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MARK WAGNER

Charter flying in aircraft like this VistaJet Global is helping speed up the recovery of business aviation, but activity is growing faster within country and regional boundaries as border restrictions remain problematic for business and leisure travelers.

Business aviation bounces back

by Chad Trautvetter

Business aircraft utilization has made a recovery from its Covid-19-induced low in April that can best be described by industry watchers as a reversed square root symbol—a V-shaped recovery that plateaus before it can fully return to pre-pandemic levels. "Activity was so suppressed that it was bound to come back," Argus International v-p of market intelligence Travis Kuhn told **AIN**.

That plateau was expected to be reached last month in the key North American market, with traffic returning to about 83 percent of normal levels, he said. Kuhn expects activity in the region to then level off at about 15 to 20 percent of normal for at least the next two months due to minimal business-related travel, international travel bans, and health of the overall economy.

"If the August forecast holds then we will see approximately 225,000 business aviation flights in North America for the month. That is off from the 2019 monthly average of 260,000 but it would represent a 300 percent increase from our April low of 74,771," he added.

Much of the recovery to-date has been driven by an increase in leisure travel demand as those who can afford to fly privately seek a safer, virus-avoiding alternative to the airlines. This was reflected in recent Argus TraqPak flight data for North America, which shows the top-five states for business flying are vacation hubs: Florida, Texas, California, Colorado, and Arizona. "But leisure can't carry the water," Kuhn warned.

JetNet iQ managing director Rolland Vincent agreed with Kuhn's assessment. "Recovery in flight ops is proceeding, but the flight patterns are very distinct from years before," he said. "Florida figures prominently and 'business' trip purpose is limited in the rationales for flying, but I think that's too simplistic. Folks are relocating themselves and their families to nicer/greener/bluer spots while they work remotely."

The last 15 to 20 percent of the recovery—that predicated on a rise in business travel—will be harder to recapture because it will be more or less tied to Wall Street, according to Kuhn. The fact that New Jersey, typically a hotspot for business aircraft thanks to New York City gateway Teterboro Airport, didn't rank among the top states in the Argus Traqpak data speaks to the current lackluster demand for business travel.

Kuhn warned that business aviation entered this environment in a global pandemic and will likely emerge in a recession, so "all bets are off on exactly what our recovery will look like." For business aviation, a recession would be "heavily tied" to Wall Street, Kuhn said.

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Read Our **SPECIAL REPORT**

Product Support

The results of the annual AIN Product Support Survey are in, and AIN readers share their opinions of the support they receive from aircraft manufacturers.

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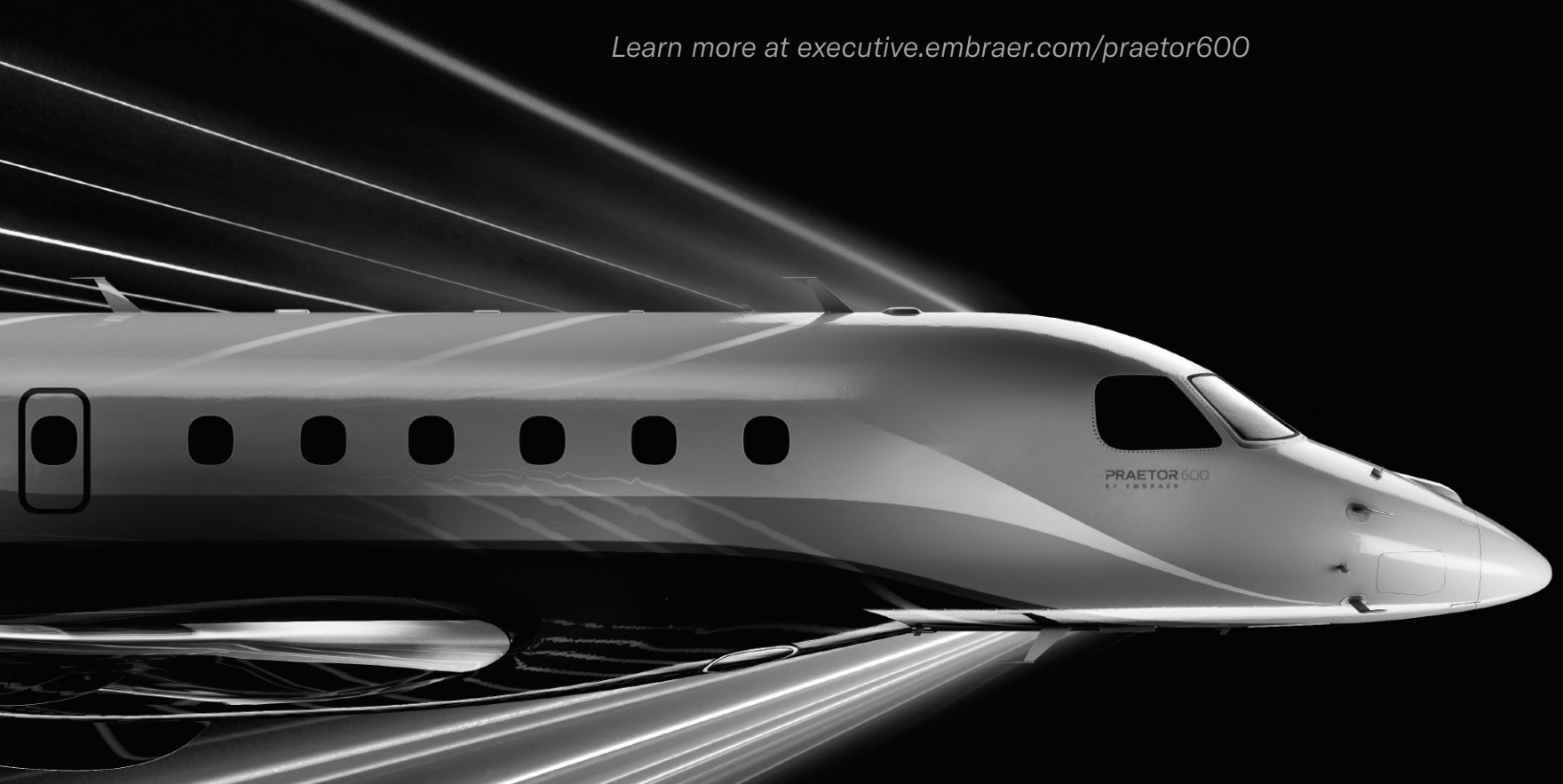

LEADING THE WAY

PRAETOR 600
BY EMBRAER

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FEATURE

Trends in Cabin Connectivity Products and Services

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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FAA'S SUPERSONIC PROPOSAL DRAWS PRAISE, PROTEST

The FAA's notice of proposed rulemaking (NPRM) to develop a certification pathway for supersonic aircraft has drawn a mixed bag from industry, community, regulators, and environmentalists. Released in April, the NPRM would for the first time establish subsonic landing and takeoff cycle noise standards for a new generation of supersonic airplanes. The Aerospace Industries Association (AIA) and GAMA commended the effort, particularly for taking a data-driven approach. NBAA and the Air Line Pilots Association similarly offered support. However, more than 60 environmental organizations coalesced in opposition, calling for the withdrawal of the proposal and charging that it would enable such aircraft "to be noisier at takeoff and landing than new conventional jets." The European Union also expressed reservation with the FAA moving forward on a rulemaking ahead of ICAO, saying the effort is "premature."

BOMBARDIER SAFETY STANDDOWN GOING VIRTUAL

Bombardier's Safety Standdown 2020, originally scheduled to take place later this month in Wichita, will be held virtually this year due to the Covid-19 pandemic. "Because of the importance of Safety Standdown among the aviation community, we are currently exploring ways to bring this must-attend event to you in a virtual format," the company said. This year's theme for the Safety Standdown is "Safety in Focus 20/20," which Bombardier further explained as "keeping our focus on safety and helping promote specific goals and tangible outcomes to achieve...an improved safety culture and safety performance." Currently, Bombardier said it is working with aviation safety leaders to build the virtual program and promised additional information once details are finalized.

TRADE GROUPS WARN OF ONLINE CHARTER FRAUD

With air charter demand rising due to returning and new customers entering the market amidst Covid-19 concerns, the Air Charter Association (ACA) and EBAA are warning of increased online fraud. Specifically, they noted that criminals are creating websites with images and information lifted from actual companies—including names, aircraft registrations, and even contract templates—to fool potential customers. EBAA COO Robert Balthus advised operators, brokers, and end-users to be vigilant, suggesting potential charter customers wait to book a private flight until they do research on the business they are working with to ensure it is legitimate. "Verify bank details before making payment transfers and above all, listen to your instincts and check with an independent source such as EBAA or the ACA. If it feels wrong, it invariably is," he said.

KINECTAIR PLANS TO OPERATE VOLTAERO'S ELECTRIC CASSIO

VoltAero is to work with U.S.-based startup charter provider KinectAir to explore possibilities for bringing its hybrid-electric Cassio fixed-wing aircraft into commercial service. France-based VoltAero is developing a family of aircraft seating between four and 10 people that will be able to fly up to around 800 miles at speeds of around 200 knots. VoltAero plans to complete type certification under EASA's CS-23 rules for its four-seat Cassio 330 in late 2022. A spokesperson for KinectAir told **AIN** that the company intends to be a launch customer for VoltAero, with plans to order between 10 to 20 of the Cassio aircraft. KinectAir last month announced plans to offer charter and fractional programs using various aircraft types. Eventually, it intends to include eVTOLs in its fleet.

NBAA APPLAUDS CONGRESS ACTIONS TO HELP BIZAV

A new funding bill approved by the U.S. House of Representatives Committee on Appropriations contains provisions that would promote transportation workforce opportunities, continue funding of the tail-number blocking system, and support the ongoing modernization of the air traffic control system. NBAA welcomed the FY2021 Transportation, Housing and Urban Development, and Related Agencies bill's potential to help the aviation industry, and especially its provisions to bolster business aviation's workforce efforts. "Congressional leaders are sending a clear message that the success and growth of general aviation are crucial to our nation's economic recovery and future growth," said NBAA president and CEO Ed Bolen.

BELL BUYS CHINESE MRO

Bell has acquired Zhenjiang, China-based Aerochine Aviation to increase its helicopter MRO capacity in the Asian country. Aerochine, a Bell-authorized maintenance center before the sale, has been renamed Zhenjiang Bell Textron Aviation Service. Zhenjiang Bell is a Civil Aviation Administration of China (CAAC) authorized Part 145 repair station, and the acquisition enables Bell to directly provide MRO services to operators in China for the company's 407 and 206 helicopters, with plans to add all current production and legacy models such as the Bell 505, 429, and 412.

Approximately 200 Bell helicopters currently operate in China, and that number should grow in the coming years.

EASA certification of the Airbus H160 paves the way for deliveries to begin, including the first ACH corporate version and after FAA validation, the first U.S. customer's H160.

Airbus H160 gets EASA nod

by Mark Huber

Airbus Helicopters' medium twin H160 received EASA type certification approval on July 1. The company said it is expecting FAA certification validation "shortly" before first delivery to an undisclosed U.S. customer later this year.

Airbus flew three prototype aircraft and employed two static versions for dynamic and systems testing over the course of a test program that accumulated more than 1,500 flight test hours in nearly five years. The multirole, 12-passenger (four to eight in executive configuration) H160 features noise-reducing Blue Edge main rotor blades and advanced Helionix avionics with safety features that include "accrued pilot assistance" and flight envelope protection.

Power comes from a pair of Safran Arrano 1A engines, each with 1,300 shp. The Arrano 1A features 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 estimated maximum cruise speed of 150 knots and service ceiling of 20,000 feet and give it a maximum range of 475 nm (no reserve, standard tanks). Airbus Helicopters said the Arrano will have lower maintenance costs than other engines in its class.

EASA certification director Rachel Daeschler called the H160 "one of the most environmentally friendly with respect to fuel consumption and one of the quietest helicopters of its class."

The H160 also incorporates electrically activated landing gear and brakes in place of the traditional hydraulic systems, which trims some weight and improves 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, when equipped with the proper datalink.

A military variant, the H160M, is due to enter service in 2026 with the French armed forces. Launch civil customer Babcock plans to use the H160 in both passenger/utility and EMS roles. Airbus Corporate Helicopters (ACH) is marketing the helicopter for executive and VIP roles and last year announced the sale of an ACH160 to a European customer.

"We are proud that the H160 has received its EASA type certificate," said Airbus Helicopters CEO Bruno Even. "This achievement represents years of hard work designing, industrializing, and defining the support ecosystem with our suppliers and partners and I would like to thank everyone who has dedicated their time and energy to turning this next generation helicopter into reality. I now look forward to the H160 entering into service and offering its innovative features that bring competitiveness alongside additional comfort and safety to customers worldwide." ■

NEWS note

Textron Aviation announced its largest workforce reduction since the beginning of the Covid-19 pandemic, with plans to lay off 800 employees, most of whom are in Wichita. The manufacturer of Beechcraft and Cessna aircraft also noted these layoffs will affect hourly production workers.

The action comes as the airframer "continues to adjust to the evolving global economic uncertainty and existing market conditions," Textron said in a statement. It follows the layoff of 80 salaried employees in Wichita on July 1 and 250 employees on June 23, the majority of whom were located outside Wichita. ■

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NBAA cancels 2020 BACE, citing health and safety

by Kerry Lynch

DAVID McINTOSH

Citing health and safety concerns, NBAA took the extraordinary step last month to cancel its 2020 Business Aviation Convention & Exhibition (NBAA-BACE) that was to have taken place from October 6 to 8 in Orlando, Florida. NBAA pointed to guidance from public health officials and the challenges of staging an event the scope of its annual meeting during the Covid-19 pandemic. The decision was made as the pandemic spiked upward in a number of states, including the planned host state of Florida.

In fact, the Florida Department of Health advises individuals to avoid participation in gatherings of more than 50 people. Given NBAA-BACE typically draws upwards of 30,000 attendees and 1,000 exhibitors, such an advisory would make the event seemingly implausible. On top of this, various and rapidly changing restrictions both within and out of the U.S. make planning for the event extraordinarily difficult and in some cases impossible.

That was reflected in the early exhibitor numbers, which far from finalized, were still at 547, compared with some 1,000 that the convention typically draws. Textron Aviation already had indicated it did not plan to attend. While the situation could improve as October approached, a decision needed to be made far sooner to give exhibitors ample opportunity to plan.

"It's such a big undertaking you can't wait until September 1 to make a decision. You can't make an 11th-hour decision to pull it," said business aviation analyst Brian Foley of Brian Foley Associates.

The move wasn't surprising, added Rolland Vincent, president of Rolland Vincent Associates and JetNet iQ creator/director, noting that JetNet had polled aircraft owners and operators about potential attendance and "It was very clear that [attending] was going to be a difficult choice."

But it is still an event that will be missed, Vincent said. "NBAA [-BACE] is like an oasis. We all gather to connect and rejuvenate," he said. NBAA-BACE is an event that "inspires" and where people pick up competitive intelligence, meet new talent, and learn of new technologies, he continued.

However, Vincent acknowledged that "this year we're all taking a big pause—it's the year with an asterisk to an asterisk."

"The promotion of safety is a primary reason NBAA was founded in 1947, and safety is at the foundation of all we are today," said NBAA president and CEO Ed Bolen in a statement announcing the decision. "As Covid-19 has emerged as a pandemic, NBAA has consistently looked to local, state, federal, and global health officials to inform our decisions and guide our actions with regard to live events...we regret that this year's event must be grounded."

The decision is not an easy one for the association, which depends heavily on its events—and in particular NBAA-BACE—to fund its many activities. It also was a highly unusual step as one of the few, if any, times NBAA has had to cancel the event, which was to have been in its 73rd edition. Following the 9/11 terrorist attacks in 2001, NBAA was forced to reschedule the convention in New Orleans.

While many associations are no doubt going through the same types of decision-making processes, Foley said the move is particularly disappointing for NBAA, which spent the past several months fighting on behalf of the industry to ensure it can continue operating during the pandemic while having to face its own difficult decisions.

Vincent agreed, calling the cancellation a "gut punch" to the association.

NBAA said it would begin working with exhibitors to wind down this year's events and begin preparation for the 2021 NBAA-BACE, scheduled for October 12 to 14 in Las Vegas. ■


DAVID McINTOSH

MEBAA still planning Dubai bizav show

The Middle East Business Aviation Association (MEBAA) is planning to proceed with its 2020 trade show in Dubai in December, although a final decision on whether to go ahead is unlikely until September at the earliest, association founding and executive chairman Ali Alnaqbi told **AIN**. The event is scheduled for December 8 to 10.

However, Alnaqbi is unable at this point to confirm whether MEBAA attendees traveling on airlines from outside the United Arab Emirates would be able to attend. Citing the UAE General Authority for Civil Aviation's Safety Decision 2020-01, he said the regulator had lifted restrictions on international business aviation travel from the UAE to permitted destinations, but conceded that a requirement for self-isolation for those entering or reentering the UAE acts as a deterrent to trips.

"Anyone who [wants] to travel by private or corporate jet does not [now] need to get approval from the Ministry of Foreign Affairs or diplomatic clearance," he said. "Things are [getting] back to normal. Any person or company can travel to or from the UAE, but if you are coming back, the government has [put in place] endorsement procedures saying you have to be in quarantine for 14 days."

MEBAA conferences in Jeddah, Amman, and Cairo have been postponed, while events that were already planned for Tunis and Marrakech in 2021 are likely to go ahead, Alnaqbi said. **P.S.S.**

News Briefs

Hundreds Express Opposition to FAA's PRD Proposal

ATSM International, the standards body that assures the testing and safety of any new fuel product, has approved a new alternative jet fuel production pathway, bringing the total available to seven.

The new process proposed by California-based Fulcrum BioEnergy involves the use of a synthetic crude oil derived from municipal waste, which can be co-processed with petroleum at the refinery level.

Fulcrum pioneered a process which involves the use of a Fisher-Tropsch reactor to transform household trash such as otherwise unrecyclable food-contaminated cardboard, paper, and textiles, into a gas. The gas is then converted into a waxy material similar to petroleum.

Kopter Resumes Flight Testing of SH09 Helicopter

Leonardo subsidiary Kopter in late June resumed flight testing of its third SH09 light-single helicopter prototype—P3—in Pozzallo, Italy, after a three-month Covid-19-related delay. Flight testing activities will now assess the benefits provided by the new main rotor configuration, Kopter said.

Advancements in development and trials planned in the forthcoming months include new tail rotor head, the Garmin G3000H avionics suite, final main rotor head, and flight controls, the company added.

Bizav Uptick Doesn't Mean Orders Will Quickly Follow

Industry analyst Brian Foley doesn't believe the bizav rebound will translate to a surge in orders for and deliveries of new business jets. Foley acknowledged that telephones of charter operators "are ringing off the hook, and jet cards...are selling like crazy." And while it would seem logical that an upturn in new business jet production would follow, he pointed out that owning and maintaining a business jet has a limited buyer base. Charter operators nor fractional operators will be in the market for new jets anytime soon, he added. These reasons are why the Big Three OEMs—Bombardier, Gulfstream, and Textron Aviation—have shed thousands of jobs to date and aren't expecting any meaningful pick up in jet orders in the near term, Foley concluded.

Embraer Completes First Praetor 500 Conversion

The first conversion of a Legacy 450 to a Praetor 500 has been completed at the Embraer Executive Jets Service Center at Bradley (Connecticut) International Airport. It extends the twinjet's range from 2,900 to 3,340 nm with four passengers and NBAA IFR reserves by reinforcing wing ribs and adding more fuel capacity. Also included were updates to the flight control systems, as well as installation of Praetor 500 winglets.

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U.S. Bizav accidents plummet in first half

by Gordon Gilbert

After the pandemic started earlier this year and business aircraft flying hours subsequently plunged, we projected that both the total number of turbine business airplane accidents as well as fatal mishaps would decrease accordingly. Preliminary statistics researched by **AIN** indicate that we were mostly correct, at least as far as U.S.-registered business turbine airplanes are concerned.

Although there were slightly more total accidents and incidents in the first half of this year compared with the same period last year, the number of N-numbered business turbine fatal accidents and lives lost decreased more than 75 percent, from 57 people killed in 13 accidents in the first half of last year to 14 killed in five accidents in the first half of this year.

What's more, there were no N-numbered jet mishaps officially defined by investigators as accidents in the second quarter of this year. The February 8 break-up in flight of a Cessna Citation 501 in which the two pilots and two passengers died was the only fatal U.S. jet accident in the first six months of this year versus 21 people killed in five business jet fatal accidents in the same period of 2019. Additionally, there were no reports of fatal U.S.-business jet crashes under Part 135 for the first half of either 2019 or 2020.

According to the NTSB preliminary report, the Citation broke up while climbing through 15,400 feet to 16,000 feet after its pilots reported "problems" with the autopilot and the left-side attitude indicator. The twin jet, whose rated pilot was flying from the right seat, was on a Part 91 personal flight in day IMC and had filed an IFR flight plan.

The number of U.S. business jet fatalities last year included the reported 11 passengers and two crew who perished on May 5, 2019, when their N-numbered Challenger 601-3A crashed in Mexico on a flight from Las Vegas. There are questions that remain as to whether this flight was possibly an illegal charter and exactly how many persons were on board. At press time, Mexico's accident investigation authority has not responded to **AIN** queries for more information. Until more official information is known, the accident is being classified under Part 91.

Nonfatal accidents of N-numbered business jets and turboprops doubled in the first half of this year versus last year, while the number of reported incidents increased by double digits for jets but declined for turboprops.

Four U.S.-registered turboprop accidents took the lives of 10 people in the first half of this year compared to eight accidents and 36 fatalities last year. The fatal accidents this year included the February 20 crash of a Beech King Air B200, the April 20 and June 5 mishaps involving Piper Cheyennes, and the June 7 crash of a Part 135 Mitsubishi MU-2.

AIN tables show "incidents" as well as "accidents" to distinguish mishaps based on their degree of severity. Investigators often draw fine distinctions between the two events, but, typically, incidents result in minor or no damage and their investigations are sometimes delegated to local officials.

Accidents are events that range from minor damage to destruction and/or injuries. Also, some incidents ultimately get upgraded to accident status during the investigative process.

Accidents/Incidents Worldwide

(first half 2020 vs. first half 2019)

U.S.-registered Business Jets and Turboprops

Business jets	Total		Part 91		Part 91K		Part 135		Public/Gov't		Mfr.	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Total accidents	**7**	**8**	**6**	**7**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**
Nonfatal accidents	6	3	5	3	0	0	1	1	0	0	0	0
Fatal accidents	1	5	1	4	0	0	0	0	0	0	0	0
Fatalities	4	21	4	21	0	0	0	0	0	0	0	0
Incidents	32	23	18	0	0	14	14	8	0	0	0	0

Business turboprops	Total		Part 91		Part 91K		Part 135		Public/Gov't		Mfr.	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Total accidents	**13**	**12**	**8**	**11**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**
Nonfatal accidents	9	4	5	4	0	0	4	0	0	0	0	0
Fatal accidents	4	8	3	7	0	0	1	1	0	0	0	0
Fatalities	10	36	9	35	0	0	1	1	0	0	0	0
Incidents	20	24	14	21	0	0	6	2	0	0	0	1

All data preliminary. Sources: FAA, NTSB, Aviation Safety Network, AIN research

Non-U.S.-registered Business Jets and Turboprops

Business jets	Total		Private		Charter		Other*		Unknown	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Total accidents	**6**	**6**	**0**	**3**	**2**	**1**	**3**	**2**	**1**	**0**
Nonfatal accidents	3	6	0	3	1	1	1	2	1	0
Fatal accidents	3	0	0	0	1	0	2	0	0	0
Fatalities	14	0	0	0	8	0	6	0	0	0
Incidents	9	10	4	5	2	2	1	1	2	1

Business turboprops	Total		Private		Charter		Other*		Unknown	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Total accidents	**3**	**10**	**0**	**3**	**0**	**1**	**3**	**4**	**0**	**3**
Nonfatal accidents	2	10	0	3	0	1	2	4	0	3
Fatal accidents	1	0	0	0	0	0	1	0	0	0
Fatalities	1	0	0	0	0	0	1	0	0	0
Incidents	6	7	0	3	4	1	1	2	1	1

**For example: ambulance, survey, ferry, training, testing, manufacturer, government (non-military), and head of state.*

Non-U.S. Accidents Skyrocket

The number of fatal crashes involving non-U.S. registered turbine business airplanes took the opposite trend from U.S. accidents in the first six months of this year, despite the impact of the pandemic on reducing worldwide operations. Fourteen persons died in three non-N-numbered business jet accidents in the first half of this year compared to zero fatalities in the same period last year.

On Jan. 23, 2020 a Citation S/II operated by the South African Civil Aviation Authority crashed into mountains, killing all three people aboard. As the twinjet levelled off at 3,900 feet, a rapid descent occurred, and the aircraft lost 1, 500 feet in 9 seconds. Three seconds before impact, the aircraft nose pitched up.

On March 29, the two pilots and six passengers were killed when their chartered Israel Aircraft Industries Westwind II crashed on takeoff from Manila-Ninoy Aquino International Airport, Philippines, and on May 5, an air ambulance Learjet 35A crashed on approach to Esquel Airport in Argentina, taking the lives of three of the four people people aboard.

Non-U.S. registered turboprops suffered one fatal accident in the first half of 2020 versus zero fatal crashes in the same period in 2019. On May 12, 2020, a Kodiak turboprop flying for Mission Aviation Fellowship in Indonesia crashed into a lake, killing the sole-occupant pilot.

Our charts do not include accidents or incidents that result from illegal flights, shoot downs, suicides or other intentional crashes. ■

News Briefs

NBAA Initiative Strives To Put 'BizAv Back to Work'

NBAA is rolling out an initiative called "BizAv Back to Work" to provide resources to help business aviation reopen and facilitate the return of the workforce that has been shaken during the Covid-19 pandemic.

The program expands on the association's existing employment services by providing members with free 30- or 60-day postings on its jobs board, Business Aviation Jobs, through August 31. In addition, NBAA will provide a regularly updated listing of positions available in the NBAA Insider Daily news service and in biweekly Job Flash reports.

Boom To Roll Out Supersonic Demonstrator in October

Boom Supersonic is hosting a virtual rollout event for its supersonic demonstrator, the XB-1, on October 7, marking a significant step toward its plans to develop a Mach 2.2 airliner.

Powered by three GE J85-15 engines, the XB-1 is a one-third-scale demonstrator that will be used to pave the way for its planned 55-passenger Overture supersonic airliner. XB-1 testing will demonstrate technologies for the Overture, such as carbon fiber composite construction, computer-optimized high-efficiency aerodynamics, and supersonic propulsion systems.

Honeywell RDR-7000 Wx Radar Receives TSO

Honeywell Aerospace has received FAA TSO approval for its IntuVue RDR-7000 weather radar system and is now working to complete STCs for 15 aircraft platforms by year-end, including the Falcon 900C/EX/LX; Learjet 40/45; Global 5000/Express; Citation X; and AW139. Flight testing and production of the new radar are currently under way, with initial customer deliveries expected to begin in the third quarter, Honeywell said.

Features of the fully automated, 3D radar include scanning from zero up to 60,000 feet and up to 320 nm in front of the aircraft. Additionally, it can predict windshear up to 5 nm ahead, turbulence up to 60 nm ahead, and the presence of hail and lightning up to 160 nm in front of the aircraft with 93 percent accuracy.

Qatar Executive Launches Fixed-rate Charter Program

Qatar Executive has launched a new Diamond Agreement program that allows customers to pre-purchase flight time at fixed-hourly rates on its ultra-long-range Bombardier Global 5000s and Gulfstream G500s and G650ERs. While there are no membership fees under the Diamond program, customers must purchase a minimum of 50 hours of flight time to be eligible for the fixed charter rates, which cover both flight hours and taxi time. The pre-purchased hours also have no minimum annual usage and no maximum carry-over.

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DAVID McINTOSH

The Global 7500 is the first business jet to have a published Environmental Product Declaration disclosing detailed environmental information about its lifecycle, such as CO_2 emissions, noise, water consumption, and other key environmental impact indicators.

Global 7500 environmental declaration marks bizav first

by Kerry Lynch

Bombardier Aviation's Global 7500 has become the first business jet to receive an Environmental Product Declaration (EPD) through The International EPD System. Third-party verified 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.

"We are proud to collaborate with Bombardier in its effort to provide full transparency about the environmental performance of its Global 7500 jet from a lifecycle perspective," said Sebastiaan Stiller, director of business for The International EPD System. "With the publication of the first business jet EPD in our system, Bombardier is striving to provide customers and stakeholders with the full environmental picture."

Bombardier called the publication of the Global 7500 EPD an important milestone in the company's environmental sustainability strategy, which also has involved the increased adoption of sustainable alternative fuels (SAF), a reduction of its CO_2 footprint, expanded aircraft recyclability, and further sustainable sourcing.

The publication of the EPD is an outgrowth of efforts that Bombardier incorporated throughout the development of the Global 7500, the company said. In a first for the company, a Bombardier Eco-Design team applied product innovation lifecycle processes throughout the development process to ensure that the ultra-long-range business jet minimizes its impact on the environment from design to the aircraft's end-of-life. This 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.

"The EPD for the Global 7500 business jet embodies Bombardier's commitment both to the environment and to the sustainable advancement of the aviation industry," said Bombardier Aviation president David Coleal. "We are thrilled to offer a comprehensive environmental footprint and performance overview of the Global 7500 throughout its lifecycle. By making this information available to our stakeholders, including operators, this EPD supports the business aviation industry's broader approach to fight climate change through clear, transparent goals and associated multipronged plans that encompass technology and sustainable fuels." ■

Embraer delivers 1st enhanced 300E

Embraer Executive Jets (EEJ) has delivered its first upgraded Phenom 300E six months after announcing the refresh program for its top-selling light twin. Texas law firm Dunham & Jones took delivery of the first customer copy of the enhanced Phenom 300E at a ceremony in late June at Embraer's Global Customer Center in Melbourne, Florida.

"This milestone delivery to our friends at Dunham & Jones is a testament to our ongoing commitment to providing the ultimate customer experience in business aviation," said EEJ president and CEO Michael Amalfitano. "We are honored to help them grow their Embraer fleet with the world's best-selling light jet for eight years straight, which has now been even further enhanced in terms of its technology, comfort, and performance to ensure its market dominance in the industry."

Texas law firm Dunham & Jones took delivery of the first customer copy of Embraer's enhanced Phenom 300E in late June.

Dunham & Jones also owns a Phenom 100EV. Powered by new, Fadec-equipped Pratt & Whitney PW535E1 turbofans, the Phenom 300E can fly faster and farther than its predecessor—Mach 0.80 and 2,010 nm with NBAA IFR reserves compared with Mach 0.78 and 1,971 nm range. It also comes equipped with a quieter cabin, upgraded Prodigy Touch Flight Deck based on the Garmin G3000 avionics suite, optional 4G connectivity through a Gogo Avance L5 system, and Bossa Nova interior. **J.S.**

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200th Gulfstream G280 Enters Service

Gulfstream Aerospace has delivered the 200th G280, a milestone reached some eight years after the super-midsize business jet entered service.

The G280 rolled out in 2009 and then was certified by the FAA in 2012 and EASA in 2013. As of April, the in-service G280 fleet had accrued nearly 236,100 flight hours and completed more than 145,000 landings.

Based on the IAI Galaxy (renamed the G200 after Gulfstream acquired Galaxy Aerospace in 2001), the 10-passenger G280 included a new wing, tail, Honeywell HTF7250G engines, and interior, as well as the Collins Aerospace Pro Line Fusion-based Gulfstream PlaneView280 flight deck.

The G280, which has amassed 75 city-pair speed records to date, can fly 3,600 nm at Mach 0.80. Meanwhile, it was reported early last year that Gulfstream and IAI had begun working on the next-generation variant of the G280 under a project dubbed P32.

Counterfeit Kamov Helicopter Ring Busted

Moldovan police shut down a factory in Cruileni allegedly making unauthorized copies of Russian Kamov-26 coaxial rotor utility helicopters. More than 10 helicopters were under assembly in the covert factory when it was raided on June 30.

The Moldovan interior ministry said the bootleg aircraft were destined for customers in other former Soviet-controlled countries. The ministry characterized the defendants, charged with aircraft smuggling, as "well organized."

Situated between Romania and the Ukraine, Moldova is the poorest country in Europe, as measured by per capita GDP, and has been a hotbed for smuggling, human and drug trafficking, and counterfeiting.

Garmin G1000 NXi Approved for Phenom 300

Garmin's G1000 NXi upgrade is now available for the Embraer Phenom 300, adding faster processors to the system's primary flight and multifunction displays and enabling many new features such as split-screens on the multifunction display and faster map panning.

Among other new features are wireless connectivity for database updates and two-way flight plan transfer, as well as sharing GPS and backup attitude information with compatible mobile devices running electronic flight bag apps. G1000 NXi also adds the HSI map with overlay options, including weather, traffic, and terrain; SurfaceWatch runway monitoring; and visual approach guidance. Sectional and IFR low/high en route charts are now available on the flight displays along with Smart Airspace, which "highlights the airspace nearest the aircraft's current altitude and de-emphasizes non-pertinent airspace," according to Garmin.

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Following the opening of a dedicated terminal at New York City-area Teterboro Airport last September, aircraft management and jet card provider Jet Linx has acquired Meridian's air charter and management division, adding an additional 23 aircraft to its fleet and making it one of the largest private aircraft management providers in the U.S.

Jet Linx boosts management fleet with purchase of Meridian charter division

by Curt Epstein

Private aircraft management and jet card membership operator Jet Linx has expanded its fleet with the acquisition of Teterboro Airport-based Meridian's aircraft charter/management division. In the transaction, Jet Linx will add 23 aircraft ranging from a Hawker 900XP to a Global 6000, with a combined value of more than $365 million, to its managed fleet. This brings the Nebraska operator to more than 120 aircraft under management, making it one of the largest management providers in the U.S.

According to president and CEO Jamie Walker, this latest development is part of the company's strategic plan to increase service in the key New York area. "It is an honor to have purchased Meridian Aircraft Management and Air Charter, one of the most admired, respected, and trusted operators in the private jet industry," he said. "It also could not be better timed as it follows the grand opening of our flagship private terminal at Teterboro Airport last September." According to a Jet Linx spokesperson, as part of the charter acquisition and future partnership with the Meridian FBO, Jet Linx will retain space on the third floor for its new Teterboro-based team members.

For Meridian, which was established at Teterboro in 1946 and gave up its Part 135 certificate in the deal, it means the end of more than three decades in the aircraft management/charter business. "Jet Linx aligns perfectly with Meridian's values, culture, and commitment to safety, and we could not be happier to have partnered with Jet Linx to purchase our aircraft management and charter business," explained Meridian owner and CEO Ken Forester. "It was important for us to find the right company that would be able to take our existing aircraft management and charter business to the next level, and Jet Linx was the obvious choice." He noted that Meridian will continue to support those former customers through its FBO and aircraft maintenance operations. ■

Bombardier's Global 5500 enters service

The last and smallest of the upgraded variants of Bombardier's legacy Global family, the $46 million Global 5500, entered service with a recent delivery to an undisclosed customer, the Canadian airframer announced on June 25. Unveiled alongside the upgraded Global 6500 at EBACE 2018, the Global 5500 received type certification from Transport Canada, EASA, and FAA last year.

Featuring three living areas with Nuage seating and powered by a pair of 15,125-pound-thrust Rolls-Royce Pearl 15 engines, the 5500 has a range of 5,900 nm—200 nm more than originally planned. "This spacious and efficient aircraft is the ultimate business tool, with the range and access to safely take our customers where they need to be," said Bombardier Aviation president David Coleal.

Coleal noted that the 5500, along with the earlier 5000 variant, breaks from tradition with interior completions done at Bombardier's Wichita site, where the Montreal-based company assembles Learjets, operates service and flight-test centers, and performs specialized aircraft work.

With a top speed of Mach 0.90, the 5500 accommodates up to 16 passengers. It also has Bombardier's Vision flight deck, Ka-band connectivity, and an air purification system with an advanced HEPA filter. **J.S.**

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Bombardier's Martel Lays Out Plan To Buoy Business

Recognizing that Bombardier's financial performance has "disappointed," recently named Bombardier president and CEO Eric Martel outlined a six-point plan to boost the company's business that has included the alignment of its business aircraft production with demand and increased outreach in the aftermarket segment. He said the company has had daily leadership calls, an "intense focus" on cost and cash flow, and regular communications with customers and key suppliers on order confirmation and delivery schedules.

The objective of aligning Bombardier's aviation production with market demand, including the recent layoff of 10 percent of the workforce, is designed to manage through the Covid-19 crisis and position the group to be more profitable, Martel added. Another objective is to "vigorously pursuing business aviation aftermarket growth opportunities."

NATA Cheers SAF Inclusion in House Bill

With the House of Representatives releasing the text of its infrastructure package bill, "The Moving Forward Act," NATA is applauding the inclusion of language to further the adoption of sustainable aviation fuel.

The infrastructure package bill calls for the allocation of $30 million a year through 2025 for the study and development of renewable aviation fuels. Part of the measure also authorizes an additional $5 million a year over the same period, to be appropriated from the Treasury general fund, to provide funds for the Center for Excellence for Alternative Jet Fuels and Environment.

To be overseen by the FAA, the funds will be used for "programs to assess and reduce the environmental impacts of aviation, and to improve the health and quality of life of individuals living in and around airport communities."

Honeywell Flight Tests Sensors for Autonomous Ops

Honeywell Aerospace has started flight testing new sensors intended to support autonomous operations of aircraft in urban air mobility (UAM) environments.

From its base in Phoenix, the company is using an Airbus AS350 helicopter to test the sensors, and the aircraft is also fitted with cameras to analyze visual markings on the ground that look like QR codes to automatically guide it to a designated landing area.

Flight testing will continue throughout 2020 and gather data on the performance of the sensors to support further improvements. Honeywell aims to be able to demonstrate fully automated landings by around mid-2021 as it prepares to add this capability to its product portfolio.

Honeywell also recently launched a new Unmanned Aerial Systems business unit.

Time running out on old Laseref systems

by Matt Thurber

Business jets equipped with older Honeywell Laseref II and III inertial reference systems (IRS) face an expensive obsolescence problem, but a solution is available. This isn't a new issue as Honeywell has been warning owners and operators about it since 2016, but there are still hundreds of perfectly flyable jets equipped with the older Laserefs that will need an upgrade if any of their IRSs fail. In February 2019, Honeywell notified operators that repairs and rentals of Laseref IIs and IIIs would end.

The main problem for these aircraft is that the Laseref II and III units are no longer repairable, because parts are not available, explained Trent Tseunis, Honeywell Aerospace director of offering management for navigation and sensors. Customers enrolled in Honeywell's Maintenance Service Plan (MSP) Avionics coverage do have support for repairs until the end of this year, but then they will have to do what all operators with Laseref II and III IRSs will need to do: upgrade their IRSs.

There are 965 business jets affected by the Laseref situation, according to John Spellmeyer, Duncan Aviation western regional avionics sales manager. Most of these jets are fitted with three Laserefs, but some have two, and the total number that will need to be replaced is more than 2,500, he said. Among the airplanes affected are Gulfstream IVs and Vs, Bombardier Globals and Challenger 601s, older Falcon 900s and 2000s, and Embraer Legacy 600s and 650s.

The upgrade path for any of these jets is Honeywell's Laseref IV (modern jets are already up to the Laseref VI). The IV is a simple replacement for the III with no modification required. A small rack adapter is needed to swap out a IV for a II, plus a couple of pins need changing. STCs are available for these upgrades.

Only a failed Laseref II or III needs to be swapped for a Laseref IV, so there is no need to replace two or three at a time. However, Honeywell is offering significant discounts for the Laseref IV upgrade, and it might make sense to get them all done soon. According to Honeywell and Duncan Aviation, "Customers who wish to upgrade to the Laseref IV with Duncan Aviation are eligible for a $52,500 Honeywell trade-in credit plus attractive promotional pricing."

"Sooner or later, [operators] are going to have to deal with this," said Spellmeyer. "Now till the end of the year, Honeywell is offering promotional pricing and trade-ins for each unit. We're saying do this now while the incentives are available. If you wait, you will pay twice as much."

There is another advantage to upgrading because the Laseref IV is much lighter—about 25 pounds less than the II and 10 pounds less than the III. Other benefits of the new IRS include, according to Honeywell: automatic realign function for postflight alignments for quick turn and auto-calibration of sensors to maintain optimal performance over time."

Of course, the big benefit of upgrading to the Laseref IV is that it "will probably outlast these airplanes," said Tseunis. "The IV has no obsolescence issues. We don't foresee we'll have to deal with this relative to these aircraft." ■

Pilot records DB proposal raises industry opposition

by Kerry Lynch

The FAA's Pilot Records Database (PRD) notice of proposed rulemaking, which would mandate extending record-keeping requirements beyond air carriers to corporate pilot operators, has drawn opposition from commenters who say it is an example of "regulatory overreach" and lacks clarity on several issues.

Issued on March 30 with the comment period ending on June 30, the NPRM calls for air carriers, public aircraft operators, air tours, fractional providers, and corporate flight departments to enter pilot data into the PRD and for air carriers, fractional providers, and certain other operators to evaluate available data in the PRD before hiring a pilot candidate.

NBAA is so concerned that it issued a call to its members to weigh in on the proposal and asked the FAA to rewrite the proposal in a supplemental notice of proposed rulemaking (NPRM). NBAA said the proposal goes "far beyond the intent of the legislative mandate with no identifiable safety benefits for Part 91 operators."

NBAA is questioning the extension of pilot record-keeping requirements, which in the past had centered on commercial and fractional operations, to corporate flight departments.

In the proposal, the FAA noted that Congress had mandated that the agency established an electronic database to compile data on air carrier pilots and "other persons." However, the legislative body did not specify how other persons should be applied. The FAA interpreted that to mean individuals who might fly for a "gateway operation" as a means toward a career with a commercial carrier and defined corporate flight departments as such gateways. And the agency further narrowed the definition of a corporate flight department as one that typically flies with two or more aircraft and requires a type rating.

But NBAA said the agency's "attempt to define a 'corporate flight department' lacks any congressional direction, is rooted in a false and baseless belief that 'corporate flight departments' are 'gateway operators' that are likely to provide pilots employment on their journey to a career with the scheduled airlines, and its codification would create significant confusion in the industry, discouraging compliance." The association further questioned how such a definition would improve safety.

Imposing the recordkeeping and reporting requirements on Part 91 exceeds the agency's statutory authority in the first place, NBAA added. "The FAA offers no identifiable safety benefit and NBAA is unable to identify any positive safety outcome for Part 91 operators facing compliance with these measures," the association said, recommending that the FAA support the existing record request processes for other operators.

Another key concern surrounds the agency's proposal to include comments from check pilots during pilot training in the PRD. This, the association said, "will have a significant chilling effect on safety and on documenting opportunities for pilot improvement. Additionally, this requirement contradicts previous FAA positions on the value of protecting check pilot comments during training and is contrary to the FAA's broader efforts to de-identify data in support of safety improvement." NBAA asked the agency to scrap that requirement.

"The NPRM lacks a robust analysis of the effects of this proposal on Part 91 operations and ignores many consensus recommendations from the 2011 PRD ARC [Aviation Rulemaking Committee], resulting in a significant burden on numerous small entities with no clear nexus to Part 121 air carrier hiring," said NBAA COO Steve Brown.

Joining the call for a supplemental NPRM was the National Air Transportation Association (NATA), which told the agency that this "would provide an ideal framework to address the many gaps identified by commenters and present a more complete rulemaking package."

NATA also expressed disappointment that the FAA rejected its request to extend the comment period to answer detailed questions the agency had asked within the NPRM.

NATA expressed concern that the proposal doesn't adequately address a number of questions, such as the need to follow up on records from businesses that have closed or the handling of omissions, errors, and lost records.

"If a carrier's representative makes an error in a pilot record entry that is not discovered, perhaps for several years (and the paper records upon which that entry was based are gone), how should a disputed record be managed?" the association asked as an example.

Further, the FAA is calling for carriers to formalize a dispute process but offers no guidance on how such a process could be structured, NATA said, asking, "How would a pilot dispute a PRD record if the air carrier no longer exists?"

NATA also pushed for extended time for carriers to comply with new electronic requirements. "The NPRM, citing reviews conducted by field inspectors, states that only 12 percent of carriers are using electronic pilot records," NATA noted. "Given that the significant majority of official record-keeping systems do not offer the ability to create an XML program to sweep up the necessary data fields for transmission, the FAA is strongly urged to provide carriers with additional time to convert their records for entry into the PRD."

The General Aviation Manufacturers Association, meanwhile, echoed concerns about the extension of the applicability to corporate operators and further questioned the FAA's explanation deeming corporate operators as gateway operators for pilots seeking to build hours and work with carriers, but said, "The FAA erroneously assumes that Part 91 corporate aviation merely serves as a 'pipeline' or 'gateway' to employment with Part 121 and Part 135 air carriers. The reality is that many pilots choose to spend a career in business (corporate) aviation with no intention of ever pursuing a position with an air carrier."

The Aircraft Owners and Pilots Association (AOPA) also said the FAA went beyond the congressional mandate for an electronic PRD and its proposal failed to accept recommendations of the government/industry ARC on the issue. "This proposed rule casts a much wider non-mandated net of applicability than [the Pilot Records Improvement Act] and will unnecessarily create additional requirements that will negatively impact thousands of small and sole-practitioner Part 91 operators," AOPA said. "These individuals and small entities will have to comply with a reporting system that is not only costly and complex, but also creates a disincentive to purchase more aircraft or hire additional pilots. The burden of compliance outweighs any potential benefit."

AOPA also agreed with arguments about the lack of clarity in the NPRM, particularly around resolving disputes on information. "Without clear rules, guidance, and protections, inconsistent application of these regulations will create a hodgepodge of 'documented processes' between multiple operators," the association said.

AOPA also worried that the NPRM lacked any requirement for the removal of erroneous or false information. ■

Three flight-test Falcon 6Xs are taking shape at Dassault's final assembly facility in France. Aircraft number one has been powered up and is now in ground testing.

Falcon 6X on track for 1st flight next year

The first three pre-production Falcon 6Xs are taking shape at Dassault Aviation's facility in Bordeaux-Merignac, France, and the program is on track to achieve first flight early next year, the company announced in July. In tandem, Pratt & Whitney and its sister company Collins Aerospace are ramping up production of the 6X's PW812D engines and nacelles, respectively, with the first podded engines delivered to Dassault.

"Bringing the Falcon 6X to market on schedule is a top priority for the company. Our planning and production staff have been diligent and resourceful in adapting procedures to new [Covid-19] sanitary guidelines to keep this program running smoothly," said Dassault Aviation chairman and CEO Eric Trappier.

The first flight-test 6X has been powered up and is now in ground testing. Aircraft numbers two and three are in advanced stages of assembly, and long-cycle parts production for serialized production has already begun. The second aircraft recently had its wings mated to the fuselage and the third aircraft is in the early stages of final assembly.

Aircraft number three will also be outfitted with a full interior to evaluate systems functionality, acoustics, airflow, comfort, and other factors. Interior furnishings, environmental systems, electronics, and other equipment are currently being tested in a ground test rig before installation on the aircraft.

Electric, hydraulic, and fuel system tests are complete, and testing of the Falcon 6X's digital flight control system has begun. Ground fatigue and damage tolerance testing are also underway.

Falcon 6X certification and entry into service are still planned for 2022, Dassault's original timetable. **C.T.**

Kinect Air preps launch of low-cost charter/frax ops

by Charles Alcock

Private aviation startup Kinect Air has launched a crowdfunding campaign to support its plans to provide a mix of on-demand, per-seat charter and fractional ownership. The company, which intends to offer a mixed fixed-wing fleet before later adding new hybrid electric and eVTOL aircraft as these enter service, is in the process of establishing air operator certificates in both the U.S. and UK.

Kinect Air is aiming to launch charter operations through its Together program with a mix of leased aircraft in the second quarter of 2021. This fleet might include larger aircraft such as Bombardier Dash 8 twin turboprops seating up to 80 passengers that could be used for group travel.

In September, the U.S.-based company intends to offer new customers the chance to buy fractional shares in its Anywhere program, offering aircraft including the four-seat Cirrus SR22 and the eight-seat Pilatus PC-12. Owners will be able to give back hours from their allocation to be offered for third-party charter flights and earn rebates on their operating costs, with Kinect Air claiming they will have broken even on these after 20 hours are resold.

Kinect Air is working on the assumption that each aircraft will operate around 750 hours per year and with five owners per airframe. It aims to have a minimum of eight aircraft available in each region where it operates, with plans to start in Washington state, the San Francisco Bay area, and also in the UK.

Nick Rogers, cofounder and chief commercial officer, acknowledged that the company's plans to market flights on a per-seat basis will require some regulatory changes. He told **AIN** that he expects UK authorities to show a willingness to support new air transport business models to plug gaps caused by a widespread failure in the airline sector. In his view, Kinect Air's Together offering could replace services lost with the collapse of regional airlines such as FlyBe. He added that the company plans to "crowdsource" seat availability.

Kinect Air is the latest in a long line of private flight providers claiming that it is ready to revolutionize the market using artificial intelligence-driven technology and advanced software to support dynamic pricing and targeted marketing of available capacity. A key to making KinectAir work is the technology platform that it will run on.

Unlike many startups that aim to disrupt the air charter industry, KinectAir's plan to obtain its own operating certificates sets it apart. Most other attempts at disrupting the charter space have involved charter brokers arranging flights with existing charter operators.

Quite a few companies have tried this. Virgin Charter, for example, burned through $25 million to $30 million from 2007 until it shut down in 2009. JetSmarter built a business around filling empty seats, but it ended up being purchased by Vista Global Holdings in 2019 only for its technology.

BlackBird Air tried to put together a service that allowed passengers to hire an airplane and a pilot separately and then fly to a particular destination, all under Part 91 regulations and not Part 135. After the FAA halted that activity, BlackBird pivoted back to arranging real charters, then was purchased by Surf Air. And Surf Air has its own unique business model, a regional all-you-can-fly membership service, using Pilatus PC-12s operated by charter companies.

Another failed attempt at democratizing the charter brokerage space was a company called FlyOtto, which aimed to leverage underutilized charter aircraft, especially smaller ones that can provide a reasonably priced service.

KinectAir estimates that it will be able to deliver seat-mile costs of between 60 cents and $1, based on a fully occupied four- or eight-seat aircraft. It said this compares with costs of between $15 and $20 per passenger mile in typical chartered jets.

According to Rogers, Kinect Air is now in talks with prospective leasing companies and also with developers of hybrid and electric aircraft. He indicated that the company might be fairly close to committing to introduce a hybrid, fixed-wing aircraft to the fleet by 2024.

On June 9, KinectAir launched a Wefunder "regulation crowdfunding" campaign to raise investment funds to help the company reach its goals and begin serving customers. As of late June 15, 38 investors committed $145,000 towards KinectAir's goal of $50,000 to $1 million. Before the Wefunder campaign, KinectAir raised $66,000 consisting primarily of loans from company officers. It intends to launch a wider fundraising round at a later date.

Kinect Air has 13 employees and five of these are focused on software development. CEO Jonathan Evans is a former U.S. Army pilot who sold his Skyward drone airspace management software company. Rogers is a former British Airways pilot who ran a drone operating business called Sky-Futures.

Chief technology officer Ben Howard has a background in software for unmanned aircraft and AI and machine learning applications. U.S. Marine Corps veteran Anneke Tucker is the company's director of aviation development, with a background in aviation maintenance, certification, and technical documentation. ■

Full-throttle opinion from former NTSB member John Goglia

It shouldn't take an act of congress to mandate safety improvements

It really should not take an act of Congress to get aviation safety improvements mandated in aircraft. Aircraft owners and operators should be willing to make voluntary safety improvements of proven technology, and certainly many do. But to ensure uniform requirements of important safety improvements that are not being adopted voluntarily by a large majority of operators, the FAA, through the rulemaking process, should be able to do that.

Normal rulemaking gives the public–including, of course, the affected parties like helicopter operators, pilots, and, yes, even passengers, the opportunity to comment on the proposed rules and the final rule is, ideally, better for those comments. But sometimes it seems the FAA drags its feet and years pass and aircraft continue to crash and yet those improvements never get made. At times, Congress says "enough" and proposes legislation to require those improvements. There is no notice to the public as required with the usual rulemaking efforts and no opportunity to comment as there is with rulemaking. But it seems sometimes a federal law is the only way to get some safety improvements made mandatory.

The latest example of Congress stepping in to do the FAA's safety job is legislation that was recently introduced in the House and Senate that would require several long-sought safety improvements for certain helicopters. The law hasn't yet passed but it may be the only hope for these safety improvements to ever be required.

The draft law, called The Helicopter Safety Act of 2020, would impose two main requirements: all Part 91 and 135 transport category helicopters would have to be equipped with a flight data recorder (FDR) and a cockpit voice recorder (CVR) or "an onboard cockpit image recorder with the capability of recording cockpit audio, crew communications, and aircraft parametric data." And all new and existing turbine-powered helicopters certificated for six or more seats would have to be equipped with a terrain awareness and warning system (TAWS). The proposed law would also eliminate any existing exemptions (and prohibit future exemptions) to these requirements. (It makes no sense to me to require safety equipment by regulation and then to give operators exemptions from those requirements.)

While many people regard the FDR as critical to accident investigations—and it is—its greatest potential use, I believe, is to prevent accidents. Data from the recorder can be analyzed to improve the safety of flight operations. By analyzing flight data, accident risk precursors can be identified and appropriate mitigation measures taken.

As most of you know or suspect, the proposal in Congress is a reaction to the tragic and high-profile helicopter crash on January 26 that killed the basketball superstar Kobe Bryant, his daughter, and seven others, including the pilot. But other helicopter crashes spanning more than a decade have highlighted the need for these requirements.

> **"The latest example of Congress stepping in to do the FAA's safety job is legislation that was recently introduced in the House and Senate..."**

The NTSB has been recommending TAWS since a helicopter crashed in the Gulf of Mexico about 70 miles southeast of Galveston, Texas in March 2004. The Sikorsky S-76A was carrying oil company workers to a drilling ship, Discover Spirit. The flight was a Part 135 VFR flight at night. All eight workers, the pilot, and copilot were killed in the accident. The NTSB investigation that followed determined the probable cause was the "flight crew's failure to identify and arrest the helicopter's descent for undetermined reasons, which resulted in controlled flight into terrain."

The NTSB issued its probable cause determination after finding no evidence of problems with the helicopter's engines, systems, or structure and no evidence that the crew was attempting an emergency water landing. Basically, a perfectly airworthy helicopter made a controlled descent into the water. There was no FDR on the aircraft and while there was a CVR, improper CVR installation resulted in no CVR data being available to help determine the cause of the crash. Based on instruments in the helicopter, the NTSB concluded that the flight crew was not properly monitoring the helicopter's altitude and "missed numerous cues to indicate that the helicopter was inadvertently descending towards the water." Because of night conditions, the crew would have lacked visual ground references and would have had to rely on instruments to gauge the helicopter's distance from the water.

The NTSB concluded that if TAWS had been installed on the helicopter it would have provided sufficient warning to the flight crew of its impending impact with water and allowed for corrective action to avoid impact. Based on that conclusion, it recommended to the FAA that all turbine-powered helicopters certificated for six or more passengers be equipped with TAWS. The Board had previously recommended that all EMS helicopters install TAWS. In response to the NTSB's recommendations, the FAA, in 2014, published a final rule requiring TAWS in helicopter air ambulances.

Fast forward to 2020 and the helicopter flight that killed Kobe Bryant. While there is no final NTSB accident report, the preliminary investigation indicates that the Sikorsky S-76B helicopter collided with hilly terrain near Calabasas, California. The aircraft was supposed to be operated VFR under Part 135 but witnesses at the scene indicated clouds and fog were present. Whether the installation of TAWS would have prevented the accident is not known at this time and perhaps may never be known. But the forward view that TAWS provides pilots would certainly be helpful if a pilot is caught in rising terrain in clouds or fog. The lack of FDR and CVR data from the helicopter will certainly hamper the Board's ability to properly investigate the accident and make needed safety recommendations.

Since the January 2020 crash, the NTSB has made clear that it has pretty much given up on the FAA and is appealing directly to manufacturers. In a May 2020 Safety Recommendation Report, the NTSB recommends that helicopter manufacturers install flight data, audio, and image recorder systems on all turbine-powered helicopters.

The safety recommendation states that the Board has been trying unsuccessfully to get the FAA to require crash-resistant recorder systems since 1999. While it's possible some manufacturers may take the NTSB's recommendation to heart and install this equipment in new helicopters, that still won't address the need to get this equipment into the existing fleet. It seems that will only happen if Congress acts. In this case, I hope Congress is successful in doing an end-run around the FAA's recalcitrance and getting this much-needed safety equipment required. ■

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

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Aaron adds upset training at new SUU academy

Renowned aerobatic helicopter pilot and instructor Chuck Aaron and his advanced flight academy are joining Southern Utah University (SUU) to offer the world's only collegiate helicopter upset recovery and advanced instrument flight training. The Chuck Aaron Academy at SUU is in development and will open soon for pilot training.

In 2019, Aaron opened a helicopter aerobatics school and began offering the world's first in-helicopter upset recovery training program. Aaron gained worldwide fame performing helicopter aerobatics at airshows in a specially-modified MBB BO-105 sponsored by Red Bull. He is the only pilot in the world licensed by the FAA to teach and perform helicopter aerobatics and only one of two teaching upset recovery training in a helicopter.

Chuck Aaron Is bringing helicopter upset recovery training to Southern Utah University.

"Chuck Aaron's addition to SUU Aerospace represents a significant leap in our training capabilities," said SUU aviation director Michael Mower. "Chuck brings almost five decades of experience, including work with NASA's Space Shuttle program, the U.S. Army's Apache test pilot Targeting System (TADDS-PNVS) program, various movies, and as the Red Bull helicopter pilot. His research into advanced flight and safety techniques will allow SUU Aerospace to advance Chuck's already groundbreaking work further. We will be incorporating this advanced training into our short term, intensive programs," said Mower. "The flight portions of these programs are geared toward pilots already in the industry. While our students will not directly participate in the flight portion of the training, the aeronautical knowledge that Chuck brings to the program will be incorporated into all aspects of our ground training."

Industry professionals will complete the new program in Aaron's BO-105. "This type of safety training needs to become standard in the industry, " Aaron said. "My partnership with SUU aviation will allow for more pilots to receive this critical training." **M.H.**

Stratos 716X personal jet clears first flight milestone

by Mark Huber

The Stratos 716X single-engine, four-six seat personal jet made its first flight July 2 from the company's factory in Redmond, Oregon. The aircraft is designed to cruise at 400 knots and have a maximum range of 1,500 nm. The 22-minute first flight utilized a full-power takeoff and climbed to an altitude of 13,500 feet.

The carbon-fiber 716X is powered by a 3,000 pound thrust Pratt & Whitney JT15D-5 turbofan with electronic engine control and features Garmin avionics components including dual G3X screens, GTN 750 MFD, and integrated Garmin autopilot. It is also equipped with dual Mid-Continent standby attitude indicators, custom switch panels, fully automated pressurization system, and air conditioning.

Stratos announced the aircraft in 2018 as a follow-on to the proof-of-concept Model 714. Compared to that aircraft, the 716X has a fuselage that is 31 inches longer and two inches wider. Initially, the company plans to offer the aircraft as a kit but will eventually produce a fully-certified model badged simply the "716." The initial run rate for the kit aircraft will be three units per year. The company said it will offer a comprehensive build-assist program, and kit build time is estimated at 2,500 hours.

"When we introduced the proof of concept 714 aircraft three years ago, the marketplace interest was tremendous," said Stratos CTO Carsten Sundin. "It was clear that the market is looking for the performance and comfort we were offering, but in a true six-place aircraft. We have achieved this with the 716X. With a cabin width of 4.9 feet and height of 4.8 feet, there is plenty of room for passengers to relax on long flights." Stratos said each seat row features more than 30 inches of legroom. Available seating configurations include a three-place, side-facing divan, all-forward-facing seats, and an executive club with forward lavatory area. ■

The Stratos 716X single-engine personal jet completed a 22-minute first flight on July 2, and after taking off climbed to an altitude of 13,500 feet.

OSHA proposes Plant 3 accident penalty

The Occupational Health and Safety Administration proposed a $13,494 penalty against Textron Aviation for a Dec. 27, 2019 explosion at its Plant 3 in Wichita. OSHA alleges the company "failed to protect employees from autoclave explosion hazards."

According to OSHA, Textron was operating the liquid-nitrogen-pressurized vessel (Autoclave 8) when it suffered a catastrophic thermal fatigue failure as pressure in the autoclave built. The failure "resulted in an explosion that critically injured 15, exposing employees to amputation, broken bone, concussion, crushing, laceration, and struck-by hazards," OSHA alleges. It recommends Textron find means to prevent future incidents such as "developing and implementing measures to effectively monitor, control, discover, maintain, and repair pressure vessels…"

"Textron Aviation continues to work closely in collaboration and coordination with the investigating entities, including OSHA, as well as independent industry experts, as to the final root causes of the explosion and the implementation of additional preventative measures and programs," Textron's statement said. ■

DASSAULT

AIN Product Support Survey

Readers rate Dassault tops for jet support

by Jerry Siebenmark

For the second year in a row, Dassault Aviation held the top spot in the annual **AIN** Product Support Survey. The French airframer recorded this year's highest Combined Overall Average of Newer and Older Aircraft of 8.3, based on results of **AIN**'s survey of business jet operators, pilots, and maintainers.

Dassault's 8.3 Overall Average rating is slightly lower than last year's 8.4, but still high enough to top Gulfstream Aerospace, which came in second for a second consecutive year based on its large-cabin jet Combined Overall Average score of 8.2. That leaves Embraer in a tie for third place alongside Gulfstream's mid-cabin offerings, each with a score of 8.1.

For this year's survey, there were 687 respondents who rated 2,063 aircraft broken down into 141 models. The minimum number of ratings required to include a manufacturer's aircraft in the final results is 20. (*For more details, see Survey Rules and Methodology sidebar, right.*)

Survey Rules and Methodology

As with **AIN** Publications' previous annual Product Support Surveys, the objective this year was to obtain from the users of business jets, pressurized turboprop airplanes, and turbine-powered helicopters statistically valid information about the product support provided by aircraft manufacturers over the last year and to report this information to our readers. The goal is to encourage continuous improvement in aircraft product support throughout the industry.

This survey was conducted via a dedicated website, created to provide improved ease of use and to encourage greater reader participation. **AIN** emailed qualified readers a link to the survey website.

The survey website was open from May 4 to June 17. Respondents were asked to rate individual aircraft and provide the tail number, age (less than 10 years old or more than 10), primary region of service, and whether they used factory-owned or authorized service centers, or both. Respondents were also asked to rate, on a scale from 1 to 10, the quality of service they received during the previous 12 months in the following categories:

- Factory-owned Service Centers—cost estimates versus actual, on-time performance, scheduling ease, service experience.
- Authorized Service Centers—same as above.
- Parts Availability—in stock versus back order, shipping time.
- Cost of Parts—value for price paid.
- AOG Response—speed, accuracy, cost.
- Warranty Fulfillment—ease of paperwork, extent of coverage.
- Technical Manuals—ease of use, formats available, timeliness of updating.
- Technical Reps—response time, knowledge, effectiveness.
- Overall Product Reliability—how the product's reliability and quality stack up against the competition.

Respondents were also asked to recognize individuals who have provided them with exceptional product support and service. The 2020 **AIN** Product Support Survey results for aircraft are published in this issue, avionics will be featured next month, and engines will follow in October. ■

DASSAULT AVIATION

The Results

Dassault Aviation held on to its first-place ranking in the 2020 **AIN** Product Support Survey with an 8.3 Combined Overall Average of Newer and Older Aircraft, a rating that was slightly lower than the 8.4 it earned in 2019 but equal to the 8.3 it held in 2018, putting it at second place behind Gulfstream Aerospace for the 2018 survey. Dassault also scored well in the Newer Business Jets segment, sharing first place with Gulfstream's mid-cabin jets with an 8.4 Overall Average. It should be noted, however, that score was lower by 0.3 than the 8.7 Dassault earned in 2019, along with Gulfstream's midsize jets.

Continuing in that Newer Jets segment, Dassault's strongest ratings were Warranty Fulfillment at 9.0, AOG Response at 8.9, and Parts Availability at 8.6.

In terms of Older Business Jets, Dassault improved its score from 7.9 in last year's survey to 8.0, placing it third behind Embraer's combined lineup of Phenom, Legacy, and Lineage aircraft, and tied with Textron.

The Improvements

In the past 12 months, Dassault's focus has largely been on consolidating and integrating a network of MRO facilities that netted it 17 more factory-owned service centers through acquisitions of 11 ExecuJet, four TAG Aviation, and two Ruag MROs and service centers in Africa, Asia-Pacific, the Caribbean, Europe, Latin America, and the Middle East.

"The reason for making that move ...in the longer term it clearly was to provide a better customer experience," said Jean Kayanakis, senior v-p of Dassault's worldwide customer service and service center network. "That was clearly understood by our customers. Even in the difficult times we were facing over the last three months, they have seen through that network that we were still able to provide the same service—whether it's in North America, whether it's in South [America], whether it's in northern Europe or the Middle East—and show them that we are really everywhere."

A key part of the integration has been training maintenance personnel new to the company's Falcon products. To that end, ExecuJet MRO Services in Kuala Lumpur, Malaysia has been approved for maintenance on all in-production Falcons while ExecuJet MRO Services Dubai has been approved for Falcon 2000 and 900 series aircraft. "This integration process is not that easy," he said, but "these people have very good technical skills."

At ExecuJet Dubai, which was part of Dassault's acquisition, plans call for an expansion of the line maintenance site at Al Maktoum International Airport by the end of 2021, "which is going to help in developing the Falcon capability in the region," Kayanakis said. The OEM also is planning to expand the ExecuJet Malaysia facility by building a new hangar there in the next two years, he said. "There's going to be a re-engineering of the airport...but as we are already at capacity there, we are adding rental hangars," Kayanakis explained.

› Dassault Aviation continued

Looking beyond this year, Kayanakis expects Dassault to unveil changes to its warranty and spares programs. For now, though, "it's kind of secret," he said. "But effectively we're thinking about it. And we'll have something coming definitely for early next year." He said those coming changes will reflect an aging fleet and "a great market."

Also on the support side, Dassault is deep in the process of planning for the the 6X, including maintenance planning for the new twin jet that is expected to enter the market in 2022. Kayanakis estimates there are, on average, about 10 people from customer service involved in the design engineering of the airplane. "We pulled out some skilled technicians from the service center network...and they are merged into the engineering group to provide feedback," he said, adding that there will be "even deeper involvement" from customer service as the airplane begins its flight test program this year. "These people are gaining experience and once the aircraft is delivered, they will go back into the customer service environment to train the back-office people, to train the front-office people, and be the skilled pioneers of the program."

Combined Overall Average Ratings of Newer and Older Aircraft	Overall Average 2020	Overall Average 2019	Rating Change from 2019 to 2020
Jets			
Dassault (Falcon)	8.3	8.4	-0.1
Gulfstream (GII-GV, G300-G650)	8.2	8.2	0.0
Embraer (Phenom, Legacy, Lineage)	8.1	8.2	-0.1
Gulfstream (G100 - G280)	8.1	8.3	-0.2
Bombardier (Global)	8.0	7.9	0.1
Bombardier (Challenger)	7.9	7.8	0.1
Textron Aviation (Citation)	7.9	7.8	0.1
Bombardier (Learjet)	7.2	7.5	-0.3
Textron Aviation (Hawker)	7.1	6.4	0.7
Turboprops			
Mitsubishi (MU-2, Solitaire, Marquise)	9.0	9.1	-0.1
Pilatus (PC-12)	8.0	8.3	-0.3
Textron Aviation (King Air)	7.5	7.3	0.2
Rotorcraft			
Bell	7.7	7.3	0.4
Leonardo	7.0	6.8	0.2
Airbus Helicopters	6.4	6.7	-0.3

* Listed in order of the 2020 overall average. Ties are listed alphabetically.

Category & Overall Average Ratings by Newer and Older Aircraft	Overall Average 2020	Overall Average 2019	Rating Change from 2019 to 2020	Factory Owned Service Centers	Authorized Service Centers	Parts Availability	Cost of Parts	AOG Response	Warranty Fulfillment	Technical Manuals	Technical Reps	Overall Aircraft Reliability
Newer Business Jets												
Dassault (Falcon)	**8.4**	**8.7**	-0.3	7.9	8.4	**8.6**	6.9	**8.9**	**9.0**	8.6	9.0	8.8
Gulfstream (G200 - G280)	**8.4**	**8.7**	-0.3	**8.4**	7.8	8.4	6.4	8.8	**9.0**	8.8	9.0	8.8
Bombardier (Challenger)	8.2	8.0	0.2	7.6	**8.6**	8.0	6.4	8.1	7.9	8.3	**9.2**	**9.2**
Gulfstream (G450-G650)	8.2	8.4	-0.2	8.0	7.7	8.4	6.1	8.7	8.7	8.2	8.8	8.9
Bombardier (Global)	8.1	8.0	0.1	7.5	8.2	8.0	6.6	8.7	8.5	8.3	8.8	8.6
Embraer (Phenom, Legacy, Lineage)	8.1	8.1	0.0	7.0	7.9	7.6	**7.2**	8.0	8.0	**9.0**	8.7	8.8
Textron Aviation (Citation)	7.9	7.8	0.1	7.6	7.6	8.1	7.0	8.1	8.3	8.0	7.8	8.6
Bombardier (Learjet)	7.5	7.7	-0.2	6.0	6.7	6.8	6.2	7.9	8.1	8.4	9.0	8.2
Older Business Jets												
Embraer (Phenom, Legacy, Lineage)	**8.3**	**8.5**	-0.2	**8.3**	**8.6**	7.9	**6.9**	8.6	8.1	**8.8**	8.8	**8.9**
Gulfstream (GII-G550)	8.1	7.8	0.3	7.1	7.9	8.2	5.9	**8.8**	8.4	8.5	**9.3**	**8.9**
Dassault (Falcon)	8.0	7.9	0.1	7.3	7.8	8.2	6.6	8.7	8.5	8.0	8.7	8.6
Textron Aviation (Citation)	8.0	7.7	0.3	7.6	7.8	**8.3**	6.3	8.2	8.3	8.3	8.6	8.7
Bombardier (Global)	7.7	7.5	0.2	7.1	7.5	7.8	6.1	7.8	7.6	7.9	8.8	8.5
Gulfstream (G100 - G200)	7.6	7.7	-0.1	7.7	8.4	6.6	5.6	8.6	**9.1**	7.6	9.0	8.3
Bombardier (Challenger)	7.3	7.2	0.1	6.6	7.2	7.1	5.7	7.5	7.3	8.2	8.1	7.9
Bombardier (Learjet)	7.0	7.3	-0.3	6.3	7.6	6.6	5.8	6.8	6.4	7.7	7.9	7.9
Textron Aviation (Hawker)	6.8	6.6	0.2	6.5	6.9	6.6	5.5	6.2	5.9	7.6	7.5	7.5
Newer Turboprops												
Pilatus (PC-12)	**8.2**	**8.0**	0.2	**8.8**	7.6	**7.8**	6.3	**8.3**	**8.4**	**8.8**	**8.7**	**9.6**
Textron Aviation (King Air)	7.6	7.4	0.2	6.7	**8.0**	7.4	**6.9**	7.8	7.9	7.3	7.5	8.8
Older Turboprops												
Mitsubishi (MU-2, Solitaire, Marquise)	**9.0**	**9.1**	-0.1	**9.4**	**9.3**	**8.5**	**7.6**	**8.8**	**9.0**	**9.3**	**9.2**	**9.8**
Textron Aviation (King Air)	7.5	7.1	0.4	6.6	7.4	7.6	5.8	7.1	7.8	7.9	8.6	9.2
Rotorcraft (all ages)												
Bell	**7.7**	**7.3**	0.4	8.0	**7.3**	**7.4**	6.1	**7.8**	**7.6**	**8.2**	**9.0**	8.5
Leonardo	7.0	6.8	0.2	N/A	5.8	6.8	**6.5**	6.7	7.3	8.0	8.0	**8.6**
Airbus Helicopters	6.4	6.7	-0.3	N/A	7.0	5.6	5.7	6.2	5.7	6.6	7.4	8.0

Listed in order of 2020 overall average. Ties are listed alphabetically. Bold indicates highest number in each category. N/A indicates not enough evaulations for statistical signfigance

GULFSTREAM AEROSPACE

The Results

The Savannah, Georgia-based airframer placed second in the Combined Overall Average Ratings of Newer and Older Aircraft with a rating of 8.2 for its large-cabin jets and third place in a tie with Embraer Executive Jets with a rating of 8.1 (down from 8.3 last year), based on the strength of its midsize G100-280 models.

In the Newer Business Jets category, Gulfstream tied Dassault for first place with an 8.4 rating for its midsize jets, which was down from an Overall Average of 8.7 last year, and tied Bombardier's Challenger series for second place with an 8.2 rating for its G300-650 models, which also was lower, by 0.2 from last year. For its midsize newer jets, Gulfstream received high marks for Factory Owned Service Centers (8.4) and Warranty Fulfillment (9.0).

Among Older Business Jets, Gulfstream's GII-GV saw improvement in the Overall Average, rising 0.3 from last year to 8.1 and a solid second-place seating. But the airframer's Overall Average for the G100-G280 edged slightly lower to 7.6 from 7.7 a year ago. The OEM did receive high marks for AOG Response (8.8), Technical Reps (9.3), and Overall Aircraft Reliability (8.9).

The Improvements

With the openings of new service centers last year in Appleton, Wisconsin; Savannah; and Van Nuys, California, Gulfstream continues to emphasize the importance of that network to its overall customer support. This year additional facilities will open in Palm Beach, Florida and Farnborough, UK as well as the 2021 opening of a $35 million, 160,000-sq-ft service center in Fort Worth, Texas.

"We are very fortunate to be owned by General Dynamics," said Gulfstream customer support president Derek Zimmerman. "It's allowed us to make some pretty significant investments." The investment in new service centers reflects a decreased reliance on third-party maintenance of its aircraft and "I believe gives us a competitive advantage and value in the eyes of our customers," he added.

But improvements in its customer support don't stop with the service centers, Zimmerman noted. In December it opened a new European parts center in the Fokker Logistics Park adjacent to Amsterdam Schiphol Airport. That served as a relocation of the center from the London-Heathrow area in a bid to continue uninterrupted delivery of parts and materials to its European Union customers over concerns with the effects of Brexit. Gulfstream also has seen a 15 percent improvement in its space parts placement over the past 12 months, he said.

By the Numbers 2020	
Respondents who rated aircraft	687
Respondents who completed the survey in its entirety	608
Aircraft rated	2063
Aircraft models receiving ratings	141
Minimum ratings required to be included in the data	20

EMBRAER EXECUTIVE JETS

The Results

Like last year, Embraer Executive Jets remained tied for third place with Gulfstream for Combined Overall Average Ratings of Newer and Older Aircraft at a slightly lower rating of 8.1 (except this year it was tied with Gulfstream's mid-cabin aircraft rather than its large-cabins in the 2019 survey).

Embraer also retained the same 8.1 rating in the Newer Business Jets category as last year as well as held on to its third-place ranking but tied with Bombardier's large-cabin Global series. The Brazilian manufacturer also received improved ratings in Cost of Parts (7.6) and Technical Manuals (9.0).

In the Older Business Jets category, Embraer's rating dropped 0.2 from 2019's survey to 8.3 but held on to the No. 1 spot. It also received high ratings in Factory Owned Service Centers (8.3), Authorized Service Centers (8.6), Cost of Parts (6.9), Technical Manuals (8.8), and Overall Aircraft Reliability (8.9).

The Improvements

A primary customer support focus at Embraer in the past 12 months has been AOG support, said Frank Stevens, Embraer Services & Support v-p of global MRO centers. "A lot of our customers operate in far-flung places that we don't necessarily have a support structure at," Stevens noted. "So we've increased our AOG support teams and branded them in a way that makes the teams and the customers become more synergistic, and makes sure that they are working much more together in these far-flung places."

Specifically, Embraer's TEAM—Technical Experts in Aviation Maintenance—concept involves organizing groups of airframe and powerplant mechanics and avionics technicians at its four North American service centers along with its 39 authorized service centers (ASCs) to provide AOG support. So far, Embraer has organized two seven-member TEAMs at its Fort Lauderdale, Florida and Mesa, Arizona service centers with plans to organize additional TEAMs at its other company-owned service centers.

Likewise, where Embraer has ASCs in geographic areas not served by its service centers, Stevens said it is working with them to provide trucks and manpower for AOG. "So we're broadening our AOG network capability by supporting it both inside our network and outside our network," he explained.

Another priority for the airframer is parts availability, said Armando Berti, Embraer Services & Support v-p of material solutions. Embraer currently has six main parts hubs across the world as well as more than 60 "offsite stocks." Following the cancellation of the Boeing-Embraer commercial tie-up, the company is "reviewing our policy to provide a much better service in terms of parts availability," Berti said. It also is working on optimizing the turnaround times on rotables, he added.

BOMBARDIER

The Results

Bombardier held on to its fourth and fifth spots on the Combined Overall Average Ratings of Newer and Older Aircraft with a rating of 8.0 for its Global series and 7.9 for its Challenger midsize jets, both of which were 0.1 higher than last year's survey. But its Learjets, at 7.2, were supplanted by Textron Aviation's Citation line for the number 6 spot they held last year. Bombardier's Globals and Challengers scored 0.1 higher than in last year's survey, while Learjets fell 0.3 from 7.5.

In the Newer Business Jets category, Bombardier's Challengers tied for second place with an 8.2 rating while its Globals were tied for third place with an 8.1 rating. Learjets were last at 7.5 However, among Challengers in the categories, the company scored high in authorized service centers (8.6), Technical Reps (9.2), and Overall Aircraft Reliability (9.2).

Globals were strongest for Bombardier in the Older Business Jets category, at fourth place with a 7.7 rating, up from 7.5 a year ago. Challengers and Learjets, however, came in at the sixth and seventh spots with ratings of 7.3 and 7.0, respectively.

The Improvements

Bombardier Aviation has put a heavy emphasis on growing its customer support business in the past 12 months through a number of different means, said v-p of customer support Andy Nureddin. "We've grown our (mobile response team) trucks, we've grown our AOG capabilities, we introduced a parts express aircraft [a Challenger 300] in Europe—those two parts express airplanes have just been our arms and legs given the current restrictions on travel—[and added] additional line maintenance stations in Van Nuys and Teterboro."

On the service center side, the Canadian airframer announced plans to replace its London Biggin Hill service center with a larger, 250,000-sq-ft facility expected to open in 2022. It also still expects to open a 430,000-sq-ft service center in Singapore this year, though Nureddin said the Covid-19 pandemic forced a pause in its construction, which resumed in July. He said the Singapore facility was in an "advanced state of construction" when work there had to stop. What's left to do, he added, is to "stuff" the inside of the facility. It also completed construction on a 300,000-sq-ft service center at Miami-Opa Locka Executive Airport in Florida this year. Nureddin said an expansion of company-owned service centers follows a change of philosophy at the company over the past few years, one in which it is taking a more "holistic lifecycle view" of its aircraft and the customers who buy them. "We [previously] depended a lot on authorizing service facilities across the board," he explained. "And ASFs do play an important role. But we recognize also that having the customer coming back to Bombardier, 'bringing their jets home,' is the proper recipe. And in order to do that we embarked on probably one of the most aggressive expansion projects in the past five years."

TEXTRON AVIATION

The Results

The Wichita-based airframer saw improvement for both its Citation and Hawker products in the survey's Combined Overall Average Ratings of Newer and Older Aircraft by increasing its year-over-year ratings 0.1 to 7.9 for Citation and a significant 0.7 to 7.1 for Hawker, giving the OEM a slight edge over Bombardier's Learjet and a tie for the fifth spot with Bombardier's Challenger.

In the Newer Business Jets category it maintained that lead over Learjet with a 7.9 Overall Average and fourth place. But in the Older Business Jets category, Citation ranked even higher and earned a third-place spot with an Overall Average rating of 8.0, up from 7.7 in last year's survey and a tie with Dassault. Citations also earned high marks with an 8.3 in Parts Availability.

The Hawker models' Overall Average score also improved year over year to 6.8 from 6.6.

Among turboprops, Textron Aviation's Beechcraft King Air recorded a Combined Overall Average Rating of Newer and Older Aircraft of 7.5, up 0.2, but behind Pilatus and Mitsubishi. The King Airs were second to Pilatus's PC-12 in the Newer Turboprops category with an Overall Average score of 7.6 but earned high marks for Authorized Service Centers (8.0) and Cost of Parts (6.9). In the Older Turboprops category the King Airs earned an Overall Average of 7.5, which was up strongly from 7.1 in the 2019 survey.

The Improvements

Textron Aviation has put an emphasis on improving parts and distribution in the past year, particularly in Europe and Asia-Pacific.

Textron Aviation senior v-p of parts and programs Kriya Shortt noted that effort began with the expansion last October of its Dusseldorf, Germany distribution center, which is located within its service center there. "We are seeing an improved support level for our customers

› continues on next page

Above & Beyond

OEMs

Daniel Prairie (Bell Helicopter)
Bell CSR for more than 25 years in [Brazil]. Always available, friendly, representing his company in an efficient and reliable way. Highly proficient in the Bell Helicopter models operated in the country. Dan Prairie is the synonym of Bell in Brazil.

Rebecca Kripotos (Bombardier)
Rebecca is my go to for any parts issues we might have. I've routinely run into difficulties with procuring parts or figuring out a return and Rebecca is always there to work through the issue and solve it effectively and efficiently. She's an asset to the customer and to Bombardier.

Rick Best (Textron Aviation)
Rick has been the go to guy for me, I can call with any question and if he doesn't know, he finds out who does and has them call me. He then calls and makes sure they contacted me and I have what I need. He also will tackle issues with parts or service center problems and make sure I am connected with the people who I need to talk to about issues and wants to be kept in the loop on how that progresses.

I look forward to his visits so we can go over things. I get the feeling he really cares about how we are doing and the airplane, and is it working for us.

Julija Gerasimuk (Dassault)
Julija is one of the best sales managers that I worked with. She is really going above and beyond for the customer and with her attitude and customer orientation, she really provides perfect service for the customer.

Vignesh Kasiviswanathan (Embraer)
He is very humble, and the most important thing that makes him so special is "his availability for the customer." He is always available 24/7, any time day or night. There were several AOG instances where he helped me with technical assistance and also helped me with material and logistics support.

Nacho Jara (Gulfstream)
Nacho understands the true meaning of customer support. He will always answer the phone and will do all he can to provide the required parts support. He is a true listener and has always followed through to whatever end. We count on his diligence as it's becoming a rare thing these days.

John Cary and Graham Allan (Leonardo)
Both these customer support reps have helped an enormous amount to get me parts, repair schemes, technical support, etc. Any time I have called they jump to help right away and always ensure that all our company's needs are met before they leave or end the conversation (they never just leave you hanging around waiting for an answer).

Pablo Amodeo (Pilatus)
Always available to satisfy any request and provide daily followup to the customer. He helps to keep the maintenance costs low as much as possible.

Service Centers

John Arnett (Flightstar)
John answers the phone on the first call. These guys have the best customer support of any MRO we have visited. They are the experts in Lear 45/75 maintenance in our area. Great service, reasonable pricing.

Mark James (Intercontinental Jet Service)
Mark is a quality person and an outstanding customer relations asset for Mitsubishi and Intercontinental Jet Service Corporation. Amazingly responsive, knowledgeable, available, and helpful whenever the rare aircraft problem arises, and fantastic at catering to the unique demands of our operation and attention to detail.

Santiago Carol (West Star Aviation)
One of the best CSRs I ever had , he is always working with the same quality and attitude for many years (25), providing excellent options and services with our aircraft.

Thomas Bartolomeo (Aero Star Aviation)
Tommy's knowledge and experience on the Embraer Phenom 100 and Phenom 300 have vastly surpassed any maintenance facility we have been to. Tommy answers his phone at all hours of the day. Willing to help achieve mission critical flights, and has the mindset of "making it happen"

MITSUBISHI HEAVY INDUSTRIES AMERICA

The Results

Mitsubishi's out-of-production MU-2 and its variants continue their dominance in the Combined Overall Average Ratings of Newer and Older Aircraft, holding the top spot once again with an Overall Average of 9.0, which is slightly down from 9.1 in last year's survey.

The same is true in the Older Turboprops category, where an Overall Average of 9.0 for the high-wing twin bested the King Air series. The MU-2 also retained top marks in every other category: Factory Owned Service Centers (9.4), Authorized Service Centers (9.3), Parts Availability (8.5), Cost of Parts (7.6), AOG Response (8.8), Warranty Fulfillment (9.0), Technical Manuals (9.3), Technical Reps (9.2), and Overall Aircraft Reliability (9.8).

The Improvements

Mitsubishi Heavy Industries America (MHIA) continues to support the aircraft through its MU-2 Aircraft Product Support Division located in Addison, Texas, which provides product support programs worldwide for the Mitsubishi MU-2B series. The division's support comprises spare parts sales, engineering, field support, quality assurance, and flight safety as well as offering learning opportunities based on the latest best practices in operations and safety.

Beginning last year, MHIA launched its MU-2 webinar series with presentations by industry experts for MU-2 owners and operators. The webinars are broadcast live and are also available on-demand. MHIA recently hosted an angle of attack system webinar and another on Special Federal Aviation Regulation 118, which in response to the Covid-19 pandemic provides relief from several regulatory requirements, including Part 91 Subpart N for MU-2 pilots. The company also plans to host webinars on safety enhancing systems such as voice alerting and the ice detector.

Further, MHIA said it has taken on initiatives to localize the manufacturing of spare parts in the U.S. and to consolidate regulatory oversight, which it expects will enhance the MU-2 parts supply chain and FAA coordination into the future.

PILATUS

PILATUS

The Results

Pilatus Aircraft has maintained a second-place ranking in the Combined Overall Average of Newer and Older Aircraft in the turboprop segment with a score of 8.0. That's down from an Overall Average of 8.3 last year and 8.2 in 2018.

In the Newer Turboprops category Pilatus held first place with an Overall Average of 8.2, up from last year's 8.0. The company also received high marks for Factory Owned Service Centers (8.8), Parts Availability (7.8), AOG Response (8.3), Warranty Fulfillment (8.4), Technical Manuals (8.8), Technical Reps (8.7), and Overall Aircraft Reliability (9.6).

The Improvements

The biggest customer support changes at Pilatus come with its newest turboprop offering, the PC-12 NGX. It wasn't until late last year that Pilatus began offering a support program—CrystalCare— for its latest single-engine turboprop offering because under previous variants customers didn't want it. "We had attempted almost 20 years ago to launch a [support] program for the PC-12 and we were ready to roll it out and the customer base said, 'We don't need it,'" said Pilatus v-p of customer service Piotr Wolak. "We tried and there really were no takers."

But times changed and so did the demands of fleet operators and bank lenders, prompting Pilatus to unveil

› Textron Aviation continued

in fill rate through Europe as well as the anecdotal feedback of our customers that they have responded very favorably," Shortt noted.

The Dusseldorf expansion followed the establishment of a new distribution center in Melbourne, Australia, which came as a by-product of the company's acquisition of Premiair. And the Australia distribution center followed a 2018 expansion of its parts warehouse in Singapore.

"APAC is a huge geographic region, so while we have continued to invest in the warehouse in Singapore, having parts in Singapore doesn't really help a customer who's Australia-based," Shortt added. Between those distribution centers and a total of more than 20 global parts locations, 99.9 percent of Textron's in-stock parts ship on the same day, she added.

In the service center side of the house, the company has implemented what it calls "smart scheduling," with a goal of minimizing the amount of time a customer's aircraft is in the service center for scheduled maintenance and modifications, said Lannie O'Bannion, v-p of North America customer service centers. The company also continues to evaluate flat-rate hours on a variety of Citation inspections, which in some cases has resulted in fewer hours and thus lower maintenance costs for Citation customers, O'Bannion added. It also has introduced a data maintenance hub, which offers customers a record of maintenance performed on their aircraft through a network of recommended third-party maintenance tracking system providers that has been expanded to include Camp Systems, Flightdocs, SierraTrax, and Traxxall. The data hub also will be a new feature in its customer portal, O'Bannion noted.

› Pilatus continued

the support program for the NGX alongside the airplane's rollout at the 2019 NBAA-BACE, said customer support director Andy Roth.

"Our typical client nowadays is very different than from 20 years ago," Wolak explained. "Back then, the predominant customer was a Part 91 owner-flown operator whereas nowadays we deal a lot with the fleet operators, the corporate flight departments, the 135 charter operations."

With more than 1,730 deliveries of PC-12s to date, Pilatus also has been able to increase the NGX's scheduled inspection interval from 300 hours to 600 hours, Wolak added. "That's a huge impact on the direct operating cost and it's not been easy to get there because you know when you certify an airplane you have to come up with a maintenance program that's certifiable," he said. "Granted, the original PC-12 was certified in '94 [and had a 150-hour inspection interval] and it took us a few years to collect the data and prove to the authorities that its feasible to move to that 300 hours [two years ago]."

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Humanitarian missions run into China ops requirements

by Kerry Lynch

Operators of large aircraft engaged in humanitarian efforts are running into an unexpected constraint in missions to China as they trigger requirements for CCAR-129 foreign operations approvals, UAS International Trip Support warned. The company has received a "huge increase" in requests for help for CCAR-129 certification, which traditionally has been a complex and lengthy process.

Chinese authorities require such certification for foreign operators of aircraft with 29 seats or more who fly more than 10 missions to the nation within a 12-month period. CCAR-129 requirements apply to both scheduled and nonscheduled passenger and cargo operations.

While the requirements for such approval are not new, many operators who in the past have not needed such approvals find that they do now as they rack up trips to collect medical and other humanitarian supplies in China during the Covid-19 pandemic, Carlos Schattenkirchner, UAS regional director for China, told **AIN**.

Many operators with mixed fleets are using their larger VVIP aircraft, such as BBJs, to pick up supplies but have been unaware of the CCAR-129 threshold, Schattenkirchner said, noting this has come as a surprise to a number of operators. They have been unable to receive clearance for those flights until they come into compliance.

However, Chinese authorities have recognized the issues surrounding these missions and are trying to expedite the process, he added. CCAR-129 approval can take between 60 to 90 working days. But, for certain humanitarian missions, the process has been streamlined and whittled down to about 14 days.

Even so, 14 days can represent a lengthy wait, depending on the mission. Operators have been forced to reschedule missions or reset their timeline, Schattenkirchner said. For some, the missions have not yet triggered the requirements, but operators might bump up against them in the months ahead. ■

Bombardier delivers 350th Challenger 350

Bombardier celebrated in mid-July the 350th delivery of its super-midsize Challenger 350, a milestone reached some six years after the 3,200-nm-range twinjet entered service. The Canadian business aircraft manufacturer launched the model at EBACE 2013 as an upgraded version of the Challenger 300, with a new wing, more powerful Honeywell HTF7350 engines, larger cabin windows, and a redesigned interior.

"The 350th delivery of a Challenger 350 aircraft, reached after only six years in service, speaks volumes," said Bombardier Business Aircraft senior v-p of worldwide sales and marketing Peter Likoray. "This achievement shows the great confidence customers place in this aircraft and demonstrates Bombardier's production proficiency and strong supplier base."

The Challenger 350 also holds the title of best-selling super-midsize business jet for six consecutive years, capturing 43 percent of market share in the segment last year. Over the past six years, Bombardier has enhanced the twinjet, adding an optional HUD and EVS, better cabin sound-proofing, refined cockpit aesthetics, and a short-runway performance improvement package.

As of May 31, the worldwide fleet of Challenger 350s has logged more than 648,000 flight hours and more than 383,000 landings. **C.T.**

New Year ushers in cabin, connectivity improvements

by Matt Thurber

The race to provide reliable and reasonably fast airborne connectivity has taken some interesting turns, but as with all things technological, improvements continue and end-users are the ultimate beneficiaries of the changes that are coming.

One of the most significant changes is the launch of new low-earth-orbit (LEO) satellites, which will provide global internet and communications coverage with far less signal delay (latency) than current satellites. Latency is a function of the distance that signals must travel between transmitters and receivers; the further the satellite, the longer the latency. Newer satellite networks located in LEO will have much less latency and should provide more satisfying service for users, along with lower costs and higher speeds.

Hundreds of new-generation LEO satellites already are in orbit, and networks linking them could be at least partially activated by 2021 and fully operational by 2022. Among these networks are SpaceX's Starlink, OneWeb (which had filed Chapter 11 bankruptcy but recently found a buyer), Telesat, Amazon's Kuiper network, and a network being lofted by China's Aerospace Science and Industry Corporation.

The constellations of the latest LEO satellites promise fiber-optic-network-like speed at a much lower cost. Tests on the Telesat satellites, developed by Airbus, have shown they can deliver speeds of over 400 Mbps, latency of just 40 milliseconds, and seamless beam and satellite handovers, with worldwide coverage.

For business aircraft, the main advantages of these LEO networks concern antenna size, service speed, and coverage area. Manufacturers are already developing aircraft antenna systems that can receive signals from these new LEO satellites.

For example, Satcom Direct, in partnership with Germany's Qest, is working on an electronically steered, fuselage-mounted, phased-array antenna that will deliver high-speed connectivity for aircraft as small as light jets. Also working with Qest, the company recently unveiled SD Plane Simple, a tail-mounted satcom antenna for midsize to large business jets using more traditional, higher-orbital-altitude Ku-band and Ka-band satellite systems.

To be sure, the new LEO networks are not yet providing service for aviation platforms, and it's going to take some work to develop airborne equipment, conduct tests, and set up billing mechanisms.

For now, the current connectivity offerings will continue to be the systems of choice, but more choices are clearly on the horizon.

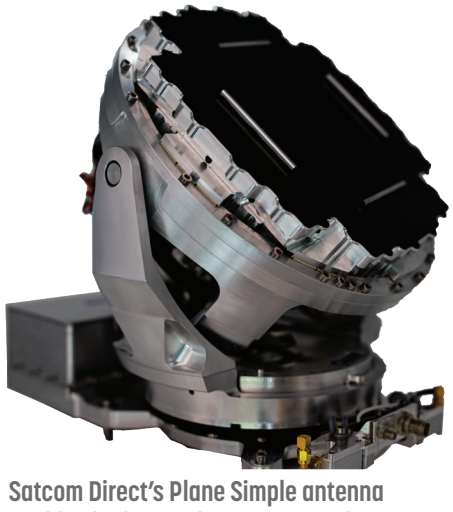
Satcom Direct Adds Customers

Satcom Direct is a service provider for most satcom networks and thus has seen the impact of the coronavirus on customer usage. "In April, there was a significant dropoff in traffic," said Chris Moore, president of Satcom Direct Business Aviation. In the U.S., satcom traffic dropped by more than 70 percent, he said, but in June there was a recovery, although traffic hadn't reached pre-Covid levels by early July. Because Satcom Direct also serves government customers, that segment remained fairly busy and "remained extremely strong," he said.

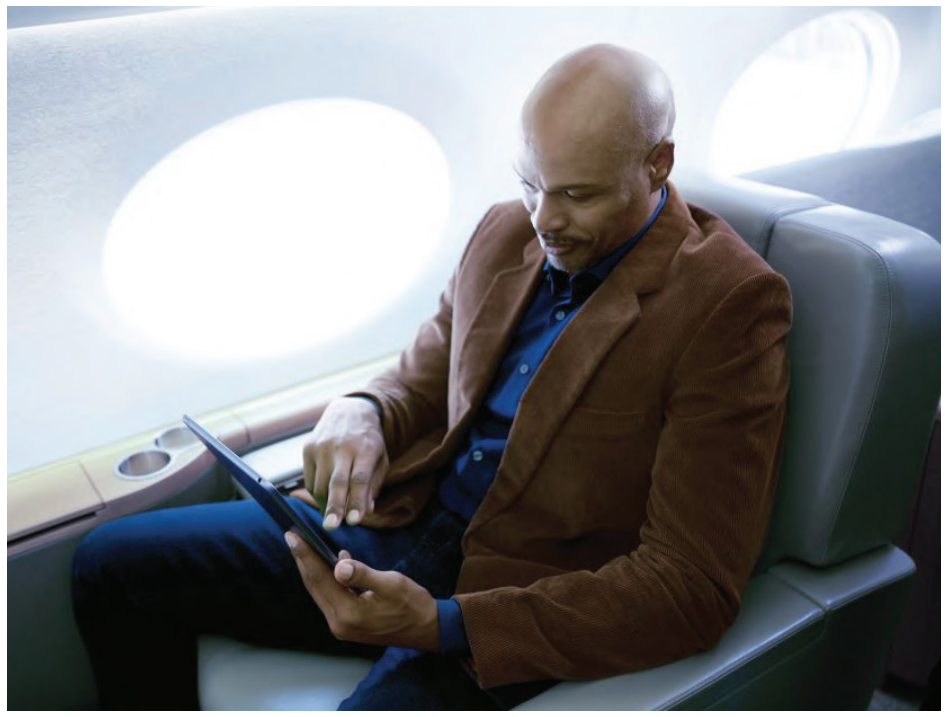
The quarantines affecting international travel, however, are cutting connectivity activity. Flights within regions such as Europe and inside larger countries are picking up, and consequently, satcom traffic follows, but not across major borders. Those who are able to fly are using their connectivity as much as usual, Moore said, "but flights are still significantly down."

Like other providers, Satcom Direct is helping its customers manage their requirements. "We're flexible with each customer," he said, "and we work through their requirements depending on the mission. Each business aircraft has its own unique story depending on what it's used for. A lot are being used for humanitarian purposes, some for charter, some are grounded. It's a mixed portfolio. Even during the pandemic, when people are flying they still want access to that connectivity. It's become an essential item for the aircraft."

Satcom Direct is still onboarding new customers and there has been no disruption to its entry-into-service and delivery process, where a team travels to the customer's location or the customer comes



Satcom Direct's Plane Simple antenna enables high-speed service on midsize jets.



Viasat has removed limitations on network speed, at no extra cost to customers.

to Satcom Direct's hangar at Melbourne International Airport in Florida. This isn't just about teaching customers how to use their systems, but also ensuring that they are doing so in a secure fashion. In addition to it SD Pro fleet-planning and tracking software, Satcom Direct has made cybersecurity a key part of its service portfolio.

"Anything that's activated on our network takes cybersecurity," Moore said, "and some customers put their own corporate access points in our data infrastructure. Because of our military heritage as well, we understand that need for security and provide best-in-class cybersecurity. When they enter the satcom Direct network, it is not subcontracted out; cybersecurity is always in-house and is probably one of our most popular services."

Customers can also avail themselves of Satcom direct's virtual training. All in-person training is done in accordance with Centers for Disease Control guidelines. "We didn't have any areas where we couldn't onboard a new client," Moore said. "But it has been more challenging in terms of social distancing."

Before the coronavirus, in February Satcom Direct held its Connecting with Customers conference and outlined details of the new Plane Simple antennas.

"These are revolutionary from a technology perspective and easy to install for OEMs," Moore said. The new antenna allows for a cleaner installation, from five boxes to two: the antenna and modem. "That technology allows us to capture more data analytics for performance," he said, "and the customer gets increased capability."

The first Plane Simple antenna will be available in the fourth quarter this year, a Ku-band antenna for Intelsat's satcom network. Next year, Satcom Direct will offer a Plane Simple antenna for Inmarsat's high-speed Ka-band network.

The advantage of the smaller and simpler antenna system is that it brings costs down to make the most robust satcom networks available on older airframes as well as newer aircraft.

For even smaller business jets, for example, Embraer's popular Phenom 300, Satcom Direct is working with manufacturers to develop flat-panel phased-array antennas. Moore sees that market developing in concert with commercial implementation of the LEO constellations, possibly as soon as 2022. Next year, Satcom Direct plans to launch its Surface series antennas for smaller aircraft to access Iridium's new L-band Next constellation and Certus service, which offers higher-speed service than the original Iridium network.

Viasat Removes Speed Limits

Viasat has eliminated "internet speed limits" for business aviation customers of its Ka-band satcom network, and some customers have already 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, super-midsize business jets like the 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."

When the extra capacity became available recently, Viasat didn't tell customers, and some called, wondering why they were seeing such high speeds and if the system was working properly.

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. "When you start to download, you will appreciate having no speed limits," he said.

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. The airborne hardware is also forward compatible with Viasat's next Ka-band satellite network, ViaSat-3, which quadruples the capacity of ViaSat-2 satellites. The ViaSat-3 network is planned to begin service next year.

To accommodate growing customer data needs with the new capacity and speed, Viasat has added a new 200 GB service plan, double the previous maximum plan size of 100 GB. "It's effectively an unlimited plan," Person said. "It would be hard for an operator who flies less than 120 hours per month to use that much."

The top tier 100 and 200 GB plans also include unlimited streaming, which doesn't count against the plan's data. This eliminates the need for installation of a separate television system and antenna, he explained. The unlimited streaming, for example, covers services such as YouTubeTV, Hulu, Disney+, and others that provide access to television channels. This is especially attractive for smaller airplanes, he said, which don't have space to accommodate a separate TV antenna.

Prices for the Viasat airborne hardware start at about $400,000, including a Wi-Fi router such as the Satcom Direct Router or Honeywell's Forge Router.

Honeywell Forges Ahead

Although installations of Honeywell's JetWave Inmarsat Ka-band satcom hardware continue to happen on new-build airplanes, aftermarket installations have slowed during the coronavirus pandemic, according to John Peterson, Honeywell, v-p and general manager of services and connectivity. JetWave airborne hardware gives business aviation passengers and crew access to Inmarsat's high-speed Ka-band JetConnex network, with speeds of up to 33 Mbps.

Like most satcom network providers, Honeywell's traffic dropped during the pandemic, Peterson said, "but we're seeing that come back quickly. It should be back to normal about September. We're happy to see people are flying again, operators are putting airplanes back into service in the business aviation world."

Meanwhile, Honeywell engineers are working on next-generation satcom technology, he said, "with how to maximize the pipes, the bandwidth, and spectrum. We don't see this pandemic affecting us long term, it's a normal variable in the life cycle in business. We have to be ready when the market comes back...and how we make sure when it does come back, we have something more compelling [to offer].

"We're working closely on hardware, with Inmarsat, and with OEs [original equipment manufacturers]," he explained. "We'll be rolling out this year, with respect to aircraft networks, some new software and next year some exciting products." Part of this strategy will be developing products that fit into smaller aircraft, as JetWave currently requires large-cabin jets to accommodate the system's antenna.

Honeywell's new Forge cabin router fits that strategy as it is 70 percent smaller and costs much less than earlier Honeywell routers. Software updates add new functionality to the router as well, through Honeywell's Force analytics platform, which allows operators to manage flights end-to-end. Forge also offers a cabin connectivity analytics dashboard, flight operations information, navigation database updating, and predictive maintenance analytics.

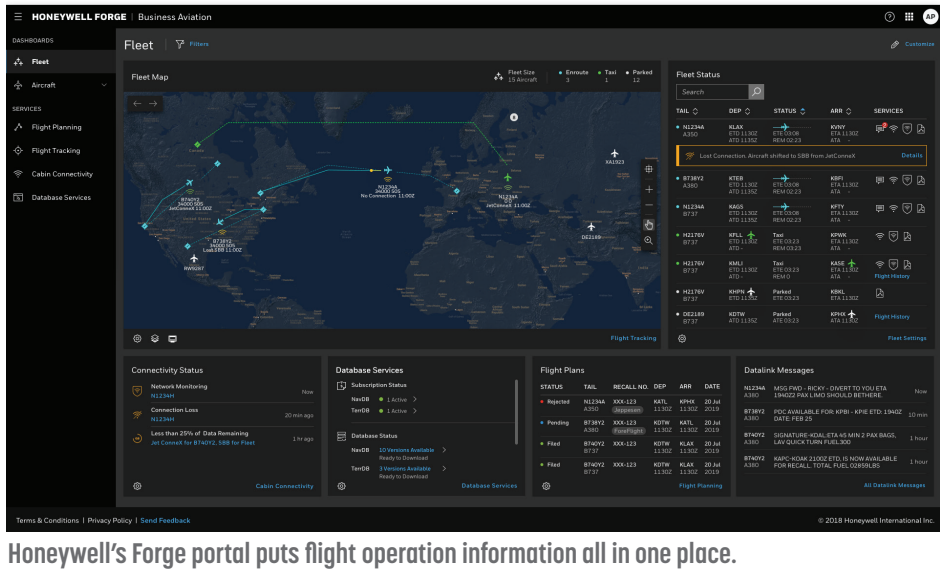
Forge now integrates with Professional Flight Management's scheduling software. A new propulsion data reporting system that Honeywell is now testing will integrate aircraft health data with Honeywell's Maintenance and Service Plan (MSP) monthly reporting. The integration with MSP combines health data from the aircraft and automatically compiles it for monthly reports.

Forge customers now have access to another new feature; pilots have expanded access to D-ATIS airport information, without having to tune ATIS broadcast frequencies or deal with datalink issues.

More recently, new Forge updates included a link to the ForeFlight electronic flight bag app and its flight planning service. "Now [Forge customers] can access other flight planning providers," Peterson said.

The Forge portal is available for customers buying Honeywell services such as flight planning, datalink, cabin systems, and satcom. Once signed up for Forge, users can use it to track their fleets, or Forge can be set up for a management company so only administrators can see the fleet while individual aircraft managers have access to the aircraft they oversee. "Privacy is very important," Peterson noted.

"Later this year we're adding more partners and capability," he added. "It's going to keep getting better." To that end, Honeywell welcomes outside products and developers to work with Forge."



Honeywell's Forge portal puts flight operation information all in one place.

Collins Aerospace Satcom

Collins Aerospace has partnered with satellite network operator SES to develop LuxStream, a high-speed broadband Ku-band satcom network. LuxStream offers speeds up to 25 Mbps in the U.S. and 15 Mbps over the rest of the globe, excluding the polar regions. Higher speeds will be available, if there is market demand, according to Collins Aerospace.

The SES-15 Ku-band satellite, which covers the U.S., became operational last year, and several aircraft have already installed the LuxStream hardware and are using the service. Collins provides the cabin router and KuSAT-2000 satcom terminal for LuxStream, and its ArincDirect unit is the service provider.


Collins Aerospace is now offering 4K video for customers of its Venue cabin systems.

Currently, STCs for KuSAT-2000 installations are available for the Gulfstream GIV/GIVSP, and Bombardier's Global 5000, 6000, and XRS are next in line in early August. Additional STCs are expected shortly after that for the G450 and Challenger 850, followed by the Falcon 7X, GV/G550, and Challenger 600.

For smaller aircraft or those that don't need full broadband internet capability, Collins is developing new Certus-capable airborne hardware that it will offer service on Iridium's Next satellite network. Target aircraft sizes for these new Iridium satcom systems are light jets through air transports and helicopters.

"Collins currently provides a number of Iridium products to the aerospace industry," according to Joe Gallo, global marketing director for avionics, "and we would assist those customers in upgrading systems to the new constellation, in addition to providing a path via the aircraft manufacturers to receive Certus-capable products on new aircraft deliveries, and assist customers that would like to fit preowned aircraft with a wide range of STCs and service bulletins."

New Certus-capable hardware should be available for installation in early 2022, Gallo said. Network speeds should eventually reach 1 Mbps, but, he added, "until we can do that we have confirmed speeds to 704 Kbps."

Collins Aerospace also is expanding the capabilities of its Venue cabin management system, which has reached 1,400 installations in midsize jets through VIP/VVIP business jets in the aftermarket and forward-fit new production aircraft.

A key new Venue feature is 4K video capability, and the first aftermarket installation is underway at West Star Aviation. With the availability of improved video monitors, Collins has developed high-definition Airshow interactive moving maps, which take advantage of sharper HD and 4K images and more vibrant colors.

Passengers can watch the latest

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Part 1: Aircraft

› continued from page 24

Among rotorcraft manufacturers, Bell retained its first-place spot with a score of 7.7 on the Combined Overall Average Ratings of Newer and Older Aircraft, improving its score from last year's survey by 0.4. Leonardo, too, retained its second-place seating with an Overall Average of 7.0—up from 6.8 last year—while Airbus Helicopters held on to third with an Overall Average of 6.4.

AIRBUS

BELL

The results

In addition to maintaining the overall top spot among the survey's rotorcraft manufacturers, **AIN** readers gave Bell high marks in seven of nine other categories: Factory Owned Service Centers (8.0), Authorized Service Centers (7.3), Parts Availability (7.4), AOG Response (7.8), Warranty Fulfillment (7.6), Technical Manuals (8.2), and Technical Reps (9.0).

The Improvements

Ronnie Ries, Bell senior manager of commercial marketing and customer experience, said the Fort Worth, Texas-based OEM is taking a hard look at its parts pricing—especially parts that have been developed by third parties under FAA parts manufacturer approval (PMA) regulations—as part of an initiative to drive down direct operating and maintenance costs for customers. "A lot of our customers have started to experience some price reductions on certain parts," he explained. "We've been really trying to focus on that."

So far, Bell has identified about 80 parts to which that effort applies, and some of those have seen a price drop of as much as 50 percent, Ries added. Also, Bell earlier this year opened its parts marketplace to all owners and operators of its rotorcraft as well as some authorized maintainers. Previously, not all customers had the ability to purchase parts directly from Bell, much less with a credit card. Instead, they generally had to get them through one of its service centers or authorized service facilities. This is all done through a single web portal that also allows owners and operators to access technical publications as well as submit and track answers to questions about customer and product support.

AIRBUS

The Results

Airbus Helicopters took the third-place spot in the Combined Overall Average Ratings of Newer and Older Aircraft, although it did see a year-over-year decline of 0.3 in its Overall Average, to 6.4

The Improvements

Christoph Zammert, executive v-p of Airbus Helicopters customer service and support, said the company continues to make inroads with customers signing up for its HCare customer service program. In 2019 Airbus added more than 250 helicopters to HCare's global offering, bringing the total number of helicopters enrolled in HCare to more than 2,200, or about 20 percent of the fleet, according to Zammert.

In the past 12 months Airbus also has invested in its spares stock, adding more than 33,000 part numbers that are distributed from four logistics hubs in France, Germany, the U.S., and China as well as "local inventories" in the UK, Canada, Brazil, South Africa, Japan and Australia. "This is making sure our customers have the spares and repairs that they need in order to operate the aircraft," Zammert explained.

Airbus also continues to work on easing direct maintenance costs for owners and operators of its rotorcraft, he said. For example, last year Airbus eliminated the 12-year inspection on the H125 light single as well as worked with Safran to increase the time between overhaul on the Arriel engine powering the H125 and H130 by 25 percent. "And we do the same on all our products every year, trying to wring out a couple of dollars per flight hour," Zammert added.

LEONARDO

The Results

As well as maintaining its second-place position in the Combined Overall Average Ratings of Newer and Older Aircraft, the Italian helicopter manufacturer received high marks for Cost of Parts (6.5) and Overall Aircraft Reliability (8.6).

The Improvements

One of the biggest activities within Leonardo's customer support and training operation in the past year has been the standing up of a $65 million training academy in Philadelphia, said Paolo Petrosso, v-p of simulation and training services. First announced at the 2019 HAI Heli-Expo, the academy will open with a Level D full-flight simulator for the AW139, AW169, and AW609. "Certification of the [simulators] might move for several reasons into 2021 but physically all the devices are going to be in Philadelphia before year end," Petrosso said.

More recently on the MRO side of the house, Leonardo completed an acquisition of Precision Air Services in South Africa, which has been a Leonardo authorized service center for years. In February the company also broke ground on a new service center near São Paulo, Brazil. It will include maintenance hangars, bonded warehouse, workshops, and a dedicated heliport and will house spares, maintenance, product support, and engineering services for the AW119 single and AW109 light twin, and the AW139, AW169, and AW189. Meanwhile, in the U.S., Leonardo's service organization has logged more than a full year of operations at its Broussard, Louisiana customer support facility. That location's primary focus is the structural repair of the main and tail rotor blades of Leonardo's commercial helicopters "up to the same level of complexity that we typically do in our production plant," said Giovanni Cecchelli, v-p of global customer support. "This is really part of our strategy to get close to our customers with very clear brand and ethos that is recognizable."

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NetJets adopts advanced qualification training

by Matt Thurber

NetJets has become the first FAR Part 91K/135 business aviation operation to receive FAA support to launch an advanced qualification program (AQP) for pilot training. The first NetJets fleets to transition to the AQP are the Citation Sovereign and Latitude, with the Citation XLS next on the schedule.

NetJets' fractional-share operation has become the first Part 91K and 135 business aviation operation to receive FAA support to launch an advanced qualification program (AQP) for pilot training. The company has been working on AQP since 2018, but the steps that led to this process began 10 years earlier when NetJets transitioned to training to Part 121 standards.

The first NetJets fleets to transition to the AQP are the Citation Sovereigns and Latitudes, with the Citation XLS fleet next on the schedule. This will be followed by the Global, Phenom 300, and Challenger 350 fleets toward the end of this year. Next year will see the Challenger 650 and Citation Longitude added to AQP, lastly the Gulfstream fleet, which needs to be done at the FlightSafety learning center in Savannah, Georgia. The other fleets' training is all done at the FlightSafety center next door to NetJets' headquarters in Columbus, Ohio.

NetJets had already implemented a higher standard of training, under a program where the FAA recommends that charter operators train pilots to Part 121 standards, during the period from 2008-2018. This included implementing an Aviation Safety Action Program (ASAP) and flight operations quality assurance (FOQA) program. NetJets also more recently added an air carrier designated examiner program where FAA inspectors oversee all training and checking and are dedicated to the NetJets operation. All of these efforts got NetJets nearly all the way to meeting AQP requirements, and the FAA encouraged the company to work with the agency to achieve full AQP status.

AQP steps up pilot training to a much higher level compared to traditional business aviation processes. "What we have found is AQP allows NetJets to develop a training program that's appropriate for us and our pilots," said Sean Kennedy, NetJets director of operations and v-p of operations. "They can focus on where they need to improve and be better prepared for our flight operations." A key part of AQP is adding real-world scenarios to flight training, based on FOQA information from the NetJets fleet.

Beginnings of AQP

The process that led to NetJets adopting the AQP training began in 2007 when the company stepped up its pilot training efforts, starting with adding more human factors elements. The problem that NetJets was trying to solve, Kennedy explained, was that pilot training was too regimented and predictable. "It's more of a skills-based event than decision-making," he explained.

NetJets was an early adopter of the FAA's ASAP, which requires gathering information about flight operations to inform safety decisions. But it wasn't clear how to use that information to modify recurrent simulator training.

Adding to the challenge was that at the time, NetJets was flying 23 different aircraft types. "The training was dependent on the simulator instructor meeting a standard set of requirements [stipulated by] the regulations," he said. "We're limited in what we can do in the simulator, and there is only so much simulator time available. There are a lot of incidents and accidents [where we] see pilot error. We felt the regulations were getting a little outdated."

To make training more consistent and pertinent, NetJets developed its own lesson plans that still met Part 135 requirements while allowing parts of the checkride to take place during the training. This opened up more time to conduct realistic scenario-based training based on lessons learned from the ASAP.

Although the regulations weren't keeping pace with modern training requirements, NetJets nevertheless followed a regulatory path toward AQP, starting with moving into training to Part 121 standards. The FAA encourages charter operators to do this in Part 135.3(c), which says operators "may comply with the applicable sections of subparts N and O of Part 121." The benefit of subparts N and O, Kennedy explained, "is that it allows you to put more human factors, decision-making, and line-oriented flight training into your program."

NetJets did roll this out to all 23 fleet types in its fractional-share operation. "The best way to describe the change," he said, "is that we are the operator and we determine how to do training and how to train instructors." This was helpful because, with so many different aircraft types and training centers, many of the instructors weren't familiar with NetJets' standard operating procedures and checklists. Many operators rely solely on manufacturer flight manuals and checklists, but a big part of AQP is a standardized system of manuals and checklists.

The NetJets team started writing the standardized documents in 2008 and finished in 2018, at which time all pilot training was up to Part 121 N and O standards. This included training the FlightSafety instructors who teach NetJets pilots to the new standards. "This is no less than two full eight-hour days in a large classroom talking about the objectives of our training cycle," he said, "then taking them to [a learning center] and evaluating the instructors and making sure they can teach our pilots."

After presenting these achievements to the FAA in 2018, which were based on the NetJets FOQA, ASAP, and compliance-monitoring program, the FAA countered with an intriguing offer, Kennedy explained. "[The FAA manager], who a lot of inspectors report to, looked at me and Chris [Eastman, NetJets director of training] and said, 'You are 85 percent of the way there, I want to help you become first to achieve AQP."

There were other challenges, however, including that Part 121 regulations are written for operations that fly aircraft equipped with permanent jumpseats and on scheduled routes, so it's easier for FAA inspectors to fly along and observe. In a business jet with an ever-changing schedule, he said, "The FAA can't just show up for an oversight flight. We had to work through that. Chris and his team were very successful at doing that. Now we're officially through Phase 4 of AQP and we're the first 91K and 135 carrier to achieve this."

AQP and Pilots

For pilots, AQP means that instead of the traditional recurrent training every six months, Kennedy said, "We allow our pilots to improve themselves, their decision-making, and how they fly, not come in every six months and just prove they can meet the [FAA standards].

"AQP is a whole different ballgame," said Kennedy. "It's a custom program for NetJets, and the FAA looks at the data and decides what you need to do to meet the next cycle. The requirements change every year. Pilots can't anticipate them, and the training is relevant to what's happening in the industry."

What that means for the actual training is taking lessons learned from accidents and applying the human factors lessons to the upcoming training. It also resulted in improving the NetJets checklists based on many studies of checklist human factors. Long checklists that cover every eventuality are counterproductive, and using flows backed up by shorter checklists is proving to be much safer and more efficient.

Although AQP originated with airlines, it isn't rigid and it allows for customization to fit the operation. "If there are certain areas that we find a particular crewmember could use more experience on, we could make that the focus for [that pilot]," he said. And there is also a remediation process for pilots who need help in a specific area.

The benefits of AQP are evident in the NetJets training, which allows pilots, if all goes well, to complete the recurrent training checkride on the second simulator flight. During subsequent simulator flights, the pilot is free from "checkride-itis" stress so they can focus on learning something important or new.

"We get a tremendous amount of feedback to learn more about the aircraft and how the system works in a startle environment. AQP has empowered pilots to learn what decisions they're making and how the aircraft reacts. For example, if this component fails, what else isn't working?"

This benefits the trainee pilots in other ways too, because those who take the time to prepare for the training session ahead of time will have a much more comprehensive experience. "We reward them for coming in prepared," Kennedy said. "Then they have a minimum of two hours to experience other events to improve [their skills]. If they are struggling, they do have to meet the minimum requirements. We have the best pilots in the world and one of the most supportive pilot unions in the world. A lot [of these improvements] are because of their feedback."

AQP is embedded in NetJets, and new-hire pilots are introduced to the program right away. "It's usually eye-opening for them," Kennedy said, "but they see a strong commitment to safety and human factors. They say they wish they would have done that where they worked before. I could not imagine not doing it. I highly recommend it." ■

NTSB, business jet operator played key role in family crash assistance process

by Kerry Lynch

On February 15, 2005, Tricia Coffman did not want her husband to step aboard a private jet the next day. She asked him to fly commercial, worried about his safety. He promised her that he would be fine and that no matter what he would find his way back to her. The next day, her husband, David Joseph Coffman, Sr., awoke early and departed for a trip from Richmond, Virginia, to Santa Ana, California aboard one of his company's Cessna Citation 560s.

Operated by Martinair, Circuit City's Citation 560, N500AT, had scheduled fuel stops in Columbia, Missouri, and Pueblo, Colorado. The twinjet crashed as it headed toward the second fuel stop on a ranch 4 nm east of Pueblo Memorial Airport, killing two crew and all six passengers, including 34-year-old David Coffman.

Tricia Coffman read the National Transportation Safety Board (NTSB) probable cause citing "the flight crew's failure to effectively monitor and maintain airspeed and comply with procedures for deice boot activation on the approach, which caused an aerodynamic stall from which they did not recover."

But her story to attendees at the 2020 Air Charter Safety Foundation's Air Charter Safety Symposium was not about the cause. It was about her personal experience—how she learned of his death; how she explained to her four children, all of whom were too young to fully comprehend; and how her husband's company and the NTSB handled the aftermath. This experience, where Circuit City embraced her as family, got her through her worst nightmare, she recalled.

Don Chupp, president and CEO of Fireside Partners, which specializes in emergency response programs, in introducing Coffman to attendees at the ACSF symposium on Tuesday, noted that much attention is paid to safety leadership. Equally important, though is leadership on the family assistance. "It's a responsibility of everyone in this room," Chupp told attendees. "Even if you are not bought in on the emotional aspect, you've got to be bought in on the business aspect. The best countermeasure to protect your house after a bad event is through the people most directly affected."

The best way is to stay connected, he added. "When people feel as though they are not cared about, communicated with, and cared for, how do they express that frustration?" He said, adding there are at least other professions willing to listen if the companies involved don't and contended that "taking care of people in a bad scenario is exceedingly simple." But he added that people will not give themselves permission to do it. Companies have "notify families" in their plan, but never how, by whom, and to what degree involvement comes with it.

Coffman said sometime after the events surrounding the death of her husband, she learned that Circuit City senior executives were advised to avoid too much contact with the surviving families because anything they could say may be used later against them in a lawsuit. The CEO of Circuit City at the time, W. Alan McCollough, responded he didn't care—let them sue. He was going to do the right thing.

Eric Jonas, senior v-p of human resources, broke the news to Coffman on February 16, sometime after lunch. Her voice quivered at times as she recalled the events that had occurred 15 years earlier. She remembered being told, but not much what was said. She was in a fog. She made a couple of calls to family members to share the news and then remembered sitting on the ground, wondering what good could have come out of this. Coffman said she had lived her life understanding that what had come her way was for the general good, even if she couldn't see it at the time. But at that moment, she said she could not have seen any good. She remembered seeing a bus pull up down the street and wondering how the rest of the world was moving on as hers had stopped.

Sharing the News

At that point, her four-year-old David came into the room and she realized she would have to share the news with him, her three-year-old daughter Sarah, and 15-month-old twins Alexander and Sydney.

Not able to fully grasp or believe the news, she called the county sheriff's department in Pueblo for confirmation. She was told at the time that seven were found and an eighth was still being located. In Coffman's mind, the eighth was her husband David. He promised he would return to her. The sheriff's office then gave her a contact with the NTSB. The investigator was en route to the crash scene at the time and did not have much information. But she was advised that chances weren't good that he survived. The next day she received a call that the eighth was located.

Coffman then felt a need to go to the scene. She began to research flights, a hard task given the busy ski season. Circuit City executives called and asked if they could make arrangements for her to visit the scene.

The next day a van arrived with Circuit City human resources executives on board to take her to the airport. They told her not to worry about anything but clothes. Baskets of toys, diapers, food, all awaited her and her children at the hotel in Pueblo.

Circuit City had notified the airport and security detail met them at the airport, whisking them through security and onto the airplane before other passengers with as much ease as possible. On the airplane, the crew, notified of the grieving family's arrival, came back to introduce themselves and said they were aware of the situation. In Denver, the family was similarly escorted through the airport, luggage handled for them and brought to cars awaiting them.

There she met with a person the company had assigned to see to everything through her stay in Pueblo—a "guardian angel," Coffman said.

When they arrived counselors were there, as was the Red Cross, and officials from the sheriff's office to make sure they had food and anything else they could need.

The next morning, they met with the NTSB and went to the crash site. The kids initially remained in the car as Coffman looked at the wreckage site, trying to make sense of what happened and where David Coffman may have been during the scene. There was a small memorial set up on the ranch with flowers. Her oldest had left the car, drawing a smiley face in the dirt, saying he wanted his dad to know he was there and he wanted him to be happy.

She later called the coroner asking to see her husband but was informed it was a violent crash and her husband was not recognizable. Given the fact she could not see him, she still had a hard time grasping it was true and didn't want to believe it.

Later Coffman received dog tags that her husband had worn. The NTSB had found them and asked that they be handed over to Tricia Coffman at the appropriate time. The fact that her husband was on the airplane made no sense to her. David Coffman was with different passengers than she had expected. But then Tricia Coffman learned there were two airplanes on the trip and David Coffman was originally aboard Circuit City's Citation 560 N500FK. During the refueling stop in Missouri, he agreed to move to the other Citation jet, N500AT, after learning of an imbalance of passengers aboard the two aircraft.

She had met executives from Martinair and said she recognized their grief. They had lost as well.

When she returned home, David Coffman's vehicle was in the driveway. Circuit City had arranged for its return. The company later had held a memorial service at their offices and telecast it to regional offices.

During that service, the human resources director—the same who had made that first call—told employees: "This is our family. We need to wrap our arms around these people...forever. This is our family." And as such, shortly after the CEO of the company, as well as his wife, came to Coffman's house. Coffman said she did not know really who they were, she was still in a fog. But she did know he came with a bag of books and sat on the floor and read to her daughter. His wife built Lego with her son. These visits continued regularly every other Sunday. On the odd Sundays, the president of the stores would visit. "They took care of us," she said. This meant excursions to restaurants, movies, and parks to make sure she and her family got out of the house. Circuit City also saw to them financially, continuing pay and full bonuses for a year and health care for three years.

A year later a memorial was held in Pueblo commemorating the loss. One item still missing for Coffman was her husband's favored watch. She wanted to pass it along to her eldest son, but it had not been found. She and another widow, who was still missing her spouse's wedding ring, went a day in advance to look for the lost items at the wreckage site. After an exhaustive search, they had nearly given up the search for the small items on the vast ranch. When she did discover them, just by a lark and nowhere near where they would have expected to be found, Coffman said she felt that closure, that somehow David Coffman had found his way back to her.

Coffman stayed in constant contact with NTSB, calling them periodically with questions. She read the probable cause to the audience at the safety symposium and noted the regulatory changes and congressional interest that surrounded it. She said she had participated in meetings and appeared before congressional panels. But her focus was not so much on that. It was on her interactions with the company and how her family was taken care of in the aftermath. The fact that everyone dealt with her directly was a big help, she said.

Looking back at the day she sat on the floor, she said, "to me, Circuit City was the positive. NTSB was the positive." Her children have vague recollections of the time, but they remember the trips to the park, she said. ■

NEWS note

To better safeguard customers and staff, charter provider VistaJet is now including RDT's Tempus IC2 health monitors aboard its entire fleet. The telemedicine devices allow flight crew to measure and transmit vital clinical data and images, along with real-time voice and video, to medical assessment provider MedAire's 24/7 ground center.

In addition to diagnosing in-air medical situations, MedAire can also assist the ill person with obtaining further medical care or prescription medication at the aircraft's final destination. Should the person require urgent treatment not available onboard, VistaJet's operations team can also be informed to change the flight path or final destination. ■

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Connectivity improvements

Hollywood movies and television shows on bulkhead monitors, in-seat monitors, and mobile devices through Venue's Stage on-demand service, with audio piped to cabin speakers.

Send Solutions Airtext

While new LEO satcom networks are coming, Iridium remains the network of choice for low-cost airborne connectivity. Although not yet speedy enough for web-browsing and movie streaming, Iridium does provide true worldwide coverage, something that higher-orbiting satellites like those of Inmarsat, Viasat, SES, and Intelsat aren't able to offer (their coverage isn't available over polar regions).

Send Solutions founder David Gray figured that most passengers and pilots are satisfied with being able to send and receive text messages and emails without attachments, if the price is significantly lower. The company's Airtext systems do just that and are in use in everything from single-engine piston-powered light airplanes to the largest business jets.

Certified and installed Airtext units retail for $16,975, which includes voice calling via Iridium, or $9,750 for texting and email only. Send Solutions also sells portable Airtext units, with the voice-capable LT+ for $6,450 and the regular LT at $4,950. Service prices are $300 per year for the first 500 messages, then 5 cents per text. Gray said that some Airtext power users spend about $1,500 a year, which is far less than costs associated with higher-orbit satcom systems.

Airtext users can message FBOs for fuel and other requests using its FBOLink service. The messages are received at the FBOs via email, and FBOs can respond to the aircraft.

Pilots can access digital-ATIS via Airtext, eliminating the need to switch to an ATIS frequency to listen to the broadcast.

A new Airtext feature is seat-to-seat texting, handy during the pandemic for passengers to ask a question of flight crew, according to Gray, without having to visit the flight deck.

Send Solutions has also developed the Airtext map on the iPad. This displays a moving map for passengers to see flight plan and trip information, including points of interest. Bulkhead monitor versions are also available.

BizjetMobile Texting

BizjetMobile also offers a low-cost Iridium-based messaging system. Its most recent product release is the CrewX texting and email system, retailing for just $2,490. Unlimited service costs $199 per month.

For additional capability, BizjetMobile's Chiimp Next system provides unlimited messaging and some access to data services as well as voice calling. The system helps operators manage passenger data by keeping them updated on how much data they use. After the flight, Chiimp Next sends an email to each passenger and crewmember to notify them of their usage.

The Chiimp system costs $9,990, plus $299 per month for unlimited texting, email, and voice calling.

Gogo Business Aviation's Lower Altitude

Gogo is leveraging the high-speed capability of its new Avance platform and recently unveiled a lower service level, dropping 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.

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, and no physical changes are needed to the airborne hardware. Customer aircraft must be equipped with Avance L3 or L5 systems, or for commercial airline operators, Gogo ATG-4 and ACPU2 technology. There are more than 1,300 business aircraft already equipped with Avance hardware.

Gogo customers can now use the air-to-ground system down to 3,000 feet.

During flight testing of the new capability, 50 aircraft flew with the new software over four months, and the service to 3,000 feet agl was available "at most locations throughout the contiguous United States," according to Gogo. However, the company added, "Testing shows service may not be available everywhere and system performance may vary from airport to airport, Gogo's service guarantees apply once an aircraft reaches 10,000 feet [agl]."

"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. "The additional time to conduct business or make arrangements was valuable and appreciated by our passengers."

SmartSky's Patent Battle

SmartSky is still building its new air-to-ground network that employs beamforming technology using both 4G LTE and emerging 5G spectrums. Its airborne connectivity network has been in development for eight years, with more than 1,000 hours of flight testing by aircraft owners, airlines, and fleet managers.

Although SmartSky had planned to begin widespread service in the U.S. in this year's second quarter, that has been delayed. "We are continuing to move forward with progress and assessing exactly what that looks like for aviation in this new business reality," said a SmartSky spokesman. "We just received our 170th patent and we are excited for our current customers and partners to experience our network."

SmartSky's network will compete with Gogo as Gogo pioneered air-to-ground connectivity in the U.S., having launched as Aircell in the 1990s. Gogo challenged one of SmartSky's patents with a filing on April 1, questioning the validity of a SmartSky patent having to do with software-defined radios.

"We strongly believe that the '947 patent granted to SmartSky is not valid," said Sergio Aguirre, president of Gogo Business Aviation. "We have submitted evidence of published materials clearly showing that well before SmartSky asserts to have invented the concepts in the '947 patent, others had conceived of the claimed subject matter. Further, we believe there are many of SmartSky's patents that are not valid. This is only one of many patents we could have challenged in a patent review."

SmartSky filed a response to the Gogo patent challenge on June 22. According to a statement from SmartSky president Ryan Stone, "We believe the Gogo filing is without merit. We believe their argument is based on a highly faulty premise. For their case to hold water, they had to first, and incorrectly, redefine a common industry-standard term to suit their purpose."

His statement went on: "While there are various specifics in our filing as to why the patent was validly granted and should remain valid, the crux of our argument is one key point. Gogo made a misguided attempt to redefine a commonly used industry term, a software-defined radio, in order to then argue that our patent should not be valid. Our response provides the clear and compelling evidence that Gogo's redefinition is wrong, we provide ample evidence of the industry-standard definition of a software-defined radio, which when applied to this case proves why our patent was, still is, and should remain valid."

SmartSky expects a U.S. Patent & Trademark Office decision in September. The PTO should, he said, "either decline to initiate further action and effectively stand by its issuance of the SSN patent (similar to a summary judgment) or initiate the [inter partes review] IPR and effectively move things to a formal proceeding in which each side presents its case. This process typically takes about a year before a decision is reached." ■

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Bizav bounces back

If the financial damage is on the milder side and international travel restrictions come to an end, he believes the industry could make up the remaining losses over the next six months, versus about another nine months for the airlines. But if the financial impact turns out to be deeper or travel restrictions remain in place, then it will take longer.

Kuhn believes October will be a bellwether month, saying, "We'll be six to seven months out from the start of this pandemic, so we'll have a little more clarity." October is also traditionally the busiest month for business aircraft traffic and when companies finalize plans for the coming year. The month will also likely get a boost from the run-up to the U.S. presidential election in early November, he said.

"So if organizations are reluctant to travel in October, then we could see a suppression in business aviation's recovery," he said. But if travel is more robust in October, that could indicate a full recovery is just around the corner, Kuhn indicated.

Outside of North America, Europe is the next region poised for recovery as lockdown-lifts accelerated in Europe last month. WingX managing director Richard Koe said that these relaxed travel bans have "led to a return in confidence, evident in the quicker recovery in flight activity."

In the second week of July, European business aircraft activity was back up to 77 percent of normal activity, inversing its negative trend in April, according to WingX data. The busiest European countries in the first week of July were France and Germany, down by 24 percent and 10 percent year-over-year, respectively. Like the U.S., most flights in Europe are still domestic, Koe added.

Given its 14-day quarantine for all arriving passengers, the UK has unsurprisingly been the hardest hit in the European market, with flights down more than 55 percent.

"Whereas in North America the overall recovery has cooled, and although certain U.S. states are seeing growth in activity, this may well be reversed if virus outbreaks require further lockdowns," Koe noted. "This is clearly the case in Asia where mid-month virus outbreaks have stalled recovery. Clearly we are entering a delicate phase in the recovery, but assuming restrictions continue to lift, we expect pent-up demand for flights to materialize this summer."

Kuhn is equally optimistic. "We live in a global, connected world and business aviation will be vital to our recovery," he concluded. "As we face down this new, unforeseen challenge, our industry will rise to the occasion and it will play a key role. Business aviation isn't going anywhere and maybe we'll see that 10,000 daily flight average in the not-too-distant future." ■

Founded in 2018, fractional HondaJet operator Jet It is seeing growth and expects to triple its fleet of HondaJet Elites to 15 over the next few years.

Share provider Jet It sees silver lining amid pandemic

by Curt Epstein

While the Covid-19 pandemic has affected all sectors of aviation, for some it has provided opportunities. Among them is fractional aircraft provider Jet It, which launched in 2018 and operates only HondaJet Elites.

With the small-to-midsize business jet segments seeing a stronger comeback due to the constraints on international travel and a renewed increase in private travel and the peace of mind it can afford, the company has grown. "We consider now a very interesting time," said company CEO and co-founder Glenn Gonzales. "Our business model affords the market that's looking for private means of travel more autonomy and more control. Especially in today's environment with the pandemic, our business model coupled with that market is a great opportunity."

The largest share the company offers is a half, for $3 million. "We will not sell the whole airplane, we leave that to Honda," said Gonzales, who previously served as the airframer's regional sales manager for the Northeastern U.S. Other shares available range from the smallest of a tenth to a sixth, fifth, quarter, and third.

Different than most fractional operators, Jet It uses days rather than hours in its accounting, with a half share equating to 130 days use of the aircraft and stepping down depending on the size of the share. "Essentially it's your airplane for the day—you can fly as many hours as we can squeeze into a normal crew duty day," Gonzales told **AIN**.

The company's research indicates its typical mission is 2.7 passengers and an average flight time of 90 minutes. With HondaJets based in North Carolina, Virginia, Delaware, and Florida, Jet It's operating model is predicated on the airplane returning to its base each night. That isn't to say owners can't use their shares for one-way travel. "If you so choose, there's no reposition cost to come back and pick you up three or four days later," said Gonzales.

In addition to a monthly maintenance fee to cover necessities such as insurance and Wi-Fi—which for a half share totals $13,000 monthly and is prorated for lesser shares—owners pay only the direct operating costs for the HondaJet, which currently tallies at $1,600 an hour, a price significantly lower than that for similar-sized aircraft.

Jet It's fleet consists of five of the six-passenger light twinjets, four of which are fractionally-owned, while the fifth is leased. Gonzales confirmed it is currently out of inventory and has a one-aircraft-per-five-owner ratio. When the aircraft are not required by their owner, Jet It is free to make them available through charter. Because of this, it expects to put approximately 800 flight hours a year on each aircraft. According to the company, by mid-June, it had already exceeded its charter quota for the month, while owner flying was increasing to approximately 70 percent of the pre-Covid-19 levels.

Headquartered in Greensboro, North Carolina, near the HondaJet factory, the company has a firm order for 10 additional Elites and expects the next delivery in August. That aircraft will be based in the New York City area, the company said.

Included in the owner package is concierge services, which can arrange for ground transportation via the company's preferred and vetted vendor, and for meals to be delivered to the owner on the road from trusted caterers.

Gonzales is especially proud of another unique benefit available through his company's fractional plan. "Being a pilot and aviator myself, flying fighters to Gulfstreams and the HondaJet, it is important to me to also have an opportunity to offer our program to owner-pilots that may have an interest in transitioning and flying their own airplane," he explained, adding such owners would still be responsible for their training and maintaining their medicals. "You have to fly with one of our captains on board, but it's an opportunity to fly your own private jet." ■

XOJet flies flexibly during pandemic, avoids layoffs

by Jerry Siebenmark

While the effects of the Covid-19 pandemic on business aviation are still being felt, XOJet Aviation executives decided from the onset of the virus in the U.S. that the charter operator would not idle hundreds of workers. Many were new to the company, which before the pandemic was adding new jobs and completing a cross-country headquarters relocation. Instead, the privately held company opted to hang onto its 600 employees, diversify its flight operations, and fight for as many charter bookings as it could.

March and April were critical months for XOJet, which was concluding its move from Sacramento, California to Fort Lauderdale, Florida. "We felt that during this period it was important that we not start to train [new employees], then lay them off or furlough them...wait a couple of months, bring them back, and start the whole process over," XOJet president and COO Kevin Thomas told **AIN**. "As a business, we decided we were going to use this time...to focus on the training and reorganization of the structure and do everything we could to diversify our operations and capture every available flight hour that was in the market at the time."

One thing that did fall victim to the effects of the pandemic was the company's plans for the construction of a new, 40,000-sq-ft building at Fort Lauderdale Executive Airport (FXE). Those plans have been put on hold and, for now, it will remain in leased space at FXE. "Once operations start to settle back to normal and we've got some better long-term visibility as to how this recovery is going to take hold, we will begin to reopen those internal discussions," he said.

Financially, XOJet was strong before the Covid crisis, Thomas said. Between that position of strength as well as increasing its freight flights and efforts to book as many charters as it could, it succeeded in retaining employees at XOJet, as well as its wholly-owned subsidiary GMJ, a corporate air shuttle service for Fortune 500 companies. "In that diversification, it really got us through what I would say was a significant low period—a stretch of time in April—and it kept the entire fleet flying and kept the entire organization on its toes," he said. "Now it wasn't normal flying as anyone can attest, but we did in connection with our [retail and wholesale charter sales] team do a fantastic job capturing any available flight hours."

XOJet also was able to avoid layoffs by freezing hiring and reassigning some of its workers, mostly in its talent recruitment department, to work in other areas of the business to support administration, maintenance, training, and operations.

While the reassignment of workers was largely limited to talent recruitment, XOJet already planned for some restructuring of the business so Thomas said there were some employees who were permanently reassigned new jobs within the company. "That was part of our plan anyway," he explained.

Employees have been appreciative of the company's efforts to avoid layoffs and furloughs, with much of the credit going to the "ownership group's decision to muscle through this downtime and keep the operation running," Thomas added. Its owners include a small group of shareholders with a 51 percent stake in the company, as well as a 49 percent stake held by Vista Global Holdings.

Recently, business has been picking up at XOJet, which operates a fleet of 43 owned aircraft—primarily Bombardier Challenger 300s and Cessna Citation Xs—with access to another 116 aircraft through Vista Global. Thomas explained that short-term bookings are where XOJet has seen new customers, whom he described as a combination of people new to XOJet or new to charter flying. "We have seen a significant short-term booking curve and we're operating day in day out at an average of 85 percent capacity compared to where we were pre-Covid-19," he said. "And our long-term booking curve, while still not where it has been historically, is starting to come back." ■

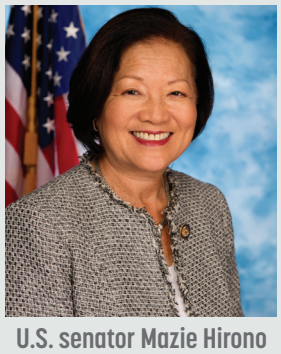
XOJet Aviation kept its fleet of Challenger 300s and Citation Xs flying during the height of the pandemic's impact on business aviation by scrapping for any available flights on the market, including freight.

Hawaii pols seek end to Part 135 exemptions

Hawaii's two U.S. senators, Brian Schatz and Mazie Hirono, have introduced legislation that would mandate all air tour and skydiving flights be conducted under FAR Part 135 and that all aircraft used for such purposes be equipped with crash-resistant flight recorders capable of supporting flight operations quality assurance programs.

U.S. senator Brian Schatz

The Air Tour and Skydiving Safety Improvement Act would also require establishing and implementing a performance-based standard for remote flight data monitoring, flight data monitoring programs for tour operators, and controlled flight into terrain (CFIT) training, as well as a requirement for tour and skydiving aircraft to have TAWS. Schatz said the legislation is necessary in the wake of several high-profile skydiving and air tour accidents in Hawaii over the last 18 months.



U.S. senator Mazie Hirono

He added, "The tragic number of air tour accidents we've seen in Hawaii has made it clear that we need to do more to protect passengers and pilots. Our new bill will apply essential safety standards recommended by the NTSB, protecting passengers and improving the safety of air tours for everyone."

The bill from the Aloha State senators came just days after several of their Senate colleagues introduced legislation that would mandate installation of helicopter TAWS (HTAWS) and crash-resistant flight data and cockpit recorders on all transport-category (Part 29) turbine helicopters that can carry six or more passengers. **M.H.**

ANTHONY PECCHI/AIRBUS

EASA has given a nod to Airbus Helicopters' new, foldable five-bladed H145D3 twin.

EASA approves foldable five-blade Airbus H145D3

by Mark Huber

Airbus Helicopters' new, foldable five-blade H145D3 twin has received EASA certification. FAA approval is expected by year-end and a military variant is anticipated to win certification in 2021. Customer deliveries begin later this summer.

The European certification covers single-pilot IFR operations (SPIFR), single-engine Cat. A/VTOL, and night vision capability. Airbus Helicopters CEO Bruno Even called the helicopter "an excellent example of our quest for continuous improvement and providing incremental innovation that responds to our customers' requirements."

Announced in 2019, 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 D3's twin Safran Arriel 2E engines now incorporate Fadec and its digital Helionix avionics suite incorporates a four-axis autopilot and an integrated wireless airborne communications system (wACS) that provides 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. Existing D2 operators will be able to upgrade to the D3 configuration via an upgrade kit. ■

Swiss researchers develop fast 'detect and avoid' tech

University of Zurich researchers have developed technology that will enable drones to detect and avoid other fast-moving objects in as little as 3.5 milliseconds using special event cameras and newly developed algorithms. The reaction time makes the aircraft "nearly" as reliable as human pilots and is directed at beyond visual line of sight operations, according to researcher Davide Falanga.

In demonstrations, the system installed onboard a test aircraft was shown to successfully detect incoming objects "more than 90 percent of the time" in both indoor and outdoor tests. Traditional camera-based detect-and-avoid technology relies on computer analysis of all the pixels in a digital image, while event cameras use smart pixels that work independently of each other. This allows the onboard computer to dramatically speed computations by detecting changes in individual pixels such as light intensity, as opposed to having to wait for analysis of the entire image, thereby slashing vehicle reaction times by 30 to 40 milliseconds.

Researchers developed new algorithms to work with the event cameras that subtract drone movement from recorded camera events over a short burst of time. Related research was funded by the Swiss National Science Foundation through the National Center of Competence in Research (NCCR) Robotics and published in the Science Robotics journal. **M.H.**

News Update

NTSB: L.A. Newscopter Had Midair with Drone

The NTSB has concluded that damage sustained by a Los Angeles news helicopter late last year likely resulted from a drone strike. The Board concluded that the probable cause of the damage was "an in-flight collision with a hard object of polycarbonate construction, with size and features consistent with that of a small UAS (drone)." The aircraft was operated by long-time electronic newsgathering aviation and charter firm Helinet for television station KABC. The pilot reported colliding with an unknown object and made a precautionary landing at a nearby helipad.

Pushing For Safer Fuel Tanks

Two Colorado congressmen are continuing to push for mandatory crash-resistant fuel systems (CRFS) in all helicopter air ambulances. Colorado democrats U.S. Reps. Joe Neguse and Ed Perlmutter renewed their call for their colleagues to pass the Safe Helicopters Now Act, which provides operators who install the safer fuel systems with offsetting tax credits. Those systems are already required in new-production helicopters effective April 5, 2020, under the provisions of the 2018 FAA reauthorization. The congressmen introduced their bill last year and made their latest appeal on the fifth anniversary of the July 3, 2015 crash of an Air Methods Airbus AS350B3e shortly after takeoff from the Summit Medical Center Heliport in Frisco, Colorado.

Bell Delivers ENG 429 To China

Bell has delivered the first electronic newsgathering (ENG)-equipped helicopter to China. The 429, intended for Chinese national broadcaster China Central Television (CCTV), will also become the first ENG-configured 429 to enter service, according to a company spokesperson. Reignwood, an independent Bell representative in China, will receive the helicopter and incorporate aerial photography systems before it officially enters service. Its CCTV-authorized subsidiary Reignwood Star will operate the rotorcraft.

Leonardo Gets First IFR AW119Kx Order

Leonardo has logged the first commercial and EMS order for its IFR-certified AW119Kx single-engine helicopter. Life Link III, which already operates 10 VFR-equipped AW119Kxs, placed the order and optioned a second. Delivery is expected from the AW119 final assembly line in Philadelphia in third-quarter 2021. Leonardo's IFR-certified AW119Kx gained FAA approval in July 2019 and is the platform selected for the U.S. Navy's new primary helicopter training aircraft, the TH-73A. The aircraft is fitted with Genesys Aerosystems glass panel avionics and redundant flight systems typically found in twin-engine aircraft.

Bell embraces virtual reality to design new rotorcraft

by Mark Huber

Bell turned heads when it revealed its FCX-001 concept helicopter mockup at the 2017 Heli-Expo show. Now, more than three years later, two Bell insiders revealed not only how the company used augmented and virtual reality (VR and AR) to create that concept, but how the company is using these technologies today, along with staple technologies of computer gaming, to slash prototyping times for new products including the Nexus eVTOL urban air taxi model.

Speaking on a Helicopter Association International webinar titled "Using virtual reality to design the future of flight," Bell's Levi Bilbrey and Cameron Ayres pointed out the many advantages these technologies bring to the table. Bilbrey, manager of creative services, said the road to a new aircraft begins with the traditional sketch, albeit now done more rapidly thanks to modern animation tools. That technology facilitates faster transition into the "3D space," once the exclusive purview of engineering programs such as Catia or SolidWorks.

The big jump in productivity comes, Bilbrey explained, when those early 3D designs are run through the human factors gauntlet using virtual reality. This allows the fine-tuning of designs from human feedback in real-time, for instance, adjusting cockpit dimensions for sightlines or crashworthiness factors such as head-impact criteria. Wearing a VR device and camera, a pilot can communicate directly with a designer armed with an electronic sketch tool.

"We're able to jump right into a physical space and look around and actually move these elements around the person in real-time and that's been that big leap forward," said Bilbrey. "[In the past] this was stuff you couldn't tell until you built a physical model to sit in of cardboard, foam, or plywood to really get that 3D awareness. Here [with virtual reality] we're able to do that really rapidly and then advance the design."

The technology also drives greater collaboration and synergies between the engineering and design sides of the company, he said. "It's no longer prioritizing one over the other," form versus function. Rather than the traditional analytic engineering left brain versus the creative design right brain, Bilbrey credits the technology, deployed across cross-functional groups, as creating a "holistic brain" inside the company, where engineers are more aesthetically aware and designers embrace more engineering sensibilities and where issues of contention led to discussions that were more Socratic in nature as opposed to "a game of ping-pong" that led to unsatisfying solutions.

While the main advantage of using VR to design a new product is unquestionably overall program speed, it also allows real-time feedback from both pilot and passenger focus groups that can quickly be incorporated into the design, Bilbrey said, producing an end result that is not just visually compelling, but more intuitive and user-friendly, such as simplified avionics displays. The technology makes customer collaboration more immediate and compelling, unlike what he called "death by PowerPoint," which had been the hallmark of customer focus groups in the past. The collaboration required for this result works not unlike popular video game engines, Bilbrey said.

"I don't know that 15 years ago a game designer would have made sense to hire at Bell, but I can speak from firsthand experience that having a background in game design and serious games [is helpful]," said Ayres, an innovation engineering specialist. "Rapid iterative development is something we need to have moving forward." However, Ayres added that the process of incorporating game design technology into virtual reality tools was "not easy."

Bilbrey said that using the technology is a "significant shift" for Bell that diverges from the traditional route of OEM engineering, but that it is gaining in popularity throughout the company. In fact, he and Ayres formed an internal interactive council at Bell to promote best practices and share information and lessons learned with other teams in the company. The council doesn't just cross-share information, but in some cases stands up other small project teams at Bell. It also works with third parties outside the U.S. manufacturer. ■

Bell used augmented and virtual reality to design new models such as its Nexus eVTOL aircraft.

HAI members pledge to be 'Covid Clean'

The Helicopter Association International (HAI) is urging its members to "take the pledge to be Covid Clean." Launched in June, participating members in HAI's "Covid Clean" program agree to abide by a list of cleaning standards and policies best practices, including aircraft disinfection between flights and daily deep cleaning, facilities cleaning, and the use of personal protective equipment (PPE) by personnel. Compliant companies will receive HAI-provided emblems, logos, certificates, and text that can be integrated into marketing materials to reassure customers.

"We believe that most of our members are already taking these steps to protect themselves and their customers," said HAI president James Viola. "We want to assist them in publicizing these efforts so that anyone taking a flight is aware that the company takes their health seriously. Taking the Covid Clean Pledge provides these companies with tools to publicize and demonstrate their commitment to the health and safety of their passengers and crew in a visible and reassuring way." Viola said the program will help build the level of customer confidence required to eventually return the industry to normal.

In addition to sanitation best practices, pledge takers promise not to transport anyone who is visibly ill, recommend the use of PPE by passengers, and make PPE available to passengers who need it. **M.H.**

Sikorsky-Boeing Defiant busts 200-knot barrier

The compound Sikorsky-Boeing SB-1 Defiant helicopter broke the 200-knot speed barrier at Sikorsky's flight test center in West Palm Beach, Florida, achieving a forward speed of 205 knots. A Sikorsky spokesman said the aircraft, one of two finalists for the Army's future long-range assault aircraft (FLRAA) program, should reach its target speed of 250 knots within the next few months. Because the aircraft used less than 50 percent of its propulsor power, the development team expressed confidence that the aircraft could reach—and perhaps exceed—that goal.

The SB-1 is competing against Bell's V-280 Valor tiltrotor, which exceeded 300 knots forward speed in level flight last year. Both the Sikorsky-Boeing team and Bell were awarded Army competitive demonstration and risk-reduction contracts to continue aircraft development in March. The Army said it plans to select a finalist sometime in 2022.

Sikorsky and Bell are also competing for the Army's future attack and reconnaissance aircraft (FARA) program. Sikorsky is fielding a technologically similar design to the SB-1, a coaxial main rotor system mated to an aft propulsor, in a smaller package it is designating as the "Raider-X," while Bell is offering a conventional design it calls the "Invictus 360."

Earlier this month Bell announced its development team for that program. Members include: Collins (avionics, mission systems), GE (T901 engine), ITT-Enidine (vibration eliminators), L3 Harris (cameras, sensors), Parker Lord (rotor dampers, main rotor CF bearing, tail rotor torsion strap, active vibration control), Mecaer (retractable tail gear), Moog (flight control computer/electronics, software, flight control actuation, fly-by-wire components), and TRU (simulators).

The Army plans to select a FARA finalist in 2023 and field the aircraft by 2028. **M.H.**

Daher expands TBM app safety features

by Matt Thurber

Pilots who use the Me & My TBM app to record flights in their TBM turboprop singles now have access to more information to help improve performance and safety with the release of Version 4. The most useful new feature is the ability to download a full report of the flight, allowing pilots to assess their performance compared to specific criteria and other pilots' experiences.

"It's an improved way to get data from the aircraft to the phone and computer," said Daher aircraft division v-p of customer support Raphaël Maitre.

After the flight's information is sent to Daher's servers from the TBM's Pratt & Whitney Fast flight data retrieval and transfer system, the app shows detailed information about the flight. "We are making it graphical with the approach profile," said Daher aircraft division senior v-p Nicolas Chabbert. "We're also trying to give hints and a way you can self-critique your energy management and on-speed [skills]. Day-to-day, it's good that we all try to improve ourselves."

With the new Version 4, a full flight report—including analysis of approaches and landings in comparison to stabilized approach criteria—can now be emailed from the app. The criteria include airspeed and pitch at 500 feet, 50 feet, and touchdown; engine torque; and vertical speed.

Pilots can compare their skills with other TBM pilots using the app's "Aviator Challenge" feature, which scores flights against key references and compares them to the participating fleet. Scores are now provided in percentages, as well as points. Trend analysis helps pilots see their progress and also determine areas they might need to work on during recurrent training sessions.

The app, which is available for Android and iOS devices, also displays maintenance status. Daher automatically sends flight times to Camp Systems for maintenance tracking, so pilots don't have to do this manually.

The Fast data retrieval system is standard on the TBM 910, 930, and 940, of which there are about 120 flying. The app's benefits are available for earlier TBM models by downloading data from the Garmin G1000 avionics and sending it to Daher via the internet or using Bad Elf's Wombat wireless data retrieval and database transfer device. ■

The Me & My TBM app is available for Android and iOS devices and allows pilots to view information about each flight in their TBM turboprop.

Vu Systems completes cloud-busting sensor development testing

Development testing of the Vu Systems passive millimeter-wave (PMMW) sensor has been completed, the company announced, noting that this critical milestone in the program marks the end of "all flight testing required to validate the design of its Vu Cube sensor." The Vu Cube PMMW sensor allows pilots to "see" through fog and clouds from much longer distances than traditional infrared sensors—up to two to three miles in low-visibility conditions.

Testing was done in an unpressurized Beechcraft King Air during more than 150 approaches in 50 flights in rain, heavy fog, and extremely low cloud ceilings. The Vu Cube is mounted in the nose of the King Air, but testing of various sensor variants was done to optimize the system for business jets and large air transport aircraft.

"Our sensor operates at a wavelength up to one thousand times longer than that of today's most advanced sensors, and this allows Vu Cube to see through clouds and fog when traditional sensors cannot," said Vu Systems CEO Stedman Stevens. Even in dense fog where the runway was completely obscured for viewing with an infrared sensor, test pilots were able to see the runway with the Vu Cube-provided imagery.

The Vu Cube passive millimeter wave sensor installed in the nose of an unpressurized King Air used for flight testing.

The advantage offered by the Vu Cube is to help avoid landings at alternate airports due to poor weather at the original destination. Weather-related delays and disruptions cost the U.S. airline industry $9.2 billion a year, according to Stevens.

Vu Systems is working with aircraft and avionics manufacturers and airlines to develop Vu Cube installations and certification approvals. Demonstration flights with two airlines and a business jet manufacturer are planned to take place shortly, and avionics manufacturer Saab is working with Vu Systems on incorporating the Vu Cube in an enhanced flight vision system with head-up display. "Now that we are confident that we have a mature product, we are freezing the design and are working toward certification of the final product," said Vu Systems chief science officer Larry Yujiri. **M.T.**

News Update

FlightAware Live Traffic Feeds Microsoft's New Simulator

Microsoft's all-new Flight Simulator 2020 not only delivers impressive graphics but will offer something new for desktop simulation aficionados: real-time live traffic, using a feed provided by FlightAware.

"It's the next level of evolution for this type of simulation," said FlightAware CEO Daniel Baker. Simulators have for many years offered hyper-realistic terrain, buildings, and weather, but, he added, "The new version is stunning. It will raise the bar for everyone else."

Flight Simulator 2020 is still in the alpha testing stage, but the real-time traffic feed is already working. Under its partnership agreement with Microsoft, FlightAware provides a real-time traffic data feed of worldwide air traffic to Microsoft's servers. FlightAware gathers traffic data from its global terrestrial ADS-B network (more than 28,000 receivers) combined with data from 45 air navigation service providers, ACARS datalinks, Aireon's space-based ADS-B network, and airline real-time out/off/on/in (OOOI) and flight information.

"Microsoft's servers connect to the simulators," Baker explained, "which are providing information on where the user is [flying], and Microsoft can feed relevant data like traffic and nearby weather. The heavy lifting from the simulator integration side is left to them."

What this means for a simulator pilot is they will be able to see and share the airspace with other aircraft in the simulated world, while the other aircraft populate the simulation exactly as they are flying in the real world. This includes air traffic on the ground at airports and in the air.

G1000 NXi Approved for Phenom 300

Garmin's G1000 NXi upgrade is now available for the Embraer Phenom 300. The upgrade to the aircraft's Prodigy flight deck adds faster processors to the system's displays, enabling many new features, including split-screens on the multifunction display and faster map panning.

Among the new features are wireless connectivity for database updates and two-way flight plan transfer as well as sharing GPS and backup attitude information with mobile devices running apps such as Garmin Pilot, FltPlan Go, and ForeFlight.

G1000 NXi also adds the HSI map with overlay options including weather, traffic, and terrain; SurfaceWatch runway monitoring to help pilots avoid using the wrong runway or one that is too short; and visual approach guidance, which gives a stabilized glidepath to the runway end. Sectional and IFR low/high en route charts are now available on the flight displays along with Smart Airspace, which "highlights the airspace nearest the aircraft's current altitude and de-emphasizes non-pertinent airspace," according to Garmin.

Legacy Universal FMSs need modern unit upgrades

by Matt Thurber

Last year, Universal Avionics notified aircraft owners and operators that certain parts of legacy flight management systems (FMS) are becoming obsolete and that repairs may soon be unavailable for these units. The Universal service letters published in November of 2019 apply to UNS-1K/1K+, -1Csp/1Csp+/1C/1C+, and -1D/1D+ FMS models. Universal was first to market with an FMS in 1983 and its products are installed in more than 50 different aircraft types in all aviation segments.

According to Universal Avionics, the problem isn't that these FMSs will suddenly stop working, but parts such as the LCD display, CPU board, GPS board, and GPS sensor are no longer available. Universal is continuing to offer repairs to these FMSs as long as these parts are available or it can do repairs unrelated to these parts, but the parts are expected to run out around December.

While the legacy FMSs are still perfectly usable, there are reasons to consider upgrading besides the fact that a component failure could render them inoperable.

An important feature is that the newer FMSs available from Universal Avionics are needed for ADS-B Out compliance. An ADS-B Out transponder is also needed, but the modern FMS's SBAS-capable GPS sensor is required.

Some operators of older business jets have run into problems accessing instrument approach procedures at some airports because the legacy FMS's database isn't large enough to contain all the available approaches. Data provider Jeppesen chooses which approach is primary.

In one recent case, a flight crew was told to go elsewhere while trying to land at Teterboro Airport because their FMS didn't have the approach that was in use and the controllers were too busy to offer an alternative. The legacy database for Teterboro has only four approaches, versus nine in the SBAS FMS. At Dallas's Love Field, the full database includes 14 approaches, but there are only four available with the legacy database.

With a new FMS, a huge benefit is LPV approaches, which are proliferating and offer lower minima and new precision approaches at many airports. There are more than 4,000 LPV approaches in the U.S., 538 in Canada, and 701 in Europe. An LPV monitor is also required to enable this capability for a single FMS installation but not dual FMSs. The SBAS FMS also adds basic RNP 0.3 approaches and Arinc 424 legs capability.

The modern FMS also serves as the foundation for other new capabilities that can be added later, such as digital clearances, which require a UniLink Communications Management Unit and a data-capable cockpit voice recorder. Adding a suitable satcom can then enable FANS 1/A.

It's also important to note that older Universal Data Transfer Units are also reaching the end of life and need to be replaced with solid-state DTUs. Like the original DTU, the solid-state units are available in fixed or portable versions. The problem with the older units is they use disk drives for uploading data, and the Zip disks and drives are no longer available. The solid-state DTU uses SD cards or USB for uploads.

Universal Avionics dealer Flightstar has been promoting the SBAS FMS upgrade for the past year and a half, according to avionics sales manager Greg Vail. Flightstar is the only avionics installer with an STC for a single Universal FMS upgrade with LPV monitor for the Learjet 45, Vail said. "It's a better option than a standalone GPS."

Now is a good time to take advantage of upgrade pricing from Universal, he said. "Because of the pandemic and Universal trying to do the right thing, they have some crazy aggressive pricing. I'm doing two to three quotes a week for FMSs."

Another dealer, C&L Aviation Group, has partnered with Universal Avionics to present a pair of free webinars on upgrades to the legacy FMS. The webinars, "Support Issues and Solutions for Your Universal Legacy FMS: Answers for Current System Obsolescence and Navigation Database Restrictions," was held at on July 8 and July 14 and is available in a recorded version. ■

Ergo 360 app adds flight plan integration

The Ergo 360 iOS app developed by Aeronautical Data Systems (ADS) is now available in Version 6.2 and one of its key changes is populating flight plan data automatically to make it easier to incorporate equal time point (ETP) information.

"The flight planning features were developed in direct response to customer feedback," said ADS CEO Jim Stabile. "These updates...decrease the likelihood of user entry errors while providing an even more comprehensive and timely display of emergency landing options for quickest possible rescue."

Ergo 360 is designed to help pilots deal with emergency situations in remote areas, especially on long overwater flights, with oxygen contingencies an area of primary focus, according to the company. Ergo 360 displays the aircraft's own-ship position on a map showing range circles that illustrate the distance that can be flown before running out of oxygen or fuel after emergencies such as smoke/fire, decompression, urgent medical events, and engine failure.

The Ergo 360 app displays fuel and oxygen range rings and shipping traffic, to help pilots deal with emergency situations in remote areas.

Saved by Ships

What makes Ergo 360 unique is that it displays positions of shipping traffic—including speed, direction, and type information about each ship—to aid flight crew and passengers in case it becomes necessary to ditch the aircraft in the ocean. Ship positions are continually updated when airborne internet connectivity is available or, if the aircraft has no internet service, the latest positions and projected tracks can be downloaded just before takeoff. Knowing the ships' positions could allow pilots to facilitate ditching near a ship to maximize survivability. Ship information comes from automatic identification system (AIS) data.

When connected to a portable VHF marine radio, Ergo 360 can broadcast a distress message generated by the iPad on Channel 16, the maritime emergency frequency, to notify ships of the aircraft's position, altitude, airspeed, and time to ditching.

The app's flight plan data population feature is available for most flight plans that include ETP information. Some flight plans that work with the Ergo 360 feature include ArincDirect, International Trip Planning Services, Jeppesen, Universal Aviation, and World Fuel Services.

Other new features in Version 6.2 include standardized ETP analysis from the ETP to the diversion airport with fuel/oxygen reserves calculations every 15 minutes; flight route waypoint overlay display for improved situational awareness; split-screen capability to permit operation and viewing of multiple apps at the same time; and time of latest vessel position update. **M.T.**

Garmin GI 275 displays approved for helo installs

Operators of certain Part 27 helicopters can now install Garmin's GI 275 electronic flight instruments under a field approval process. In the fourth quarter, Garmin expects to receive a follow-on supplemental type certificate for use of the GI 275 as a replacement for attitude and horizontal situation indicators in helicopters.

Garmin's GI 275 mounts from the rear of instrument panels and fits in standard 3.125-inch instrument holes, simplifying the replacement of older flight instruments. Pilot control of the GI 275 is via touchscreen and dual concentric knobs.

Installations that can be done now include the GI 275 as a course-deviation indicator (CDI), radar altimeter display, and multifunction display. According to Garmin, "The GI 275 has completed stringent helicopter vibration and temperature testing, demonstrating it can withstand the harsh operating environments encountered by helicopters."

For CDI installations, the GI 275 can interface with legacy navigators, thanks to its built-in omnibearing resolver. It can also accept up to two GPS and two VHF nav sources and can display vertical and lateral GPS, VOC/LOC, and glideslope deviation.

The MFD installation enables the display of moving map, flight data, weather, traffic, Garmin SafeTaxi airport diagrams, and radar altimeter information.

Garmin GI 275 in moving map configuration.

The GI 275 also includes built-in Wi-Fi so database updates can be transferred wirelessly to a single GI 275 or synced with multiple units installed in an aircraft. The Wi-Fi capability also enables sharing of GPS position and backup attitude information with the Garmin Pilot app. **M.T.**

BARRY AMBROSE

Boeing 737 Max 8s sit parked in desert storage in Victorville, California.

DOT IG report says Boeing shielded Max data from FAA

by Gregory Polek

Boeing failed to submit certification documents to the Federal Aviation Administration on modifications to the 737 Max jet's Maneuvering Characteristics Augmentation System (MCAS), including significantly increasing the system's ability to lower the aircraft's nose automatically under certain conditions, according to a report detailing the certification timeline released June 29 by the U.S. Department of Transportation's Inspector General's (IG) office.

According to the report, FAA flight test personnel knew of the change, but "key" agency certification engineers and personnel responsible for approving the level of airline pilot training told the IG's office they did not.

The report also revealed that because Boeing's safety analysis did not assess system-level safety risks as catastrophic, the company's engineers designed MCAS to rely on data from a single aircraft sensor. Although Boeing did not communicate to the FAA the formal safety risk assessments related to MCAS until November 2016 and January 2017, more than four years into the five-year certification process, FAA managers told the IG's office that "it isn't unusual" for manufacturers to complete and submit safety assessments toward the end of the certification process.

Meanwhile, because Boeing presented the software as a modification to the 737's existing speed trim system that would activate only in limited conditions, the FAA did not emphasize MCAS in its certification efforts and, therefore, a more detailed review of the system did not occur between agency engineers and Boeing. Rather, the FAA concentrated its efforts on what it considered high-risk areas such as the airplane's larger engines, fly-by-wire spoilers, and landing gear changes.

Following the start of flight testing in 2016, the FAA's Flight Standards Service approved a training plan proposed by Boeing—known as Level B training—for 737 Max pilots already qualified to fly the Boeing 737-800. According to the IG report, the outcome met with Boeing's "overarching" goal of gaining a common type rating for pilots moving to the Max from the NG largely because it limited costs by avoiding simulator training. Furthermore, required training did not include pilot response to automated MCAS activation, added the report.

In a statement to **AIN**, Boeing insisted it has committed to "complete transparency" with the FAA during the entire recertification process. Since global certification authorities grounded the Max in March 2019, Boeing has introduced three more layers of protection related to flight control software and updated flight training to account for MCAS. "We have made robust improvements to the 737 Max flight control software, including ensuring MCAS cannot be activated based on signals from a single sensor and cannot be activated repeatedly," said Boeing. "We have dedicated all resources necessary to ensure that the improvements to the 737 MAX are comprehensive and thoroughly tested. We have also taken a number of actions to further improve the safety culture of our company. These actions include establishing a permanent aerospace safety committee of the company's board of directors and reorganizing the company's engineering organization, with all engineers reporting up through Boeing's chief engineer. When the Max returns to service, it will be one of the most thoroughly scrutinized aircraft in history, and we have full confidence in its safety."

In comments published in the appendix of the IG report, the FAA conceded that its oversight suffered from a lack of effective communication, not only between Boeing and the agency but within the agency itself, "which led to an incomplete understanding of the scope and potential safety impacts of changes to the flight control system."

"FAA's certification process relies on receiving complete, candid information from manufacturers," the commentary read. "The agency will be taking further steps to ensure integrity and transparency with regard to information sharing, assumptions, and validation, all of which are integral to the overall certification system. Additionally, FAA anticipates strengthening coordination among the lines of business with certification responsibilities, as well as enhancing its human factors, flight controls, and system safety expertise to address weaknesses that led to an incomplete understanding of MCAS prior to certification." ■

United Airlines warns of 36,000 furloughs

Up to 36,000 United Airlines employees—roughly a third of the U.S. carrier's global workforce—face possible involuntary furlough starting October 1 as management attempts to avoid financial ruin amid the continuing Covid-19 crisis. United informed its employees in a notice sent on July 8. The furlough warnings apply to 15,100 flight attendants, 2,250 pilots, 5,500 mechanics, and some 11,000 airport operations employees.

United said it cannot continue at its current payroll level in such a depressed travel demand environment and called the move "a last resort." Airlines that accepted funds under the payroll provisions of the Coronavirus Aid, Relief and Economic Security (CARES) Act may not lay off employees until October 1.

In a letter to United's pilots, the Air Line Pilots Association's Master Executive Council reported that it has "intensely focused" on securing a so-called early-out package that will mitigate furloughs by encouraging pilots to retire early. It also said it has begun finalizing provisions for voluntary furloughs and company-offered leaves of absences (COLAs) for pilots willing to temporarily step back from active flying.

"None of the pilots notified today of their anticipated furlough are in this situation because of any action or decision on their part," wrote United ALPA MEC chairman Todd Insler. "With different luck, timing, or circumstances, it could be any one of us."

Association of Flight Attendants MEC president Ken Diaz called the number of job reductions sought by United "overreaching, excessive, and punitive" and not commensurate with the company's other employee groups or with other airlines' planned measures.

"I want you to remember, we will uncover every stone, give every contractually compliant option, and work diligently with management to find solutions," wrote Diaz. "We will reduce this number and we will not rest until we have done every single thing in our power to avoid even one involuntary furlough." **G.P.**

News Update

ATR to Cut Production in Half

Franco-Italian turboprop maker ATR will cut production by 50 percent and reduce its workforce by 204 positions—including 186 in France—in response to Covid 19-related business pressures, the company said on July 2. ATR delivered 67 airplanes last year and now expects to ship between 30 and 35 this year. The company said a consultation process with unions has begun with a view to reaching agreements this autumn.

In a statement, ATR chief executive Stefano Bortoli said that short-distance regional aviation will recover, but that travel restrictions, a "natural" fear of people to resume flying, and uncertainty over the prospects for a vaccine will mean a slow return to normal operations.

Breeze to Launch in May

David Neeleman's new Breeze Aviation low-fare venture has changed course and entered into an agreement to lease 15 Embraer E190s from Nordic Aviation Capital (NAC) for a planned scheduled service launch in the U.S. next May.

Originally planning to lease E195s from fellow Neeleman-established Brazilian airline Azul and start flying by the end of this year, Breeze instead took advantage of falling lease rates due to the Covid-19 pandemic by signing a new term sheet with NAC. Breeze recently said it would delay its launch from the end of this year to sometime in 2021, but a July 10 filing with the U.S. Department of Transportation (DOT) detailing plans to take over the operating certificate of defunct U.S. regional airline Compass Aviation indicates Breeze expects to finalize lease documentation with NAC on July 31 this year, ahead of first delivery in August. The company expects to take the remaining 14 airplanes over the course of the ensuing eight months.

Separately, Breeze and Airbus have agreed to defer delivery of the first of 60 A220-300 narrowbodies by six months until August 2021. Plans call for Airbus to deliver the second in September and then another one per month starting in January 2022.

Qantas Retires 747s

Qantas has unveiled a three-year recovery plan through which it aims to cut costs by A$15 billion ($10.4 billion) through a mix of measures including the immediate retirement of its Boeing 747s, some six months ahead of schedule. It also plans to ground around 100 aircraft for at least 12 months and cut some 600 jobs. In a June 25 statement, the company added it will seek to raise around $1.3 billion through a new equity issue.

Most of the 100 grounded aircraft will come from Qantas's international fleet and it might return some to lessors. It has deferred planned deliveries of new Airbus A321neos and Boeing 787-9s.

Airbus to slash 15,000 jobs as Covid-19 shaves business activity by 40 percent

Airbus plans to cut 15,000 jobs by next summer in response to a 40 percent drop in its commercial aircraft business activity resulting from the Covid-19 crisis, the company said on June 30. The European airframe maker added that it already has begun a consultation process with unions in an effort to reach agreements for implementation starting this coming autumn.

Airbus CEO Guillaume Faury

The cuts will affect 5,000 employees in France; 5,100 in Germany; 900 in Spain; 1,700 in the UK; and 1,300 at other sites around the world. The figures include Airbus subsidiaries Stelia in France and Premium Aerotec in Germany, although they do not include some 900 positions stemming from a pre-Covid decision to restructure Aerotec. Those cuts will now happen within the timeframe of the larger plan.

Airbus said it would work with its unions to limit the effect of the plan on the workforce by relying on "all available social measures," including voluntary departures, early retirement, and long-term partial unemployment arrangements "where appropriate." The company has not ruled out compulsory cuts, however.

"Airbus is facing the gravest crisis this industry has ever experienced," said Airbus CEO Guillaume Faury. "The measures we have taken so far have enabled us to absorb the initial shock of this global pandemic. Now, we must ensure that we can sustain our enterprise and emerge from the crisis as a healthy, global aerospace leader, adjusting to the overwhelming challenges of our customers. To confront that reality, we must now adopt more far-reaching measures."

Those measures include a reduction in production rates to match its drop in activity associated with its commercial aircraft business. The company announced in early April a plan to reduce production by about a third throughout its product line. At the time it did not specify plans for employee cuts.

"Airbus is grateful for the government support that has enabled the company to limit these necessary adaptation measures," it said in a statement. "However, with air traffic not expected to recover to pre-Covid levels before 2023 and potentially as late as 2025, Airbus now needs to take additional measures to reflect the post-Covid 19 industry outlook." **G.P.**

FAA and Boeing complete 737 Max certification flights

by Gregory Polek

The FAA and Boeing flew the last of a series of certification flights with the 737 Max on July 1, marking the completion of three days of tests to aid the evaluation of software changes to the airplane's flight control system. While the completion of test flights marks a key milestone in the recertification process, a number of vital tasks remain, said the FAA, including evaluating the data the team of agency and Boeing engineers gathered.

"The agency is following a deliberate process and will take the time it needs to thoroughly review Boeing's work," said the FAA in a written statement. "We will lift the grounding order only after FAA safety experts are satisfied that the aircraft meets certification standards."

Next, the FAA's Flight Standardization Board (FSB) and the Joint Operations Evaluation Board (JOEB)—which includes international partners from Canada, Europe, and Brazil—will evaluate minimum pilot training requirements. The FSB will issue a draft report for public comment addressing the findings of the FSB and JOEB before the FAA publishes a final FSB report.

Other tasks include an FAA review of Boeing's final design documentation to evaluate compliance with all agency regulations. The multi-agency Technical Advisory Board (TAB) will also review the final Boeing submission and issue a final report before the FAA determines compliance. The FAA then must issue a Continued Airworthiness Notification to the International Community (CANIC) of pending safety actions and publish an airworthiness directive (AD) that addresses the known problems that led to the grounding. The AD will advise operators of needed corrective actions before aircraft may re-enter commercial service.

Once it rescinds its grounding order, the FAA will retain its authority to issue airworthiness certificates and export certificates for all new 737 Max airplanes manufactured since the grounding and perform in-person, individual reviews of each aircraft. Finally, the FAA will review and approve training programs for all part 121 operators. ■

DAVID McINTOSH

Boeing used a 737 Max 7 to run a series of certification flight tests over three days.

European Union warns U.S. of subsidy war escalation

European Union trade commissioner Phil Hogan on July 6 warned of an escalation of the trade war between the EU and the U.S. after he said Washington had rejected overtures to settle the 15-year-old dispute over subsidies to Airbus and Boeing jets. The latest salvo follows an increase in March of U.S. duties on Airbus jets and European airplane parts from 10 to 15 percent following a determination by the World Trade Organization that EU member states illegally subsidized the development of the A350 and A380.

Speaking during a European Parliament trade committee hearing, Hogan criticized the U.S. for its most recent threats to place duties on a range of EU goods and the Trump administration's apparent unwillingness to negotiate.

"The ball is in the court of the U.S.," Hogan said. "We tried to negotiate a mutually beneficial outcome on the Airbus-Boeing dispute that we have at the moment, and they rejected our negotiating paper on two occasions. We are waiting for the panel in the WTO to report. This is now put back until early September unfortunately because of the delays arising from Covid-19. But I hope it will be as soon as possible in September that we will get a result here. But I want to reassure people that we are ready to act decisively and strongly on the EU side if we don't get a type of outcome that we expect from the U.S. in relation to finalizing this 15-year-old dispute."

MARK WAGNER

Improper government support of Airbus airplanes including the A350 led to a WTO decision to allow countermeasures by the U.S.

Based on the WTO ruling of the subsidy case against Airbus, the U.S. may impose tariffs of up to 100 percent on $7.5 billion of annual EU imports—including Airbus aircraft. The new duty rate follows a compliance report from the Geneva trade watchdog, released in December, that found that changes made to Airbus A350 and A380 development loans did not bring the four so-called Airbus countries—France, Germany, Spain, and the UK—in compliance with WTO recommendations.

At the behest of Boeing, Washington State in March rescinded tax breaks to the company introduced more than a decade and a half ago and renewed in 2013 to attract 777X wing production to the state. The U.S. Trade Representative (USTR) in May notified the WTO of the elimination of the tax breaks, but a formal ruling remains months away.

Notwithstanding his apparent frustration with the lack of a U.S. response, Hogan did not completely rule out further negotiations over the dispute regarding aerospace subsidies.

"We have tried our best to manage our relationship in a very difficult political environment with the U.S. and we continue to talk to Ambassador [Robert] Lighthizer and his team and USTR about what we can do together, albeit maybe in a limited way," he said. **G.P.**

Artist's impression of the new Galaxy FBO at Addison Airport north of Dallas. The design is similar to Galaxy's recently debuted FBO at Hobby Airport in Houston.

Galaxy FBO Breaks Ground on New Dallas Location

Texas-based Galaxy FBO is continuing to expand, breaking ground on what will be its third full-service FBO. To be located at Dallas-area Addison Airport (ADS), its design will be similar to the recently-opened facility at Houston's William P. Hobby Airport as the company is employing the same engineering and architectural firms. Galaxy FBO also operates a Houston heliport.

The new FBO will be on the southeast side of ADS at the end of Runway 33 and will consist of a 20,000-sq-ft terminal featuring a pilot lounge with showers and snooze room, passenger lounge, on-site car rental, and concierge. A pair of 38,000 sq ft hangars and a 30,000 sq ft hangar will be able to accommodate the latest big business jets. The facility will also house sister company Wing Aviation's charter operation in the metroplex, which will relocate from its current hangar at ADS.

When completed in the summer of 2021, it will become the third FBO at the airport, offering the largest uninterrupted ramp on the field. "We're excited to expand the Galaxy FBO out of the Houston area to increase our overall presence in Texas," Jeremy Gee, managing director of parent company Black Forest Aviation told **AIN**. "With the area surrounding the city of Addison continuing to flourish, our new facility will provide the much-needed hangar space for our corporate and general aviation clients, while providing more job opportunities."

New York's HPN Completes Runway Surfacing Project

New York City-area business aviation hub Westchester County Airport (HPN) completed a resurfacing project on its primary 6,500-foot Runway 16/34 last month. The nearly $22 million project was originally intended to involve mainly nighttime work, enabling the runway to continue daytime operations, officials decided to take advantage of the Covid-19-induced lull in traffic to accelerate the work schedule and close down the runway for three weeks.

According to county executive George Latimer, by completing the project during this time frame, paving operations were shortened from three months to three weeks, with as much as 6,000 tons of asphalt placed in one day. The runway reopened in late May, and after the new pavement on 16/34 aged for 30 days, it then underwent grooving at night over a span of 20 days to provide channels for the escape of standing water, with the work wrapped up in mid-July.

ExecuJet Paris Joins Paragon Network

Following Luxaviation's recent acquisition of the Sky Valet FBO at Paris Le Bourget Airport, the location, recently rebranded as part of the company's ExecuJet FBO chain, has joined the Paragon Aviation Network. This gives Paragon a member facility at one of Europe's most prominent business aviation destinations.

ExecuJet joined the Paragon Network in 2017, and its Paris Le Bourget terminal features a private terrace with apron view, three VIP lounges, and a dedicated crew lounge.

To join the network, which was founded in 2011 and now numbers more than 70 locations worldwide, FBOs undergo a facility audit conducted by Paragon. Each member FBO must also comply with a set of core standards to remain in the group. Clients using the network are eligible for Paragon Preferred status, which includes access to custom fuel pricing, dispatching of fuel requests to network locations, and reservations through the group's website.

Luxaviation's ExecuJet Paris FBO recently joined the Paragon FBO network. The former Sky Valet FBO has a private terrace overlooking the expansive apron.

Kansas Airport To See Change in FBO Operator

Great Bend Municipal Airport (GBD) in Kansas will see a change in the operation of its lone FBO on August 1, when the ownership behind Iowa-based P&N Flight and Charter begins the transition from incumbent Centerline Aviation, which served notice six months ago that it would decline to renew its lease.

P&N, which won the RFP, operates three FBOs in Iowa and will inherit a 3,000-sq-ft terminal built in 1965 that also houses the airport offices. Additionally, the facility includes a WWII-vintage 19,500-sq-ft hangar with a door height of 17 feet, which allows it to shelter light to midsize business jets, and a smaller maintenance hangar.

With its central location making it a popular transcontinental tech stop, GBD features a 7,851-foot main runway that just underwent a 12-month long, $8 million reconstruction project.

According to airport manager Martin Miller, the general aviation airport sees 1,900 operations a month, split between turbine and piston traffic, and its FBO pumps approximately 15,000 gallons of fuel each month, 70 percent of which is jet-A. It is home to 50 aircraft, including a pair of Citations and a turboprop. P&N president Cole Norton told **AIN** he sees a huge demand for aircraft maintenance in the area and will work toward obtaining FAA Part 145 repair station certification for the location, which will be open from 7:30 a.m. until 5:30 p.m. seven days a week, with no callout fee for after-hours operations. Other improvements will include a refurbishment of the terminal.

New Mexico Airport To Build New Genav Terminal

Belen Regional Airport (BRG) in New Mexico is proceeding with its long-planned new general aviation terminal. Before the current downturn in aviation business due to the Covid-19 crisis, the Albuquerque-area gateway had been seeing an increase in transient business aviation traffic since 2015, when its crosswind runway opened. The city is currently finalizing funding for the new terminal, which will carry a price tag between $5 million and $8 million, according to airport manager John Thompson.

The airport-operated FBO will occupy 4,000 sq ft of the nearly 20,000-sq-ft two-story structure, which will also house the airport's five-bay aircraft rescue and firefighting station. It will include a passenger lobby and pilots lounge, as well as three a/v-equipped conference/training rooms and a café on the second floor with a shaded observation deck overlooking the runway. The new terminal will replace the current 1,200-sq-ft standalone private aviation facility, which will be retained for tenant use. BRG, which features a 6,600-foot main runway, expects to break ground on the building by the end of the year, with an eye towards completion by early 2022.

Signature Buys Remaining Shares in Italian Subsidiary

Signature Flight Support has consolidated its position in Italy with the purchase of the 40 percent minority stake in Signature Flight Support (SFS) Italy held by SEA Prime. The global FBO chain entered the Italian market in 2016 in partnership with SEA Prime, which manages the business and general aviation infrastructure at Milan Linate and Malpensa airports under the brand Milano Prime. With this transaction, Signature now owns 100 percent of SFS Italy. "We are glad to announce this deal with Signature Flight Support, which we see as the natural development of a successful four-year partnership," said SEA Prime CEO Chiara Dorigotti. "SFS Italy will continue to operate at Milano Prime's premises, offering top quality services for customers and operators."

In addition to FBO operations in Milan and at Rome-Ciampino Airport, Signature Italy also provides trip support arrangements at Bergamo, Catania, Florence, Naples, Palermo, and Pisa. The service provider also maintains a partnership through its Signature Select FBO affiliate program at Venice Marco Polo Airport.

"This acquisition continues to show our commitment to growing our business in Italy and other key markets around the world," said Signature Aviation CEO Mark Johnstone. "We are proud to fully incorporate the Italian business into the Signature family and offer our customers premier choices for flight support services throughout the country." ■

Maintenance news by Jerry Siebenmark

King Aerospace is expanding to meet growing demand for new MRO and interiors work.

King Aerospace Plans Hangar to Almost Triple Capacity

Even with 200,000 sq ft between four hangars at Ardmore Industrial Airpark in Oklahoma, space is at a premium for MRO provider King Aerospace, which is why it is now laying plans for additional expansion. The Dallas-based company that specializes in VVIP aircraft is looking to add a fifth, 90,000-sq-ft hangar.

That hangar will increase its covered space by 45 percent and provide additional room for multiple large jets and shops to support large aircraft interior projects.

In addition to VVIP aircraft, King Aerospace provides depot services for military and government aircraft at its Ardmore site, which has a 9,000-foot runway to accommodate VVIP and ultra-long-range business jets. A second 5,300-foot runway supports turboprops and light and midsize jets. King's civil aircraft services include maintenance, avionics, paint, and interior refurbishment.

Citing Covid-19 Effects, Air Service Basel To Exit Mx

Air Service Basel (ASB) plans to wind down its aircraft maintenance operation by August 1, citing economic pressures caused by the Covid-19 pandemic. "Business aviation has undoubtedly been facing challenges for a while now and the coronavirus pandemic has certainly not been in our favor," said ASB chief executive Claudio Lasagni. "It's with a heavy heart that we close the maintenance department, but we remain positive about the industry bouncing back after this crisis."

In light of the closing, Lasagni added that the company will develop new areas of the business. ASB will continue its FBO operations at EuroAirport in Basel, Switzerland, including CAMO services, aircraft parking, and executive aircraft handling.

Pioneering Bizav Parts Firm CRS Under New Ownership

Florida-based component provider CRS Jet Spares has new ownership and leadership who plan to inject new capital, as well as update and evolve its available inventory, build on partnerships, and integrate new technology into the nearly 38-year-old company founded by the late Armando Leighton Jr. Its new ownership includes primary owner Andrew Sherrill and CEO Milan Cvejic.

"The CRS team and its unwavering focus on providing solutions for each and every customer is what attracted us from an investment perspective," said Cvejic. "Working with our team and surveying the industry, we've built a strategic plan that is both true to the tremendous history of the company and also very much forward-thinking."

Cvejic is the founder of private investment firm The Sina Group and an expert in investment strategy, buyouts, business development, and mergers and acquisitions. Sherrill is the former CEO and chairman of Capsa Healthcare, which specializes in the manufacture of medical carts and cart technology. "I see many similarities in CRS and Capsa, as both had a great foundation and history with significant opportunity for market share growth—both organic and through acquisition," said Sherrill. "The team and that history provide confidence in the future of CRS, and we are committed to building on our inventory and offerings through aircraft acquisition, partnerships, and evolved sales channels."

AMAC Keeps Hangars Full with New Mx Projects

AMAC Aerospace has taken on several new maintenance projects of Airbus, Boeing, and Bombardier aircraft, the Basel, Switzerland-based provider announced. In mid-May the company received a Bombardier Challenger 605 for a 12-month inspection and a Global Express for a 30-month check. It was also selected to do a pre-purchase inspection of a Challenger 605 on short notice.

In the bizliner category, AMAC has been awarded two Boeing BBJ projects. The first calls for a 6a-check and due maintenance, as well as service bulletin tasks. On the second BBJ project, AMAC will perform one-, six-, and 48-month checks.

Additionally, an Airbus ACJ320 has arrived at AMAC's facilities for a full galley heating system modification that's expected to tack on an additional six weeks to the aircraft's base maintenance check. Finally, an ACJ318 will get a maintenance check and an avionics upgrade at AMAC.

AMAC Aerospace's facilities in Basel, Switzerland, are busy with VIP airplane MRO jobs.

Signature TechnicAir Offers Incentives as Traffic Grows

MRO Signature TechnicAir is assembling seasonal offers to help spur activity as traffic begins to pick up in the EMEA region. The incentives vary and cross a range of activity, including reductions in rates involving scheduled inspections, ADS-B modification labor, Tamarack Atlas winglet installation labor, and defect/squawk work. In addition, incentives include complimentary interior/exterior cleaning and crew transport.

Signature TechnicAir's EMEA stations have remained operational throughout the Covid-19 pandemic, the company said, noting its locations provide base, line, and AOG services, along with mobile service unit activity. The MRO provider's base maintenance facility at Bournemouth International Airport in the UK provides airframe, avionics, and engine services, including upgrades and modifications for Cessna Citations and Embraer Legacy 600s. Along with Bournemouth, Signature's London Biggin Hill, Luton, and Manchester line stations offer round-the-clock services.

Avant Aerospace Relocates Near Sibling West Star MRO

Avant Aerospace recently moved from Dallas to a hangar at St. Louis Downtown Airport (KCPS), bringing the aircraft parts supplier closer to the West Star Aviation maintenance, repair, and overhaul base at East Alton, Illinois. Purchased by West Star Holdings in 2017, Avant Aerospace has maintained its own brand while offering West Star customers its part products and capabilities. The company provides parts, spares, equipment, and tooling, as well as procurement, inventory consignment/purchase, and AOG services.

The move to Hangar 12 at KCPS gives Avant 20,000 sq ft of space, enabling the business to consolidate its entire inventory and operate more efficiently, the company said. The move also comes as Avant has expanded its inventory and support beyond Dassault Falcon parts to include Bombardier, Textron, Piaggio, and Gulfstream.

MRO Insider Expanding Network to Latin America

InterXtra is MRO Insider's first affiliate for Mexico and Latin America under a new agreement between the companies. Led by CEO Luis Sanders, InterXtra will register new maintenance providers and aircraft operators in the region to MRO Insider's aviation maintenance quoting network of service providers offering detailing, AOG, scheduled airframe and engine maintenance, avionics, paint, and interior modifications and refurbishment.

InterXtra is a Mexico and Texas company that for the past 36 years has offered sales representation and business development consulting to aviation clients wanting to do business in Mexico and Latin America.

Fargo Jet Center Earns EASA Part 145 Nod

Fargo Jet Center (FJC) has received EASA authorization for its Part 145 repair station. According to the North Dakota-based company, which also operates an FBO at North Dakota's Hector International Airport (FAR), the certification was granted via a recommendation by the FAA's Flight Standards District Office (FSDO).

The airport is a tech stop on the great circle route between Europe and the U.S. West Coast, with a 24/7 U.S. Customs port of entry, and the EASA authorization will permit FJC to support maintenance on European-registered aircraft. Among the types it specializes in are Beechcraft, Bombardier, Cirrus, Cessna, Gulfstream, Hawker, Piper, and Pilatus.

Additionally, FJC has a contract with Polish EMS operator Lotnicze Pogotowie Ratunkowe for the design, modification, and maintenance support on a pair of Bombardier Learjet 75s, and with the new EASA approval it can now perform work on these aircraft both in the U.S. and Europe. ■

by David Jack Kenny

PRELIMINARY REPORTS

Five Lost in Cheyenne Breakup

PIPER PA-31T, EATONTON, GEORGIA, JUNE 5, 2020

Five members of a Florida family perished after their twin-engine turboprop broke apart in level cruise flight at FL250. The pilot and owner, his daughter and son-in-law, and their two small children were en route from Williston, Florida to New Castle, Indiana. Press accounts suggesting thunderstorms in the vicinity have not been officially confirmed.

About 50 miles south of Eatonton, the pilot advised air traffic control that he was deviating "to the right a little" for weather. Passing Eatonton, he requested clearance direct to their destination, which was approved; this was the last radio contact with the flight. About one minute later, the Cheyenne entered a right turn and descended rapidly out of radar coverage. Witnesses on the ground captured cell phone footage showing the airplane spinning, on fire, and trailing black smoke.

The main wreckage crashed inverted into dense forest and continued to burn. The outboard sections of both wings and part of the tail separated during the descent and were found about three miles away.

Freight Pilot Killed in Pre-dawn Departure Crash

MITSUBISHI MU-2B-60, JUNE 7, 2020, SIOUX FALLS, SOUTH DAKOTA

The airplane crashed during an attempted takeoff at 4:26 a.m., killing the solo pilot. The Part 135 cargo flight originated at Everett, Washington's Paine Field with an ultimate destination of Kokomo Municipal Airport, Indiana and a planned fuel stop at the Huron Regional Airport in South Dakota. Weather at Huron, however, prompted the pilot to divert to Joe Foss Field in Sioux Falls, where he landed around 1:40.

According to the NTSB's June 22 preliminary report, the pilot had misplaced his mobile telephone and was unable to reach the FBO's after-hours service number. The operator's dispatcher was likewise unable to reach the pilot and contacted the FBO at 3:10 a.m. The on-call lineman arrived and confirmed that the airplane and pilot were on the ramp, then lent his phone to the pilot so he could check in with dispatch while the airplane was refueled.

Preliminary radar data suggest that at 4:26 a.m. the MU-2B began an apparently normal takeoff roll on Runway 15, then pitched up sharply and began to roll to the right. The only three radar hits showed that it reached a maximum altitude of 70 feet before crashing into the infield on the south side of Runway 21. Groundspeed was estimated at 85 knots. All major portions of the aircraft, including the nose, tail, both wings, and both engines, were found in the debris field on airport grounds.

No Fatalities in Loss of Kenyan Police Helicopter

AGUSTAWESTLAND AW119 MARK II, JUNE 13, 2020, KAITHE KITHOKA, MERU, KENYA

A police helicopter carrying security officials to a meeting in Marsabit crashed onto the grounds of a banana plantation. All six occupants survived to be transported to a hospital, with at least one reported as seriously injured. Witnesses described the helicopter circling the site for as much as 15 minutes before going down. Unconfirmed press accounts attribute the accident to a "mechanical problem" en route, though one source also reported the pilot's having made a precautionary landing for weather earlier in the flight.

Photographs from the scene show the fuselage lying on its right side amidst broken trees.

FINAL REPORTS

Amphibious Caravan Landed Wheels Down on Water

CESSNA 208 AMPHIBIAN, OCT. 17, 2017, ANAVILHANAS ARCHIPELAGO, AMAZONAS, BRAZIL

Five weeks before a fatal wheels-down water landing, the 8,535-hour pilot of the Manaus Air Taxi amphibian failed a periodic revalidation of his single-engine seaplane rating after "not perform[ing] the Before Start Checklist, the After Start Checklist, the Taxi Checklist, and the Takeoff Checklist. He made some memory items, but did not follow the checklist." The pilot and three passengers escaped with minor injuries after the airplane pitched onto its nose and overturned, but a fourth passenger drowned before he could be extricated. The flight originated from Runway 10 of the Eduardo Gomes Aerodrome in Manaus.

After the wreckage was recovered, investigators found the gear selector in the "UP-Water Landing" position and the water rudders up and locked. However, the circuit breakers for the two hydraulic pumps that operate the landing gear were among four found open. Eight days before the accident, maintenance staff had conducted the floats' annual inspection, which included a test of the emergency manual extension and retraction system that pressurizes the hydraulic system using a hand pump. The emergency procedure test requires pulling the circuit breakers, but the maintenance checklist does not specify resetting them afterwards. The CENIPA's final report suggests that the Caravan had not been flown in the interim and quoted another amphibian pilot as having seen it over the city of Manaus with the wheels extended the day of the accident.

While the pilot successfully passed a re-examination on September 28, investigators obtained other reports of his disinclination to follow written checklists. "Circuit Breakers IN" is Item 7 on the cabin section of the preflight checklist, while confirming gear up via the blue indicator lights is the second item on the water landing checklist. The pilot did not recall noticing either the circuit breakers or the gear position lights before the landing. The final safeguard, an automated gear position annunciator, apparently did not sound because it was adjusted to activate at an airspeed of 74 knots–six knots slower than the 80 knots the pilot flew on the accident approach.

Underwater Egress Training Proves Vital

SIKORSKY S-64E, JAN. 28, 2019, WOOD CREEK DAM, VICTORIA, AUSTRALIA

Three crewmen credit their escape from the submerged fuselage of an Erickson AirCrane to "the rehearsed drills from their helicopter underwater escape training." The helicopter was conducting water drops on a bushfire when it crashed into the surface of the lake while attempting to refill. The Australian Transport Safety Bureau's final report, published on April 17, attributed the sudden loss of lift to vortex ring state, also known as "settling with power," on the last of a series of increasingly steep approaches to a dip site in a confined area at the bottom of a steep, tree-lined valley.

The accident occurred in the crew's third two-hour shift of the afternoon. During that time, their drop sites east of the dip site had gradually shifted north and west, causing their approaches to the lake to shift from a near-rectangular ground track with a 90 degree turn to final to a narrow figure eight with a final turn of at least 135 degrees. The final approach path also grew progressively shorter over the afternoon, requiring increasingly steep descents. On the accident approach, the descent rate increased from 650 to 780 feet per minute, close to the operator's external-load limitation of 800 fpm within 200 feet of the surface. The steeper approach in turn required a more aggressive flare to transition into a hover.

The crew described a chaotic situation after the helicopter struck the water tail-first, spun one and a half times to the right, and rolled onto its left side. According to the ATSB, "They identified their seat belt and nearest exit to orient themselves in the aircraft. They all waited until the last moment to draw a breath, and did not unbuckle and exit the helicopter until motion had ceased. The crew reported that it was not possible to see anything underwater, and that jet fuel contamination was present." Two other company helicopters on the scene reported the accident but could not provide material assistance. The crewmen inflated their life jackets, swam to shore, and "trekked through dense bush to a road where they were met by rescuers." Quick-disconnect plugs on their helmet cords allowed the pilots to extricate themselves without removing their helmets.

Vortex ring state is an aerodynamic phenomenon in which the combination of low forward airspeed and a high descent rate causes a helicopter's main rotor to recirculate its own downwash rather than moving undisturbed air downwards to produce lift. The pilots were trained in the recovery procedure, but circumstances provided neither the necessary lateral and vertical clearance nor sufficient time to execute it.

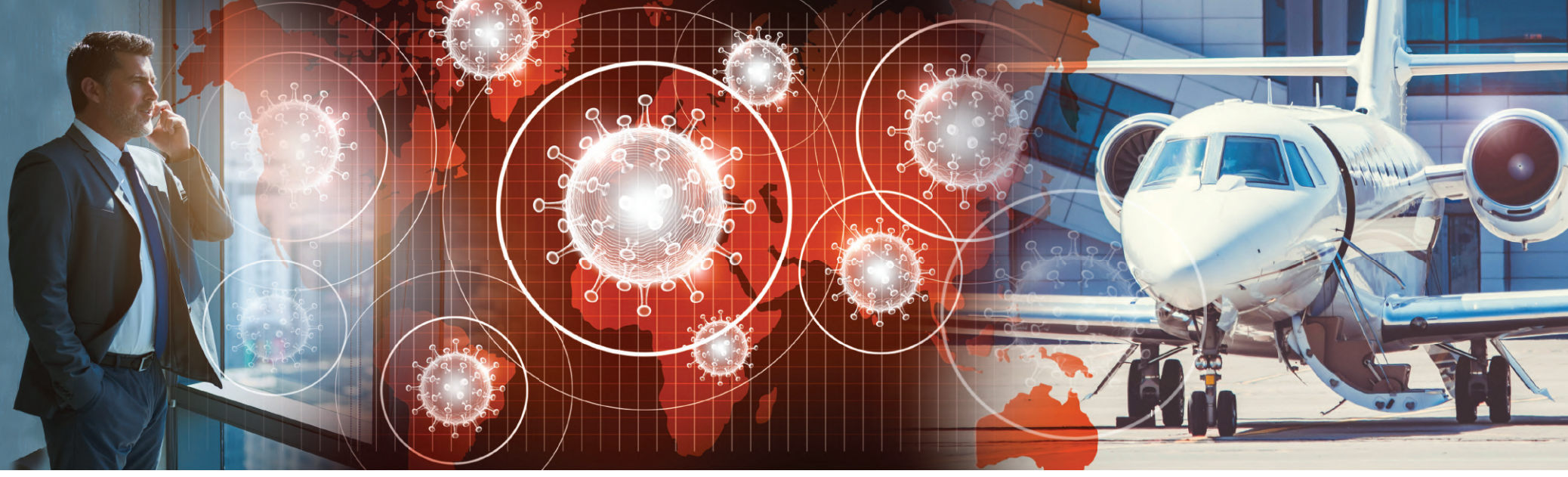
Loss of Citation Encore Officially Unexplained

CESSNA 560, MAY 24, 2019, ATLANTIC OCEAN

In a probable-cause report published on May 19, the NTSB declined to attribute the jet's offshore ditching to pilot incapacitation, though the report describes him as having become "unresponsive to air traffic controllers" 13 minutes after checking in with the Atlanta Air Route Traffic Control Center (ARTCC). Because neither the pilot nor the aircraft were recovered after crashing into the ocean 310 miles east of Fort Lauderdale, Florida, the Board instead attributed its loss to "reasons that could not be determined based on the available information."

The accident occurred on a repositioning flight from St. Louis Regional Airport in Alton, Illinois to Fort Lauderdale Executive, where the airplane's new owner had scheduled avionics work. The 52-year-old contract pilot held an ATP with more than 9,000 hours logged and multiple type ratings including the Cessna 560. After reporting smooth conditions at FL390 to the Atlanta controller, he did not read back the subsequent hand-off to the Jacksonville ARTCC. Jacksonville and Miami controllers continued tracking the airplane as it passed through their airspace and out to sea, maintaining FL390.

Two U.S. Air Force interceptors sent in pursuit reported that only the Citation's right engine was producing a vapor trail. It slowed to about 100 knots as they passed it, appearing to lose all engine power, and descended into the ocean. The Air Force pilots were unable to see the cockpit windows or anything in its interior. The Coast Guard's search for the wreckage was suspended the following day. ■



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Featuring an in-depth conversation with Pete Bunce, President and CEO of the General Aviation Manufacturers Association (GAMA); Athar Husain Khan, Secretary-General of the European Business Aviation Association (EBAA); and Jeff Lake, Chief Operating Officer of Duncan Aviation.

Keeping Business Aviation's Supply Chain Moving During Covid-19 and Improving It Afterwards

We spoke with three senior leaders from this sector: Marc Drobny, President of StandardAero Business Aviation; Todd Winter, President/CEO of Mid-Continent Instruments and Avionics; and Aaron Hollander, Chief Executive Officer of First Aviation Services Inc.

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JERRY SIEBENMARK

Yingling Aviation crews prepare a Hawker 800XP for paint at its new paint operation.

Yingling Aviation sees growth from new hangar

by Jerry Siebenmark

The addition of a new 23,000-sq-ft maintenance hangar and paint facility has proven to be a timely and beneficial expansion for Yingling Aviation, an independent FBO and MRO provider at Wichita Eisenhower National Airport. Part of a Yingling expansion and remodeling project, the new hangar and paint facility that's housed within the 50,000-sq-ft former Hawker Beechcraft Services complex has helped to drive more maintenance work for the 74-year-old company, especially larger projects on Cessna Citations.

"Having those facilities really just changed the dynamic of our company," Yingling president Andrew Nichols told **AIN**, adding that with the expansion the company has more than 200,000 sq ft of facilities.

"Our momentum has been excellent," added Jerry Pickett, Yingling v-p of business development. "Word is out that we are a new contender for all Citation work up through the Sovereign+." To underscore that point, the company recently accepted what Pickett explained are its two largest Citation projects to date, requiring Yingling to separate the fuselages of a CJ3 and an Excel from their wings. The Excel, which came to Yingling for a lower fuselage corrosion repair, will also receive a new Garmin G5000 avionics suite and integration of a Garmin traffic system (GTS) along with an attitude and heading reference system (AHRS) and magnetometer.

Pickett and Nichols said the new hangar, referred to as Bay 9, is helping boost the Citation work because of the extra capacity. "This is providing us with the ability to do more of these major repairs," Pickett explained. As a result, Yingling has added 15 more A&Ps and avionics technicians. On a recent tour of Yingling's expanded facilities, Nichols said of Bay 9: "I don't think I've ever seen this hangar empty. It's much-needed space and I'm not sure how we lived without it before."

The company also hired 10 employees for its new paint operation. Open for about a year, Nichols and Pickett estimated that about 50 airplanes have come through the paint shop.

The additional maintenance and painting projects have helped to blunt Yingling's fuel sales and parts distribution businesses that have been affected by the Covid-19-induced drop in business and general aviation traffic as well as military aircraft fueling.

Aircraft owners and operators seeking to take advantage of the downtime created by the pandemic have also helped to drive the higher maintenance business, Nichols noted. "Our team has worked so hard getting customers and bringing them in the doors," he said. "We haven't missed a beat. I can tell you for the foreseeable future unless something out of our control happens, our schedule looks pretty good." Pickett added that Yingling is scheduled out on routine maintenance projects farther than it's ever been.

To keep the maintenance momentum going, Yingling is looking to add Hawker airframe, engine, and avionics repair work, according to Pickett. "And we've had requests for Learjet work," he added, "so we're analyzing that."

Yingling's expanded maintenance and modification capabilities in airframe, engines, avionics, interiors, and paint are addressing a geographic demand for such services. And that's reflected in the growth of its MRO business since the expansion.

"There's been a need in the central part of the United States—Duncan's out there, of course—for another reliable, comprehensive support facility beyond [OEM] service centers," Pickett said. "We focus on customer service, fair pricing, quality, and on-time deliveries. And those are the things our customers tell us are the most important to them." ■

by Gordon Gilbert

Within 6 Months

Sept. 30, 2020 **Update**

ICAO: NAT Data Link

International regulators further suspended the North Atlantic datalink mandate from June 30 to September 30 to provide more flexibility for traffic that flies through the region during the Covid-19 crisis. The mandate, which went into effect January 30, requires aircraft to be equipped with FANS 1/A controller-pilot datalink communications and ADS-C (contract) equipment to transit through the North Atlantic tracks from FL290 to FL410.

Oct. 1, 2020

Australia: Rest and Duty Times

New fatigue rules apply to holders of commercial air operator certificates (AOCs), including charter, on-demand air taxis, and Part 141 flight schools. Operators who select the prescribed limits must be in compliance by June 30, 2020. Operators who develop their own fatigue risk management system must be in compliance starting October 1.

Dec. 7, 2020 and June 7, 2023

European ADS-B Out Mandate

The ADS-B Out requirement in Europe is Dec. 7, 2020 for aircraft receiving their certificate of airworthiness (C of A) starting last June 7. Aircraft that obtained their C of A between June 6, 1995 and June 6, 2020 must meet the ADS-B Out mandate by June 7, 2023. Both deadlines apply to aircraft with a maximum takeoff weight exceeding 5,700 kg (12,566 pounds) or having a maximum cruising true airspeed capability greater than 250 knots. Aircraft with certificates of airworthiness dated before June 6, 1995 are exempt from ADS-B requirements.

Dec. 31, 2020 to Dec. 31, 2022 **NEW**

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 in an operators 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 (commercial) air operators 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.

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 air transport operators with airplanes and helicopters, includes mandatory alcohol testing of flight crews during ramp checks.

Within 12 Months

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.

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.

Jan. 1, 2022

Mexico: ADS-B Out Mandate

According to government officials, when ADS-B requirements take effect, they will apply to operations in Mexico Class A, B, C, E airspace and Class E airspace above 10,000 feet. ADS-B is required now in Class E airspace over the Gulf of Mexico, at and above 3,000 feet msl within 12 nm of the Mexican coast.

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

Compiled by Kerry Lynch

MARTIN THOMSEN

ANTHONY LAM

ANTHONY KUNDE

BRIAN SPRECHER

Martin Thomsen was named CEO of *Air bp*. He is stepping in for **Jon Platt**, who has steered the business since 2016 but is retiring from the company later this year. Thomsen has served in a number of roles with bp over the last 15 years, most recently as retail director and fuels country integrator for Austria, Switzerland, and Turkey.

Duncan Aviation announced several senior leadership changes. Previously Duncan's COO in Lincoln, Nebraska, **Jeff Lake** assumes the role of president from **Aaron Hilkemann**, who is now serving as part-time CEO and chairman of Duncan's board of advisors. Assuming Lake's COO role in Lincoln is **Mike Minchow**, who has been with Duncan since 1993. At Duncan's facility in Provo, Utah, executive v-p and COO **Bill Prochazka** has retired after 33 years with the company. **Chad Doehring**, a 26-year veteran of Duncan, has assumed Prochazka's COO post in Provo. Lastly, **Ryan Huss** fills the newly created role of director of sales.

Elite Jets Charters promoted two of its pilots to senior positions. **Mark London**, previously general manager, and **Stephen Myers,** formerly assistant chief pilot, have been promoted to president and executive v-p, respectively. London assumes a role previously held by founder **Dan Randolph,** who remains CEO.

The *Massachusetts Business Aviation Association* added **Pam Day** and **Tom Richardson** as board members. Day is the director and general manager of FBO Services at Jet Aviation in Bedford and has more than 30 years of aviation experience, including with Page Avjet/Signature Flight Support, SheltAir Aviation Services, Million Air, Piedmont Airlines, and LaGuardia Airport. Richardson is an associate attorney at Greenberg Traurig, representing owners, family offices, operators, manufacturers, lenders, and financial institutions in the purchase, sale, leasing, financing, operation of business aircraft.

Vertical Aerospace appointed **Tim Williams** chief engineer, responsible for the development of the company's new eVTOL. Williams formerly was a chief engineer at Rolls-Royce and brings 34 years of aerospace experience to the new role.

OmnAvia Interiors named **Praveen Srivastava** director of global business development. Srivastava has a long background in commercial and corporate aircraft interior completions, installations, and repairs and will remain CEO of the aviation maintenance and services firm he founded, AeroChamp Aviation, in India.

The *Metropolitan Airports Commission* (MAC) in Minneapolis-St. Paul hired **Tim Simon** to serve as v-p of finance and revenue development. Simon, who has 20 years of experience in finance and auditing roles for governmental organizations, previously was the chief financial officer for the city of St. Louis Park, Minnesota.

Lufthansa Technik appointed new management within seven departments: **Alexander Feuersaenger** is responsible for the Fleet Services product division in Frankfurt; **Stephan Drewes** is responsible for the IT Domain MRO department as well as the Information Management Lufthansa Technik Group; **Philip Mende** is head of the Digital Fleet Solutions product division; **Michael Kirstein** is leading Engines Parts Repair and Mobile Engine Services; **Tim Butzmann** is the head of Corporate Sales, Africa and the Middle East; **Andreas Drosdowski** was selected as head of Maintenance for Europe as well as CEO of Lufthansa Technik Maintenance International; and **Michael von Puttkamer** was selected as head of operations of the VIP & Special Mission Aircraft Services division.

Allianz Global Corporate & Specialty (AGCS) appointed **Chuck Couch** regional head of aviation programs and product development in North America. Previously aviation workers' compensation product lead for AGCS in the U.S., Couch has 20 years of insurance industry experience.

The *Asian Business Aviation Association* appointed **Anthony Lam** as director of marketing and external affairs. Lam assumes responsibilities formerly handled by an external agency. Lam previously served as editor of the Asian business aviation magazine JET Asia-Pacific and is a former member of the NTSB's aviation accident investigative team.

Paul Hathaway joined the *Columbia* group of aviation companies as director of marketing. Hathaway, who will help expand Columbia's Daher TBM sales program, has held marketing roles at Tamarack Aerospace Group, Avidyne, Honeywell Aerospace, and WSI.

Soljets added **Anthony "Tony" Kunde** to its sales team as executive sales director. Kunde most recently was regional sales director for Textron Aviation with responsibility for the Rocky Mountain region of the U.S., but also has been involved in sales in Europe and Asia.

Dave Helderop joined *Avmats Jet Support* in addition to continuing his work as director of business development at Georgian Aerospace. Helderop, who will pursue joint projects for the companies, brings 35 years of aerospace industry experience to Avmats.

West Star Aviation promoted **Dan Prieu** to senior project manager of its facility in Chattanooga, Tennessee. Prieu brings 28 years of aviation experience to his new role, including with Saab and Bombardier.

C&L Aviation hired **Brian Sprecher** to serve as regional sales manager for corporate MRO for the Southeast U.S. Sprecher previously was a regional sales manager for the Southeast U.S. for Constant Aviation.

AOne Parts & Logistics hired **Ryen Shultz** as a full-time trader, responsible for all aspects of vendor monitoring. Shultz previously served in the U.S. Army as a CH-47 mechanic, stationed at Fort Wainwright in Fairbanks, Alaska, and Hunter Army Airfield in Savannah, Georgia.

North American Aerospace Industries Corporation (NAAI) named **Janos Virag** director of innovation, responsible for new recycling processes for advanced materials such as carbon fiber, as well as technical work processes, aircraft arrival scheduling, and coordination of training programs. He previously served as aviation manufacturing instructor and manager of fabrication for the Airbus 350XWB with Lenoir Community College/Spirit AeroSystems in Kinston, North Carolina.

Duncan Aviation named **Mark White** Gulfstream sales representative at its service facility in Provo, Utah. White, who has more than 20 years of Gulfstream sales experience, has sold both parts and maintenance/service.

Summit Aviation has hired **Frank Reuter** as director of maintenance. Reuter, a retired master sergeant with the U.S. Army, most recently served as v-p of maintenance and engineering and director of maintenance for AAR Lift in Palm Bay, Florida, and also has served with Black Water Aviation and Presidential Airways.

Dave Amdor joined the *Lee County Port Authority* (LCPA) as the director of finance. Amdor brings 12 years of public and private accounting and finance experience to his new role, previously serving as the finance manager for the Omaha Airport Authority, responsible for operating Eppley Field (OMA) in Nebraska.

Priester Aviation added four new members to its sales team: **Toby Batchelder**, **Greg Cummings**, **Deborah Maestas**, and **G. Scott Shatzer**. Batchelder brings nearly two decades of aviation experience to Priester, previously heading sales and marketing for Jet Choice and also working with Elliott Aviation. Cummings has previously served as an executive at Bombardier, Flexjet, and most recently v-p of sales for Fractrade. Maestas has nearly 25 years of aviation experience, including serving as COO for CSI Aviation. Shatzer has more than 30 years of aviation experience, including with Flexjet, American Airlines, USAirways, and Bombardier

Biralhas appointed **Amy Sear** marketing and communications officer. Sear is joining the meteorological equipment specialist after spending almost nine years in the charity sector with the Meningitis Research Foundation and Shaw Trust. ■

FINAL FLIGHT

Harland Terrell "Terry" Hibler, 70, a long-time *FlightSafety International* executive and former corporate pilot, died on May 3 after suffering from the effects of a stroke.

Hibler spent 28 years with FlightSafety, serving as its director of worldwide airline marketing in the company's Teterboro, New Jersey, office. He became deeply involved in the regional airline market, including serving on the Associate Member Council of the Regional Airline Association and as long-time chairman of the Associate Member Council for the Regional Air Cargo Carriers Association (RACCA). A Facebook posting credited Hibler for "helping to build RACCA to what it is today." Through his work with numerous carriers, Hibler helped with the transition from piston and turboprop commuters into the regional jet era.

A U.S. Air Force veteran, Hibler served as a C130 loadmaster in Vietnam. He also was a corporate pilot during most of his career and held 16 type ratings.

He is survived by his wife Karen, daughter Amy, and son-in-law Justin.

Tom Casey, who faced extraordinary obstacles but eventually succeeded in flying around the world in a single-engine seaplane in 1990, died on March 29. He was 82 years old.

Casey flew the trip by himself, and it was the first of its kind with landings all done on water in a Cessna 206 on Wipaire floats. Casey first attempted to fly the trip westbound from Lake Washington in Seattle, but Russia denied him entry and he decided to turn around and complete the trip flying to the east.

Beset by myriad challenges, the trip took 188 days, 128 more than the originally planned. A long delay resulted when Casey needed major back surgery while in Saudi Arabia, during the Gulf War in Kuwait. Despite being warned about a suspect oil sample before flying to Alaska, Casey pressed on and made a harrowing landing after a catastrophic engine failure, then cooled his heels waiting for a new engine to arrive and be installed.

The book *Floatplane Odyssey*, written by Casey's long-time friend Bill Coleman, details how he survived typhoons, house arrest, and an unauthorized sneaky flight through Japan, and occasionally had to bribe aviation ministers to look the other way.

On Dec. 18, 1990, Casey arrived back at Lake Washington. The National Aeronautic Association never recognized Casey's journey.

Casey was a graduate of Temple University and served in the U.S. Navy. ■

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