-in-one instrument that can be installed as a standby display with a 60-minute backup battery.

The GI 275 offers both touchscreen and dual-concentric knob interfaces, with the same operating philosophy of other Garmin products so pilots will quickly be able to learn how to use the new displays. FAA approval is already available for more than 1,000 single- and twin-engine aircraft, as well as some Class IV and Part 25 aircraft. Prices start at less than $4,000 and vary depending on the configuration and options.

The GI 275 can interface with third-party navigators, not just Garmin units, and without an adapter. As a CDI or HSI, the GI 275 can also serve as a multifunction display (MFD) with features such as moving map, weather, traffic, and terrain. The GI 275 can also interface with traffic advisory (TAS) and traffic alert and collision avoidance systems (TCAS). Other MFD features include Garmin's SafeTaxi airport diagrams, terrain shading and obstacles, including Garmin's WireAware database.

uAvionix AV-C-30 Displays

Competition in the market for replacement 3.125-inch glass displays is heating up, and uAvionix has introduced the AV-30-C digital multi-mode instrument, which is FAA approved for installation in hundreds of certified aircraft. Mounting from behind the panel in a standard 3.125-in instrument hole; the AV-30-C can replace an airplane's vacuum system when two of the multi-mode instruments are installed. The pilot interface is not touchscreen control; the AV-30-C uses two buttons and a rotary knob for various selections.

For added utility, the AV-30-C also integrates with uAvionix's tailBeaconX ADS-B Out transponder, for setting transponder codes and modes. Each AV-30-C contains its own inertial and pressure sensors so it can be field configured as either an attitude indicator (AI) or heading indicator/directional gyro (DG) although not as a horizontal situation indicator.

In its basic mode, it displays as an AI with primary attitude and slip or as a DG with airplane direction always displayed. The pilot can add supplemental textual and graphical overlays on portions of the instrument that are not used for the primary functions.

These include functions such as indicated airspeed, altitude, V-speeds, derived angle of attack, vertical speed, set altitude, heading, bus voltage, g load, outside air temperature, true airspeed, density altitude, a variety of navigation information, and alerting for angle of attack, g limit, and excessive roll, among others. The built-in lithium-ion battery lasts for two hours and provides at least 30 minutes of operation. To try out the AV-30-C, prospective buyers can download a simulator from the company website and view available functions.

Gogo Biz Lowers ATG Altitude

Gogo Business Aviation's new lower service level drops the altitude at which aircraft can start using the Gogo air-to-ground service to 3,000 feet from 10,000 feet. According to Gogo, this adds 15-20 minutes of extra connectivity availability for a typical flight, which makes it more useful for both pilots and passengers.

Gogo's air-to-ground network is available across the U.S. and in parts of Canada and Alaska, and network speeds on the Avance L5 platform are similar to 4G speeds on the terrestrial internet, allowing video streaming and other network-intensive activities.

The new 3,000-foot capability is added via a software update. Customer aircraft must be equipped with Avance L3 or L5 systems. More than 1,300 business aircraft are already so-equipped.

During flight testing of the new capability, 50 aircraft utilized the new software over four months, and the service down to 3,000 feet agl was available "at most locations throughout the contiguous United States," according to Gogo. "In our flight testing, we found that the Avance L5 consistently performed well at altitudes below 10,000 feet and provided a quality connectivity experience for our passengers," said Tim Eames, chief pilot for Odin 123, which conducted several test flights.

Viasat Removes Speed Limits

Viasat has eliminated "internet speed limits" for business aviation customers of its Ka-band satcom network, and some customers have reported seeing airborne connectivity speed tests of 30 to 40 Mbps.

"We removed a software limit, which takes place in a 'traffic shaper' in our satellite network," explained James Person, director of business development and strategy for the satcom operator.

Viasat's initial Ka-band satcom services peaked at 16 Mbps and this was available even for the smallest aircraft that could accommodate the Viasat airborne hardware, such as the super-midsize Gulfstream G280 or Embraer Praetor 500/600. Members of Viasat's customer advisory board asked if more speed might be available, and it turned out that Viasat's network had "massive amounts of capacity," Person said. "Why not open that for our business jet customers?"

The traffic shaper limited the capability of the network for end-users, and once that was removed, the full capacity became available to business aviation operators. "Instead of artificially constraining the internet experience," he said, "now it will go up to whatever capacity is available in our satellite beams and the hardware in the aircraft."

Person explained that the move to open up the Viasat capacity "isn't to wow people with high results of speed tests, but more in line with how people use the internet." Customers now expect airborne internet access to match their experiences at well-connected homes and offices. Streaming content such as movies or large email attachments start buffering quicker on the aircraft and download much faster.

Viasat is unique among satcom network operators in that it also provides the airborne hardware. Its system comprises just three LRUs that can fit on midsize and larger business jets, thanks to the 12-inch antenna. The hardware fits outside the pressure vessel and doesn't require space in the baggage compartment.

Aviation Groups Help Industry Meet ADS-B Deadline

When the FAA set the deadline for installation of Automatic Dependent Surveillance-Broadcast (ADS-B) equipment in in the U.S., there was a lot of grumbling about the mandate. Aircraft owners questioned the expense, avionics shops wondered if they would get the equipment from manufacturers in time and whether they would have enough capacity to install it in nearly 200,000 aircraft, and pilots wondered what the fuss was all about.

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FAA to propose SMS rule for 135, 145 holders | by Mark Huber

FAA Administrator Steve Dickson hopes the agency will have a proposed rule mandating safety management systems (SMS) for air taxi and air tour operators, repair stations, and PMA parts providers by second-quarter 2022, he said at the FAA's Virtual International Rotorcraft Safety Conference in October. The agency is also working on a separate rule mandating SMS for airports, he added. Dickson also used the occasion to encourage helicopter operators to voluntarily modernize their aircraft with crash-resistant fuel systems, seats, and structures.

FAA Administrator Steve Dickson

A former airline pilot, Dickson said the agency's goal is to spread the safety record of Part 121 air carriers, which are required to have an SMS, downstream to the rest of aviation by moving "the ball forward in a collaborative way." The safety systems employed by Part 121 carriers can be "progressively deployed" and scaled "throughout the aerospace industry," he said.

"It's no secret that the airline industry in the U.S. is the gold standard when it comes to unprecedented safety levels. It's the safest form of transportation in human history and one of the key elements to that success story is the collaboration, partnership, and sharing of information and data between all stakeholders," he said. Dickson further noted that the keys to successful SMS programs "are the practices of flight data monitoring and safety reporting using proactive, data-driven approaches to oversight that prioritize safety over all else and do it in a systematic way," accompanied by a just culture.

The ultimate benefit of ubiquitous SMS is the generation of data that can be used to prevent "what could be an accident or incident in the making" and encourage operators to "use flight data monitoring as feedback into their training programs and ideally make it part of a systematic SMS process," Dickson said. That includes sharing data across organizations via FAA FAASTeams, industry workshops and organizations, and industry safety experts.

He singled out FAA's Helicopter InfoShare program and offshore energy's Helicopter Safety Advisory Council, whose best practices are "easily adaptable to other helicopter sectors." Additionally, he praised the work of the U.S. Helicopter Safety Team.

Dickson stressed that a recommitment to safety was essential toward the goal of knocking down the helicopter fatal accident rate that has "remained roughly the same" for the last 15 years.

Noting that 90 percent of all helicopter fatalities are caused by blunt force trauma, Dickson called on operators to voluntarily install crash-resistant seats and structures as well as crash-resistant fuel tanks required on new production helicopters. "Thousands of helicopters in our legacy fleet aren't required to have these features. Why not consider retrofitting these upgrades now?" he asked. ■

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Now that the Jan. 1, 2020 deadline has passed, pilots have had plenty of time to fly with ADS-B Out. And the FAA smartly added an incentive to the mix: ADS-B In, which includes free traffic and weather information deliverable to avionics displays and portable devices. In fact, ADS-B In was switched on well before the 2020 mandate, giving pilots years to experience the benefits of nearly live weather in flight and live traffic information. Spotting other traffic is so much easier now with ADS-B In that pilots realize how difficult it is to see traffic by eyesight alone, and they are not complaining now about the ADS-B mandate.

To help pilots, avionics shops, and anyone affected, aviation organizations stepped up their educational efforts. While magazine and online articles did their best to explain ADS-B, aviation groups helped pilots understand not only what the equipage mandate meant but also the benefits of ADS-B Out and In. They also worked closely with the FAA to make sure the final rule made sense and that requirements around installation and operation made equipping easier and ultimately, for many aircraft owners, reasonably priced. This was especially true of the Aircraft Electronics Association (AEA).

Although there are likely others, these organizations played a significant role in the long road to ADS-B equipage in the U.S.: AEA; AOPA-Aircraft Owners and Pilots Association; EAA-Experimental Aircraft Association; GAMA-General Aviation Manufacturers Association; NATA-National Air Transportation Association; NBAA-National Business Aviation Association. ■

TRAINING

Rolls-Royce Virtual Reality Training

Rolls-Royce began virtual reality (VR) training in March, with its two-day BR725 familiarization class. Participants join the class remotely, from their homes, offices, or maintenance facilities, logging in over the internet while wearing VR glasses and handheld VR controllers.

The development of the VR training class came at a propitious time when much of the world became inaccessible for travelers due to the coronavirus pandemic.

The benefit of VR training is that students can learn about parts of the engine that they might be able to see only if the real engine was fully disassembled. And they can see all the subsystems and components exactly as they relate to each other, either in an as-assembled view or by virtually taking them apart, assembly by assembly, piece by piece. Both the instructor and student can use a virtual marker to draw on any part of the engine. Routine tasks are also possible, like checking the oil level or finding a part-number stamp on a part or component.

One great advantage of the VR training is not having to travel to a class, with all the associated logistical hassles and costs.

The student can view the engine in various ways—for example, by virtually walking inside the engine and looking around; by using a cutaway tool to slice into the engine from the side or front; or by highlighting each subassembly and moving it off the engine and then taking a close look at its components.

The VR training is instructor-led, so someone is always there to help explain what the student is viewing. There is no end to the possibilities of VR training, and Rolls-Royce has taken a compelling piece of technology and turned it into a practical training tool. Anyone who takes this training will soon appreciate its benefits and capabilities.

FlightSafety LiveLearning

While the effects of the Covid-19 crisis have touched virtually every aspect of the aviation industry, the pandemic's resulting limitations on classroom instruction could have hit companies such as FlightSafety International particularly hard. But FlightSafety's remote LiveLearning program has already delivered thousands of pilot and mechanics courses since its introduction in March.

LiveLearning differs from the company's well-established eLearning offerings in that it replicates the classroom environment with a live instructor. Most recently, the company has expanded its LiveLearning offerings to include EASA-approved courses taught from its facilities in Paris and Farnborough, UK.

FlightSafety senior v-p of operations Brian Moore told **AIN** that, particularly for recurrent training, the program has "boomed" since its launch in March. V-p of sales and marketing Steve Gross explained that the company did something similar for ancillary courses such as RVSM and MMEL training for three or four years before the pandemic.

"We took that technology and broadened it to do a two- or three-day recurrent," said Gross. "We've done the rare initial [training] this way too, but we really want to keep it to recurrent. We think that it's best if you're doing an initial to do it at the facility."

Further relief from the FAA took the form of a "virtually" certified flight simulator in Dallas. "So rather than having the inspector sitting in the box with us going through the qualification, we brought him in through video and other web-based means to see all the squiggly lines and see the thing fly and do the demo and all the things that would normally be done," explained Moore.

The FAA has also given FlightSafety some relief on the number of days and hours needed for FAR 61.58 recurrent proficiency checks in some programs, said Moore. "The FAA has been outstanding in terms of supporting the things that needed to be done here."

CAE Airside

CAE, which this summer introduced the Airside digital platform to provide career and training resources for pilots during the Covid-19 pandemic, said the site has attracted more than 10,000 visitors since it went live in June. CAE developed Airside after surveying more than 3,000 pilots in April, after the pandemic had shut down many areas of the globe. The training provider sought to create a pilot community and engage with its customers during the pandemic and has continued to add features to the platform.

"CAE is building a strong pilot community on Airside and providing the information and tools required to get through these challenging times," said Nick Leontidis, CAE's group president of Civil Aviation Training Solutions. "With the Airside platform, CAE is reinforcing its commitment to safety and excellence with resources that will allow pilots to sharpen their skills, remain connected to the industry, and emerge better prepared to pursue their dreams of flying."

Content surrounds training, career, and lifestyle sections with features such as a resume builder, proficiency information, and pilot myth-busting. "CAE's digital team will continue to enhance Airside as we grow our digital-product portfolio and serve the civil aviation industry with outstanding pilot-training experience," Leontidis added.

NATA Human Trafficking Training

A little more than a year after the National Air Transportation Association (NATA) began to highlight the issues surrounding human trafficking and associated regulatory requirements for the aviation industry, the organization has teamed up with the U.S. government on its Blue Lightning air carrier awareness and training initiative and has now trained several thousand pilots and hundreds of air carriers on preventative measures.

NATA signed a memorandum of understanding (MoU) in June with the Departments of Homeland Security and Transportation to help extend the DOJ's Blue Lightning Initiative to general aviation. Under the partnership, NATA's Compliance Services (NATACS) agreed to educate the general aviation community on the pervasiveness of trafficking, detection, and mitigation.

In response to the MoU, NATACS added the 17-minute Blue Lightning training program to its training suit. By the end of September, NATACS had already fully trained 533 companies and 4,723 crewmembers.

As for the training itself, it is a relatively short program that explains what human trafficking is, how it typically occurs, signs that it is occurring, and what to do should trafficking be suspected. The program explains that human trafficking is modern-day slavery involving force, fraud, or coercion. Human trafficking can be forced labor, domestic servitude, or forced sex.

It further highlights indicators of trafficking, including means of control over victims. One such example is the trafficker may hold the victim's travel documents, preventing them from escape. The trafficker may hold the victim close to them, even accompanying them to a restroom. The victim may not have clear ideas of itinerary or give a non-sensical itinerary.

The trafficker can be anyone, including the victim's friend or family member and, in turn, anyone can be a victim of trafficking.

The program provides numbers for crewmembers and operators to present suspected activity and urges that any suspected activity be reported immediately. The U.S. telephone numbers listed on the Blue Lightning website include (866) 347-2423 to report activity or (888) 373-7888 to get help from the National Human Trafficking Hotline. ■

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FAA FSDOs move into virtual plane | by Mark Huber

FAA division manager Wayne Fry said the agency's flight standards district offices (FSDOs) remain open despite the Covid-19 pandemic but that more activities are being conducted virtually. During the opening day of the FAA's rotorcraft safety virtual conference in October, Fry divulged the massive extent to which the agency is using online tools to keep up with the demand for inspections and meetings at the FSDO level. He urged attendees to leverage electronic tools to interact with the FAA and to avoid "letting this national emergency impact our safety profile."

Fry said the agency engages in more than 5,000 web-based Zoom meetings daily and has done more than 148 international videoconferences across 30 countries since the pandemic began. "The FAA is open for business," he said. "Our offices may not look open. Most of our staff inspectors and managers support telework from home. We're doing this to keep our people safe just like you do. If you drop by the local FSDO, there may not be anyone there, but you will see a sign on the door telling you how to get in touch with us. We still stop in occasionally and we will support you if we need to meet in person, but the best way to contact us now really is probably through phone or email."

FAA division manager Wayne Fry

Doing more business virtually has made the FAA realize that "open and consistent communication is more important than ever, so to stay connected we need to talk more," Fry said, adding that operators, maintenance providers, and schools could help the FAA during the pandemic by "giving us digital copies of most work." He said organizations could digitally connect with FAA personnel using technology no more complicated than Apple FaceTime or mobile devices and laptops to verify aircraft condition, equipage, and installations, provided it is done with the consent of all parties involved.

"We won't ever do this type of work without both of us agreeing to it," Fry said. "We won't ever do it without your approval or consent. If it's not working, we will stop. We will both agree on how to do it and what happens, so that's a very safe space. But just think of the possibilities." Going virtual does not preclude physical site visits and face-to-face appointments at the local FSDO, but Fry conceded that arranging those meetings might take a little more time during the pandemic.

"This is pretty new to us, and probably to you also, and we are still figuring it out," Fry conceded. "We're doing some experimentation. We're not only trying to figure out how to best work in this [Covid-19] environment, but also how to continue to support the general aviation community." ■

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NEW FBO FACILITY

Million Air, KAUS, Austin, Texas

Million Air expanded its network last October with the opening of its newest FBO at Austin-Bergstrom International Airport in Texas.

Groundbreaking on the $40 million, 20-acre facility began in 2018, and the company began providing service from a temporary facility in summer 2019. The spacious two-story 14,500 sq ft terminal is designed to look like a Texas Hill Country ranch home. The lobby atrium extends up to the exposed wooden rafters and roof, with limestone fireplaces, wood and granite features, as well as private sky lounge bar, complementary Starbucks-trained barista, and refreshment bars. Other features include pilot's lounge with snooze rooms and shower facilities, business center, wraparound ramp-side balcony, flight planning room, a pair of a/v-equipped conference rooms with available fine dining service, concierge, and luxury crew cars. Million Air Austin participates in NATA Safety 1st training and adheres to the organization's Clean protocols for Covid safety.

The newest of three FBOs at the airport, it also includes a 6,750-sq-ft aircraft arrivals canopy, more than seven acres of ramp space, and seven hangars ranging in size from 15,600 sq ft to 19,950 sq ft, each a stand-alone facility with independent secure parking and entries and 28 foot-high doors.

Desert Jet, KTRM, Thermal, California

In October 2019, the Palm Springs-area airport saw the long-anticipated opening of the permanent home of Desert Jet Center (DJC), the newest of its then three full-service FBOs. That was followed shortly after by the announcement of the sale of the Signature location there to on-field rival Ross Aviation, which reduced the FBO number to two.

DJC features a 7,000-sq-ft terminal with passenger lobby and a refreshment area known as the "Dessert Bar" featuring local fruits and snacks; pilot lounge; shower facilities; a pair of eight-seat, A/V-equipped conference rooms; ramp-side observation deck; onsite laundry and dishwashing service; crew cars; pet relief area; onsite car rental; and complementary customer vehicle detailing. In the summer months the company provides indoor vehicle parking.

Adjoining the terminal is a 23,000-sq-ft climate-controlled hangar that can accommodate the latest ultra-long-range business jets. The DJC fuel farm is tended by a pair of 5,000-gallon jet refuelers and a 750-gallon 100LL truck, operated by the company's NATA Safety 1st-trained and IS-BAH Stage II-registered line staff. DJC has received Safety 1st Clean registration, and offers complementary disinfection for all arriving aircraft.

Jet Aviation, KVNY, Van Nuys, California

Jet Aviation opened its new FBO at Los Angeles-area Van Nuys Airport (VNY) in November 2019. Three years prior, the company was awarded a 30-year lease to redevelop the 17-acre site on the north side of the field, which was formerly occupied by the Pentastar Aviation facility. Jet Aviation had been operating from a temporary facility during construction.

The $40 million location includes a 10,000-sq-ft terminal with passenger lounge, two a/v-equipped conference rooms, pilots lounge with a pair of snooze rooms, shower facilities, flight planning area, and a 43,000-sq-ft hangar with 8,000 sq ft of office space and 30-foot clearance.

The facility was built to LEED Silver specifications using regional materials, energy-efficient lighting, and low-flow plumbing fixtures. The IS-BAH Stage 2 FBO is the first to offer sustainable aviation fuel (SAF) at VNY, as well as the first of Jet Aviation's locations to carry the blended fuel. The facility is certified under NATA's Safety 1st Clean program, with all Covid-19 safety protocols in place, including social distancing measures, the requirement of masks, and regular cleaning and sanitization.

Carlsbad Jet Center, KCRQ, Carlsbad, California

Carlsbad Jet Center, whose terminal was started more than a decade ago as Magellan Aviation, is finally operational at California's McClellan Palomar Airport. The business was purchased in January 2019, and its new private owner appointed Josh and Julia Hochberg, owners of Sonoma Jet Center at Charles M. Schulz-Sonoma County Airport in Santa Rosa, to manage it. The two-story terminal has 4,000 sq ft of space dedicated to FBO operations and another 6,000 sq ft of tenant offices.

Located 15 minutes from the beach and decorated in Southern California style, with surfboards and art from local artists, it features an a/v-equipped conference room; business center/flight planning area; passenger lounge with complementary snacks and beverages including local favorite on-tap iced coffee, and given the proximity to Legoland, a refrigerator of juice boxes for children, a pilot lounge with widescreen TV and recliners; and concierge service.

Along with its NATA Safety 1st training, the location is also registered under the Safety 1st Clean program for Covid mitigation. Positioned just off Taxiway A, the facility offers 180,000 sq ft of hangar space.

Galaxy FBO, KHOU, Houston, Texas

The flock of aircraft service providers at Houston William P. Hobby Airport grew more crowded with the opening of the long-anticipated Galaxy FBO in June. The $20 million facility, the sixth FBO on the field, is located on 19 acres on the south side of the airport, adjacent to the U.S. Customs facility at the end of Runway 4.

It features a two-story 23,000-sq-ft terminal with pilot and passenger lounges, concierge, snooze rooms, shower facilities, four a/v-equipped conference rooms, on-site car rental, crew cars, and more than 2,000 sq ft of tenant office space. The terminal building sits on nine acres of ramp and is flanked by a pair of 38,000-sq-ft hangars with 245-foot clear span doors, which can accommodate the latest ultra-long-range business jets. Making its debut during the initial surge in Covid cases, the company reconfigured its seating spaces to establish social distancing zones prior to opening, and while

it complies with all of the protocols, it is in the process of obtaining its NATA Safety 1st Clean certification. Galaxy, an Air Elite FBO Network member, which established its first FBO at Conroe North Houston Regional Airport in 2006, also operates a Houston-area heliport.

Sheltair, KBJC, Denver, Colorado

With September's grand opening of its new FBO at Colorado's Rocky Mountain Metropolitan Airport, Florida-based Sheltair debuted the permanent facility for its first location west of the Mississippi. The company began operations last year from a temporary building, which made it the second service provider on the field.

The approximately $20 million, 11-acre facility with expansive views of downtown Denver on one side and the mountains of the other, includes a 10,400-sq-ft terminal with a land-side porte-cochere for passenger drop off and pick up and an airside 162-foot-span aircraft arrivals canopy with direct access to the terminal, which features pine, stone, and exposed raw steel as well as a radiant-heat floor for customer comfort. Amenities include a pair of a/v-equipped conference rooms seating 18 and eight respectively, pilots lounge with snooze room and en-suite shower facilities, business center/flight planning area, concierge, crew cars, on-site car rental, and on-site dishwashing and laundry service. The main 31,050-sq-ft heated hangar can accommodate the latest business jets and has 4,500 sq ft of adjoining office space, and the company has a lease on an additional 20,000 sq ft hangar.

Included in the FBO's construction was a subterranean, glycol-based, defrosting system to keep its primary hangar entrance and walkways free of ice and snow.

Like all other locations in the Sheltair chain, the facility uses NATA's Safety 1st training program and is registered under the Safety 1st Clean program. ■

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JetClub

Few recent products in business aviation have epitomized innovation more than the HA-420 HondaJet, with its distinctive over the wing mounted engines and best in class performance. The light twinjet became the inspiration for an innovative all-HondaJet fractional ownership program, launched by two former HondaJet sales executives in 2018. The North Carolina-based program has quickly grown, underscored this past year by its rebranding as JetClub, from Jet It, and the announcement of a major expansion into Europe and Asia, furthering the company's plans to "create a global leader in affordable private travel solutions," said co-founder Vishal Hiremath.

Tailoring the offerings to the markets, JetClub will operate as a membership-based travel service in Southeast Asia and India, and a hybrid-fractional share company in Europe. The service also features international concierges who can coordinate members' transportation needs as they travel from region to region, ensuring a JetClub solution is always at hand. JetClub is also taking delivery of two more HondaJets to support the expansion, bringing its fleet to seven.

Also noteworthy among the program's innovations: For owner-pilots, JetClub offers "an easy but thorough type training process to sharpen your skills," so owners can pilot the single-pilot certified aircraft themselves when they choose. "You earned your wings," JetClub says, "Now fly your jet!"

Jet Linx

Jet Linx introduced its unique membership jet card and private terminal access model with its Omaha, Nebraska debut in 1999, charging members an upfront fee to buy and renew jet cards for economical, high-touch, guaranteed-access service based from its own exclusive FBOs. Today, Jet Linx has almost a score of bases nationwide and operates a fleet of more than 100 aircraft, and its innovations continue. In response to Covid concerns, Jet Linx introduced the Enterprise Jet Card, created for corporate

customers turning to business aviation for the first time by pandemic issues.

The card provides availability of up to four aircraft per day from the Jet Linx fleet at guaranteed, fixed hourly rates, available to fly an unlimited number of employees. Additional benefits include a 24-hour lead time, no short-notice fees, and guaranteed Wi-Fi across light, midsize, super-midsize, and heavy jet categories. Flexible payment options provide pricing incentives such as flight credits, confirmed upgrades and a rewards program.

"Now more than ever, we understand the significant role of business aviation and wanted to create a flexible and reliable corporate travel solution," said Jet Linx president and CEO Jamie Walker.

Also in response to the pandemic, Jet Linx became the first aviation company to use the BioProtectUs System from ViaClean Technologies to treat aircraft and facilities with a patented long-term antimicrobial disinfectant.

Flexjet/FXAIR

Founded as a pioneering OEM-owned fractional ownership program, the former Bombardier Flexjet's history of access innovation predates joining the Directional Aviation fold, and this year added to its legacy by introducing FXAIR, a premium on-demand charter service, in partnership with sister Directional company OneSky Flight.

Featuring Flexjet's Second Generation Nextant 400XT light, Challenger 300 super-midsize, and Global Express ultra-long range jets, the fleet is complemented by premium legacy aircraft from vetted operators across the five cabin categories offered (midsize and large cabin jets in addition to the above). The preferred access Aviator account, FXAIR's flagship

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program, offers low, flat-rate fares on transcontinental flights; charter access throughout Europe; and an assortment of perks and complimentary services including free Wi-Fi on domestic and international flights, aircraft upgrades when available, and real-time booking via mobile app. Account deposits (minimum $100,000) are fully refundable.

FXAIR provides easy, all-inclusive access from a highly regarded provider for late adapters drawn to private aviation by Covid-19 travel issues. Additionally, its use of legacy airframes in the premium service also demonstrates the business aviation fleet's sustainability at a time when its age is drawing greater attention. Moreover, the program's roll-out amidst the pandemic, said FXAIR CEO Andrew Collins, "really demonstrates the strength of the Directional Aviation family of brands."

No stranger to innovation itself, Directional is also parent company of jet card powerhouse Sentient Jet and the Nextant airframe remanufacturing programs.

VistaJet

VistaJet has been in the vanguard of charter innovators since founder and chairman Thomas Flohr debuted the "asset light" global block charter program early this century. New developments continue today under the Vista Group umbrella with sister charter operator XO, and this past year VistaJet introduced a humanitarian innovation to address critical needs created by the Covid-19 pandemic: the premium charter service is providing complimentary empty leg flights aboard its fleet of bespoke, large cabin Bombardier aircraft to transport supplies and government, medical, and health personnel impacted by the lack of airline service. Working directly with governments and consulates around the world, VistaJet is assisting with the complex logistics and permit and paperwork requirements and has repatriated stranded citizens, as well.

DAVID McINTOSH

VistaJet has also introduced short aircraft leases, rather than its customary 36-month terms, to make aircraft available for organizations seeking temporary solutions to transportation shortfalls induced by the pandemic.

"This is an unusual time, and one that we must all work together where possible to do whatever we can to help," said Flohr. "Ultimately, we are a logistics company and we are here to help the global community as much as we can. We are in this fight together."

VistaJet has also made sustainability a linchpin of its program and mission. This past year the company launched a carbon offset program that 80 percent of its customers now use to compensate for their flight's emissions, with funds invested in select emission reduction projects worldwide; and the Malta-based company has also created a plan to secure sustainable aviation fuel sources for its global operations.

Wheels Up

Innovation has been at the core of Wheels Up since debuting its closed fleet charter access membership model in 2013, the first step in founder Kenny Dichter's stated goal to "democratize" private aviation access. Impressive growth and firsts have followed, yet this past year has outstripped all others in the number and scale of advances. First came a Costco-branded jet card Wheels Up created with the mass market retailer, serving to spread public awareness of private aviation as a consumer item. Of greater impact was the New York City-based charter provider's

DAVID McINTOSH

acquisition of Delta Private Jets, which made a major commercial carrier Delta Air Lines—Wheels Up's largest investor—a partner with the reach, resources, and now reasons to vastly expand private aviation's domain among the public, while simultaneous adding lift to serve Wheels Up's growing base of on-demand charter customers. Wheels Up also acquired the Travel Management Company, whose owned and operated light jet fleet was a major source of external lift; as well as Gama Aviation Signature, the largest charter operator in the U.S. and operator of Wheels Up's wholly owned fleets of King Air 350s and Citation light jets. Any one of these developments would be challenging for an access provider to introduce successfully in a year, but Wheels Up also debuted a new management division, whose offerings include "charter select," a program that assists clients in achieving charter revenue goals, expanding the available charter fleet in the process. Together, innovations like these bring democratized private aviation access closer by the day. ■

SUSTAINABILITY

Business Aviation Coalition for Sustainable Aviation Fuel

The Business Aviation Coalition for Sustainable Aviation Fuel was created by a group of international aviation organizations to encourage the use of sustainable aviation fuel (SAF) by increasing the awareness of its safety and availability and the use of it by OEMs, ground handlers, and owners/operators globally. It also seeks to promote a build-out of infrastructure to increase SAF's manufacture as well as its further development.

The organizations behind the coalition are the Canadian Business Aviation Association, Commercial Aviation Alternative Fuels Initiative, European Business Aviation Association, General Aviation Manufacturers Association, International Business Aviation Council, National Air Transportation Association, and NBAA.

In August the coalition released a guide, "Fueling the Future," which details how industry leaders can introduce SAF into their operations and accelerate its adoption, at the same time reducing greenhouse gas emissions.

The coalition hosted its first Sustainable Business Aviation Fuels Summit in September, a two-day online event that gathered a constellation of experts encompassing all facets of the industry including operators, legislators, regulators, fuel suppliers, and others to determine how best and how quickly to ramp up the acceptance, demand, and supply for SAF, which is viewed as one of the tentpoles in achieving the industry's goals of carbon emissions reduction.

Among the topics explored in depth was book-and-claim, a mechanism whereby an operator looking to use SAF in an area where it isn't available can purchase it and receive any environmental policy benefits, while the actual fuel is dispensed at a facility where it is available. This system is viewed as crucial to increasing the usage of SAF until it can become widely distributed.

Signature Flight Support/ Neste/NetJets

In September, Signature Flight Support launched the Signature Renew industry sustainability program, including agreements with sustainable aviation fuel (SAF) provider Neste and private jet operator NetJets, which connected all segments of the fuel supply chain from producer to end-user. Under the deal with Neste, Signature purchased 5 million gallons of SAF that would be used to establish permanent supplies of the alternative fuel at its FBOs at San Francisco International Airport (SFO) and at London Luton Airport (EGGW) in the UK. Customers purchasing SAF at Signature SFO can take advantage of the California Low Carbon Fuel Standard tax incentive programs, while those at London Luton can reduce carbon offsetting needs for the EU's ETS.

As launch customer for Signature-supplied SAF at SFO, NetJets committed to purchase up to 3 million gallons, which is expected to cover all of its flights from SFO as well as from its Columbus, Ohio headquarters using book-and-claim. The SAF purchase agreement is the largest by an FBO operator to date and is the first step in Signature's goal of being the world's

first 100 percent sustainably-supplied FBO in the first quarter of 2021.

Neste announced earlier this summer that it had for the first time delivered SAF to SFO via the existing multi-product pipeline designed for the transport of fossil fuels and other oil products for use by commercial airlines.

Bombardier Global 7500 Environmental Product Declaration

In June, Bombardier Aviation achieved a first in sustainability when its Global 7500 became the first business jet to receive an Environmental Product Declaration (EPD) through The

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International EPD System. Verified by a third-party to international ISO standards (ISO 14025 and related—for Type III environmental declarations), the EPD discloses detailed environmental information about the Global 7500's lifecycle, such as CO_2 emissions, noise, water consumption, and other key environmental impact indicators. Based in Sweden, The International EPD System has a library of published EPDs for products from 31 countries in an effort to foster transparency about environmental lifecycles.

The Canadian airframer acknowledged the declaration as another milestone in its environmental sustainability strategy that so far has included the increased adoption of sustainable alternative fuels (SAF), a reduction of its CO_2 footprint, expanded aircraft recyclability, and further sustainable sourcing.

Bombardier's pursuit of an EPD was incorporated throughout development of the Global 7500. The company's eco-design team applied product innovation lifecycle processes throughout the 7500's development to ensure that the ultra-long-range business jet minimized its impact on the environment from design to the aircraft's end-of-life.

That involved a focus on health, safety, and environmental considerations during design, production, support, and end-of-life. In addition, this approach involved years of collaboration with the supply chain. Operational lifecycles, including an evaluation of noise and fuel burn, are considered. Further, Bombardier considered recyclability and recovery rates for end-of-life, reporting that material recycling and energy recovery aggregate to an 85 percent recoverability rate by weight for the Global 7500.


MARK WAGNER

Vista Jet Sustainability in Aviation Pledge

A partnership struck earlier this year between sustainable aviation fuel provider SkyNRG and Vista Jet enables its users to voluntarily pay for the volume of SAF consumed in their flight through a book and claim mechanism. Exercising such an action allows a user to receive environmental credits while SAF is dispensed into a different aircraft where the environmentally friendly fuel is available.

It's part of Vista Jet's Sustainability in Aviation pledge that it made earlier this year. Through its sustainability initiatives, Vista Jet has introduced a carbon offset purchase program, in which it has seen an 80 percent acceptance rate among its customers and the offset of nearly 100,000 tons of CO_2 . Vista Jet also has added fuel consumption reduction technology to automate flight optimization and management of its global fleet, which has resulted in an 8 percent improvement in fuel burn per flight. The company is also moving to source the electricity that is supplied to its offices from only renewable sources. ■

CONTRIBUTION TO SAFETY

Garmin Autonomi's Autoland Recovery System

Autoland is now available for the Piper SLS (branded Halo) and Daher TBM 940 turboprop (branded Safe Return) singles and the Cirrus SF-50 G2 single-engine jet (branded Homesafe Autoland). Other aircraft no doubt will follow. Autoland can be adapted to almost any airplane, from piston singles to jets.

The Garmin Autoland system is part of the company's Autonomi family of automation products, which includes Electronic Stability and Protection and Emergency Descent Mode. The Autoland system is designed to safely fly an airplane from cruising altitude to a suitable runway, then land the airplane, apply brakes, and stop the engine. As it flies the airplane toward the airport, Autoland slows the airplane down and, if necessary enters a hold to bleed off excess airspeed.

It can be automatically or manually activated, via the touch of a single switch. In the Piper M600, the system automatically activates at 18,000 feet if the autopilot is engaged and the pilot doesn't interact with the avionics in a 15-minute period. At higher altitudes, the engagement period is shorter. Autoland also tries to alert the pilot with repeated chiming sounds and asking, "Are you alert" before engaging. Autoland will also engage if the Electronic Stability and Protection system is engaged for a prolonged period of time, first putting the M600 into level mode, and if the pilot doesn't disengage level mode, then implementing an automatic landing.

The system is designed so that a non-flying passenger can switch it on and understand what is happening during an Autoland event. When engaged, Autoland immediately turns the airplane toward the nearest suitable airport while displaying on all three cockpit displays carefully designed messages that show the passengers what is happening. A moving map on each PFD clearly illustrates the path that the airplane is taking to get to the selected airport. The PFD shows a split-screen with moving-map on one side and synthetic vision system imagery on the other. The MFD in the center shows messages for the passengers, as do the PFDs. One MFD message is an animation of the cockpit and the controls, with a warning: "Keep hands and feet away from aircraft controls." On the displays at all times are the words: "Emergency autoland active" and "landing in XX minutes." The MFD also shows how many miles to the destination and how much fuel remains in hours and minutes.

Both PFDs show time until the next turn, if applicable, and time until descent. A smoothly modulated voice tells passengers exactly what to expect. At the same time, Autoland uses information about the state of the airplane to broadcast an emergency radio message on appropriate frequencies, and it resets the transponder to the 7700 international emergency code. The radio broadcast might occur on the local approach control or control tower frequency. But if landing at a non-towered airport, Autoland will broadcast on the local CTAF frequency, so that other pilots in the area area aware of the emergency landing that is about to take place.

Autoland can even switch on anti/deicing systems if necessary. Autoland is available for aircraft manufacturers to incorporate in their airplanes equipped with Garmin G3000 avionics and autothrottle.

The system is designed only for emergency use and not for pilots to use just because the weather is marginal or crosswinds are too high. It adds the option of getting the airplane to a nearby airport where medical assistance may be more readily available.

Even with a worst-case scenario of an incapacitated pilot and an engine failure, Autoland can improve the outcome by implementing a controlled descent to nearby smooth terrain. Autoland could also help rescue a pilot trapped by widespread zero-zero fog, allowing a safe landing where it would be difficult if not impossible to safely land using an ILS or LPV approach.

IS&S ThrustSense Autothrottle for Twin Turboprops

Innovative Solutions & Support (IS&S) ThrustSense autothrottles reduce pilot workload by automatically managing engine power from the takeoff roll through the climb, cruise, descent, go-around, and landing phases of flight. They are available as a retrofit option on 300-series King Airs with Collins Pro Line Fusion avionics and standard on the new Textron Aviation King Air 360/360ER.

Separately, IS&S and Blackhawk Modifications have announced an agreement for Blackhawk to distribute and install IS&S's NextGen flight deck and integrated autothrottle system for King Air 200s and 350s. The two models account for more than 3,000 airplanes, according to IS&S, and there are another 2,000 C90 through E90 and F90 models that are upgradeable as well.

The IS&S autothrottle includes engine-out thrust control: in the case of one engine failure, the autothrottle system automatically sets the remaining engine to the correct power level to avoid loss of control if the airspeed drops below minimum controllable airspeed.

The IS&S PT6 autothrottle is able to fully control an engine with a hydromechanical fuel control, and it includes protections that prevent over-torquing during takeoff or over-temping in climb or at high altitudes. The system also features over- and underspeed protection in case the pilot mismanages the aircraft's airspeed. If the pilot tries to move the power lever and nears the engine's torque or temperature limits, the autothrottle has a built-in shaker system to warn the pilot. However, the pilot can always override the autothrottle by simply moving the power levers as necessary.

ThrustSense consists of an integrated standby unit (ISU) and linear actuators that control each throttle lever. The ISU contains an integrated computer, inertial

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ATP Aviation Hub integrated with Flightdocs software

by Matt Thurber

Software and information service provider ATP and Flightdocs have integrated their products, allowing users to access technical publications and regulatory information directly from the Flightdocs maintenance-tracking platform. ATP purchased Flightdocs in June, and the merged companies' product development team has been working on the integration since then.

"The main concept is if someone is in Flightdocs, they can link to get technical publications and regulatory content from the ATP Aviation Hub to perform that maintenance," said ATP CEO Rick Noble. "The mission is to try and make things easier and more efficient for customers, with less time looking for information."

ATP's Aviation Hub now provides users with access to more than 1,700 technical publications from 90 original equipment manufacturers (OEMs), in addition to FAA and EASA regulatory documents. The ATP team adds more than 2,000 pages per day to the Hub.

Before the integration, a technician preparing for maintenance by going over a due list in Flightdocs would have had to switch to ATP to look up the technical information for the tasks. Now users can access all the necessary information directly from Flightdocs, which eliminates those extra steps.

The integration philosophy fits with ATP's original strategy, Noble explained. "The goal is to put all the content [from OEMs] together so if you're working on an aircraft from the propeller to avionics to wheels and brakes, all the content is in one spot." Flightdocs and ATP users can access the Aviation Hub and Flightdocs platform on PCs or mobile devices. "Increasingly, people want to move around the hangar and not be tied to a desk," he said. In locations where internet access isn't available at the aircraft, users can download the Aviation Hub content and work offline.

"We continue to invest heavily in the evolution of the products we're delivering to aircraft owners, operators, and OEMs," said Greg Heine, chief strategy officer at ATP. "The merger of ATP and Flightdocs just a few months ago strengthened our ability to develop new products, features, and integrations across all of our platforms. We're excited about this new launch and have numerous major releases planned over the next year."

ATP owner ParkerGale and Accel-KKR joined to make the Flighdocs acquisition in June. After buying ATP in 2015, ParkerGale purchased CaseBank Technologies a year later and merged it with ATP. "We have been trying to convince Flightdocs' owners to join the ATP family for a few years, and we are so pleased to have finally put the companies together," said ParkerGale co-founder and ATP board chairman Devin Mathews. "We have ambitious plans for ATP as one of the largest aviation software companies and we are excited to have Accel-KKR's support in the endeavor."

Flightdocs adds a significant base of business aviation customers to ATP's portfolio, which includes airline and military segments, although the Aviation Hub does serve many business and general aviation operators. "We're always on the lookout for companies that might augment our product line," said Noble. "Flightdocs is a perfect example. There are many synergies between the two companies."

Chronic Issues

Although the former CaseBank's ChronicX defect-detection software has mostly airline customers, ATP has demonstrated it to the military. Before the pandemic, ATP had roughly 5,000 commercial aircraft signed up for ChronicX, about 25 percent of the free world's fleet. The drop in airline activity due to the Covid pandemic has lowered ATP's airline income, but that wasn't a huge percentage of the company's revenue base, according to Noble. "We're fortunate to have a portfolio of customers in various segments but also that business and general aviation has been less impacted than commercial and has come back strongly."

That said, ATP is looking at offering ChronicX to aircraft manufacturers and possibly adding it to Flighdocs, to help operators that use Flightdocs realize the savings available from solving problems before they cause an AOG. Although, he said, "Those aircraft don't tend to be used as much as commercial airlines, we think the same dynamics are in play and the same potential savings and return on investment will be there."

ATP's other CaseBank product is the SpotLight troubleshooting diagnostic database, which already has penetrated the business aviation market with customers such as Pratt & Whitney and Gulfstream. After signing up, ATP helps the customer populate the underlying diagnostic database, then when users encounter a problem, they type in the symptoms and are given likely potential solutions.

Noble would like to see the SpotLight service expand into more business aviation and airline aircraft, including King Air turboprops and Boeing 737s. SpotLight works better when there is a larger population of a particular aircraft type.

Meanwhile, ATP is working to add more OEMs to the Aviation Hub so that users don't have to go elsewhere for maintenance information. As Noble explained, ATP's specialty is organizing and publishing complicated information that needs to be updated regularly. "The OEMs that use us exclusively focus on designing quality aircraft and leave publication distribution to us," he said. "Our specialty is managing publications, taking customer service calls, updating regulatory content, and billing customers. Many OEMs are happy to not take that on."

As for Flightdocs, plans are underway to add enhancements to the software to allow aircraft and flight crew scheduling, which would help operators better manage crew and aircraft availability. "We're also looking at building in additional features and functions to make it much more useful to MROs," he said. This could include allowing a maintenance provider to manage Flightdocs accounts for aircraft it doesn't operate—for example, maintenance tracking for a customer's fleet or even individual aircraft. Invoicing could be added at some point, although that adds more complexity in terms of integrating with financial software, Noble admitted.

After acquiring CaseBank and Flightdocs, ATP employs more than 200 people in four locations, although many are currently working remotely due to the pandemic. There are about 7,500 customers in 137 countries operating 140,000 aircraft that use one or more of ATP's software products, according to Noble. ■

Embraer, Porsche team on Phenom 300E, 911 turbo S pairing

Embraer and Porsche have created a limited-edition Phenom 300E and Porsche 911 Turbo S pairing. Each shares similar exterior and interior elements designed through a collaboration of the Brazilian aircraft manufacturer and German carmaker.

Called Duet, the $10.9 million package is limited to 10 pairs and includes a three-piece baggage set and exclusive Swiss titanium wristwatch that matches the clocks found on the panels of the limited-edition Phenom 300Es and Porsche 911s. "Duet is an exclusive package developed in a unique design collaboration with Porsche. This combination will only be available through this one-time-only pairing," said Michael Amalfitano, president and CEO of Embraer Executive Jets. "In the spirit of delivering the ultimate customer experience, we are fusing two of the most notable brands in the aerospace and automotive industries."

Embraer's and Porsche's limited-edition Phenom 300E and Porsche 911 Turbo S "Duet" pairing incorporates a number of design elements that reflect both the light jet and automobile.

The companies have also designed an exclusive collaboration logo that "brings together the aeronautical requirement of lift—depicted by the Phenom 300E winglet—with the automotive requirement of downforce—depicted by the rear wing of the flagship 911." This logo is embossed on the seat headrests of the car and aircraft, as well as featured on the aircraft side ledge, speaker grills, and mounted near the main door. To further solidify the symbiotic pairing, the aircraft registration number appears on both the car's rear wing and the sides of its key, said Jay Beever, v-p of Embraer design operations.

Design inspiration for the aircraft mirrors that of the car, and vice versa, he added. For example, the sew style on the Phenom 300E seat is patterned after that of the 911 Turbo S, and the seats in both vehicles feature red pull straps, a Speed Blue accent stitch, and carbon-fiber shrouds to create a shared connection. Pilot seats of the 300E were also redesigned to match the car.

The aircraft and car also share the same exterior paint pallette and general scheme—the upper part with platinum silver metallic paint, transitioning to jet gray metallic at the bottom. Dividing the two paint colors is a trim strip with lines in brilliant chrome and speed blue. Further, the air intakes of the 911 Turbo S are painted in brilliant chrome to match the Phenom 300E's nacelle leading edges. **C.T.**

Avidyne switching on FOQA for bizav

by Matt Thurber

Aircraft equipped with Avidyne IFD, Atlas, and Helios avionics will soon be able to participate in a flight operations quality assurance (FOQA) flight safety program led by Avidyne, with data analysis provided by CloudAhoy and data download and transmission via AirSync hardware.

The IFD GPS navigator and Atlas and Helios flight management systems are equipped with attitude reference sensors, GPS, and the ability to record avionics data via the aircraft's databus. Depending on the avionics in the aircraft, a lot of data can be available. For example, in a Collins Pro Line 21 flight deck, the IFD can capture more granular data from the avionics general purpose bus, including air data, corrected and uncorrected barometric information, and some engine parameters, explained David Miner, Avidyne general manager of business aviation. "Even if the IFD is not using the data, whatever is coming in on the digital bus is being captured and recorded," he said. "The more information coming in, even if we're not using it, the IFD is able to transmit out via Wi-Fi."

Although the data can be manually downloaded in the form of .csv log files, which are normally used for troubleshooting the Avidyne avionics, it made sense to find an easier way to move the data.

Charlie Precourt, U.S. Air Force Colonel (ret.) and former NASA astronaut/Shuttle commander, was instrumental in helping to develop Avidyne's FOQA program, after he had an IFD545 installed in his Citation CJ1+ and realized how much flight data it records. He started working with data downloaded from his jet and the IFD545, then showed his findings to Avidyne. "It happened to be a clean, quick, out-of-the-box solution for what we wanted to do," said Miner.

"We came to find out with Charlie's help and expertise, he's been able to get [AirSync] to capture that without a pilot interface, out of the built-in Wi-Fi from the IFD units."

Using the IFD's Wi-Fi, data is transferred to the AirSync box. Then once on the ground, it is transmitted via AirSync's cellular connectivity to a

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Pipistrel's Nuuva V300 unmanned hybrid-electric cargo aircraft is set for first delivery in 2023 to an undisclosed customer in Asia.

Pipistrel picks Honeywell FBW for Nuuva V300 unmanned electric cargo aircraft

Electric aircraft manufacturer Pipistrel has chosen Honeywell's new Compact Fly-By-Wire system for its cargo-carrying Nuuva V300 unmanned aerial system (UAS). The Slovenian company is seeking to use lightweight equipment and controls for the hybrid-electric aircraft, which is being developed to carry a payload of 300 kg (660 lb) on sectors of up to 300 km (186 miles).

Honeywell's new business unit focusing on the UAS and urban air mobility (UAM) sectors developed the Compact Fly-By-Wire system by reducing the scale of technology produced for much larger aircraft, including airliners. The system is around the size and weight of a paperback book and is also intended to support passenger-carrying eVTOL aircraft.

Pipistrel has named Honeywell as a partner in its plans to develop its 801 eVTOL, which is designed for use with the Uber Elevate air taxi network in which the company is a partner. However, in May, it confirmed that plans for electric cargo-carrying aircraft and a regional airliner are being prioritized over the eVTOL for the UAM sector. Pipistrel does not expect the 801 to enter service until 2028 but aims to deliver the first Nuuva 300 to an undisclosed customer in Asia during 2023.

For takeoff and landing, the V300 uses eight independent battery-powered Pipistrel E-811 electric motors, which are already type certified and drive eight vertical rotors installed on beams connected to the aircraft's tandem wings. The batteries can be recharged using the SkyCharge charging station that Pipistrel and Green Motion introduced in July. An internal combustion engine driving a propeller at the rear of the fuselage powers the UAV for cruise flight.

The V300 can carry up to three standard-sized Euro cargo pallets (EPALs) that are loaded by a forklift truck. The UAV can be customized for a wide variety of missions. For instance, by reducing payload and dispensing with anti-ice operating capability, the aircraft can take more fuel and carry a 50 kg (110 lb) payload up to 2,500 km (1,550 miles) while operating from altitudes as high as 8,000 feet. Taking off from lower altitudes and flying shorter distances, the UAV can carry the full 460 kg payload.

The company is also working on a scaled-down version of this design called the Nuuva V20. This would have a payload of just 20 kg and would be used for so-called last-mile local deliveries. Both aircraft are fully autonomous and will operate with pre-loaded flight plans.

Meanwhile, a second cargo aircraft is being advanced as a fixed-wing design based on Pipistrel's Alpha Electro electric light trainer. It is being developed to be remotely piloted or manned and would be used for missions such as humanitarian relief, with packages being dropped from pods on each side of the wing and a cargo payload of almost 250 pounds.

Separately, privately owned Pipistrel is working to develop a 19-passenger aircraft that it says would fly routes of up to 300 miles at around one-quarter of the operational cost of conventional aircraft. The company reported that the so-called Miniliner concept could be ready to enter service in 2028.

Honeywell is also a partner with UK-based eVTOL developer Vertical Aerospace to provide flight controls for its VA-1X electric tiltrotor. The U.S.-based avionics and engines group formed its UAS/UAM business unit in June 2020. **C.A.**

FutureFlight

This story comes from FutureFlight.aero A resource developed by **AIN** to provide objective, independent coverage of new aviation technology, including electric aircraft developments.

News Update

Garmin Training Goes Online Through June 2021

Garmin has released its training schedule through June 2021, and all classes and training delivery will be done in "an entirely virtual learning format," according to the Olathe, Kansas avionics manufacturer.

Customers can opt for new instructor-led courses that feature scenario-based training as well as self-study elearning, iPad and PC training software, and monthly webinars. Garmin products available for training in iPad simulator versions include the GTN/GTN Xi series and GNX 375, GNC 355/355A, and GPS 175 navigators.

The instructor-led courses are available for the GTN series, GTN plus TXi displays, G3X Touch, and G500/G600 flight displays, G1000/G1000 NXi systems, and GWX aviation weather radar.

Pilots can self-study with elearning courses on the GTNs, TXi, G1000 NXi, G3000/G5000, and GWX weather radars. A special "Plus" course is available to add G5000 autothrottle operations.

Max-Viz EVS STC'd for Airbus AS350 Helicopters

Astronics's Max-Viz 1200 and 1400 enhanced vision systems (EVS) have received STC approval from the FAA and Transport Canada for installation in the Airbus Helicopters AS350B/B1/B2/B3/BA/BD. The Max-Viz 1200 and 1400 systems, which are lightweight and feature an uncooled thermal camera, can output sensor images on any avionics displays that can accept NTSC or PAL/analog RS-170 video signals. They provide improved safety by enabling pilots to see terrain, obstacles, and airport environments more precisely in adverse weather conditions such as haze, smoke, smog, and light fog.

Genesys Certifies Black Hawk Avionics Suite

A panel full of Genesys Aerosystems avionics has received FAA STC approval on Sikorsky UH-60A and EH-60A Black Hawk helicopters. Operators can choose between a fully integrated avionics suite or modular "building block" options to match budget constraints while paving a path to future upgrades.

The upgrade's chief benefit is replacement of older electromechanical instruments with Genesys NVG-compatible, MIL-STD IDU-680 displays. The new displays include a digital attitude/heading reference system.

The full package can replace all instruments in the Black Hawk, including engine gauges. A typical Black Hawk installation would include four displays in portrait layout, a digital three-axis autopilot, and radios.

The displays offer synthetic vision, HTAWS, geo-referenced hover vector, and Genesys's Open Architecture System Integration Symbology special mission systems interface.

Scott IPC releases int'l plotting chart iPad app

by Matt Thurber

Scott International Procedures (IPC) has released the Scott Plot ePlotting Chart app, which went live on the Apple App Store on October 30. The app is designed to facilitate oceanic crossings, but it is also designed to be a key part of Scott IPC's international procedures training and tools that the company offers to help customers flying overseas.

Pilots and dispatchers can use Scott Plot to set up international flights by creating a Journey Log that includes all the information related to the trip and the flight plan, including weather, Notams, and charts. Scott Plot can accept flight plan formats from any provider.

"Three years ago we had the concept for an electronic plotting chart," said Shawn Scott, who founded the company with his wife Amy. Given the extensive international operations training his company provides, he added, "We have a good feel for what's needed in the cockpit. We wanted to make sure the user interface was as close as possible as what pilots are used to with paper planning. But there is no safety degradation."

The software walks the user through each step of the planning process automatically, based on Scott IPC's checklist and its International Cockpit Reference Handbook (ICRH) as well as FAA Advisory Circular 91-70B recommendations and the guidance in NAT Ops Bulletins. Users can also store any other documents in Scott Plot.

Once the flight plan is pulled into Scott IPC, the pilot can build the route, starting with setting coast-out and -in points. If the user has questions at any point, they can open the ICRH for that particular phase of flight.

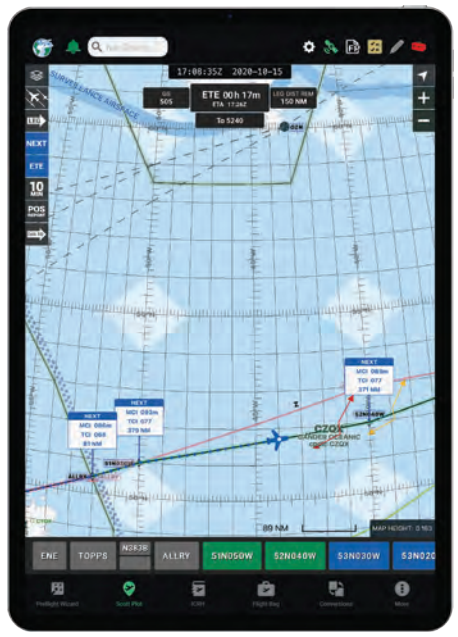
The next step is plotting equal time points (ETPs), which is done based on the flight plan. Scott IPC will identify any discrepancies, such as upper-level winds in a different direction than the winds for the ETP scenarios. "We identify that and automatically build the ETPs," said Scott.

Scott Plot prompts the user to set oceanic flight reminders, such as prior to coast-out, waypoint passage, 10-minute checks, nearing a flight information region, etc.

Once in the air, pilots can use Scott Plot to manage the overseas trip, and the software keeps a record of the flight in the Journey Log. "If it is a flight for the record, you need a Journey Logbook if you're operating more than 12 miles off the coast," said Phil Tyler, director of business development. "This builds the log and posts it with the master document and delivers it via different formats."

The software facilitates normal and emergency procedures, including strategic offsets, diversions, equipment failures, and other contingencies. In aircraft where the app can use GPS information from the avionics via Wi-Fi equipment, if there is a GPS sensor failure, the app will mark that with a timestamp for post-flight investigation. Another timestamp is recorded when the GPS information returns, and this is all included in the Journey Logbook.

As the aircraft flies the trip, the track flown is shown with breadcrumbs. The app includes all waypoints, airways, and Blue Spruce routes in the navigation database and notes associated with those routes, which can be helpful in case of a reroute. The user can also annotate the plotting chart (or any other document),



Scott IPC's new Scott Plot ePlotting chart app for the Apple iPad keeps a detailed Journey Logbook during overseas trips.

and these written notes are saved in the Journey Logbook.

A complicated process that causes a lot of errors in overseas flying is rerouting after a flight plan change from controllers. "We wanted to make it simple and user friendly," said Scott. All a pilot has to do with Scott Plot is tap and hold the new waypoint and then add it to the route. The Journey Log retains the old and new routes. Scott Plot asks if this new waypoint should be added to the route, then helps the user build new ETPs for the new routing. The process isn't completely automatic, however. "Our philosophy is to stay engaged in the process," he said. "If everything is loaded automatically, you just lost a ton of situational awareness. This allows us to set it up but also to verify. It gives maximum situational awareness."

"Our goal is not to take a paper process and digitize it," said Tyler. "The features, structure, and chronology are based on how our company trains for actual plotting. There are a lot of features that are what we consider higher level, but it's what we train our pilots to do to have proper situational awareness."

In keeping with Scott IPC's training goals, the company is planning three levels of training, in addition to a detailed user's guide and frequently asked questions section. The first training level is a series of short videos in the app that are function-specific, so a user can brush up on a topic before a trip. The next is the ability to build scenarios based on contingencies, for example, dealing with a GPS sensor failure. Finally, the app includes a simulation mode, which allows users to pre-fly a trip while on the ground. "This allows the app to believe it's flying so you can see and practice real-time what would happen in the air," Tyler said.

"This is valuable for new and experienced pilots," said Scott. "It keeps them from getting complacent. What we're seeing is people with automation and CPDLC and FANS, they're not modifying their standard operating procedures along with the new technology. We're a training company and always have been. We train using scenarios for contingencies. You're subscribing to all the training, and the Scott Plot plotting chart is gravy on top of that."

"We have people all over the spectrum on plotting," Tyler said. "Some don't do it, some do the bare minimum, and some want to be as safe and cognizant of the situation as possible. Those are people that we train and will look to provide the training and the new tool."

"People who don't think it's important to plot, [it goes] back to their training," said Scott. "Nobody is going through scenarios with them. That pilot-in-command is supposed to know more about that flight than anybody. Those who don't follow the procedures are not trained properly. Training is going to elevate the usage of best practices." ■

NEWS note

Avidyne has updated its IFD100 iPad app so that it supports multitasking, allowing it to run simultaneously on a split-screen and share information with the other multi-tasking app. Users can download the latest version of the IFD100 app (10.2.9) from the Apple App Store for free, although it works only with Avidyne IFD FMS/GPS navigators, including the IFD550, IFD540, IFD440, IFD545, IFD510, and IFD410. The IFD100 app allows pilots to control the IFD FMS/GPS directly from the app.

"With this latest version, the IFD100 app can now be displayed on a split-screen with other apps that support multitasking," said John Talmadge, Avidyne v-p of worldwide sales, "including the industry-leading ForeFlight app, as well as SkyDemon in Europe, allowing pilots even greater utility and more capabilities." ■

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Avidyne switching on FOQA for bizav

pilot's CloudAhoy account. Once the data is in CloudAhoy, the pilot can analyze the flight in many ways, including scoring against preset standards and with graphic overlays on maps and approach charts.

"The beauty is it doesn't take any pilot action," said Dan Reida, Avidyne's director of business aviation sales. The AirSync plugs into USB power on the aircraft, and after it detects power off when the flight ends, it automatically sends the data captured by the Avidyne avionics to CloudAhoy's servers. Pilots can view the flight analysis on mobile devices or any browser.

The CloudAhoy report card will show the pilot an evaluation of key parameters, using a red-yellow-green indicator, based on values such as Vref, landing distance from threshold, speed over threshold, and touchdown point.

"The way I would use it," said Miner, "is that if it appears I'm always landing long, over 10 knots too fast, and flying an extra 500 feet [before touchdown], I need to improve. My awareness is way up." If a bad habit is becoming entrenched, CloudAhoy will highlight that degradation, with green performances trending to yellow or red. "Before anything bad happens, I can get back to green," he said.

"Based on the success of FOQA programs in commercial and military aviation, we believe that access to affordable FOQA flight data will give business and general aviation pilots the opportunity to evaluate their performance, spot trends, and take corrective action before a serious incident can occur," said Precourt.

Avidyne is planning to offer various levels of service for its FOQA Flight Data Intelligence program, with one-stop shopping for the hardware and analysis services. Cost is expected to run in the hundreds of dollars per year, and there will be varying levels of service, so "it fits a lot of markets," said Reida.

The FOQA analysis could also be de-identified and shared with operators of similar aircraft to help them spot trends. "It is a real game-changer for business and general aviation," said Miner. ■

Mitsubishi suspends work on SpaceJet program

by Charles Alcock

Mitsubishi Heavy Industries (MHI) is suspending the development of its SpaceJet M90 airliner in a bid to stem steep losses. In late October, the company announced the move as part of a revised medium-term business plan, saying it will continue some work on type certification documentation with a view to possibly resuming the program at some point in the future.

In financial results for the first half of the current fiscal year, MHI reported a 12 percent group-wide decline in revenues to ¥1,658,6 billion ($15.9 billion). However, in the wake of the Covid-19 pandemic's negative impact, the group sustained a pre-tax loss of ¥72.8 billion, of which its aviation, defense, and space division accounted for ¥66.3 billion.

Earlier this year, Mitsubishi Aircraft halted plans to conduct flight testing of the 88-seat M90 twinjet in Moses Lake, Washington, and also shelved development work on the 76-seat M100. In the October 30 announcement, the company did not give a revised target date for completing M90 certification, which has already fallen behind multiple times since the launch of the program in 2008. The most recent target date was mid-2020.

"Given the current development status and market conditions, we have no choice but to temporarily pause the majority of SpaceJet activities, except for type certification documentation," said MHI in its "2021 Medium-Term Business Plan" running through 2023. "We will work to review where we stand, make improvements, and assess a possible program restart.

DAVID McINTOSH

Development of Mitsubishi's SpaceJet M90, shown here after arriving at Le Bourget Airport for the 2019 Paris Air Show, has been suspended but could restart after program reviews.

In June, MHI announced plans to halve funding for the SpaceJet program after Mitsubishi Aircraft incurred costs totaling ¥263.3 billion, in part through the acquisition of Bombardier's CRJ program. Under a revised business plan, MHI will expand plans to provide maintenance, repair, and overhaul to the existing CRJ fleet.

MHI now expects the air transport market will only begin recovery from 2024. It said it will remain active in the aerostructures sector through a plan to "increase production efficiency and drive forward new technology development to participate in future global aircraft programs."

The announcement from MHI makes no mention of possible layoffs in the wake of the M90 program suspension, but its recovery plan refers to targeted initial cost savings of ¥120 billion. ■

EU pulls trigger on tariffs for Boeing jet imports

by Gregory Polek

The European Commission (EC) on November 10 planned to begin imposing tariffs on U.S. exports into the EU worth $4 billion—including a 15-percent duty on Boeing aircraft—in retaliation for similar measures taken by the U.S. affecting Airbus and other European industries. The World Trade Organization (WTO) formally authorized the EU on October 26 to impose countermeasures in response to illegal U.S. subsidies to Boeing. The commission said it stands ready to work with the U.S. to settle the dispute and to agree on long-term plans on aircraft subsidies.

"We have made clear all along that we want to settle this long-running issue. Regrettably, due to lack of progress with the U.S., we had no other choice but to impose these countermeasures," said European commissioner for trade Valdis Dombrovskis. "The EU is consequently exercising its legal rights under the WTO's recent decision."

Based on separate WTO decisions on aircraft subsidies, the countermeasures put the EU on equal footing with the U.S., according to the EC. Along with the 15 percent duties on aircraft, the European measures include tariffs of 25 percent on a range of agricultural and industrial products imported from the U.S.

In a parallel case related to Airbus, the WTO allowed the U.S. in October 2019 to impose countermeasures against European exports worth up to $7.5 billion. The trade body based the amount on an appellate body decision in 2018 that had found that the EU and its member states had not fully complied with previous WTO rulings relating to a repayable launch investment for the A350 and A380 programs.

Although officials from the U.S. and the EU have each voiced their desire to reach a negotiated settlement, former European Union trade commissioner Phil Hogan warned in July of an escalation of the trade war between the EU and the U.S. after he said Washington had rejected overtures to settle the dispute. The salvo followed an increase in March of U.S. duties on Airbus jets and European airplane parts from 10 to 15 percent.

That same month Airbus agreed with the governments of France and Spain to make amendments to the A350 launch investment contracts.

Meanwhile, at the behest of Boeing, the state of Washington rescinded tax breaks introduced more than a decade and a half ago and renewed in 2013 to attract 777X wing production to the state.

For its part, Boeing insisted the tax break repeal by Washington state should have removed any basis for the WTO's most recent ruling. "We are disappointed that Airbus and the EU continue to seek to impose tariffs on U.S. companies and their workers based on a tax provision that has been fully and verifiably repealed," Boeing said in a statement last month. ■

Embraer expects commercial unit to remain a loss maker through 2021

Embraer expects its commercial aviation business to continue to lose money next year as the division remains in recovery mode despite an expected acceleration of E-Jet deliveries, company CEO Francisco Gomes Neto conceded during the company's third-quarter earnings call on November 10. Neto added he doesn't expect E-Jet sales to increase much beyond the anemic volume of 2020—a year that saw Embraer collect an order for 20 E175s from SkyWest in January but virtually no further commercial aircraft orders since the Covid outbreak and several delivery deferrals to at least 2022. However, the company suffered no order cancellations since the onset of the Covid crisis.

"We see that 2021 will be a very challenging year for commercial aviation," said Neto. "We are preparing for that scenario, but we see an opportunity to grow from 2022 onwards."

Neto explained that the company continues to adjust its cost structure to deliver "a much better [financial] performance in 2021."

So far this year the company has lost $728.6 million, including $121.2 million in the third quarter. However, Embraer called its liquidity position "solid" as the company finished the quarter with total cash of $2.2 billion, compared with $2.0 billion at the end of the second quarter despite a third-quarter negative free cash flow of $566.5 million.

Although company CFO Antonio Garcia said he could not offer guidance for deliveries next year, he noted the fact that the seven airplanes it shipped in the third quarter, including five E175s for United Airlines, signaled a significant acceleration from the previous two quarters, when the company delivered a total of nine. He also said the company has delivered more airplanes in October than it shipped during the entire third quarter.

Embraer has formulated a new five-year plan to run through 2025 consisting of 18 projects aimed at efficiency gains, increased sales, and a combination of business diversification projects, innovation, and strategic partnerships.

Diversification projects most notably include a program dedicated to a new regional turboprop whose early schedules call for market introduction in 2027. Embraer has previously spoken openly about its plans to introduce a new turboprop to its airliner family, but former commercial aviation division head John Slattery, who earlier this year took over the leadership of GE Aviation, insisted the program would only go ahead as part of its planned merger with Boeing. That deal fell apart contentiously in April.

In a podcast interview last week with Air Finance Journal, Embraer Commercial Aviation marketing vice president Rodrigo Silva e Souza said work on the new program would accelerate next year and that Embraer already has entered serious discussions with a number of undisclosed business partners, who he implied would take a risk-sharing role in the venture. **G.P.**

CalGuard pilots recount rescuing 100s from inferno

by Mark Huber

On September 5, members of California National Guard's 40th Air Combat Brigade were dispatched to fly into a raging forest fire and evacuate hundreds trapped by the rapidly-moving Creek Fire at the Mammoth Pools campground in the Sierra Nevada mountains near Merced. The fire started on September 4, incinerating 45,000 acres on its first day. By September 5, the carnage grew to 81,000 acres.

A CH-47F Chinook commanded by CW5 Joseph Rosamond was dispatched from Stockton and was joined by a Sikorsky UH-60M Black Hawk commanded by CW5 Kip Goding out of Fresno. The two told their stories during a webinar hosted by Helicopter Association International.

The mission was exigent with little time for each crew to brief and no time for the aircraft commanders to cross brief. Goding was initially told 30 people needed to be evacuated, then 30 families. Before it was over, 242 would be evacuated by both helicopters over the course of three hops and 10 hours. On the first hop, 20 passengers were crammed into the 11-seat Black Hawk. On the second, 102 campers were jammed into the Chinook. The mission would strain crew and machines to their limits and so impressed military commanders that each member of both crews was awarded the Distinguished Flying Cross in person by President Trump on September 14.

Both helicopters arrived on scene as dusk approached but were kept out of the area by air attack aircraft that were directing water bombers. It was not until after dark that the rescuers were allowed to land, but the question was where? Confusion reigned. Information from law enforcement on the ground and CalFire was either imprecise or nonexistent. "We started getting a whole lot of grid coordinates and lat-longs that didn't make sense," said Rosamond. "They just didn't know."

With their night-vision goggles (NVGs), they could make out the terrain by the fire and heat plumes on the surrounding mountain and hillsides. Convection from the fire kicked up what had been seven-knot winds to velocities near 25 knots. Finally, the LZ became apparent: halfway down a 13-degree sloped boat landing surrounded by flames.

Many of the campers were already taking shelter in the water. It was chaos. "There was no one on the ground to control the people," said Rosamond. The LZ was at 3,300 feet and the outside air temperature was 105 deg F. Assisted by flight engineer Sgt. Cameron Powell and Sgt. George Esquivel, 65 campers piled into the Chinook on the first hop, and several had horrific injuries according to Rosamond. "They had multiple broken bones and severe burns. Some had skin falling off their bodies." Once Rosamond was airborne he headed for Fresno and put out the call to send all the EMS they had to the airport. Goding was only a few minutes behind. Once shutdown, they offloaded, briefed, refueled, and headed back to the LZ.

And that, said Rosamond, is when things got really crazy. Water-soaked campers "bum-rushed" the Chinook. There was no law enforcement anywhere near the boat ramp to impose order. The Chinook's aft loading ramp came down and terrified campers ran past Powell and Esquivel. They had no idea how many. They thought maybe 75-85 and gave that number to Rosamond, sitting in the cockpit, for his performance calculations. As they struggled to close the Chinook, mothers began throwing their babies at them. The crew decided not to leave the mothers behind and made more room.

Even with 75-85 aboard, Rosamond thought the load was within limits after punching data into the FMS. "Almost immediately after I lifted off, I knew that number was not true. We were extremely heavy." In reality, 102 passengers and the four crew were aboard.

And it was too late to do anything about it. "The next thing we knew we were over the water and didn't have the option of setting it back down. We initially thought we would hover at about 85 percent torque. We didn't come off the ground until about 92 or 93, maybe a little bit more, just about everything that was available," said Rosamond. "We were shaking. The vibrations were very telling." Co-pilot CW2 Brady Hlebain was the pilot flying and Rosamond pulled collective power to 100 percent and held it for him. Still, the Chinook dropped, struggling to accelerate through effective translation lift (ETL) speed range of 16-24 knots. "It was kind of alarming. I was really hoping we would get through ETL before the water got to us," said Rosamond.

It did, but the climbout was painfully slow. The Chinook could only maintain its power settings for a few more minutes and was plodding along at 60-70 knots. It needed to make 80 to achieve the best rate of climb and clear the mountains and the ever-encroaching smoke that was closing down some of the exit routes. Hlebain pointed at the cruise guide indicator (CGI) that measures stress on the rotor system. It was pegged deep into the red. "That was a zone I had never operated in before, even in Afghanistan," Rosamond said. "We couldn't accelerate anymore. So we played this game of accelerating as much as we could, getting the CGI into the red, then slowing down and cyclic climbing to get a little more altitude."

For the next 10-12 minutes, by finessing engine limit and power setting times, Rosamond and Hlebain coaxed the Chinook into a slow climb to 8,000 feet, enough to clear the mountains and return to Fresno. Reflecting on that night, Rosamond said, "We did everything we were supposed to do. There was just so much that was unknown." ■

During the second rescue flight from Mammoth Pools campground, 102 people crowded inside this CH-47F Chinook commanded by CW5 Joseph Rosamond and piloted by CW2 Brady Hlebain.

News Update

Leonardo Signs First U.S. Air Ambulance Trekker

U.S. EMS operator Life Link III has ordered two more Leonardo helicopters, including the first AW109 Trekker light twin for the U.S. air ambulance market. These helicopters are scheduled to deliver in the fourth quarter of next year and will boost Life Link III's Leonardo fleet to 14 aircraft. The deal follows Life Link's III's July order for the first AW119Kx IFR-equipped single for the civil market. That aircraft is expected to be delivered in the third quarter of 2021. The air ambulance company operates in Minnesota and Wisconsin and will be the first to fly a mixed fleet of IFR AW119Kx and AW109 Trekker helicopters. Life Link III's Trekker will be equipped with night vision goggles and will be single pilot IFR capable.

Vanderbilt LifeFlight Honored

Tennessee's Vanderbilt LifeFlight has been named the air medical program of the year by the Association of Air Medical Services. The award recognizes an air medical program for a superior level of patient care, management prowess, and quality leadership. LifeFlight is operated by Vanderbilt University Medical Center in partnership with Air Methods. Founded in 1984, the program has flown more than 40,000 patients. LifeFlight also operates an airplane based at Nashville International Airport and 14 ALS ground ambulances and critical care ambulances, and communications and event medicine divisions.

Maverick Launch Customer For Spidertrack's Insight FDM

Maverick Helicopters will be the launch customer for Spidertracks's Spider X Insights virtual flight data recorder technology. Spider X is billed as an affordable "plug and play" solution for flight data monitoring. The company notes that Insights not only enables aircraft owners and operators to see where, but how their aircraft are flying. Spider X collects aircraft data including heading, roll, pitch, yaw, airspeed, vertical speed, altitude, and exceedances and then delivers it wirelessly to the Spidertracks platform.

Hill Developing Own Engine

Hill Helicopters is developing its own 440-shp light turbine engine to power its HX50 light single helicopter. The new GT50 engine's architecture features proprietary Fadec, a three-can combustor system, and eliminates the heavy compressor gearbox of current designs for a direct-drive starter generator. Hill said the engine also features "extensive use of redundant electrical engine ancillaries" and "a modular design" for easy maintenance of core components. Specifications include a 5,000-hour/20,000 cycle on-condition TBO, installed weight of 220 pounds, and max fuel consumption of 35 gph.

The opening of the new M Jet FBO at Grantley Adams International Airport in Barbados gives private jet operators another option when visiting the island.

New FBO Opens in Barbados

Barbados's Grantley Adams International Airport has received a second FBO with the opening of the new M Jet facility. Built at a cost of more than $3 million, the facility includes a 3,200-sq-ft terminal with a passenger lounge, crew suite with private shower facilities and kitchenette, 12-seat conference room, business center, refreshments, concierge, and pet relief area. It also has an in-house customs and immigration facility, which is normally open daily from 7 a.m. until 7 p.m. local time with after-hours available on appointment, the FBO itself is staffed 24/7. Aircraft disinfection services are also available.

While the FBO already has a 10,000-sq-ft hurricane-resistant hangar that is capable of sheltering aircraft up to a Dassault Falcon 7X, the company is in the process of building another 26,000-sq-ft hangar that will be able to simultaneously accommodate two BBJs. It is also working to nearly triple the size of its 35,000-sq-ft private ramp. Fuel is provided by SOL, but the company offers many well-known contract fuel programs.

ExecuJet Absorbs two Jet Aviation FBOs

ExecuJet has acquired the Jet Aviation FBO facilities in Berlin and Munich. Switzerland-based ExecuJet, a Luxaviation subsidiary, is already present with FBOs in the general aviation terminals at Berlin Schönefeld (now part of the newly-opened Berlin Brandenburg Airport) and Munich International Airport (MUC), and will incorporate the former Jet Aviation facilities, consisting of two lounges (passenger and crew) and two offices, at both locations.

Jet Aviation, which will continue to operate its facility in Düsseldorf, expanded its German operations to include Berlin in 2013, and Munich the following year. It directly informed its customers and stakeholders of the sale of the two locations. With this consolidation, along with the closing of Berlin's Tegel Airport (where Jet Aviation also had an FBO) as part of the Brandenburg opening plan, ExecuJet expects to see a bump in its Berlin traffic.

Clay Lacy To Open East Coast FBO at Oxford Airport

California-based Clay Lacy Aviation has received permission from the Connecticut Airport Authority to expand its East Coast aircraft maintenance, management, and charter facility at Waterbury-Oxford Airport into a full FBO.

The company has had a presence at the airport since 2015 when it purchased the former Key Air and occupied its 65,000-sq-ft facility. Last year, the location, which currently employs 50 people, received FAA Part 145 maintenance approval.

While the company will continue to use that facility, the airport authority presented it with a new 30-year lease on another 16-acre plot on the opposite side of the field, on which it will build a new $20 million FBO. The first phase, slated to open in early 2022, will consist of 40,000 sq ft of hangar and terminal space. An additional 120,000 sq ft of hangar, office, and MRO space will be completed in the following years. "The award of this lease is the culmination of a five-year strategic plan to expand our capabilities and support services in the Eastern U.S.," said Clay Lacy president and CEO Brian Kirkdoffer. It will be Clay Lacy Aviation's third FBO, following its flagship at Van Nuys Airport and the recently awarded location at John Wayne-Orange County Airport, which will debut at the beginning of 2021.

India Sees First True FBO at Delhi International

India's first FBO—located at Delhi International Airport (DIAL)—has finally opened. Contracted in 2016 to two companies—Bird Execu-Jet Airport Services (Dubai) and Indamer MJets (Thailand) Airport Services—the 550-sq-m (6,000-sq-ft) terminal was much smaller than originally planned, and was initially considered to be a temporary facility until a larger building could be built.

The terminal and two hangars cost about $7 million. The FBO has a common lounge that can accommodate up to 50 people, a crew lounge, shower facilities, and amenities such as a food and beverage counter. There is also a small retail area with duty-free shopping. The 2,600-sq-m parking area can accommodate 50 vehicles. Fifty-five aircraft can be parked on the 65,000-sq-m apron, and the vacant 6,500-sq-m plot next to the terminal has been left for possible future expansion, Indamer MJets managing director Rajeev Gupta told **AIN**.

"The present facility has a capacity to handle 100 flights a day," he said. Gupta is also concerned about too much competition at the airport. "Looking at what we have spent on building the terminal and hangars, rentals on land, cost of equipment, staff, no business during months of lockdown, topped with a new airport coming up in Delhi in five years with an FBO likely to take away 50 percent of business by the time our concession ends in 2034, we envisage we will have a no-profit, no-loss return on investment," he told **AIN**. "DIAL should have had only one FBO, not two concessionaires."

Threshold Aviation Group's newly-occupied 50,000-sq-ft hangar at California's Chino Airport was originally designed for military transports and can now handle up to an Airbus ACJ320.

Threshold Aviation Group Adds Additional Hangar at Chino

Threshold Aviation Group has acquired an additional hangar at California's Chino Airport. The FBO operator—which offers a full spectrum of aircraft-related services, including aircraft management, charter, and sales—occupies the approximately 50,000-sq-ft Hangars 3 and 4 in the airport's commercial complex, one of which it uses for its maintenance operation. It has now added the similarly-sized Hangar 1, which had been dormant after a previous tenant's deal fell through.

Each of the hangars, which were originally built to shelter aircraft the size of military C-130 transports, also includes 8,000 sq ft of office space, plus another 8,000 sq ft of upstairs space used primarily for spare parts storage. "The fact is we needed more space before Covid-19 hit and then things looked somewhat bleak for a while," said company founder and CEO Mark DiLullo. "Now people are looking for a more reasonable option to get to and from where they need to go, and private aviation is a more reasonable option than ever due to health and safety concerns with flying commercial."

India's first true FBO has opened at Delhi International Airport and offers typical amenities such as a crew lounge, shower facilities, and a passenger lounge for up to 50 people.

Omni Handling Debuts New Portuguese FBO

Omni Handling has opened a new FBO at Faro Airport in southern Portugal. The 150-square-meter (1,614-sq-ft) terminal, which was completed on time despite Covid restrictions, features a passenger lounge, crew rest area, fully-equipped kitchen, ensuite private bathroom, outdoor terrace, and a virtual golf simulator in a dedicated area that can double as a movie theater. "Faro is where our activity has been growing most these past two years, and it was only logical to invest here in a luxurious new FBO to the benefit of our trusted clients," said CEO Ricardo Pereira. The debut of this location, ahead of the Formula 1 Portuguese Grand Prix, follows the company's opening of two other lounges in Cascais and Madiera earlier this year. ■

Maintenance news by Jerry Siebenmark

Bombardier Unveils Plans for Australian Service Center

Bombardier Aviation is continuing to build out its global service network with plans to develop a 50,000-sq-ft service center at Essendon Fields Airport in Melbourne, Australia, the Canadian airframer announced. With construction of the new facility set to begin this year and become operational in 2022, the center will employ 50 people—including 40 technicians—and have a 4,000-sq-ft parts depot.

It will support Learjet, Challenger, and Global aircraft with scheduled and unscheduled maintenance, modifications, avionics installations, and AOG services. Bombardier accounts for more than half of the 168 business jets in the Australian fleet.

Gulfstream To Consolidate Long Beach Operations

Gulfstream Aerospace will close its Long Beach, California maintenance and modification location as part of what it calls "facility optimization." Under the airframer's plan, the Long Beach facility will be closed in phases, with maintenance work moving to Gulfstream's Van Nuys service center and completions to its centers in Appleton, Wisconsin, and Savannah, Georgia. Plans call for all three of those facilities to have long-term workforce expansions.

Noting the recent construction of Van Nuys and expansion at Appleton and Savannah, Gulfstream said the Long Beach closure was the next step in its long-range facility modernization investments plan.

Gulfstream is encouraging Long Beach employees to apply for open positions in the company with an emphasis on Van Nuys, Appleton, and Savannah. The Van Nuys facility is 45 miles away from Long Beach.

In August 2019, Gulfstream completed a $40 million expansion in Appleton, followed a month later by a $55 million MRO expansion at its Savannah headquarters. That December, it opened a new MRO at Van Nuys, where it is co-located with sister company Jet Aviation, which operates a 52,000-sq-ft FBO and parking hangar.

Atlas Air Service Expands into Parts Repair, Overhaul

Atlas Air Service in Germany has received EASA approval for a new business unit that will perform maintenance, repair, and overhaul of aircraft parts that include hatches, flaps, flight controls, and structural components for any aircraft type.

The parts repair and overhaul business builds upon Atlas's other business aviation units comprising aircraft sales, brokerage, MRO, non-destructive testing (NDT), aircraft management, and charter. An authorized service center for Embraer Executive Jets, Williams International, and Honeywell Aerospace, the 250-employee company with four locations stood up its parts repair and overhaul business in six months from its facility in Ganderkesee, Lower Saxony.

Atlas Air Service in Germany has received EASA approval for a new business unit that will perform maintenance, repair, and overhaul of aircraft components for any aircraft type.

Aircraft Specialties Opens New, Larger Building

Wheel and brake specialist Aircraft Specialties (ASI) has relocated to a larger, newly constructed building that will provide energy savings, greater efficiency, and new equipment. The 42,000-sq-ft facility replaces the Omaha, Nebraska-based company's previous home for the past 34 years, which is located 15 minutes south of its new building.

ASI noted the timing for building a new, larger facility might not have been optimal because of the Covid-19 pandemic. In fact, said president Dave Fochler, the pandemic nearly caused ASI to hit the pause button on the project. Further, the reduced workload caused by the pandemic enabled ASI to take a more strategic view of its operations and incorporate small changes into the new facility.

Ontic Acquires More JT15D Parts Manufacturing

The manufacturing rights to a fourth tranche of JT15D engine parts have been acquired by Ontic from Pratt & Whitney Canada, continuing a process begun in 2015. This latest tranche "adds significantly" to Ontic's engine parts support, the manufacturer of OEM-licensed parts for legacy aircraft said.

More than 6,700 JT15D engines were produced since the 1970s and the engine family powers a variety of business jets, including the Cessna Citation II and V, as well as the Beechjet 400A/400XP and its T1-A Jayhawk military equivalent.

The parts in this latest tranche include sensors, vibration dampers, valve sleeves, and compressor veins, which will be manufactured and sold from Ontic's Chatsworth, California, facility. According to Ontic, these parts will continue to be distributed through Boeing Distribution (formerly Aviall).

Daher Adds New Authorized TBM Service Center in Russia

General and business aviation services company Simavia has received certification from Russia that allows it to operate as an authorized service center (ASC) for Daher's TBM turboprop single. The FAP-285 certification issued by Russia's Federal Agency for Air Transport also enables Simavia to operate as a TBM ASC in Armenia, Belarus, Ukraine, and Kazakhstan.

Simavia is a new Daher TBM authorized service center in Russia and other countries.

As a part of the ASC awarding, Simavia technicians traveled to the Daher TBM factory in Tarbes, France, to attend a four-week training course. Simavia has its headquarters in Krasnodar in the Kuban region near the Black Sea and also operates a base in St. Petersburg. Its business includes aircraft sales, maintenance, aviation training, and VIP charter.

Dassault Aviation Makes Changes to Hourly Mx Program

Dassault Aviation has signed the 500th contract for its FalconCare maintenance program and is adding new options to it. The program currently offers scheduled and unscheduled maintenance services through C check, including airframe, avionics, and landing gear parts, labor, consumables, service bulletins, and maintenance tracking that can be performed at more than 60 Dassault Falcon-owned and authorized service centers.

Based on feedback from flight departments and the Falcon Operator Advisory Board, FalconCare service will now be offered at two different levels. The basic level, known as FalconCare Essential, covers the full cost of Dassault spare parts; meanwhile, FalconCare Elite covers parts as well as labor, consumables, AOG GoTeam service, documentation, and exchange items such as batteries and wheels.

FalconCare Efficiency Bonus—a rewards program—and a flex spending account for costs outside FalconCare coverage are also available for both plans.

Constant Offers Price Cap on Major Legacy Inspections

Under a new program, Constant Aviation is offering Legacy 600 and 650 owners an upfront flat rate for major inspections and a price cap for discrepancies the MRO finds during the inspection, excluding landing gear and corrosion repair. The not-to-exceed pricing program will limit the customer's out-of-pocket expense for common issues encountered during the inspection.

Constant Aviation executive v-p of sales Jay Rizzo noted the company's experience as a 24-year-old Embraer authorized service center and familiarity with the Legacy airframe as the reasons behind offering the program. Constant Aviation has more than 2.2 million hours of overall maintenance experience on the Legacy. It has completed thirty 144-month inspections on the Legacy 600 and 650 and expects high demand in the future for those inspections. More than 25 Legacy aircraft in operation worldwide will be coming due for the 144-month inspection in the next four years, according to Constant Aviation.

ExecuJet Malaysia Receives Limited Vietnam Certification

ExecuJet MRO Services Malaysia has received certification from the Civil Aviation Authority of Vietnam (CAAV) to perform line and heavy maintenance on certain Dassault Falcon 2000s registered in the Southeast Asian country. Under the certification, line and base maintenance up to and including C checks (72 months or 3,750 flight cycles) is covered on the Falcon 2000EX, 2000EX EASy, and 2000XLS models. Maintenance of batteries and landing gear are also covered.

Further, the Dassault Aviation-owned maintenance provider has received CAAV certification for work on Pratt & Whitney PW300-series engines. That includes scheduled inspection, repairs, non-routine maintenance, and removal and replacement of engine accessories. ■

by David Jack Kenny

PRELIMINARY REPORTS

Helicopter Destroyed in Apparent CFIT

AEROSPATIALE AS350B2, AUG. 17, 2020, 45 NM NORTHWEST OF STEWART, BRITISH COLUMBIA, CANADA

The helicopter was destroyed and the solo pilot killed when it crashed into a mountainside approximately 1,200 meters (three-quarters of a mile) from the drilling site where it was conducting long-line operations. Although the Transportation Safety Board has not yet published a formal report, their announcement of the investigation characterizes the accident as "controlled flight into or toward terrain."

After an initial lift, the pilot returned the load to the site and attempted to return to the staging area to avoid approaching weather. Ground personnel were unable to establish communications with the pilot and launched a search. They found the wreckage almost entirely consumed by a post-crash fire.

Attempted Takeoff from Closed Runway Damages Metroliner

FAIRCHILD INDUSTRIES SA226, AUG. 20, 2020, GUNNEDAH AIRPORT, NEW SOUTH WALES, AUSTRALIA

The left main landing gear of the twin-engine turboprop collapsed after hitting two holes excavated in the pavement of Runway 29, causing a propeller strike and damage to the left wing. A Notam closing the airport for paving work from 0700 to 1500 had been filed the previous day, and white "X" marks on the pavement indicated that the runway was closed. However, the pilot indicated that no indications of work in progress or the runway closure were visible from the ramp.

The accident occurred at 1225 Eastern Standard Time. As the airplane accelerated on its takeoff roll, the pilot saw "something on the runway surface in the distance," but thought they were patches in the pavement. After realizing they were holes he attempted to avoid them, but was unable to clear the left main gear.

The number of people on board was not initially reported, but no injuries resulted. The ATSB expects to complete its report by the second quarter of 2021.

Four Killed in Attempted Emergency Landing

PIPER PA-46-310 JETPROP CONVERSION, SEPT. 20, 2020, HILLTOP LAKES, TEXAS

The pilot and his three passengers were killed when the airplane crashed short of Runway 15 during an emergency approach to the Hilltop Lakes Airport (0TE4). While in cruise flight at FL190, the pilot declared an emergency with air traffic control, reporting that the airplane had lost engine power. He requested a diversion to 0TE4, about five miles south of his current position and began to descend. Archived ADS-B data show that the airplane flew directly to the airport then circled until it descended below the floor of ADS-B reception about three miles northeast of the field. Commercial flight track data was received up to the time it turned to a final approach segment about one mile north of the threshold at an altitude of 1,250 feet and a groundspeed of 169 knots on a 145 degree heading,

Witnesses about a quarter mile south of the arrival end "reported seeing what they described as the airplane taking off, before noticing the propeller was not turning." It banked left just before the nose dropped, striking the ground in a near-vertical attitude. The NTSB's preliminary report notes that a conversion to a Pratt and Whitney PT6A had been installed under the provisions of a supplemental type certificate but does not indicate when that was performed.

FINAL REPORTS

LTE Blamed for N.Z. Helicopter Ditching

MBB BK-117 A-3, MAY 2, 2017, PORIRUA HARBOUR, NEW ZEALAND

Mechanical and metallurgic analysis ruled out any physical failure of the tail rotor, and the Transport Accident Investigation Commission (TAIC) attributed the sudden loss of control during a low-speed external-load flight to a loss of tail rotor effectiveness (LTE), described in their report as "unanticipated right yaw." The helicopter sustained damage to the right skid and lower right fuselage, tail boom, vertical stabilizer, and one main transmission mount when it crashed into shallow water in Porirua Harbour. The pilot was submerged but was able to follow his helicopter underwater egress training and escaped with minor injuries.

The accident occurred on the first of three planned flights to transport 11-meter (36-foot) hardwood utility poles and install them in holes prepared on the opposite shore. After picking up the pole, the pilot climbed to 230 feet and crossed the channel on a southwesterly heading at a GPS-measured groundspeed that peaked at 38 knots. As the pilot began slowing the helicopter while talking to the installation crew over a handheld radio, the ship experienced "a significant medium-frequency vibration...which amplified with pronounced oscillation, followed by a sudden rotation of the helicopter to the right." The pilot responded by lowering collective, which slowed the rotation but increased the descent rate more than he'd anticipated. The company's chief pilot saw the helicopter flare nose-up abruptly "like a quick stop" followed by a cracking noise that may have been the utility pole striking the water. When the pilot raised collective to arrest the descent, the helicopter rolled right, pitched nose down, and hit the water.

The accident occurred with the aircraft flying at low forward airspeed in a right quartering tailwind of 8 knots gusting to 20, conditions conducive to LTE. In addition, the TAIC concluded that the pilot's communications with the ground crew distracted attention from maintaining control of the aircraft. The report also identified a number of administrative and operational issues in the operator's management practices, including failure to disclose the pilot's pharmaceutical treatment for a potentially relevant medical condition and multiple recordkeeping irregularities, including discrepancies in documenting the airworthiness of an aircraft imported without a conformity certificate from its country of origin. ■

Despite the complexities fostered by the Covid-19 pandemic, private jet activity at Dubai's Mohammed bin Rashid Aerospace Hub has been on the rise since May.

Dubai sees strong recovery in business aviation traffic

by Curt Epstein

Private aviation traffic at Dubai's World Central-Al Maktoum International Airport has experienced a strong rebound since July, according to the Middle East & North Africa Business Aviation Association (MEBAA). Despite the challenge of the Covid-19 pandemic, aircraft movements during the third quarter at the VIP terminal in the airport's Mohammed bin Rashid Aerospace Hub (MBRAH) saw double-digit growth, bringing them to 93 percent of the total from third-quarter 2019. After an initial plunge in April, the numbers began climbing until they surpassed the previous year's total over the summer months.

With the UAE easing travel restrictions, the sector saw increases in usage from medical and business-related travel, from high-net-worth passengers and holiday trips. The VIP terminal houses three FBOs and has onsite PCR Covid testing facilities, which have enhanced air traffic through the facility. Aviation-related activities currently represent more than a quarter of Dubai's GDP.

"By analyzing the numbers, it's reassuring to see the return of private jet travel given the circumstance we are all experiencing," said MBRAH CEO Tahnoon Saif. "Dubai has always been a business and vacation destination for the world and measures taken by the UAE government as a whole, and the VIP terminal at [MBRAH] specifically, have only reinforced the commitment to the sector, cushioning VIP traveler movement and reinforcing visits to Dubai, as well as outbound international trips." ■

CORPORATE ANGEL NETWORK

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Corporate Angel Network arranges free travel on corporate aircraft for cancer patients traveling to and from treatment. Business jet travel makes it possible for patients, especially those in locations with minimal airline access, to travel to specialized medical centers.

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"It's wonderful that organizations like the Corporate Angel Network are able to help connect those most in need of flights to those who are flying."

-Henry Maier, President and CEO, FedEx Ground

› continued from page 34

measurement unit, air data system, and flat panel display in a box that directly replaces the existing standby unit in the flight deck. Its ISU computer uses proprietary software to determine the throttle positions needed to prevent over-temp, over-torque, over-speed and hot start conditions for engines that do not already use an electronic control system.

Integrated with ADS-B, ThrustSense can optionally provide in-trail spacing of two miles plus or minus 200 feet between aircraft.

Universal Avionics Systems ClearVision Enhanced Flight Vision System with SkyLens Head-wearable Display

Universal's ClearVision enhanced flight vision system (EFVS) and head-wearable SkyLens display offers head-up display (HUD) capabilities with combined enhanced and synthetic vision imagery along with a virtually unlimited field of view. The approval in the ATR regional airliner is the first time a head-wearable display (HWD) has been certified for a civil aviation application.

EFVS allows airlines access to runways under more weather conditions, helping to maintain traffic flow and capacity. The HWD can be fitted to many more types of aircraft than a traditional, heavier, and more expensive ceiling-mounted HUD.

Airliners and business jets already equipped with single HUD displays can provide the data for both crewmembers by adding a HWD. Aircraft with obsolete HUD and camera systems can more economically upgrade to EFVS with the ClearVision and SkyLens systems.

For pilot training, Universal has developed a program that includes online training, virtual reality practice, then practice in a flight training device.

Universal sees EFVS with SkyLens particularly useful for the helicopter market to enhance safety during low-visibility conditions and stressful missions such as firefighting, medevac and search-and-rescue operations. SkyLens can also display night vision goggle information. The company currently is working with OEMs on three commercial aircraft: Leonardo's AW139 and AW169 and the Airbus Super Puma for the German police. Universal already has flown 200 to 300 test hours with EFVS on the FAA's Sikorsky S-76.

IBAC's FlightPlan Stage 1 IS-BAO Risk-management Program for Small Operators

The International Business Aviation Council's (IBAC) new FlightPlan Stage 1 IS-BAO risk-management program for small operators is now available. Unveiled at NBAA 2019, the program is designed to provide a pathway for operators with one aircraft and one base to gain Stage 1 IS-BAO recognition within 90-180 days. Under the option, a credentialed program support affiliate will help streamline the pre-audit process for the operator. Once that is accomplished, the operator will undergo a one-day independent audit and continue with post-registration validations every six months over a two-year period. FlightPlan Stage 1 (FS1) will include access to the IBAC General Company Operations Manual (GCOM).

IBAC says the program is an all-inclusive option that provides a streamlined approach to demonstrating safe operations that will make it easier for smaller operators to participate. IBAC's Stage 1 program has three basic phases: obtaining IS-BAO documentation and conducting a web meeting with AviationManuals, a partner in the program; meeting with an FS1-approved implementor to prepare for the program and audit; and then undergoing the audit. The program also outlines a path to Stage 2 registration.

Similarly, IS-BAH (International Standard for Business Aviation Handling) is a global set of industry best practices, centered around safety management sytems, that are tailored for aircraft handlers, such as FBOs. Launched in 2014, the IS-BAH program now has nearly 200 different ground handling services providers that have achieved at least Stage 1.

While it works to bring in operators at the Stage 1 level, IBAC also has teamed up with Baldwin Safety and Compliance on the development of a business aviation-specific safety database based on operators participating in the IS-BAO Progressive Stage 3 group. Progressive Stage 3 operators meet IS-BAO Stage 3 protocols, but will share de-identified (for privacy) SMS data with IBAC and participate in IS-BAO audits progressively over the course of a year. Baldwin will support the de-identification, storage, and analysis of the information that will be accumulated in the database, the first of its kind for business aviation.

IS-BAO is a recommended code of best practices for aircraft operators based on International Civil Aviation Organization standards and with safety management systems at the core of the program. Established in 2003, the program offers registration in various stages, with Stage 3 considered the highest level with more intensive audits. Overall, IS-BAO is designed to help flight departments achieve high levels of safety and professionalism. More than 700 organizations are registered. ■

by Gordon Gilbert

Within 6 Months

Dec. 31, 2020 to Dec. 31, 2022

Mexico: CVRs and FDRs

Cockpit voice and flight data equipment requirements for commercial turbine aircraft operations (including air taxis) that were adopted in 2011 by Mexico's aviation authority will become effective and go into force incrementally from Dec. 31, 2020 through Dec. 31, 2022 based on the number of aircraft that are in an operator's fleet. Generally, the rules apply to turbine airplanes with 10 or more passenger seats and large turbine helicopters flying in Mexico airspace under an international air operator certificate.

Jan. 1, 2021

Saudi Arabia: ADS-B Out Mandate

Saudi Arabia delayed the start of ADS-B requirements in Class A and B airspace by a year from the previously published original date of this past January. According to a recent notam, the new start date is Jan. 21, 2021.

Jan. 1, 2021

EASA: Cockpit Voice Recorders

Cockpit voice recorders with a recording duration of at least 25 hours will be required on commercial airplanes with an mtow of 60,000 pounds or more manufactured from Jan. 1, 2021.

Jan. 28, 2021 **NEW**

Australia: Commercial Drone Registration

A registration and accreditation process for commercial drone owners and operators in Australia must be completed by Jan. 28, 2021. The country's Civil Aviation Safety Authority (CASA) requirement covers all remotely piloted aircraft flown for work, research, training and community service. Both registration and accreditation must be completed using the myCASA online portal. Registration will be free of charge and valid for 12 months. Accreditation is also free and valid for three years.

Feb. 14, 2021

EASA: Pilot Mental Fitness

Due to effects from the Covid-19 pandemic, the European Union Aviation Safety Agency has pushed the deadline from Aug. 14, 2020 to Feb. 14, 2021 for complying with revised air operations safety rules to incorporate provisions to better identify, assess, and treat the psychological fitness of air crew. Compliance with the new rules, applicable to commercial aircraft operators, includes mandatory alcohol testing during ramp checks.

March 25, 2021

Australia: Flight Operations

Ten new flight operations regulations consolidate the operating and flight rules, as well as certification and management requirements. The rules apply to all pilots and operators in Australia and will commence on March 25, 2021. The regulations covered include: general operating and flight rules; certification and management of commercial aircraft operating certificates; and small and large airplanes and rotorcraft.

June 2, 2021 **NEW**

U.S.: Aircraft Fueling Fire Standards

The National Fire Prevention Association (NFPA) standards for aircraft fueling has proposed the installation of automatic shutdown systems on fuel trucks and fuel farms. The NFPA standards, typically adopted as requirements by regulatory agencies, would apply to in-service trucks and fuel farms, as well as for new equipment. In-service equipment would need to be retrofitted by June 2, 2021. The National Air Transportation Association has requested that the retrofit feature be removed.

Within 12 Months

Nov. 4, 2021 **NEW**

Runway Surface Assessment Format

In response to the on-going Covid-19 pandemic and the associated challenges facing the aviation industry, ICAO has delayed for one year the applicability date of the new global reporting format (GRF) for assessing runway conditions to Nov. 4, 2021. The GRF was scheduled to go into effect Nov. 5, 2020. The agencies, in partnership with key international organizations, will continue to provide support to member states and stakeholders as they emerge from the current crisis and revise their implementation plans. Canada also announced its delay of GRF until Nov. 4, 2021.

Beyond 12 Months

Dec. 31, 2021

New Zealand: ADS-B Out Mandate

New Zealand is expected to adopt its proposal to make ADS-B mandatory for all aircraft in controlled airspace below Flight Level 245 starting on Dec. 31, 2021.

For the most current compliance status, see: https://www.ainonline.com/aviation-news/compliance-countdown

by Kerry Lynch

DAVID HELFGOTT

RAY BENVENUTI

JESSICA NAOR

LUKE WILLIAMS

NICK MAYNARD

SmartSky Networks brought **David Helfgott** on board as CEO succeeding Haynes Griffin, who will remain as executive chairman. Helfgott joins SmartSky after serving as president and CEO of phased-array antenna developer Phasor and previously served as president and CEO of Inmarsat Government, president of Tactical Wireless Communications for Cobham, president and CEO of Datapath, and president and CEO of SES Government.

VIH Aerospace appointed **Jeff Norie** president and CEO. Norie has held a number of positions within the VIH Aviation Group of companies, beginning as a shipper at VIH Helicopters and working his way up to positions as director of maintenance and v-p of maintenance services and leasing for VIH Aerospace.

Iris Automation named **Jon Damush** CEO. Damush has more than 30 years of aviation technology experience, most recently leading new business ventures at Boeing NeXT and chief growth officer at Boeing's Insitu.

APP Properties, owner of APP Jet Center, promoted **Daniel Harrow** to CEO. He succeeds **Thom Harrow**, who has become executive chairman of the board. Daniel Harrow joined APP in 2016 as COO and, before that, was assistant general counsel for RCS Capital Corp.

Skyservice Business Aviation named **Benjamin Murray** president and COO. Murray, who will transition to president and CEO in early 2021, previously has held leadership roles with NetJets, including as president and CEO of its Executive Jet Management subsidiary, and also has served as president of aircraft management and charter for Landmark Aviation, as well as founded North Star Solutions.

Ray Benvenuti joined *Spike Aerospace's* executive team. Benvenuti founded Concord Investment Partners, was president and CEO of Stellex Aerostructures, served as an operating partner to Greenbriar Equity, and managed portfolio companies, including Gulfstream Aerospace while with Forstmann Little.

The *Air Charter Safety Foundation* elected **Jessica Naor** to its board of governors. Naor has served with Middle River, Maryland-based GrandView Aviation for more than a decade, beginning as a charter sales representative and working her way up to COO.

West Star appointed **Luke Williams** corporate controller. Williams brings 15 years of finance experience in the transportation industry to his new role.

Nick Maynard has launched *Leading Edge Aviation Marketing* to provide specialized, tailored marketing services for the aviation industry. Maynard has provided marketing and communications services for a range of companies, including British Airways, Emirates, Gulf Air, Royal Jet, Honeywell Aerospace, ACC Columbia Jet, JetSupport, and ExecuJet MRO Services.

*Airshar*e promoted **Alex Franz** to COO. Most recently v-p of flight operations, Franz joined Airshare in 2003 and has since held a number of positions, including first officer, captain, base manager, check airman, and chief pilot. Ben Petersen, meanwhile, was named Airshare's new director of flight operations. Petersen, who joined Airshare in 2007, previously was chief pilot.

West Star appointed **Luke Williams** corporate controller. Williams brings 15 years of finance experience in the transportation industry to his new role.

The International Aircraft Dealers Association (IADA) board of directors selected **Joe Carfagna** of Leading-Edge Aviation Solutions as chairman, replacing outgoing chair Paul Kirby of QS Partners. Kirby becomes chairman emeritus of IADA.

AIN Publications has named **Jerry Siebenmark** senior editor. Siebenmark joined the AIN editorial team in 2018 as associate editor, based in Wichita, Kansas, after a 20-year career in general business, commercial aviation, and general aviation reporting, including with the Wichita Eagle and the Wichita Business Journal. ■

AWARDS and HONORS

NBAA honored nine individuals in the business aviation industry with its annual Dr. Tony Kern Professionalism in Aviation Award, in recognition of outstanding professionalism and leadership in support of aviation safety. The 2020 Kern Award winners are **Erika Armstrong**, **Chris Bing**, **Sean Breen**, **Sheryl Clarke**, **Jeff Duncan**, **Terry Ickes**, **Mitch Launius**, **Brett Palmiero**, and **Nicholas Treglia**.

The peer-nominated award recognizes individual pilots, maintenance technicians, flight attendants, dispatchers, and other aviation professionals who excel in leadership in the areas of professional ethics, vocational excellence, continuous improvement, professional engagement, professional image, and selflessness. ■

FINAL FLIGHT

Randy Hudon, a long-time corporate pilot and former member of the NBAA board of directors, died on October 29 in Auburn, Alabama, after a six-year battle with cancer.

Hudon, who graduated from Auburn University in 1979 as a U.S. Air Force ROTC commissioned officer, subsequently spent 10 years in the USAF as a T-37 instructor pilot and WC-130 Hurricane Hunter pilot, according to the Auburn University Aviation Alumni Group. During that time, he also earned an MBA in aviation from Embry-Riddle Aeronautical University, NBAA added.

Following his service, Hudon joined BellSouth in 1989 as a pilot, serving as captain on several business aircraft. He became president of corporate aviation and travel service in 1998. He joined the NBAA board in 2004, and, as a certified aviation manager (CAM), served on NBAA's CAM governing board.

Hudon also remained active in the Auburn University aviation program. The alumni group credited him with developing an outline for the future growth of the program that was adopted by the university administration.

Joe Ronald "Ron" Bower, who set two speed records circumnavigating the earth in helicopters, died on October 12. He was 78.

Born on Dec. 28, 1941, Bower had amassed more than 9,000 hours over his 55 years of flying and obtained nearly every aircraft rating, except for blimps and hot air balloons. He had served in multiple roles, including as a flight instructor, combat pilot, sales executive, and purchasing consultant, in addition to his east- and west-bound helicopter world records. Soloing in 1962, Bower's flying and business expeditions led him to pilot aircraft in 37 countries and visit more than 50, according to a tribute site.

Bower originally gained experience in the U.S. Army flying Hiller observation helicopters on the demilitarized zone border with North Korea and then Hueys during the Vietnam War. After his service, he joined IBM in 1967 to sell computers but in 1982 jumped back into aviation when he joined a fellow IBM colleague to help launch an aircraft sales company. There, he built a team to support the sales business, as well as establish a database of Bell 206 records.

In 1994, he broke an around-the-world record set in 1982 by Ross Perot Jr. and Jay Coburn. Bower flew eastbound in the 206B3 Jet Ranger III, departing and ending at the Bell Helicopter Textron delivery center in Fort Worth, Texas. The trip began on June 28, 1994, and ended a month later on July 28, gaining recognition for a world speed record, five specific city-to-city speed records, and as the first western helicopter to fly across Russia.

His westbound trip followed in 1996, beginning and ending in London in a Bell 430, setting a world speed record for a twin helicopter. That trip began Aug. 17, 1996, and ended less than three weeks later on September 3, averaging 10.2 hours a day, with the longest day reaching 17.5 hours. The total distance traversed was 20,508 nm and he logged a high of 2,263 nm in one day.

Joe Anckner, a long-time Gulfstream executive who helped design early models and led the company's international sales expansion, died on October 18 in Savannah, Georgia. He was 88. Anckner spent 44 years with Gulfstream, selling more than 200 GII, GIII, GIV, and GV twinjets in more than 50 countries.

Born Jan. 30, 1932, and raised on Long Island, Anckner first joined Gulfstream predecessor company Grumman when he was 17. However, he left to serve in the U.S. Navy as a navigator for the first carrier aircraft purposefully built for anti-submarine warfare operations.

Following his service, Anckner returned to Grumman, where he worked on the Apollo Lunar Lander and was involved in early Gulfstream designs. He moved to Savannah in 1973, taking on responsibility for the OEM's international growth. The only international salesman for Gulfstream at the time, he helped develop the Middle East market. He also led the annual NBAA Gulfstream golf tournament.

Anckner retired from Gulfstream in 1994 as senior v-p of international sales and marketing. A year later, however, he joined Harrod's Aviation at Heathrow in London, helping to grow the FBO and opening locations in Luton and Stansted. In retirement, he continued to provide aircraft acquisition and sales for private customers. ■

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