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EBACE ‘greening up’ with SAJF

by Matt Thurber

On Saturday, the business aviation world came together as it headed for EBACE in Geneva, demonstrating the benefits of sustainable alternative jet fuel (SAJF) during flights to participate in the show’s static display. Thirteen business aircraft fueled up with SAJF at TAG Farnborough Airport in the UK, while others took on SAJF supplied by Avfuel in the U.S. at Republic Airport near New York City, and Air BP at Caen-Carpiquet Airport in France and Arlanda Airport in Stockholm. World Fuel Services supplied 75,000 liters of SAJF for the Farnborough event, but the biofuel made by Gevo had to be shipped to the UK from the U.S.

Aircraft flying in from Farnborough included a Gulfstream G550, Bombardier Global 6000 and Challenger 350, Embraer Praetor 600, Cessna Citation Latitude, Piaggio Avanti, Cirrus Vision Jet, and others. Dassault’s Falcon 900LX picked up a load of SAJF from the Sheltair FBO at Republic Airport, and its Falcon 2020C filled up at Caen. More than half the airplanes on the EBACE static display burned SAJF flying into Geneva.

UK Member of Parliament Grant Shapps even flew to Farnborough in his own airplane, a Piper Saratoga. Although his airplane doesn’t burn jet fuel, he offered the enthusiastic support of the General Aviation-All Party Parliament Group, the largest such group in Parliament, with 221 members who want general aviation in the UK to grow and succeed. “If we don’t start greening up this sector, it won’t have a future,” he said.

While at Farnborough, OEMs, industry associations, fuel companies, and Eurocontrol director general Eamonn Brennan participated in an event to highlight the benefits of SAJF, "Fueling the Future, The Sustainable Alternative Jet Fuel Initiative: Emissions Reduction through Investment, Innovation." Forming part of the EU Sustainable Energy Week, the event was staged by the SAJF Coalition, which includes aviation organizations EBAA, NBAA, NATA, GAMA, and IBAC, and was sponsored by the OEMs, World Fuel Services, and TAG Farnborough Airport.

The goal of this effort is to encourage business aviation pilots and operators to ask for SAJF and thus stimulate demand for the new fuel. Participants at the event helped spread the word about the safety, improved performance, and environmental benefits of running SAJF in turbine business aircraft.

Ten years ago, the “Business Aviation Commitment to Climate Change” initiative set three goals: a 2 percent improvement in fuel efficiency from 2010 through 2020; carbon-neutral growth from 2020; and, relative to 2005, a 50 percent reduction in carbon emissions by 2050. “We need SAJF” to meet those goals, said EBAA secretary-general Athar Husain Khan. “It’s great to see the SAJF availability today at many airports. Uplifting this fuel is no easy task, and market availability leaves much to be desired. The cost is higher [than jet-A] but decreasing. We need dedicated regulation for SAJF and fiscal incentives. We stand ready to help.”

TAG Farnborough Airport is the first business aviation airport to achieve carbon neutrality, but airport CEO Brandon O’Reilly wants to do more by promoting SAJF and thus stimulate demand for the new fuel. Participants at the event helped spread the word about the safety, improved performance, and environmental benefits of running SAJF in turbine business aircraft.

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Pilatus PC-24 order book is open again

by Ian Sheppard

Swiss business aircraft manufacturer Pilatus (Booth L115) has reopened the order book for its PC-24 “Super Versatile” jet. The company has also confirmed EASA and FAA approvals for the aircraft to be operated from unpaved runways and for steep approaches. While the order book is now open again, orders being taken by both the Swiss company and its authorized sales agents around the world, the manufacturer confirmed that delivery positions would be available in 2020 and 2021 and that the “base price” of the aircraft is now $10.7 million.

The OEM initially took orders for the first 84 aircraft, each priced at $8.9 million, when it launched the twinjet at EBACE in May 2014. At that time, it wanted to focus on certification and entry-into-service, which has now been completed successfully, with 30 PC-24s already in service since it delivered the first example in February 2018. According to Pilatus, the PC-24 fleet leader—S/N 101—belongs to U.S.-based fractional ownership provider PlaneSense and has flown more than 1,100 hours, while the fleet as a whole has surpassed 5,000 hours in operation. Pilatus said it plans to deliver a total of 40 PC-24s this year and is “stepping up production” to 50 aircraft next year.

Reflecting on the program, Pilatus chairman Oscar Schwenk said, “Demand for the PC-24 is phenomenal. From day one there has been keen interest from various customer segments all over the world. Feedback from the first 30 PC-24 operators is extremely positive, with special mention of the aircraft’s versatility, its spacious, quiet cabin, and the incredible performance.”

Meanwhile, Pilatus is continuing its work on certification for other runway surfaces, including grass. It confirmed that operations on unpaved runways have already taken place using in-service aircraft, with the Royal Flying Doctor Service of Australia flying an aircraft in early May to Kingoonya, a small and remote strip in the outback.

Dassault’s Brana to take charge of Falcon Jet line

Dassault Aviation CEO Eric Trappier announced at EBACE 2019 that Carlos Brana, deputy executive v-p of civil aircraft, will replace longtime executive v-p Olivier Villa on July 1, with direct responsibility for all marketing, sales, and customer support activities for the Falcon Jet line.

“For the company, I hope it will not change anything,” Brana told AIN. “Olivier was already doing a tremendous job.”

Brana credited Villa, who assumed his current position in 2003, and Dassault Falcon Jet president and CEO John Rosanvallon for preparing him for the position. “Both of them taught me a lot,” Brana said. “So I’m very lucky to have those great teachers, and I hope with all the education they provided to me I will be able to implement [those lessons] in the new position.”

His biggest challenge going forward? “Selling,” he said, noting that most of his time will be devoted to the existing Falcon product line, but the in-development Falcon 6X will gain a larger share of attention as it nears entry into service in 2022.

Embryra CEO ‘beaming’ over bizjet market

Embraer Executive Jets president and CEO Michael Amalfitano was positively beaming as he read out the numbers during his “state of the new aircraft market” report on Monday at EBACE 2019. He announced that the company attained a five-year compound annual growth rate of 15 percent, which compares favorably with the growth rate of the business aviation industry, which he put at slightly less than 2 percent. Moreover, with preowned aircraft inventory dropping, the ratio of new aircraft to preowned aircraft sales is skewing in favor of new, at 3.3 to 1.

“Our U.S. and European customers are driving demand,” said Amalfitano. “Compounded, they account for 91 percent of deliveries in the first quarter of 2019, with Europe alone accounting for 24 percent of our new aircraft deliveries. We’ve now achieved a market share in Europe of 8.6 percent.” This constitutes 251 aircraft as of the end of 2018 based in Europe.

The company is expanding its global reach in an effort to keep up with the customer support demands that come with increasing market share. Today, Embraer Executive Jets has 19 authorized service centers in Europe that support 13 field support representatives.
Expansion is next step for Honda Aircraft

by Kerry Lynch

With 123 HondaJet and HondaJet Elites now in service, Honda Aircraft is embarking on another expansion of its Greensboro, North Carolina facility to accommodate production ramp-up and parts demand for those aircraft. Honda Aircraft (Booth 69, SD403) is investing $15.5 million in an 82,000-sq-ft building that will be used for wing assembly for the HondaJet Elite, capacity that the company said will make the production process more efficient. Michimasa Fujino, president and CEO of Honda Aircraft, said the company is looking at automation technologies that will be incorporated into the new facility. In addition, the facility will house parts storage. Ground-breaking is scheduled for July.

To open in July 2020, the facility is part of an overall $245 million investment Honda Aircraft has made in production, training, MRO, and other facilities on its 133-acre campus in Greensboro. “As the HondaJet’s popularity and presence continue to increase around the world, it is necessary for our facility to meet our production and service needs while operating at the highest level of efficiency,” Fujino said.

In addition, Honda Aircraft is expanding its training capacity for the HondaJet Elite with plans to add a second simulator. The company is still evaluating locations for the simulator, but Fujino said it would likely be housed in Europe “because of the strong customer demand” there.

This additional support and production capacity comes as Honda Aircraft builds up its fleet. The company has increased its sales and service footprint to cover North America, Europe, Latin, and South America, Southeast Asia, China, the Middle East, India, and Japan. Thirty-seven HondaJets and the successor HondaJet Elite were delivered last year.

Unveiled in spring 2018, Honda Aircraft began delivery of the HondaJet Elite last summer and has since expanded its market with recent certifications, including approvals from India in September, Brazil in October, Japan in December, and Canada in April. These came in addition to earlier certifications from the U.S. FAA and EASA. The most recent delivery was to charter operator Wing Spirit in Hawaii, which will use the aircraft for both charters and air ambulance services.

Fujino credited the sales to an effort of Honda Aircraft to expand the business aviation market and develop new models. To that end, he estimated that nearly one-quarter of Honda Aircraft sales are to new customers. As far as new models, he pointed to the alliance Honda Aircraft formed with All Nippon Airways, which will use the aircraft for both passengers and air ambulance services.

Corporate Angel Network flies its 60,000th patient

Corporate Angel Network (CAN), an organization that provides business jet flights to cancer patients in need, recently announced the completion of its 60,000th flight. The patient, known as David J., needed to see a specialist at MD Anderson Hospital in Houston regarding cutting-edge treatment for aggressive salivary gland cancer. His only option was to make the 17-hour drive by car from his home in Columbus, Ohio—until he learned about CAN through an internet search.

He called the organization, which quickly expedited the patient-registration process. CAN then found an available seat on a scheduled corporate aircraft flight from Columbus to Houston by American Electric Power. AEP is just one of CAN’s enrolled 500 corporate partners that have donated space on their company aircraft to help patients like David.

Founded in 1981, CAN transports cancer patients, at no cost, to clinical trials and specialized cancer centers in order to access the best available treatment for their specific diagnoses. CAN aims to reduce the emotional stress, physical discomfort, life-dependent time constraints, and financial burden of cancer patients undergoing treatment.

CAN recently announced the appointment of two new members to its board of directors: David Davenport, CEO and president of FlightSafety International, and Scott Donnelly, president and CEO of Textron.
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Interest rises as Citation Longitude nears approval
by Jerry Siebenmark

Textron Aviation’s newest Citation jet, the super-midsize Longitude, is set for full U.S. FAA certification and entry into service (EIS) in the third quarter of 2019, with EASA validation due to follow next year. Ron Draper, who stepped in as the company’s CEO in October, conceded that certification will follow a longer-than-anticipated certification process. “We may have gotten a little aggressive, to put it in perspective, with some of the dates we put out,” Draper said, to achieve FAA certification of its biggest Citation, which was originally expected in 2017.

“We did underestimate the amount of paperwork with the FAA’s new design assurance process. That process is very rigorous, and we may have underestimated the amount of time to get that done,” he said. “But we’re nearing the end of that.” Draper, however, added there are no major problems, saying it is just a matter of “working closely with the FAA to go through the certification process.”

Despite the certification delays, sales of the Longitude are “going well and [we] expect it to have a successful track record like the Latitude has had,” said Draper. The company has delivered more than 169 Citation Latitudes since the midsize jet’s entry-into-service in the third quarter of 2015.

Textron Aviation has continued to demonstrate the 3,500-nm Longitude around the world and “the response has been outstanding,” said senior v-p of sales and marketing Rob Scholl. The aircraft continues to prove performance: Scholl noted last year he was able to take a 3,600-nm flight in the Longitude from Columbus, Ohio, to Paris. While waiting for certification, customers can complete initial training on a full-motion simulator, he added, which will enable them to begin operations as they receive their aircraft.

One customer anxious to receive the Longitude is NetJets, which last fall placed options for up to 175 of the super-midsize jets, and has since converted the first seven into firm orders. It has begun to introduce the Longitude to prospective customers using a Textron Aviation demonstrator. At the same time, the fractional provider’s Latitude fleet continues to grow and is anticipated to surpass 100 this year. “NetJets continues to tell us it is the fastest selling jet in their portfolio,” Draper said. Textron Aviation recently rolled the 200th aircraft off its assembly line and that milestone airplane is set to be delivered to NetJets this summer.

The other two airplanes in the Cessna new product pipeline, the single-engine turboprop Denali and twin-turboprop SkyCourier, are still targeted to make their first flights this year. Scholl told AIN that he’s expecting the Denali to be the “new market leader in that class of aircraft.” Plans for the large-cabin Hemisphere, on the other hand, remain idle at least until Safran completes its testing on fixes to the Snecma Silvercrest engine, which is supposed to wrap up this summer. “They’re redesigning parts of the engine and we’re really not going to talk about that until we understand it,” Draper said. “Once we understand that, then we will make some future decisions on that product.” He added that Textron Aviation anticipates having “a full understanding of the engine’s performance and the future of that program in a few months.”

With three new airplanes in the works and a renewed emphasis on sustaining engineering, Textron Aviation completed its best year in a decade. Revenues, bookings, and deliveries were up last year, a trend that is continuing into the first three months of 2019, according to Draper, who added that the quarter was strong across the product line, including pistons, turboprops, and jets.

Along with the development of the flight-test vehicles and static test articles, Textron Aviation (Booth V19, SD405) recently completed component integration for the iron bird, a systems test rig that is laid out in the configuration and size of the Denali. The iron bird incorporates the design of the avionics, electrical, and engine control systems, and will play a key role in testing the aircraft engine’s Fadec system.

Meanwhile, engine provider GE Aviation recently reached full power and maximum RPM on the 1,300-shp Catalyst engine and McCauley composite propeller. GE Aviation has completed more than 1,000 hours of testing on three test Catalyst articles in all from its facility in Prague, Czech Republic. During testing, Textron Aviation said the engine and propeller demonstrated the full range of pitch using the Fadec. Initial altitude chamber testing also was recently conducted.

“This new turboprop engine design will give the Denali a number of key advantages over other aircraft in this class, and we are pleased to say that test engine performance is meeting or exceeding performance expectations,” Hearne said. “New technology allows for a much longer time between overhaul, quieter operation and, because of the first-ever digital engine and propeller control, it will reduce pilot workload and have greater fuel efficiency than similar aircraft in its class.”

Along with the Catalyst engine, the Denali will be equipped with Garmin 3000 touchscreen avionics, including three 14-inch diagonal, wide-screen LCD displays, synthetic vision, and other technologies such as ADS-B In/Out and weather avoidance radar.

The Denali is expected to have a range of 1,600 nm, a maximum cruise speed of 285 knots, and a full-fuel payload of 1,100 pounds. Designed to convert between passenger and cargo configurations, the Denali is intended to offer a large, flat-floor option in the single-turboprop class.

It will also sport a 53-by-59-inch rear cargo door, but have executive aircraft features such as a digital pressurization system that maintains a 6,130-foot cabin to 31,000 feet and an optional externally serviceable belted lavatory with pocket door. Textron further is incorporating large passenger windows, interior LED lighting, and options for a refreshment cabinet and an in-flight-accessible baggage compartment.

In passenger configuration, the aircraft can be designed with executive-style seating that includes six individual reclining seats, club-configuration tables, and a refreshment unit. It also can be fitted in a commuter seating layout with nine forward-facing seats.

Textron Denali test articles in late stages of completion
by Kerry Lynch

Textron Aviation is in the final stages of completing the Cessna Denali prototype, along with two more flight and three ground test articles, as the development team prepares for first flight later this year, the company announced Monday. The Wichita, Kansas-based aircraft manufacturer will use the prototype and first two production-conforming aircraft in the flight-test program, while the ground test articles will be used for airframe static and fatigue tests, along with cabin interior development and testing.

“The result of the work we are doing now in design, production, and testing is going to provide a mature configuration that will help us move through certification and flight testing, ultimately bringing a proven aircraft to the market,” said Chris Hearne, senior v-p of engineering.
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Visit us at Booth X115
Global 7500 connects London City with Los Angeles

by Kerry Lynch

Bombardier’s 7,700-nm Global 7500 recently wrapped up a round of flight trials for steep approach approval, completing what the company claims is an industry first: a direct flight from London City Airport (LCY) to Van Nuys Airport (VNY) in California. Completed on May 11, the flight from LCY to VNY involved Bombardier’s fifth flight-test vehicle (FTV), which was configured with the equivalent weight of a fully fitted interior, including stateroom. It also carried 2,400 pounds of additional payload that represented about 11 passengers and baggage.

The flight was part of an overall steep approach test campaign that also involved a number of takeoffs and landings at the airport to demonstrate operational capability. Bombardier is targeting Transport Canada nod for steep approaches in its flagship twinjet later this year.

“Welcoming the Bombardier Global 7500 to London City Airport for its flight-test campaign is a crucial milestone toward certification and subsequent business jet operations at London’s most central airport,” said Gary Hodgetts, director of operations at London City Airport. “The flight completed by the Global 7502 FTV on May 11 is the longest flight ever out of London City and demonstrates the exceptional performance of the aircraft.”


Avinode unveils tiered membership plan

Avinode (Booth B71) has unveiled a three-tier membership program that it expects to improve broker and operator access to its platform for buying and selling aircraft charters, the Sweden-based company announced on Friday. The tiers—starter, advanced, and ultimate—are available to brokers now, with options for operators to join as well planned for later this year.

Design of the tiers is intended to allow small brokers to access Avinode’s platform and, as they expand their business, add more functionality. For individual brokers, the starter tier priced at £599 a month for a single user, offers base capabilities of the Avinode platform, including search, airport look-up, aircraft details, messaging, Trip Board requests and the recently introduced Takeoff Ready filter. Advanced, at £849 a month for a single user, adds tools such as empty leg capabilities, while the ultimate tier, at £2,699 a month for a single user, offers custom integrations with Avinode and access to its suite of application programming interfaces (API).

“We’re opening up Avinode to more customers than ever before, while empowering larger, established charter companies to command their businesses with Avinode’s breadth of technology tools,” said Avinode Group co-founder and executive v-p Per Marthinsson. “It’s bespoke—designed to match your business needs at each step as you develop.”

Jet Aviation touts FBO net

by James Wynbrandt

Full-service business aviation provider Jet Aviation (Booth A18) is highlighting at EBACE 2019 the expansion and improvement of its global FBO network—now numbering 35 locations—and announced an agreement with Wijet to provide the Paris-based operator with handling services for its fleet. The expansion binge is underscored by recent groundbreaking for a new facility at Jet Aviation’s West Palm Beach, Florida facility in the U.S. It is just one of seven of its dozen locations in the U.S. and Caribbean region that are now under construction or renovation, or soon will be.

“Our acquisitions and facility expansions throughout our FBO network demonstrate our commitment to delivering industry-leading services exactly where our customers need them,” said David Paddock, incoming (July 1) president of the Switzerland-based firm. “With [parent company and Gulfstream Aerospace owner] General Dynamic’s support, we are moving strategically and purposefully toward our top priority of exceeding customers’ expectations across our full range of business aviation services.”

The expansion began last year, with significant growth in its EMEA and APAC operations. In May 2018 Jet Aviation acquired Hawker Pacific’s Asia and Australia FBO chain. That was followed in September by establishing ground handling services at Saudi Arabia’s Prince Abdul Moshin Bin Abdulaziz Regional Airport in Yanbu and October’s acquisition of KLM Jet Center businesses in Amsterdam and Rotterdam. Action in the Middle East continued this year with announced plans to open a newly refurbished FBO facility by year-end—in space formerly occupied by DHL—at Riyadh’s King Khalid International Airport.

The planned two-story, 600-sq m (6,458-sq-ft) facility will include a reception area, three VIP lounges, and a meeting room. The upper floor will have a crew lounge and office space. With the expected traffic growth at Riyadh, the Kingdom’s capital and business hub, “the additional space is necessary,” said Jet Aviation Saudi Arabia general manager Khaled Al-Ghamdi, noting that this year marks the 40th anniversary of Jet Aviation Saudi Arabia. A joint venture formed with local partners, it was the first company to establish an FBO in the Kingdom—at Jeddah.

Earlier this month, the company announced its acquisition of a stake in Arizona’s Scottsdale Jet Center and plans to build and operate a branded FBO and a 2,787-sq-m (30,000-sq-ft) tenant hangar at the location, slated for a late 2020 opening. Jet Aviation plans additional site development following the new FBO’s opening this year, to keep pace with anticipated customer growth.

Other FBO locations seeing upgrades in the U.S./Caribbean region include a new FBO and hangar complex nearing completion in Van Nuys, California; significant FBO renovations planned for Teterboro, New Jersey; and Dallas, Texas; and hangar expansions in Teterboro, Houston, Texas, and San Juan, Puerto Rico.

This week at EBACE, Jet Aviation announced the signing of a preferred handling services agreement with Wijet to provide support through its nine European FBOs, all but the recently acquired Amsterdam and Rotterdam facilities being IS-BAH Stage 2 certified. “Our goal is to exceed customer expectations by providing seamless services to ensure the comfort and safety of aircraft owners and operators when and where needed,” said Oliver Bergsch, v-p of sales management in EMEA & APAC. Jet Aviation’s European FBO locations include Geneva and Zurich, Switzerland; Dusseldorf and Munich, Germany; Vienna, Austria; and two in Berlin.

For its part, Wijet has “an aggressive plan to grow our fleet and wanted a reliable partner,” according to Wijet CEO Jean-François Hocherhauer. The company operates three Hondaleets, with 13 more on order, and expects to have 16 business jets under management in the near future. Formerly UK-based, Wijet moved its operations to Paris last year.

Founded in 1967, Jet Aviation has more than 4,800 employees at almost 50 global locations, offering charter, management, maintenance, completions and enhancement, and engineering, in addition to FBO services.
CorporateCare ‘Enhanced’ boosts Rolls-Royce service

by Kerry Lynch

Rolls-Royce is seeing momentum grow across its engine lineup for its upgraded CorporateCare Enhanced package, company executives have said. The engine maker (Booth X115) unveiled the program during last fall’s NBAA convention and began offering the Enhanced version of the fixed-cost maintenance program in January.

In the works for three years, the Enhanced program is “the biggest change in service that we have ever done under the CorporateCare umbrella,” said Alan Mangels, Rolls-Royce v-p of sales and marketing for business aviation, adding it was so significant the company changed the name.

The program, he added, “was developed by our customers for our customers,” answering two primary pieces of feedback the engine-maker had received. One involved concern that certain elements of troubleshooting that help with engine reliability should be covered. The second request was for Rolls-Royce to cover certain parts of the entire propulsion package that it provides on its larger engines, including nacelles and thrust reversers.

As such, the program adds unlimited troubleshooting and mobile repair services for its engine lines covered under CorporateCare Enhanced. For the Pearl 15, BR710, and BR725 engines, the program further includes maintenance for the whole powerplant system, including nacelle, engine build-up, and thrust reverser unit-related services. Mangels noted that Rolls-Royce does not provide the nacelle packages for the AE3007 or Tay so it is not able to offer that coverage on those models, but the AE3007 and Tay are able to benefit from the other Enhanced upgrades.

CorporateCare Enhanced is now the baseline package for new customers but is also offered as an upgrade for existing customers. Within the first few months of being offered, the “Enhanced” package had surpassed 100 service contracts, and new contracts were continuing to come in. Rolls-Royce is finding that nearly half of its contracts are upgrades, Mangels said. While he said that is not a complete surprise since the program was developed in concert with the customer base, he added that it is still satisfying that the upgraded package is resonating with existing contract holders.

Also satisfying is that the mix of contracts is split fairly evenly among the engine types, he said. “We are not seeing any bias toward any engine type,” Mangels said, adding this underscores the importance of all the additional elements, from the unlimited troubleshooting to the coverage of thrust reversers.

Also attractive to customers, he added, is that Rolls-Royce invested $40 million in spares for the additional coverage to ensure aircraft can either continue flying or get back into the air quickly while repairs—which are sometimes lengthy—are ongoing.

In addition to upgrades, Rolls-Royce is capturing contracts from owners/operators who are transferring airplanes, along with new aircraft owners. Traditionally more than 70 percent of newly delivered Rolls-Royce-powered aircraft enroll in the program. Mangels said that with the Enhanced package, Rolls-Royce is finding that people who have been on the fence are now opting for the coverage.

Rolls-Royce will get feedback on the response from new contract-holders at a customer event to be held next month. While a significant rollout for Rolls-Royce, Mangels noted that the company will continue to look at service improvements it can offer its customers. “That conversation never stops.”

Brexit Preparations

As it gains momentum with the program, the company has taken steps to ensure its corporate jet engine production and aftermarket services will continue as normal in any Brexit circumstance. “From the services perspective, we have spent a considerable amount of time preparing for both the ‘hard’ and ‘soft’ Brexit. We have been working to get approvals in place with the various aviation authorities, and additional approvals for the Rolls-Royce Deutschland facility,” said Rolls-Royce senior v-p for services for business aviation Andy Robinson.

He added that the company has moved “thousands” of materials and parts from the main UK store to North America and also a new storage facility in Frankfurt. “We are in a good place,” Mangels added.

In addition to 76 authorized service centers worldwide, Roll-Royce has spares stores catering to CorporateCare clients located in Dubai, Singapore, and Beijing—the latter added in December.

Similarly, in Dahlewitz, Germany, where the new Pearl 15 engines and BR700 family engines are manufactured, the company has all the materials and approvals buffered and in place with the relevant authorities.

Key elements of CorporateCare Enhanced include updated troubleshooting procedures and coverage for nacelles and thrust reversers on a wider range of Rolls-Royce’s engine models.

Mercy jet

Textron Aviation has its first-ever aeromedical-configured Citation Latitude on display here at EBACE 2019. Recently delivered to Babcock Scandinavian Air Ambulance, the twinjet’s interior features a single-sled stretcher, expanded cabin door, and Salcom emergency radio. It joins Babcock’s fleet of 10 Beechcraft King Air 250s, also painted in the operator’s distinctive yellow livery. See tomorrow’s issue for a full story on the order.

ainonline.com \ May 21, 2019 \ EBACE Convention News
Jetcraft predicts near-$30B in annual bizjet sales by ’23
by Ian Sheppard

Business aviation sales are predicted to reach just short of $30 billion per annum by 2023, according to U.S.-based aircraft broker Jetcraft’s latest five-year industry forecast for new and preowned aircraft that it released this week at EBACE. This is up from the more than $26 billion in new-delivery and preowned aircraft sales last year, said company owner and chairman Jahid Pazal-Karim.

Its forecast, which covers the 2019 to 2023 period, also concluded that preowned transactions are growing at a proportionately higher rate than new deliveries and that “more accessible and less costly refurbishment options” are allowing growth in the preowned “value proposition” and even created increased demand for out-of-production aircraft.

The forecast also found that the average retirement age of a business aircraft is now 32 years—“something that really surprises me,” confessed Jetcraft CEO Chad Anderson.

This year, Jetcraft decided to “leverage” some of its proprietary data and “past transactional databases” to produce “the first [forecast] of its kind to take such a precise, comparative and quantified look” at both preowned and new transactions—which has led, despite more conservative delivery predictions, to a picture of a dynamic preowned market, “poised for continued and significant growth,” adding that, “key among this year’s changes is our shift from a 10-year to a five-year outlook, more in line with the current aircraft ownership experience.”

In terms of aircraft size, the shift toward larger aircraft continues, but overall, new deliveries are forecast to “flatten out as the result of an upcoming economic downturn,” although preowned transitions “will continue to grow.” The analysis predicts the business aircraft fleet will grow by 12.1 percent over the next five years, but estimates that some 1,050 aircraft will be retired over the same period.

The forecast involved an evaluation of 168 business aircraft models in four categories: light, midsize, large, and commercial aircraft. Over the years, Jetcraft said, it has amassed a vast amount of data “on customer buying preferences, loyalty rates, and trade-even versus trade-up patterns.” With 9,389 recorded preowned transactions over the past five years, Jetcraft said that over the next half-decade this will increase to 11,765, representing a revenue increase from $53.6 billion to $61 billion.

New aircraft value will grow from $82.1 billion to $90.5 billion over the forecast period. Interestingly, the number of aircraft these figures represent remains essentially similar: 3,444 new aircraft versus 3,444 previously. The report’s graphs show that transaction volume and value have grown significantly, despite the 2008 downturn. By 2023, pre-owned transactions will be four times the number of new deliveries, strengthening a trend that has become gradually more noticeable since 2008, as OEMs have been more measured about raising production rates.

Average transaction size for new deliveries increased gradually until around 2013, then reduced from around $26 million to just more than $22 million, but since then it has increased again. Jetcraft believes that it will continue this upward trend to reach more than $27 million by 2022 or 2023. However, the value of average preowned transactions has reduced steadily since 2007, from a peak of $8.4 million to $5.5 million last year, and is expected to reduce further to $4.7 million by 2023. This is despite “declining interest in light jets [and] growth in preference for large jets.”

In terms of aircraft for sale, 9.1 percent of the 19,818 aircraft in the active fleet were on the market; by 2023, Jetcraft said this could reach 13.1 percent of a fleet that will have reached 22,211 aircraft. For in-production aircraft, the fleet in 2018 was 1,812 aircraft, with 14.3 percent being for sale; in 2023, the fleet could reach 2,902, with 15.5 percent for sale, based on Jetcraft projections.

2008 saw a step-change of in-production aircraft for sale, and while such numbers are not likely to be reached again by 2023, they will have increased significantly. “The number of preowned aircraft for sale decreased 27.5 percent between FY2009 and FY2018 but this is projected to increase during the forecast period as light jet owners trade up and owners of new large aircraft transition within this category.”

News Clips

Bombardier Partners With Jetex for Dubai Line Mx
Bombardier has agreed to establish a new line maintenance station in Dubai with FBO chain Jetex, the Canadian airframer announced today. Its ninth line maintenance station will initially provide unscheduled maintenance but work toward offering scheduled maintenance in the coming months. Supporting the Dubai station are technicians certified for all of Bombardier’s Challenger and Global business jets, including its newest, the Global 7500.

“This expansion is an integral part of our overall mission to enhance OEM support for our operators in the Middle East—and we are very pleased to be working with highly respected business aviation leader Jetex in the development of this project,” said Bombardier Business Aircraft v-p and general manager of customer experience Jean-Christophe Gallagher.

FSI Names Davenport Sole CEO
FlightSafety International is shifting its top leadership to make David Davenport the sole CEO. He will also remain president. Davenport in October stepped in as co-CEO and president of the commercial division alongside Ray Johns, who was co-CEO and president of the government and manufacturing unit. The international training specialist had originally opted for the joint leadership approach after longtime president, chairman, and CEO Bruce Whitman passed away.

Under the latest shift, Johns continues as president of government and manufacturing, overseeing FlightSafety’s business involving government and military agencies, as well as its flight simulation/visual system design and manufacturing operations.

“After leading FlightSafety together since last October, Ray and I determined that this new structure is the best and most effective way to achieve FlightSafety’s goals while continuing to build for the future,” Davenport said. Davenport has served with FlightSafety since 1996, holding positions of increasing responsibility.

Della Posta To Succeed Saabas as President of P&WC
Maria Della Posta is taking the helm of Pratt & Whitney Canada (P&WC) as president, effective June 1. Della Posta succeeds John Saabas, who is retiring after leading the Canadian engine maker since 2009 and serving with P&WC since 1985. In her new role, she will report directly to Bob Leduc, president of parent Pratt & Whitney.

A 34-year P&WC veteran, Della Posta most recently was senior v-p. She joined P&WC in 1985 and held roles of increasing responsibility in supply chain, finance, and customer service. She became v-p of customer support in 2001 and senior v-p of sales and marketing in 2010 before taking the role of senior v-p.

Maria Della Posta is the new president of Pratt & Whitney Canada (P&WC). She replaces John Saabas, who is retiring after leading the company since 2009.
Innovation will be on full display during this week at EBACE 2019, with mockups of eVTOLs on display, a focus on the future of sustainability and alternative fuels, and a spotlight on the next generation of business aviation professionals, organizers EBAA and NBAA said. The annual show in Geneva typically draws more than 13,000 attendees representing some 100 countries. Chris Strong, senior v-p of conventions and membership for EBACE co-host NBAA, said advance registrations were running at least on par, if not a little ahead, of last year in the run-up to the event. Meanwhile, the static display is sold out again, he added. “It’s chock full. We couldn’t be more excited by how it is coming on.”

More than 50 aircraft will be on static exhibition, with participating aircraft scheduled to range from a Cirrus SR22 to a Junkers F13 alongside an extensive range of in-production business jets, including an ACJ319neo. Due to construction projects at Geneva International Airport, the static display returns to the same location as last year, with buses running regularly between Palexpo’s Hall 7 and the static display area.

Upwards of 400 exhibitors typically display their wares inside the Palexpo exhibit hall, and 2019 will be no different, with space covering about 40,000 sq m (430,000 sq ft). Returning this year inside the exhibit hall will be the new-exhibitors’ pavilion, which will host 11 such exhibitors. According to Strong, there are also several other new exhibitors located throughout the show halls.

For the first time, three companies—FACC AG and EHang (Booth D27), Pegas Universal Aerospace (Booth D23), and MAEAM (Booth D21)—are bringing eVTOL mockups to the show floor. They are located near the show entrance adjacent to the Innovation Zone. Urban mobility will be a key theme at this year’s Innovation Zone, with a panel discussion planned on Wednesday with key leaders and entrepreneurs.

In addition, a separate discussion on electric mobility will be hosted at the Innovation Zone on Tuesday. “These panels are among our most popular,” said Dan Hubbard, senior v-p of communications for NBAA, noting that the growing sector is attracting wide interest.

Joining Reuter as a keynote speaker is Grant Shapps, MP from the UK Parliament, chair of the All-Party Parliamentary Group on General Aviation. NBAA noted that Shapps has been a champion of general aviation airports in the UK. “We’re honored to have such bold leaders with us for the Opening Keynote Session at EBACE,” said NBAA president and CEO, Ed Bolen, while announcing the speakers.

“EBACE is Europe’s best forum to share the latest ideas in aviation policy, new business models, and technology, and this year’s show features a full lineup of visionaries.”

On the sustainability front, EBACE is witnessing a large fly-in of business aircraft running on sustainable alternative jet fuel (SAJF). This included the arrival of a number of aircraft from TAG Farnborough Airport in the UK, as well as others flying in on SAJF from other parts of the world. SAJF and sustainability will be a theme highlighted throughout the week in a demonstration of how serious the business aviation community is on the topic, Hubbard said, noting that the fly-in is “helping to introduce the effort to the European theater.” Among the events planned is an SAFJ session at the Innovation Zone on Tuesday that will feature a range of industry leaders from manufacturers, fuel providers, and associations, among others.

Sustainability is anticipated to play a role in a Young Professionals event that will feature an activity similar to the television show “Shark Tank,” in which the future generation of workers will have the opportunity to present ideas that will shape the future of business aviation. “We have a couple of groups that are going to present ideas on how to enrich and embed sustainability in business aviation,” said Strong.

With ongoing concerns about workforce shortages, the development of the next generation of business aviation professionals will also remain in focus. As in the past, the event will host the Careers in Business Aviation Day on Thursday. Organizers are taking an increasingly more sophisticated approach by matching mentors that have experience or expertise in the areas of interest of prospective professionals, Hubbard noted.

Also, a Young Professionals event on Tuesday will showcase a group of 10 prospective business aviation professionals who was sponsored to attend the One Young World Summit at The Hague, Netherlands, a renowned event designed to help foster future leaders. These professionals will have the opportunity to share their experiences and participate in other activities throughout the show.

Collins touchscreens proliferating on flight decks
by Matt Thurber

Touchscreen instrument panel displays are moving quickly into business jet and airliner flight decks, and Collins Aerospace has become the dominant player in accelerating the adoption of such displays in this class of aircraft. Not only are Collins touchscreens now available in owner-flown jets such as the Cessna Citation CJ3, but also in professionally-flown airplanes such as the Nextant 60XT and in-development Boeing 777X.

For many years, touchscreens were considered a non-starter for business jets, with critics contending that some business jet flight decks were too large for pilots to be able to reach the panel comfortably. They also claimed that touchscreens were difficult to manipulate in turbulence.

However, these perceived drawbacks have not held back touchscreen development in business aircraft, beginning with controllers on Garmin G2000 through G5000 flight decks, then similar units in Gulfstream’s new G6500 and G6600. Collins Aerospace launched its touchscreen efforts with the Pro Line Fusion suite in new and retrofit King Airs, then started a development program in partnership with Nexcelent Aerospace to install touchscreen Pro Line Fusion in the Challenger 604. A Nextant 60XT is being shown this week at Collins Aerospace’s EBACE static display.

Next in line for Collins was the Pro Line Fusion touch retrofit for the Citation CJ3, which just earned EASA certification; U.S. FAA certification took place in April 2017. There are 32 CJ3s with the upgrade flying in the U.S., and Collins Aerospace is already working on CJ2+ and CJ1+ programs. “I think we’ll see a lot of interest from European operators,” said JP Rivet, Collins director of commercial avionics marketing for Europe, Middle East, and Africa. “There are quite a few owner/operators in Europe.”

Touchscreens are becoming “a major pillar” in avionics, he explained. Pilots of all ages are so used to interacting by touch with their mobile devices that transitioning to flight deck touch displays is a natural move.

In the Pro Line Fusion touch system, the philosophy is described as “touch what you want to change,” which makes learning the system intuitive. For example, touching the V speeds on the PFD allows them to be updated quickly, and rerouting is a simple matter of pressing on the points that need to be changed.

“Adoption is quick from that perspective,” Rivet said. Of course, pilots can still use knobs and buttons as alternative ways of accessing all the features, but they soon revert to using the touchscreens primarily, he said.

For the CJ3 and 604XT, the upgrade offers added features including synthetic vision, geo-referenced charts, ADS-B Out, LPV approaches, radius-to-fix legs, and other performance-based navigation capabilities. “The package is pretty complete,” Rivet said. The creation of LPV approaches in Europe is accelerating, and by 2024 there should be 1,000 of these approaches at European airports.

In Europe, the Challenger 604 Pro Line Fusion upgrade—already certified in the U.S. and expected to be approved shortly in Europe—can be installed by Bombardier service centers, with Nexcelent providing the upgrade in the U.S.

A similar Pro Line Fusion touch upgrade for the King Air C90 received EASA approval in February 2019, while the B200 and B300 were certified in August 2018. New-production King Airs are equipped with the Pro Line Fusion suite. Collins dealers in Europe can install the CJ3 and King Air upgrades, while Textron Aviation service centers offer the upgrade for U.S.-based King Airs and CJ3s.
Comlux’s first ‘five-star’ VIP completion takes flight

by James Wynbrandt

On the eve of EBACE 2019, VIP airliner specialist Comlux (Booth O99) announced the delivery of its first widebody cabin completion: an ACJ330 for an undisclosed customer. The design and installation were performed at Comlux Completion, the Swiss company’s purpose-built facility in Indianapolis, Indiana. Dubbed “Slice of Life,” the project’s design goal was to create a five-star hotel experience in the air.

The ACJ330’s 200-sq-m (2,200-sq-ft) cabin is configured for 31 passengers and features a pair of master suites, dining areas, lounges, a fully outfitted gym room, and entertainment area, as well as a first-class seating section. Notable interior elements include a circular entryway with a domed ceiling made of hand-cut glass and lattice work, as well as crown molding in the staterooms.

It also incorporates several Comlux Completion innovations: curved pocket doors; an ultra-quiet air conditioning system; a new first-class seat and pod system design; and a 52-inch curved OLED monitor in the entertainment lounge that mirrors the curvature of the room. It also has an Airbus Ka-band Wi-Fi system, Comlux Completion’s first such installation.

“With our first widebody completion, we are now entering the club of a very few widebody approved completion centers,” said Comlux executive chairman and CEO Richard Gaona. “This ACJ330 is the perfect example of our competencies within the Comlux Group.” he continued, noting that, in addition to design and completion, the company handled the aircraft’s acquisition for its own fleet and then sold the aircraft to the undisclosed owner through its Comlux Transactions division, and that now Comlux Aviation, its VIP airline company, will operate the aircraft on its AOC registry in Aruba. Comlux Aviation currently operates a VIP BBJ767 and BBJ777 under that registry, and also has AOCs from Malta, Switzerland, San Marino, and Kazakhstan.

With the Group’s various divisions involved in the ACJ330, the project also gave birth to Comlux Tech, an operating framework that the company will use going forward to ensure all of its competencies are available to serve each client. For example, Comlux Aviation, having operated VIP airliners worldwide for more than a decade, brings invaluable experience to the completion phase in terms of creating a cabin for ease of operation and simplified maintenance once in service. Meanwhile, the engineering team at Comlux Completion can design proprietary solutions for in-service equipment that needs modification for maintenance or other reasons.

Under Comlux Completion’s new management team of CEO Daron Dryer and executive v-p Domingo Ureña-Raso, the center is now poised to move aggressively into the widebody completion market. The Comlux Completion facility can accommodate widebody aircraft as large as Boeing’s 747. “There are some [widebodies] coming on the market,” he said, alluding to announced new aircraft including the BBJ777 and ACJ350 XWB, “and we want everybody to know we’re here.”

According to Gaona, widebody completions are much more challenging than narrowbodies, particularly in terms of achieving certification standards, such as meeting cabin decompression requirements. With three times the interior space, widebodies also require about three times the interior space, widebodies also require about three times the man-hours and twice the lead time of a single-aisle VIP airliner completion.

The ACJ330 marks Comlux Completion’s 12th interior completion, having previously delivered a variety of narrowbody green completions. The facility is self-contained, capable of producing virtually all interior elements in-house, but Gaona said he wanted to extend a special thanks to suppliers who are also critical to its projects. The facility is currently completing the cabins for the first BBJ Max 8 and the first VIP ACJ350 neo. For the BBJ Max, the in-house design team is working with the client’s designer, Peter Marino Architect of New York.

FlightSafety Dassault sims get FalconEye capability

by Ian Sheppard

Dassault’s FalconEye combined vision system head-up display (HUD), certified on some of its Falcon family of business jets, is now installed on several FlightSafety International simulators. Falcon 8X and 2000LXS sims in Paris have it, as well as a Falcon 900LX simulator in Dallas. In October, one is scheduled to be installed in a 2001LXS/900LX interchangeable sim in Teterboro, New Jersey. The FalconEye HUD combines synthetic, database-driven terrain mapping, and actual thermal and low-light camera images into a single view.

Meanwhile, Dassault has renewed its approval of FlightSafety as an authorized training provider “in accordance with the Falcon Training Policy Manual.” FlightSafety noted that it was the first to receive a Dassault-authorized training provider certificate in 2011.

The U.S.-based training provider and simulator manufacturer is also preparing to offer Pilatus PC-24 twinjet training at its learning center in Paris, including initial, recurrent, advanced and specialty courses. PC-24 training is already available at FSI in Dallas using Matrix, the company’s integrated training system, and a level-D full-flight simulator.

FlightSafety (Booth F79) also offers training for the Pilatus PC-12/PC-12NG turboprop single in Dallas and PC-12NG in Denver, Colorado. FSI said that design and manufacture of the new FlightSafety FS1000 simulator for the PC-24 aircraft is under way at FlightSafety’s simulator facility in Tulsa, Oklahoma. The device will be equipped with Honeywell Primus Apex avionics with synthetic vision.

Also at its training center in Dallas, as well as its St. Louis location, FlightSafety is planning to provide training for Embraer’s Praetor 600. “[We are] pleased to expand the support we provide to Embraer aircraft owners and operators,” said Steve Goss, senior v-p of commercial. The FS1000 simulator being used will incorporate electric motion, electric control loading, a new multifunction instructor operating station, and FlightSafety’s Vital 1100 visual system.

FSI is an authorized training provider for “the majority” of Embraer’s commercial and executive jets, with training being provided at 13 FlightSafety locations in Brazil, France, the Netherlands, South Africa, the UK, and the U.S. “using a fleet of 32 full-flight simulators and other advanced training devices,” said the La Guardia, New York-based company.
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StandardAero renews DOF for PT6A, PW100 | by Curt Epstein

StandardAero’s engine MRO facility in Gonesse, France has had its designated overhaul facility (DOF) licenses renewed by Pratt & Whitney Canada for the PW100 and PT6A turboprop engine families. The location has been associated for more than three decades with the PW100, as its predecessor owner SECA was the first independent shop appointed to service the engine in 1986. The facility holds approvals for 23 models of the engine, including the PW127M, which powers the latest ATR 72-600 turboprop. It also has extensive authorizations for the PT6A, such as the widely used PT6A-41/42 and the PT6A-64 that powers the Daher TBM 700. The facility will soon deliver its 1,500th completed PT6A.

Daher Renewal
Located midway between Le Bourget and Charles de Gaulle airports in Paris, the StandardAero shop also had its authorization renewed by Daher as the engine MRO provider for Europe-based TBMs. Over the past several years, the MRO has optimized workflow through lean manufacturing processes, yielding improved turnaround times and quality of delivered work. This year, the location, which is home to a newly expanded mobile repair team, plans to offer additional services through the introduction of dedicated onsite service center capabilities.

“We are pleased to further expand the range of cost-effective service offerings offered to PW100 and PT6A operators across Europe, the Middle East, and Africa,” said Laurent Cluzel, the location’s general manager. “StandardAero’s decision to make the Gonesse facility the focal point for its European PW100/PT6A MRT team highlights the strong service focus of our workforce here, while the recent addition of several new hires reflects the high level of demand we are seeing from the marketplace.”
Announcing the certified Praetor 600, the world’s most disruptive and technologically advanced super-midsize aircraft that leads the way in performance, comfort and technology.

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Learn more at executive.embraer.com/praetor600
No logjam yet on ADS-B Out installations in Europe
by Jerry Siebenmark

ADS-B Out installations in Europe are robust but steady, according to companies interviewed by AIN, despite one forecaster’s expectation that many aircraft on the continent won’t be equipped with it in time for the June 7, 2020 deadline. The European ADS-B mandate applies only to aircraft with an mtow exceeding 5,700 kg (12,666 pounds) or having a maximum cruising true airspeed capability greater than 250 knots.

Still, JetNet iQ director Rolland Vincent told AIN, “Thousands of aircraft are not going to make these deadlines. After years of notice from the authorities, I cannot imagine that they would look kindly on a request for an extension as this would penalize the owners and operators who followed the rules.”

About 70 percent of European operators and owners responding to JetNet’s ADS-B Out Compliancy Survey conducted in the fourth quarter of 2018 expect to be compliant by the time the mandate takes effect, while nearly 15 percent somewhat agree that they’ll be ready. But 10 percent are uncertain while 3 percent somewhat disagree and 1.5 percent strongly disagree, according to the survey.

At Collins Aerospace, the strongest uptake for ADS-B Out was seen among operators and owners of VIP and VVIP bizliners three or four years ago, J.P. Rivet, director of business development and marketing for Europe, the Middle East, and Africa, told AIN. “They want to be able to go anywhere anytime, right? So they look at the closest mandate they want to comply with and then that makes them ready for all of the following mandates.” More recently, Rivet noted, “we’ve really started to see a strong uptake in the business aviation segment as well, so we are seeing things pick up.” That means Collins dealers are busier but just how much busier is not clear. Rivet didn’t know if they’re close to reaching a point where they won’t be able to accept additional installation jobs. “It’s difficult to say. With the mandates, if people wait until the last minute then they’re going to find it more and more difficult to find ground time, kits for STCs, and eventually hardware, too.”

Scheduling ADS-B Out installs at ExecuJet MRO Services, which is being sold to Dassault by Luxaviation Group, hasn’t been a problem yet, group sales director Des Miles told AIN. “Our regular customers are fully aware of the mandate deadlines and a good percentage have already complied with the modifications,” he explained. “It is evident that the larger, newer aircraft have complied with these modifications sooner than the smaller, older aircraft. Yes, we are busy with ADS-B installations across the group and we still have spare capacity to take on more aircraft.”

About 80 percent of ExecuJet’s soon-to-be former parent company’s managed fleet have been upgraded, Luxaviation Group chief technology officer David Van Den Langenbergh told AIN. “We started to schedule the upgrades around five years ago,” he noted. “Depending on the OEM, we were able to upgrade some aircraft sooner than others, as the technology was made available sooner.” Of the aircraft that haven’t been updated, some are awaiting base maintenance that’s scheduled after January 1, 2020—the U.S. date for ADS-B Out—while others haven’t because they are pending sale by their owners. “Throughout this process, we ensure that the end-users are updated regularly and make sure they are well aware of the consequences if the mandate is not met,” Van Den Langenbergh added.

**Daher selects EAA Young Eagles interns**

Daher (Booth P99, SD200) selected two natives of Wisconsin, home of the Experimental Aircraft Association (EAA), for its 2019 internship program. EAA partners with Daher on the program, which provides first-hand aviation industry experience to two U.S. college or university students each year. Benjamin Van Handel and Jordan Paulson, both of whom have participated in the EAA Young Eagles Program, are the 2019 interns.

Van Handel and Paulson will spend five weeks in June and July at Daher’s Tarbes facility in France. The internships include a tour of the Airbus production facility at Toulouse, attendance at the Paris Air Show, and participation in EAA AirVenture.

“This opportunity is a one-of-a-kind experience for the internship recipients,” said Nicolas Chabbert, senior v-p of Daher airplane business unit and CEO of Daher Aircraft. “Spending time with our team in France will enable them to gain expertise in their aviation industry fields of interest. We hope the experience will make a difference in their future careers, while also benefiting our company by working with the next-generation of aviation industry decision-makers.” A student at Saint Norbert College in De Pere, Wisconsin, Van Handel also spent a semester at Bond University in Australia as part of his work toward a bachelor’s degree in business administration. He obtained his private pilot’s certificate with the help of a Phillips 66 aviation scholarship.

Paulson, meanwhile, is studying business management and economics at the University of Wisconsin Oshkosh. He was inspired to earn his FAA private pilot certificate and multi-engine rating after taking an introductory flight through the EAA Young Eagles program.

“Nothing is more important than first-hand aviation industry experience to help students explore future career opportunities. With industry exposure and cultural exchange, the impact on these former Young Eagles’ lives is tremendous,” said Dave Chaimson, EAA’s v-p of marketing and business development. With the help of EAA-member volunteer pilots, the EAA Young Eagles introduces flight to young people age eight to 17. More than 2.1 million youth have flown through the program since 1992.

**Pilatus 2018 annual revenues top $1 billion**

Swiss airframer Pilatus (Booth L115, SD202) turned in a solid annual result for 2018, posting revenues of $1.074 billion and net income of $154.5 million on deliveries of 128 aircraft: 18 PC-24s, 80 PC-12 NGs, 27 PC-21s, and three PC-6s. It was the first time annual revenues had topped the $1 billion mark since 2015. Order intake for the year was $980 million, boosting the company’s backlog to $2.07 billion.

Milestones for 2018 included delivering the first customer PC-24 to U.S. customer PlaneSense in February, opening a new aircraft completion center in Broomfield, Colorado in October, beginning construction on a new facility in Australia, and selling 20 PC-12 NG turboprops to China. Pilatus said it expects the new Broomfield center could deliver up to 30 new PC-24s per year and plans to increase employment there over the next three years. Pilatus added 150 new jobs worldwide in 2018, growing its workforce to 2,283. Pilatus plans to reopen the PC-24 order book and will open a new aircraft assembly building in Switzerland later this year, said chairman Oscar Schwenk.

He added that Pilatus will continue to focus on product and service improvements in 2019. The PC-24 is involved in post-certification testing, including steep approaches at London City and Lugano Agno, Switzerland as well as certification approvals for off-pavement landing. Last year the first aeromedical interior was installed in a PC-24 for Australia’s Royal Flying Doctor Service. Pilatus also upgraded the control software for the PC-12 NG and developed a new maintenance plan for all PC-12 models that cuts maintenance costs by 20 to 40 percent. The company said it is continuing its focus on training, and last year Pilatus’s in-house center in Stans, Switzerland trained 684 students.
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TOGETHER, WE ARE REDEFINING AEROSPACE
Swiss ATC convictions invoke protests

by Kerry Lynch

International air traffic controllers’ representatives are decrying recent convictions of air traffic controllers in Switzerland for operational incidents that caused neither damage nor injury, saying such legal actions will not improve safety. The representatives further urged Swiss leaders to adopt international standards surrounding just culture.

On March 28, the Bülach District Court found a Skyguide Swiss air traffic controller guilty of negligent disruption of public transport. The conviction involved an August 22 incident at Zurich Airport in which a Darwin Airline aircraft took off while a light aircraft engaged in flight training approached. That conviction followed convictions in April and December 2018. In those cases, air traffic controllers were convicted by the Federal Penal Court and by the Cantonal Court of Zurich, respectively, for operational incidents that, similar to the August 22 incident, did not result in either personal property or injury damage.

Saying it “regrets” the latest conviction, Skyguide stressed that it stands behind the controller in question. The air navigation services provider further underscored the importance of a just culture, which it said “is designed to ensure that mistakes that are neither intentional nor grossly negligent are not subject to disciplinary sanctions.” This is important, Skyguide added, because it enables organizations to learn from mistakes and take measures to avoid future errors. “This leads to greater safety in Swiss airspace for all users,” it said and noted the controller’s employment “is not called into question by the conviction.”

The International Federation of Air Traffic Controllers’ Associations (IFATCA) and the European Cockpit Association (ECA) earlier this month issued a statement expressing extreme disappointment about air traffic controller convictions. These associations had also stressed the importance of just culture, saying it encourages pilots and controllers to report issues relevant to safety without fear of punishment. “This makes the aviation system safer. Despite drastic increases in traffic, safety levels have continued to improve to the level the flying public enjoys today,” IFATCA and ECA said.

Concerning to the organizations, they added, “Switzerland remains one of the few states that has chosen to deviate from international standards and recommendations—including those in the Annexes to the Convention on International Civil Aviation—when it comes to using safety reports to trigger court cases.”

Noting Switzerland is beholden to a 1942 penal code that binds the court system in these cases, IFATCA and ECA further urged a review of the legal system to better align with the International Civil Aviation Organization. “Lengthy and costly court cases do not improve aviation safety, nor do they contribute to the robustness of complex systems,” the organizations said. “They create a climate of fear among aviation professionals and result in a reluctance to submit reports. The opportunity to learn from these events is therefore severely compromised.”

In the U.S., the National Air Traffic Controllers Association echoed those sentiments, joining the call for Switzerland to align with international standards that incorporate just culture principles. “The implementation of a safety culture that continually strives to improve safety within the air traffic control system and the larger aviation industry, with collaborative safety programs, results in a safer system,” NATCA said, adding the results of the programs have been demonstrated “thousands of times” over the past decade in the U.S. through the FAA’s and NATCA’s voluntary, non-punitive reporting program.

That program, Air Traffic Safety Action Program (ATSAP), has become the largest voluntary reporting program of its kind, NATCA added, noting more than 165,000 reports have been filed since it was implemented nationwide in 2010. The organizations further collaborate on safety programs involving government and industry stakeholders to share critical safety information and identify trends. “A punitive culture leads to withholding of information that, if disclosed, could help make the system safer. It only takes one incident or accident to occur because of a safety issue that was not previously raised or discussed for there to be a tragedy,” NATCA said. “Our hope for Switzerland and the other nations that deviate from these principles and international standards is that they can learn from the positive examples of a safety culture to improve their own systems.”

Skyguide, Airmap partner in Swiss drone airspace trials

Swiss air navigation service provider Skyguide and drone airspace management platform AirMap will launch the trial phase of automated flight authorizations and other U-space services for drones using Swiss airspace. Skyguide plans to officially launch the first national drone traffic management system in Europe.

In addition, the trial phase will test U1, U2, and some U3 services including E-registration, E-identification, pre-tactical geofencing, flight planning, real-time traffic and tracking, dynamic geofencing, and communications and emergency services powered by the AirMap UTM platform and integrated into Skyguide infrastructure for drone traffic management.

“Digital and automated airspace authorization is a critical enabler for scaling high-value drone operations,” said Ben Marcus, AirMap co-founder and chairman. “We’ve experienced this first-hand through our work with the FAA in the United States, and we are proud to be working with Skyguide to bring this capability to the Swiss drone community.”

As part of the trial, select Swiss drone operators can request automated and manual flight authorization to access airspace controlled by Skyguide (CTR) in the city of Lugano and the canton of Geneva. Access can be achieved via the Skyguide U-space mobile application, which is provided by AirMap. “The trial phase enables us to gain vital information and experience and make sure that this pioneering system is running smoothly and reliably when launched in June,” said Robert Fraefel, U-Space project lead at Skyguide.

The Skyguide automated and manual flight authorization service builds upon experience gained with the U.S. Federal Aviation Administration’s (FAA) successful Low-Altitude Authorization and Notification Capability (LAANC) program. Commercial drone operators in the U.S. can use the AirMap mobile application to request ATC authorization to fly in controlled airspace within seconds. The Swiss trial phase represents the first instantiation of a fully automated digital authorization service for drone flights outside of the U.S., similar to FAA LAANC.

Matternet, the developer of an autonomous drone logistics platform, is one of the operators participating in the Swiss trial. Supported by Swiss U-space, Matternet and Swiss Post, the national postal service, currently use drones to transport time-sensitive medical laboratory samples beyond visual line-of-sight (BVLOS) between two hospitals in Lugano.

The Swiss U-space platform includes an open interface enabling multiple U-space service providers to connect to core U-space services provided by the Skyguide Flight Information Management System (FIMS).
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Dassault Aviation’s recent acquisitions of ExecuJet’s MRO Services and TAG Maintenance Services in Europe represent “a changing strategy” for customer support, according to Jean Kayanakis, senior vice-president of worldwide Falcon customer service and maintenance network. “For 40 years, we relied on third-party authorized service centers. But the market is changing. Customers are expecting OEMs to have better control of their experience as a customer. MROs are becoming more important. The business is becoming more influenced by the aftermarket,” he said in an interview at the annual Falcon Maintenance & Operations (M&O) Seminar in Paris. “In days past, engineering input was primary in a new airplane. Tomorrow, it is what the customer may expect in total benefit, including utilization of the aircraft.”

The Paris event was one of eight M&Os in Europe, North and South America, and Asia from April 9 through May 21.

The ExecuJet acquisition from Luxaviation, announced in late January, adds 15 maintenance, repair, and overhaul (MRO) centers across Africa, Asia-Pacific, the Caribbean, Europe, Latin America, and the Middle East to the five company-owned Dassault Falcon Services locations in Europe and Dassault Aviation Services in North America.

Dassault (SD103, Booth Z89) is also in the process of acquiring the European MRO activities of TAG Aviation in Geneva and Sion, Switzerland; Farnborough UK (which Dassault expects to expand); Lisbon, Portugal; and Paris, France.

The ExecuJet and TAG centers will retain their identities and management teams, and will continue to service multiple OEMs in addition to Dassault Falcons. For example, TAG has an extensive Bombardier business jet clientele. “For many reasons, it is quite impossible to start from scratch. They know the customers and the vendors, and we hope to teach them more about Falcon,” said Kayanakis. Currently about 10-15 percent of the business conducted through the new acquisitions is on Dassault models.

“We will try to adapt to the competition,” Kayanakis added. “The main idea is to extend our network footprint in Asia and Europe, as well as the Middle East, Africa and Australia. This was our first move.”

**Getting ‘Clever’ in North America**

Will there be future acquisitions, for example in North America? Of the 2,120 Falcons in service worldwide (1,260 operators, 90 countries), more than two-thirds—69 percent—are in the Americas, Europe, the Middle East, and Africa account for 25 percent, Asia-Pacific only 6 percent. “The U.S. market has the same kind of expectation. We don’t want to rely only on independent organizations. We will need to be clever, maybe.”

Kayanakis stated, “We will need some more capacity,” citing the new Falcon 6X, expected to enter service in 2022, “and another airplane in the future.” The support space needs are also driven by the trend toward larger aircraft. “Capacity has a direct impact on our ability to service the fleet.”

“We need opportunities to be involved in most aspects with our customers—including maintenance and pilots—to get a more comprehensive experience. We want to strengthen that to improve the product and customer service,” he said.

Nearly 300 Falcon customer representatives attended the Paris M&O two-day event, 156 with “flight ops” profiles and 154 with “maintenance profiles.” There were also more than 200 sponsors, including engine, avionics, communications, training, and other Dassault vendors. Nearly 2,000 attendees are expected across the eight M&O events globally.

**Program Specificity**

For the first time, a cabin track was incorporated for flight attendants, covering safety events and the new FalconConnect onboard communications and entertainment systems.

There was a heavy dose of detail and transparency in the aircraft-specific sessions as Dassault and partner presenters described program updates, regulatory impacts, operational challenges such as cold weather, aircraft system or parts problems customers had experienced and what the OEM was doing to fix them, as well as some new developments.

Among the innovations Dassault revealed were drone inspections of aircraft and 3D scanning. The drone would be fully autonomous, preprogrammed to check the entire exterior of an aircraft for damage and defects. Tests are in progress on military aircraft with initial evaluations on Falcons soon. The 3D scan, currently using a handheld scanner (perhaps via drone in the future) measures surface distortion or loss of material and is accurate to 0.005 millimeters. Dassault said the scanner has been deployed at Dassault Falcon Service sites and saves 70 percent of the time required for complex mapping.

In the exhibits area, Dassault offered a virtual reality experience of the FalconEye Combined Vision System (CVS) head-up display, which aligns real-world imagery from an array of cameras and sensors with a synthetic terrain map for enhanced situational awareness in low-visibility approaches. FalconEye was certified late last year by both EASA and the FAA for Falcon 8X operational credit for poor-viz approaches down to 100 feet and is expected to be approved soon for the Falcon 2000LX and Falcon 900LX. A dual-HUD configuration and full approach capability are anticipated next year.

On the subject of passenger medical care, cabin training partner Aircare demonstrated an upgrade to its portable patient assessment and communications tool—the Aircare Access RVS 6 (Remote Viewing Station) at the M&O meeting. Jake Paimi, Aircare International director of sales, said, “The basic premise behind the unit is to provide the flight crew, physician, and patient a means of providing a professional assessment of an ill passenger while in-flight or on the ground. Through the use of encrypted video, doctors have the remote ability to see and talk with your caretaker and send the assessment data to the physician in real time.”

The RVS 6 combines video, wireless diagnostic tools (blood pressure, glucose meter, thermometer, electrocardiogram, pulse oximeter), and live streaming of encrypted data.

**Geneva hangar provider lighting candles**

For a decade now, Geneva Air Park’s cavernous hangar has provided shelter for private aviation customers and operators at Switzerland’s Geneva International Airport.

**Geneva Air Park, the private aviation hangar complex here at Geneva International Airport (GVA), is celebrating its 10th anniversary this week as the airport hosts the annual EBACE show. While FBOs can have their own hangars at the airport, that space is largely reserved for maintenance activities, leaving the Air Park as the only viable option for customers seeking transient or based aircraft shelter. With 107,639 sq ft (10,000 sq m) of hangar space, the facility—located near GVA’s Terminal C3, which is adjacent to Palexpo—is large enough to fit a pair of Boeing 747s and usually operates at more than 90 percent capacity.**

Open from 6 a.m. until 10 p.m., it is home to more than 20 business jets on annual contracts guaranteeing them space, with the remainder left for transient aircraft. The facility has recently seen an uptick in larger transient aircraft, which has cut down on the total number of aircraft it can shelter.

The company (Booth Z124) offers a comprehensive range of services for private and business aviation, including towing via its fleet of five Lektro tugs and water and lavatory service. It also recently added in-house dishwashing and linen service, as well as aircraft cleaning.

Earlier this year, the facility earned its Stage I registration under the International Business Aviation Council’s International Standard for Business Aviation Handling (IS-BAH).
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Collins Aerospace fits well in UTC’s corporate family

by Kerry Lynch

After its first full quarter of ownership of Rockwell Collins, United Technologies Corp. (UTC) already is reaping greater-than-anticipated benefits. The newly formed Collins Aerospace unit posted its first profit—$856 million on $6.5 billion in sales—and teams from the legacy UTC Aerospace Systems (UTAS) and Rockwell Collins look to line up on engineering expertise, product offerings, and customer services.

UTC completed its $30 billion acquisition of Rockwell Collins in late November, combining the avionics and interiors giant with its own UTAS. The resulting Collins Aerospace will mark its debut to the business aviation market during EBACE with the new brand on display (Booth R71).

Retaining the established Collins name, Collins Aerospace is broken into six major business units—aerostructures, avionics, interiors, mechanical systems, mission systems, and powers and controls—and employs 70,000 people at 300 locations worldwide.

The legacy units combined for $23 billion in annual sales in 2017; commercial business (including business aviation) makes up about 75 percent of that total with government and military making up the rest. Forward-fit OEM applications represent approximately 60 percent of the sales. With a combined 16,000 engineers, the organization collectively invests about $3.1 billion annually in research and development.

Kelly Ortega, who had been CEO and president of Rockwell Collins, became CEO of Collins Aerospace, while UTC president Dave Gitlin took the role of president and COO. The combined entity is headquartered in West Palm Beach, Florida.

The initial reaction, he said, is surprise at the sheer scope and breadth of Collins Aerospace. “We span so much of the airframe now with content from avionics to life rafts. We can bring a solution and a product range from A to Z,” Peterson said, adding response has been “pretty enthusiastic. It is a really exciting time here—the dynamics and the learning—it’s like drinking from a firehose.”

Collins Aerospace has not only engaged in external education but also an internal “learning journey.” Teams have begun meeting and hosting webinars to highlight their various product lines and levels of expertise. “Through these learning journeys, a lot of cool things are happening,” he said. “That knowledge becomes the genesis of ideas of ‘wow, I didn’t know you did that. We have a product capability that has an affinity to what you are doing.’”

Coordination Efforts

These efforts are a strong priority not only for Collins Aerospace but the larger UTC parent. Collins Aerospace already has begun to coordinate in certain areas on the customer services front.

One such area is what Peterson called “an aggregation value.” Customers who did business with the various units may have had to conduct transactions with multiple companies. “We’re working very hard to make that more simple and efficient,” he said, by streamlining the number of entities that a customer would have to deal with for contract negotiations, billing, and other administrative areas. “This coordination, already well underway, is being done in areas that most make sense, he said, adding that Collins Aerospace is trying to be careful to provide the customer flexibility to make choices about this sort of aggregation.

Peterson pointed to aviation parts sold to MROs as an example where this collaboration is taking root. MROs will have increased access to a broader product breadth with simpler transactions. This is the same for the dealer network that the legacy Rockwell Collins had assembled. “We had a rich set of dealer agreements. Those dealers now have at their disposal a much broader catalog of products and capabilities that they can aggregate” with an easier transaction process, he said.

Collins Aerospace has a customer and account management organization that is assimilating these aftermarket processes. “This is the first big layer of value in the marketplace,” Peterson said.

New Product Development

New products and product collaborations may take years to line up and integrate, Peterson conceded, but teams are exploring where they can leverage expertise and support each other. One such example is research into additive manufacturing that can cross business units.

Another longer-range project is UTC’s recently unveiled research into the future electrification of aircraft. The new $50 million lab under development, called the Grid, will pull resources from throughout UTC, including its traditional power and controls, as well as eventually from avionics as engineers look toward aircraft and flight deck integration.

Collins Aerospace also sees possibilities in areas such as the connected aircraft, where legacy Rockwell Collins avionics and its Information Management Systems (IMS) expertise can tie into the legacy UTAS components.

And, more immediately, the merger has bridged the process of collaboration even within the legacy Rockwell Collins units. Peterson said the avionics and IMS—AircDirect—units typically operated independently. They have now been further integrated and this is producing results.

One such area is digital radios. The avionics organization has been investing in new lighter-weight, smaller digital HF long-range radios. Primarily targeting airliners and large, long-range business jets, these products will have the ability to provide a range of data applications but require ground stations to fully realize benefits.

With its collaboration with IMS, Collins can tap into that ground station expertise. The combination, he added, “will unlock a tremendous amount of value. There is any number of similar radio and service examples where we can marry connectivity services, trip services, or concierge services.”

Peterson credited the support of UTC for expediting these efforts. “The UTC merger literally interwove IMS into the avionics organization,” he said. “It has picked up the overall tempo, pace, urgency, and discipline in going forward in unlocking these kinds of synergies. The merger itself created the groundwork for turning up the game and amplified the speed in which we can go.”

When he released the first quarter performance, UTC chairman and CEO Greg Hayes told analysts that the merger of the two aerospace companies “exceeded even our expectations. As we worked as a combined team for a full quarter, I am even more confident in the long-term value the acquisition is going to bring to shareholders and our employees.”

NEWS note

Aviation app developer ForeFlight has unveiled a companion app for passengers with the release of ForeFlight 11.2 that allows them to track the progress of their flight. Use of the ForeFlight Passenger app, which is available for free on the App Store, requires connectivity between a pilot’s ForeFlight Mobile subscription and the app.

According to ForeFlight (Booth D31), the app’s map shows the position of a flight—which requires a GPS source—route of the flight, estimated remaining time, estimated time of arrival, speed, altitude in feet, and magnetic heading.

If the pilot changes the flight’s route, ForeFlight will automatically transmit it to the Passenger app.
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Global 7500 optimizes circadian-friendly lighting

by James Wynbrandt

Returning to the scene of its rebranding one year ago as the Global 7500 (née Global 7600), Bombardier is touting at EBACE 2019 its flagship’s new circadian rhythm-based cabin lighting system, designed to combat the effects of jet lag, and now standard on the ultra-long-range jet. Dubbed the Soleil (French for sun) Dynamic Lighting System, the technology uses changing combinations of red and blue light wavelengths that studies have shown stimulate or suppress melatonin—a hormone that helps regulate sleep. It’s engineered to help align passengers’ circadian rhythms to their travel, with development “driven by the needs of truly worldwide aircraft that are going to be crossing time zones and connecting airports and city pairs that no other aircraft can,” said Bombardier Business Aircraft (BBA) manager, industrial design, Tim Fagan. Incorporating Dynamic Daylight Simulation, Soleil can automatically adjust the cabin lights to help re-regulate travelers’ body clocks, either to maximize efficiency en route or adjust to the time zone of their destination. Such adaptive light strategies become useful on flights exceeding seven hours, Fagan said, adding, “I think we’re just scratching the surface on how we can better take care of our passengers onboard the aircraft in terms of wellness.”

Integrated with the aircraft’s Flight Management System through the Global 7500’s Lufthansa Technik nice Touch CMS, Soleil uses information in the active flight plan and proprietary algorithms to calculate the appropriate circadian-based lighting changes for the flight. The system, which can be engaged at any point in the journey, can also recommend optimum times for meal service accordingly. Each of the 7500’s four cabin zones can be individually quarantined and have its own lighting regime during the flight.

Soleil boasts the highest definition color rendering index (CRI) of any current system, according to the Montreal-based airframer, and incorporates mood lighting and other popular contemporary cabin illumination capabilities. Unveiled last month at the annual Milken Institute Global Conference in the U.S., a cabin mockup with Soleil is on display at Bombardier’s EBACE exhibit (Booth Z125; SD 400).

**Interior Options**

Beyond state-of-the-art lighting, as the largest purpose-built business jet and first with a true four-zone cabin by Bombardier’s reckoning, long-range flyers are eager to explore the Global 7500’s interior possibilities.

“We’re seeing a lot more customers with demand for the full stretch of the airplane, and going on 12-, 14-, and 16-hour flights,” said Stephane Loubert, Bombardier’s program management, Global 7500/8000, speaking shortly before EBACE at the company’s Centre of Excellence in Montreal. “That extra 25 percent space in the airplane— it’s 10 feet longer than the Global 6000/6500 cabin—is an advantage. It gives the customer a lot more flexibility.”

Global interiors are designed and the aircraft are delivered to the Centre of Excellence. Loubert sat in the elegant design showroom suite, surrounded by endless samples of fine china, fabrics and leathers, stone and wood, carpeting and other de rigueur furnishings of the world’s finest interiors. “We’ve been working on replicating what customers have at home,” he said.

While many configurations are available, many customers are choosing a private stateroom with full-size queen bed in the aft cabin. Loubert noted both the Global 5000 and 6000 offer shower options. “But now with the size of the airplane, we’ve got a full standup shower with 45 minutes of shower time.”

Nude seats, making their debut in the 7500, will help ensure the hours pass comfortably. The patented tilt-link system moves the seat pan as it reclines, improving the deep recline position’s ergonomics and comfort. The floating base has a permanently centered swivel axis for easy, intuitive positioning, and a trackless foot-print, so no floor attachment hardware is visible through carpet cuts. An adjustable tilting headrest provides optimal neck support in any position.

Each seat has an OLED dial controller—business aviation’s first application of an OLED (organic light emitting diode) display—part of the new fiber optic-based Touch IFE/CMS developed with Lufthansa Technik for the 7500. The controller sits flush in the armrest unseen when not in use, but rises and lights up with a swipe of the fingers, putting all cabin lighting, environmental, and entertainment controls literally at the passenger’s fingertips. Cabin functions can also be controlled from touchscreen keypads on bulkheads dividing the cabin zones.

In the kitchen—Bombardier doesn’t call it a galley—appliances are purposely left exposed, to showcase the designer kitchen-like outfitting, and the layout has been optimized for onboard meal preparation and service.

As for interior design trends, Loubert reports “dark wood and contrasting light leather, and then lighter fabrics to match the seats” are popular. “In the past, it was a little bit trickier to get the right finish and look on dark wood,” he said, but today’s spray finish technology makes it feasible.

Boasting performance as impressive as its cabin design and appointments, cruise speed tops out at Mach 0.925, and its 7,700 nm range is the greatest of any purpose-built business jet, according to Bombardier, while maintaining agile short-field capability. Arriving at EBACE as part of its inaugural world tour, the flagship has racked up multiple speed and distance records on its way to Geneva. It set a speed record between Los Angeles and New York of 5 hours, 54 minutes, with more than half the total flown at Mach 0.945. It then took honors for fastest civilian flight on the key New York to London international route, completing the flight in 5 hours, 26 minutes, for an average speed of Mach 0.92. Then in early March the demo aircraft flew 8,162 nm—the longest flight ever made by a purpose-built business jet—from Singapore to Tucson, Arizona, in the U.S., at a sustained speed of Mach 0.85.

By mid-April, the 7500 had flown more than 316 hours and 100,00 nm (the equivalent of more than 4.5 circumnavigations), with more than 90 takeoffs and landings in 21 cities across four continents with 100 percent dispatch reliability.

After two deliveries in 2018, Bombardier expects to hand over 15 to 20 this year of the flagship Globals, and 30 to 40 in 2020. The line can produce more than 40 annually, the company has said, and will adjust production to market demand.
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Lufthansa Technik Roccet tests avionics
by Kerry Lynch

MRO and completions specialist Lufthansa Technik (Booth H71) is looking at a scope of projects to increase automation to ease the burden on its workers, including the recent development of a robot to help with avionics components checks.

This new test procedure, which Lufthansa Technik calls Robot Controlled Cockpit Electronics Testing, or Roccet, was the culmination of two years of in-house development, the company said. In the implementation phase, Roccet will be able to check all LED light and switch functionality similar to a human, as well as perform defined functional tests. In fact, Lufthansa Technik said, the system takes the “subjective feel” of the mechanic out of the testing equation, helping to improve the quality of the results. It takes an objective view of when bright has become too bright or a switch is worn, the company added.

The robot is embedded with sensors that can measure forces that occur when switches are activated. In addition, the robot is equipped with industrial cameras to provide a picture of display instruments and search for outer damage. Another camera can measure the brightness of displays from different angles. “This fully automated procedure allows us to ease the burden on our colleagues in the workshops and reduce the testing effort by one to two hours per component,” said Florian Sell, senior engineer for automated test equipment systems at the Aircraft Component Services division and manager of the Roccet project. “At the same time, the new procedure provides concrete measurement data in accordance with uniform standards. For example, we now have physical threshold values for the brightness of LEDs. And with the help of data mining, we can determine exactly when an LED has to be replaced.”

Initial plans call to use the robot for work on the Airbus A320 and A350, along with Boeing 787 flight-deck maintenance, but this may eventually extend to controls on other aircraft types at various of its locations, the company said.

“It is independent from any spatial constraints. Hence, the technology could also be adapted to any modern cockpit panel, such as those of smaller VIP jets,” a Lufthansa Technik spokesperson said, but added the intent is to focus on airliners at its component shops. Currently, it is used in its workshops in Hamburg, Germany.

During the integration phase, the robot will replace manual testing “step by step” to define possible weaknesses early on and improve the automated process. Decisions on future deployment and other aircraft types have not yet been made.

But it is part of a number of possibilities Lufthansa Technik is looking at in different disciplines, from automated robots such as Roccet to collaborative robots (C-Bots) that work alongside humans. “Our robotics research activities span almost our entire spectrum of production divisions, from airframe via components to engine MRO,” the spokesman said. “One of the driving factors in this endeavor is not to replace our human workers with robots, but to relieve them from many ‘dull’ and repetitive tasks and allow them to focus on the core elements of their jobs, for example, fault rectification.”

Matternet, SwissDrones to fly with SafeDrone Health
by Mark Huber

Lufthansa Technik (Booth H71) has signed contracts with drone manufacturers Matternet and SwissDrones to provide its SafeDrone Health cloud-based service. Similar to the capabilities of a health and usage monitoring system (HUMS) in manned aircraft, SafeDrone Health allows manufacturers and operators to monitor the condition of their drones and provides failure descriptions and maintenance recommendations. SafeDrone Health said its system can reduce maintenance costs by up to 50 percent. “All this helps to reduce operating costs in the long run,” said Philipp Baumgarten, technical project lead for SafeDrone.

SafeDrone Health will support Matternet flights in Switzerland and in the U.S. under the Unmanned Aircraft System Integration Pilot Program initiated by the U.S. Federal Aviation Administration. “By partnering with Lufthansa Technik, we are taking another step to ensure that every operation we implement around the world utilizes the best-in-class technology to keep everyone involved safe,” said Matternet CEO Andreas Raptopoulos, Switzerland’s mail service Swiss Post, cargo carrier Swiss WorldCargo, and drone manufacturer Matternet started testing a small quadcopter for commercial use in 2015. UAS beyond-visual-line-of-sight (BVLOS) commercial transport operations began in Berne, Switzerland in 2018.

Swiss drone manufacturer SwissDrones specializes in multi-purpose, long endurance, heavy lift civil drones. SwissDrones board member Lukas Obrist said, “Due to the increased operational expectations toward our products in use around the world, the deployment of a professional fleet health and safety management platform has become a key initiative.”

The Lufthansa Group recently named its Lufthansa Technik subsidiary as the drone competence center for the entire group. The MRO is charged with responsibility for strategic matters, portfolio management, and the correlation of all drone activities within the group. It will represent the group’s interests at national and international bodies and take part in the development of binding standards for the drone industry.

As part of the restructuring, Lufthansa Aerial Services and SafeDrone by Lufthansa Technik are pooling resources to define possible weaknesses early on and improve the automated process. Decisions on future deployment and other aircraft types have not yet been made.

But it is part of a number of possibilities Lufthansa Technik is looking at in different disciplines, from automated robots such as Roccet to collaborative robots (C-Bots) that work alongside humans. “Our robotics research activities span almost our entire spectrum of production divisions, from airframe via components to engine MRO,” the spokesman said. “One of the driving factors in this endeavor is not to replace our human workers with robots, but to relieve them from many ‘dull’ and repetitive tasks and allow them to focus on the core elements of their jobs, for example, fault rectification.”

SwissDrones has signed with Lufthansa Technik for the latter’s SafeDrone Health service.
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EASA to codify and expand aircraft cybersecurity

by Gordon Gilbert

The European Union Aviation Safety Agency (EASA) intends to strengthen aircraft cybersecurity regulations by codifying the requirements into aircraft type certification specifications (CS), replacing the current regulatory process known as special conditions (SC). Also, EASA would expand cybersecurity requirements to more aircraft types.

Special conditions mean that regulations must be complied with by individual approval of each aircraft before they are granted airworthiness approval. In a recently issued notice of proposed amendment (NPA) the revised rules would not only replace the use of SCs to mitigate the potential effects of cybersecurity threats on avionics and other electronic systems, but also extend coverage from currently large airplanes to small airplanes, and small and large helicopters.

“Such threats could be the consequences of intentional unauthorized acts of interference with aircraft onboard electronic networks and systems,” EASA said. These threats have the potential to disrupt or destroy electronic information. All recently designed large airplanes are known to be potentially sensitive to those security threats due to the interconnectivity features of some of their avionics systems.

In addition to incorporating requirements into the CS of both large and small aircraft, the amendments also are expected to improve harmonization with FAA regulations.

Why Amend Regulations Now?

In the context of aircraft certification, cybersecurity is commonly understood as the protection of aviation information systems from intentional unauthorized electronic interference. Over the last few years, “Electronic-based systems have continued airworthiness. The European Union Aviation Safety Agency (EASA) intends to strengthen aircraft cybersecurity regulations by codifying the requirements into aircraft type certification specifications (CS), replacing the current regulatory process known as special conditions (SC). Also, EASA would expand cybersecurity requirements to more aircraft types.

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Why Amend Regulations Now?

In the context of aircraft certification, cybersecurity is commonly understood as the protection of aviation information systems from intentional unauthorized electronic interference. Over the last few years, “Electronic-based systems have been advancing at a rapid rate resulting in aircraft systems and parts being increasingly connected, and those interconnects are susceptible to security threats.”

Further, “These threats have the potential to affect the airworthiness of an aircraft due to unauthorized access, use, disclosure, denial, disruption, modification or destruction of electronic information or electronic aircraft systems,” EASA warns.

The EASA proposal is also the culmination of the findings of an FAA aviation rulemaking advisory committee (ARAC). In November 2016, the ARAC provided recommendations regarding aircraft information security protection of aircraft systems and networks, or cybersecurity, “Rulemaking, policy, and guidance on best practices, including for initial and continued airworthiness.”

EASA participated in the ARAC for regulatory harmonization purposes. The ARAC final report contains regulatory recommendations that affect large airplanes, general aviation, rotorcraft, engines, propellers, portable electronic devices, field-loadable software, commercial off-the-shelf equipment, and communication, navigation, and surveillance/air traffic management products.

Via EASA guidance materials and acceptable means of compliance (AMC), aircraft owners and operators would be responsible for maintaining procedures to ensure the continued cybersecurity of targeted equipment. As well as avionics, other electronic equipment such as engine and propeller controls must be protected.

Risk-assessment Process

Before a new TC or STC is awarded, applicants must perform a “product information security risk assessment” to cover the following aspects: determination of the operational environment for the information security of the product; identification of the possible attack paths; and the difficulty of performing a successful attack. After any necessary mitigation measures have been incorporated into the systems, it must be shown that vulnerabilities “cannot be exploited by any known security threat to create a hazard or generate a failure condition that would have an effect that is deemed to be unacceptable against the certification specification of the product considered.”

When a risk needs to be mitigated, the applicant should demonstrate, as described in EASA AMC documents, that the mitigations provide sufficient grounds for evaluating that the residual risk is acceptable. Once the overall risk has been deemed to be acceptable, the applicant should develop instructions, as described in the relevant AMC, “to maintain the information security risk of the systems of the product at an acceptable level after the entry into service of the product.”

If information security risks that are identified during the product information security risk assessment need to be mitigated, security verification should be used to evaluate the efficiency of the mitigation means. “This verification may be performed by a combination of analysis, security-oriented robustness testing, inspections, and reviews” and if necessary, by testing that addresses information security “from the perspective of a potential adversary.”

It is the responsibility of the aircraft owner or operator to report any information security issues to the designer of this product or part, “in a manner that would allow a further impact analysis and corrective actions, if appropriate.” If this impact analysis identifies a reasonably high potential for an unsafe condition, the designer of that part should report it to the competent regulatory authority in a timely manner.

Comments on the NPA are due by May 22. A decision is expected in the third quarter on whether to drop the proposals entirely, revise them based on the submitted comments, or enact them as originally proposed.

CityAirbus eVTOL Makes ‘Tethered Jump’

The four-passenger CityAirbus eVTOL urban air mobility demonstration aircraft made its first flight on May 3 at Airbus Helicopters’ facility in Donauwörth, Germany. The flight was announced via Twitter by Airbus Helicopters CEO Bruno Even who provided a photo of the flight demonstration team with the aircraft.

The company characterized the flight as a “tethered jump” intended to further assess the performance of the propulsion and flight control systems, as well as gather a few other data points. The flight-test program will now move to Manching, Germany to open the flight envelope in restricted airspace. The aircraft is currently designed to accommodate a pilot although Airbus said the eventual goal is to fly autonomously.

Power comes from four battery banks wired to eight Siemens SP200D 100 kW motors that drive eight propellers in four ducted assemblies. Estimated cruising speed is 65 knots with an endurance of 15 minutes.
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Gulfstream’s G500 and G600 close in on two milestones in Europe and the U.S.

by Kerry Lynch

Gulfstream is on the cusp of receiving a pair of key approvals for its G500 and G600 ultra-long-range siblings. European Union Aviation Safety Agency (EASA) validation of the 5,200-nm G500 is expected soon; and U.S. FAA approval for the 6,500-nm G600 is also imminent.

Gulfstream has both on display (SD406) this year, alongside its G280, G550, and flagship G650ER.

The G500 received U.S. approval in July 2018 and Gulfstream (Booth T139) delivered the first of the model on September 27, 2018. Through the end of March, the company had delivered 17 flagship G650/650ER.

Gulfstream has worked closely with EASA since early in the development program, Miller said, adding that the company was ironing out the last issues with the regulatory agency. Deliveries to European customers are anticipated to begin shortly thereafter, but shipments have already begun.

As for the G600, Gulfstream anticipates U.S. certification by the end of June with deliveries following later this year. “We’re very near the end of flight test,” Scott Neil, senior v-p of worldwide sales, told reporters in early March, saying that, at the time, the flight test program had accrued close to 3,000 flight hours in more than 790 flights.

In lead-up to certification, Gulfstream has been making preparations for a smooth entry into service. Everything is ready to go on the production certificate, Downen said, adding the company anticipated that coming as certification is granted. Gulfstream was awarded G500 type certification and production approval on the same day. In addition, work is underway for interiors supplemental type certifications for the large G600 cabin.

Entry-into-service work also includes flying a fully outfitted model to test all the interior systems at altitude. Two simulators are already in place with FlightSafety for the G500. Since the G500 and G600 have identical flight decks, the simulators can be shared.

Both models are equipped with the Honeywell Primus Epic-based Gulfstream Symmetry flight deck with touchscreen displays and fly-by-wire with active-control side sticks. Miller said the G500/G600 program benefited from the Gulfstream G650 fly-by-wire technology. Calling the system on the G650 a big step forward, Miller added, “The flight controls and the way we did that set the stage for partnering...with the side stick.”

The fly-by-wire technology also facilitates other safety enhancements such as high-speed protection, she added.

Both are equipped with a head-up display and enhanced vision system (EVS), and the G500 was the first in the Gulfstream lineup and the first-ever aircraft to receive approval for EVS-to-land capability. They both will be certified for steep approaches.

The G500 is equipped with 15,144-pound-thrust Pratt & Whitney Canada PW814G engines, while the G600 has 15,680-pound-thrust PW819GA engines. Both have an MMO of Mach 0.925, the same as the G650.

The aircraft not only meet Stage 5 noise standards but also benefit from quiet technology that has been developed with the help of submarine acoustic engineering expertise from Gulfstream parent company General Dynamics to help design that quiet environment, Miller said.

Stressing that “we work hard to give our customers back time,” Miller said that this not only translates into speed but also a G500/G600 program requirement for the ability of the customer crew to walk up to the airplane that has the door closed and no power and be ready to taxi in 10 minutes. Gulfstream injected multiple technologies in the G500 and G600, such as a data concentration network that consolidates all digital data transfer among aircraft systems.

A primary difference between the G500 and G600 is cabin length. Both can be fitted for 19 passengers and feature 6-foot-, 2-inch-high and 7-foot-, 7-inch-wide cabins. But the G500 has a 45-foot-, 2-inch cabin length, while the G600 has a cabin that is 41 feet, 6 inches long.

Expanded Factory Capacity

The G500 and G600 brought a first for Gulfstream—developing and manufacturing the wings for the aircraft. Gulfstream opened a 290,000-sq-ft building at its Savannah campus specifically to house the G500 and G600 wing and empennage work. The company expanded that facility to 400,000 sq ft as it decided to move some G550 wing work into the facility that was done under subcontract to its wing-maker Triumph.

The 500 and 600 are helping to propel the Gulfstream backlog, which by the end of the first quarter had surpassed the $12 billion mark.

With both the 500 and 600, “we seem to have hit a real sweet spot in Europe,” Neil said. This is particularly true in Western Europe, but activity has been strong throughout the region, including in Russia and Eastern Europe.

But Neil noted that Gulfstream sales in recent quarters have been up across the product line, including in both North America and Europe. “We’ve seen pretty significant traction,” he said. Gulfstream’s European fleet grew 8 percent between 2014 and 2018. Through the end of 2018, Gulfstream had 224 aircraft in the region. Worldwide, the Gulfstream fleet is approaching 3,000 with nearly two-thirds in North America. “The fleet has grown pretty dramatically over the years,” he concluded.

By mid-April, the in-service G500 fleet had already accumulated more than 2,000 flight hours, completing trips in the U.S., Europe, the Pacific Islands, Africa, the Middle East, and Asia. Including flight test time, the G500 fleet has reached more than 7,000 flight hours and 2,575 landings.

Gulfstream in late winter was working to wrap up flight-into-known-icing (FIKI) and function-and-reliability tests, leaving primarily paperwork to complete after that. On FIKI, Gulfstream was down to the final data points in early March, added Catherine Downen, director of advanced programs, G600.

The G600 program shared much of the same data as the G500, because the G500 is the base type certificate for both models, she said. The G600 was particularly able to benefit from the shared data in a number of aircraft systems. But the G500 and G600 have different wings, which necessitated separate aerodynamics testing, she said.

expanded factory capacity

Gulfstream dedicated this 290,000-sq-ft production facility in Savannah, Georgia to wing and empennage manufacturing.
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Leonardo launches
AW609 tiltrotor production
by Mark Huber

Assembly of the first production Leonardo AW609 civil tiltrotor is underway at the Assembly of the first production Leonardo AW609 civil tiltrotor is underway at the Leonardo Helicopters plant in Philadelphia, the company said. This will be followed shortly by a second production aircraft. By this spring, the AW609 flight-test program had amassed more than 1,400 hours, Leonardo said. Two test aircraft are currently flying—ACi is in Italy and being used primarily for load-level survey certification flights, while ACc is in Philadelphia and focused on engine performance certification flights. AC2 was lost in a 2015 fatal crash during high-speed dive testing in Italy, the result of problems related to the control laws of the aircraft’s fly-by-wire flight control system. Meanwhile, ACc is being assembled in Philadelphia and will fly later this year. It will be equipped with the standard Collins Aerospace Pro Line Fusion avionics and used for in-flight avionics testing. In March Leonardo (Booth T71) announced substantially better corporate results for 2018 led by an increase in helicopter deliveries and orders. Leonardo Helicopters managing director Gian Piero Cutillo said 2018 helicopter deliveries numbered 177, substantially higher than the 149 handed over in 2017, while order intake was also much higher. Within the helicopter division, compared with 2017 results, new orders nearly doubled, to $72.9 billion from $3.57 billion; the order backlog increased to $13.77 billion from $11.77 billion; revenues increased to $4.32 billion from $3.89 billion; and profitability improved to 9.4 percent from 8.2 percent. The company noted that its strategy to concentrate on the “intermediate segment of civil/dual-use helicopters” had paid handsome dividends.

“I think we are on the right path. Both civil and military sales have grown,” Cutillo said. “We have made so many changes and we have achieved all of our targets in terms of orders, deliveries, revenues, and profitability.” He attributed the improved results in large part to “making progress on meeting customer requirements.

“We have focused on agility, flexibility in manufacturing, response time, and level of quality in response to customers,” Cutillo said. Regarding the latter, he noted, “It is something we are focusing on in the near future.” Concurrent with improving customer support and training, Leonardo is working at developing a global real-time health and usage monitoring system for all of its helicopters. “Managed data is the future,” said Cutillo. “We are pushing hard on digitalization. There are material benefits for the customer.”

Cutillo pointed to major sales successes over the last year as evidence of the market’s appetite for the company’s products and proof “we are considered reliable in the industry.” These include a $3.4 billion order for 28 NH90s from Qatar; a $2.4 billion order for 84 MH-139s from the U.S. Air Force; a $315 million order for 22 AW169Ms from Italy’s Guardia di Finanza; and orders from energy exploration support customers in Russia, Kuwait, and Saudi Arabia for AW189s, AW169s, and AW139s.

ACHI60 shines in strong Airbus lineup
by David Donald

Airbus Corporate Helicopters is exhibiting at EBACE following a strong year for sales in 2018, its first full year of operation since being launched as a separate entity at EBACE in May 2017. Among recent orders are 10 for the ACH160, the €12 million ($12.5 million) corporate version of the latest H160 medium helicopter that is now undergoing certification testing. Three flight-test helicopters are involved in the certification campaign and had amassed more than 1,150 flight hours by early April. EASA certification for the H160 is expected at the end of this year, and Airbus (Booth ZZ8, SD 101) has already submitted half of the certification documents to EASA. The first delivery of a standard H160 is slated for the fourth quarter of 2020.

The second H160, which is already in production, is an ACH160 in Line configuration. This is the renaming of the previous Styleone interior branding and adds a luxury interior and other refinements to a standard machine. The unidentified launch customer is also acquiring three aircraft in the ACH160 Exclusive configuration, which also accounts for six more orders from the initial 10 sales. The head of Airbus Corporate Helicopters, Frédéric Lemos, told AIN that most production slots for the H160 have been sold through 2022. Due for delivery in the fourth quarter of 2021, the Exclusive has considerable airframe changes to facilitate greater comfort. The cabin is fitted with hinged doors instead of sliding units, offering better sound insulation, and new double-glazed windows of a revised shape are fitted. Externally the main difference is the addition of streamlined sponsons along the lower cabin sides that incorporate electrically actuated footsteps, as well as accommodating a lift chair.

Airbus’s own design studio has worked with Pegasus Design to create a coconolike interior and a club seating arrangement comprising modules of either two luxury armchair-style seats or a three-seat sofa style. The flight deck is based on the Helionix avionics suite.

Extensive Model Line

Building on 2017’s figure of 54, Airbus Corporate Helicopters sold 68 helicopters (from a total for all Airbus Helicopters of 413) during 2018, representing more than 50 percent of the market in corporate machines. The company’s ACH125 and ACH130 continue to dominate the intermediate single-market, while the ACH135 and ACH145 have increased their share of the light-twin sector. Lemos noted that the €7.8 million ACH145, in particular, is gaining sales at the expense of the Leonardo AW119.

The latest H145D3 new-generation version revitalizes the design through the adoption of a five-blade bearingless main rotor that can be folded, making it ideal for use from luxury yachts and other vessels. The new rotor and other enhancements have created a helicopter with increased useful load, simplified maintenance, increased connectivity, and a smoother ride. EASA certification for the D3 version is expected in early 2020, and the first ACH145D3 customer will be Advanced Flight in New Zealand, which expects to get its first aircraft in the middle of next year. The D3 version is also available with retrofit of earlier machines, with Swiss Air-Rescue Rega the first customer for this option, albeit as a standard H145 in an EMS configuration.

For ACH145 versions, Airbus has been teamed since 2010 with Mercedes-Benz to offer a luxury interior edition, and a renewal of that partnership has recently been concluded. An eight-seat Mercedes-Benz-inspired cabin is on display at EBACE.
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Caribbean FBO joins Avfuel network
by Curt Epstein

Avfuel (Booth E89) this week is welcoming Blue Heron Aviation, one of two service providers at Providenciales International Airport in the British West Indies’ Turks and Caicos Islands, as the latest FBO to join its branded dealer network.

Under private ownership since it opened in 2014, the facility, located midfield on the south side of the runway, features a modern 6,800-sq-ft terminal offering a passenger lounge, conference room, high-speed Wi-Fi, crew lounge, snooze rooms, concierge, catering, coffee and ice, foreign newspapers, dish and linen cleaning service, and 12 acres of ramp space that can accommodate aircraft up to a Boeing 757.

The location also provides a streamlined customs process with a private entrance to the onsite facility. Arriving guests can be processed within minutes of landing, with much of the paperwork completed in advance, while departing passengers can drive directly to their waiting aircraft, bypassing the terminal entirely if desired, although complementary refreshments await within.

“Part of what I love about this job is meeting people from around the world,” said Roger Murphy, the facility’s general manager. “We frequently serve traffic from all across the globe, particularly Europe and North America, and have a keen sense of their unique needs. Being a part of connecting these differing cultures with the culture of island life is rewarding, and we aim to make that connection as seamless as possible from customs to concierge and everywhere in between.”

FAI Technik receives FAA Mx approval

Nuremberg-based FAI Technik, part of Germany’s FAI Aviation Group (Booth B71), has received FAA approval for its EASA Part 145 repair center at Albrecht Durer International Airport, giving it authorization to perform maintenance, repair, and overhaul (MRO) on U.S.-registered business aircraft. This latest license follows similar approvals from aviation authorities in Nigeria, the Cayman Islands, and Bermuda.

The company, which celebrates its 30th anniversary this year, provides MRO services for Bombardier business jets, including FAI’s own charter and aeromedical fleet, the largest in the country, which includes seven Bombardier Globals, five Challenger 604s, one Challenger 850, and 11 Learjet 60s.

“This latest approval from the FAA is yet another milestone for FAI Technik as it continues to see growing demand,” said company founder and chairman Siegfried Axtmann. “We look forward to serving some of the many U.S.-registered aircraft operating in Europe and on the African continent as we continue to extend our remit and capabilities and deliver excellent results for our customers.”

In March, the facility, which employs 60 mechanics and engineers, began work on its sixth in-house Global Express cabin refurbishment, marking one of the type’s most extensive upgrade projects. Named “Project Pearl,” it will include 60-, 120-, and 240-month inspections and the installation of Collins Aerospace’s Venue cabin management and HD entertainment system.

Last year, the company, which also operates an FBO at Albrecht Durer Airport, was honored by the European Business Aviation Association with its Diamond Safety of Flight Award, given to members that have achieved either 50 years or 100,000 flight hours without an accident. It also has satellite offices in Dubai and Miami.

European Mx available for Global 7500
by Jerry Siebenmark

With Bombardier Business Aircraft’s introduction into service of the Global 7500, the Canadian airframer and Lufthansa Bombardier Aviation Services (LBAS) have put in place options to support servicing of the flagship jet in Europe, the companies announced today. Bombardier has certified seven line maintenance stations for the 7500, while LBAS has received EASA Part 145 approval for line maintenance on the aircraft at its Berlin Schoenefeld facility.

The moves follow delivery earlier this year of the first of Bombardier’s ultra-long-range, large-cabin jets in the region.

Bombardier’s certified stations are in Paris, Nice, and Cannes, France; London, UK; Linz, Austria; and Olbia and Linate, Italy. They are now qualified to perform standard scheduled line maintenance, and unscheduled and AOG maintenance support on the 7500, Bombardier said.

Bombardier Business Aircraft has certified seven of its line maintenance stations in Europe for the Global 7500 while Lufthansa Bombardier Aviation Services has received EASA approval for line maintenance on the jet at its Berlin Schoenefeld facility.

The stations are part of Bombardier’s maintenance support network in the region that includes its mobile response team, as well as its London Biggin Hill service center, which is able to perform tip-to-tail heavy maintenance on the aircraft.

In addition to performing line maintenance at Berlin Schoenefeld, the EASA approval also permits LBAS to offer AOG services to the aircraft type at any of its locations worldwide. “In the near future we will be able to offer the complete range of line and base maintenance services for this aircraft type,” said LBAS CEO Sascha Leitner. “Our hangar in Berlin Schoenefeld has already four maintenance bays capable of receiving the Global 7500. Furthermore, our NDT, batteries, and wheels shops are prepared to handle the extra requests.”

LBAS is partly owned by Bombardier and services the airframer’s Global, Challenger, and Learjet lines.
Bombardier consolidates to focus on ‘leading brands’

Bombardier is selling its aerostructures businesses in Belfast, Ireland, and Morocco as part of consolidating its aerospace enterprise into a “single, streamlined and fully integrated” unit located at sites in Montreal, Mexico, and Texas, the company announced May 2. The newly created Bombardier Aviation division encompasses both business aircraft and CRJ regional jets and is being led by David Coleal, the president of Bombardier Business Aircraft since 2015.

“It is the right next step in our transformation,” Bombardier group president and CEO Alain Bellemare said. “The consolidation will simplify and better focus our organization on our leading brands—Global, Challenger, Learjet, and the CRJ. It will also allow us to better support our customers and generate value for shareholders.”

As part of the wider shakeup of its aviation business, Bombardier already sold a controlling stake in its most ambitious project ever—the C Series narrowbody airliner—to Airbus in July 2018 and the Q400 turboprop program to Canadian airplane maker Viking Air for $300 million in November. The C Series—now renamed Airbus A220—and Q Series transactions leave the CRJ regional jet as the sole remaining commercial aircraft program for Bombardier Aerospace. Bombardier also sold its business aircraft training unit to CAE for $645 million last year. Conversely, it acquired the Red Oaks, Texas-based wing manufacturing operation of its Global 7500—Bombardier’s flagship business jet—from U.S.-based Triumph Group in January.

The newly acquired Global 7500 wing operations in Texas, along with the facilities in Montréal and Mexico, will provide Bombardier “all the skills, technologies and capabilities to design, produce and service the current and next generation of aircraft,” Bellemare said. While no longer part of its global manufacturing footprint, Bombardier called the Belfast and Morocco aerostructures units “great businesses with tremendous capabilities.”

Bombardier’s wing facility in Belfast is the largest manufacturing company in Northern Ireland.

Bombardier Belfast declined to give interviews to discuss the planned divestiture and whether negotiations with a possible takeover candidate have begun. In an e-mailed statement to AIN, it called its Canadian parent “committed to finding the right buyer—one that will operate responsibly and help us achieve our full growth potential.” Both Belfast and Morocco sites have seen a “significant increase” in work from other global customers in recent years. “We are recognized as a global leader in aerostructures, with unique end-to-end capabilities—through design and development, testing and manufacture, to after-market support,” it claimed.

In addition to Bombardier programs, customers of these sites include Airbus, General Electric, International Aero Engines, Irkut, Pratt & Whitney, and Rolls-Royce. The Canadian OEM bought the Belfast business, at the time called Short Brothers, in 1989. It ranks as the largest manufacturing company in Northern Ireland and produces around 10 percent of Northern Ireland’s total manufacturing exports.

“Many of the company’s 3,600 employees will be left asking what this will mean for the long-term future of their jobs,” commented Jackie Pollock, regional secretary of the Unite trade union in Ireland. “[The planned sale] will come as a shock to the entire Bombardier workforce in Northern Ireland.”

UK aerospace trade group ADS chief executive Paul Everitt called on the government, industry, and the trade unions to work together to help secure the long-term ownership of the business and its supply chain in Northern Ireland, presently unsettled by the potential disruptions of a hard Brexit.

The Piper M600 delivers a powerful first-class ownership experience. To make that experience even better, the team at Piper Aircraft and its Authorized Dealer / Service Providers have created a warranty free maintenance program for select, new M600 aircraft purchased before July 1, 2019. The comprehensive program includes all aircraft inspections for the first five years or 1,500 hours of operation to complement your Piper M600 warranty. Contact your dealer for more information, or experience the Freedom of Flight™ at piper.com.
Breitling celebrates 1999 record-setting Orbiter flight

by Ian Sheppard

Twenty years after the Breitling Orbiter 3 became the first balloon to fly around the world without refueling, Bertrand Piccard appeared at the Baseworld 2019 watch/jewelry show in Switzerland in March to celebrate the achievement again, and the fact that four of the records he set with copilot Briton Brian Jones still stand.

Piccard and Jones took off from the Swiss ski village of Château d’Oex on March 21—taking in Asia, the Pacific Ocean, Central America, and the Atlantic Ocean on the way. The 20-day journey (actually 19 days, 21 hours, and 55 minutes) saw the team achieve success after two earlier attempts ended in failure.

All three Breitling Orbiter were Rozier balloons (consisting of a helium cell surrounded by hot air) made by Cameron Balloons. Orbiter 3 stood 55 meters (180 feet) high when inflated.

Speaking at Baseworld on the pressure to succeed, Piccard reflected, “There was Steve Fossett, Richard Branson, seven other teams competing [racing to become first to fly around the world in a balloon]. By March 1999 we thought we had missed our final window of opportunity as the jet weather was good. We said if everyone agrees, we go. It was then unanimous and we went for it.”

“On March 17 [1999] above Mexico we had one-quarter of the world to overfly with one-eighth of the fuel remaining, and we’d just lost the jet stream. So I thought we were going to fail. Our speed dropped and the direction was bad. I pushed the [balloon] as high as I could, using a lot of fuel. Suddenly we had one degree left, two degrees left—the direction changed by 25 degrees in the last 100 feet that the balloon could reach?” The rest is history.

Piccard concluded, “There would have been no Solar Impulse without the Global Orbiter. [On the latter] we had 3,700 kg of liquid propane and landed with 40 kilograms—almost nothing—which is when I realized the only limitation is fuel. So Solar Impulse is the first aeroplane with potentially perpetual endurance.”

Orbiter 3 is now on display at the National Air and Space Museum in Washington, D.C. Baseworld is one of the world’s leading shows for wristwatches and jewelry and is held in the Swiss city of Basel every spring.

Airbus’s new H160 nears certification

by Mark Huber

Airbus Helicopters (Booth Z55, Static 101) flew the first production model of its new H160 medium twin in December. It is joining the three prototypes already in flight test, which have accumulated more than 1,000 flying hours, and is one of 10 pre-series-production aircraft that the company plans to assemble in the coming months as it refines its production process. The helicopter will be delivered to launch customer Babcock in 2020.

When the H160 achieves full-rate production, Airbus expects to assemble one in as little as 40 days on the helicopter’s new, dedicated production line in Marignane, France. Babcock plans to take delivery of a fleet of the aircraft “for worldwide operations” over a five-year period. Airbus said it expects EASA and FAA certification for the H160 by the end of this year. This winter, an H160 was dispatched to Finland for additional cold weather testing.

The H160 features the Helionix avionics suite, an all-composite airframe, flat-floor cabin, oversize cabin windows, and a baggage compartment that can hold 661 pounds. Its cabin can be configured to seat four or eight passengers in executive/VIP layouts or 12 in a utility configuration. The H160 also incorporates a variety of new technologies, among them Blue Edge active-tracking main rotor blades in a five-blade system with a double-sweep design that reduces noise and contributes to a smoother ride, and 10 to 15 percent better fuel consumption than the H135 family it replaces. The aircraft is powered by a pair of Safran Arrano engines (1,300 shaft pounds). The Arranos will have lower maintenance costs because of their 155-knot cruise speed, low cabin vibration, robust cabin air conditioning, flat approach angle, easy loading and unloading, ample artificial and natural cabin lighting, and generous cabin volume that facilitates 360-degree patient access. The helicopter’s dual Safran Arrano engines are also designed for a two-minute quick start and quick restarts, features that will expedite dispatches, while the H160’s standard maximum takeoff weight of 12,500 pounds will enable it to use a majority of hospital helipads. Setz thinks the eventual market for HEMS-configured H160s could be as many as 20 per year into the next decade. The quick-change cabin is of particular appeal to oil-and-gas customers such as H160 launch customer Babcock, which plans to use its helicopters in both passenger/utility and EMS roles, he said, adding that the H160 is a strong IFR machine and will have a range in full EMS livery of at least 400 nm with reserves, 25 to 30 percent more than an H145.

The H160 is also finding favor in the executive market. Earlier this year, Airbus Corporate Helicopters (ACH) announced the sale of an ACH160 to a European customer. The helicopter will be operated by Switzerland’s LionsAir and feature a bespoke VIP interior designed by the Huslig Collective. ACH managing director Frederic Lemos said, “It is particularly pleasing to see the new ACH160 continuing to win orders.”

Across all Airbus Helicopters models, ACH reported 68 sales in 2018. Launched in 2017, ACH provides an end-to-end ownership experience backed by HCare First, a premium support services program aimed at the special needs of low-hour operators looking for on-demand availability.
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Luxaviation is among the world's largest private aircraft operators with 28 FBOs worldwide, a fleet of 260 aircraft and more than 1,000 employees.
Krimson CEO engages youth

by Ian Sheppard

Addis Ababa, Ethiopia-based flight support company Krimson is showing its commitment to the next generation. The company’s founder and CEO, Dawit Lemma is doing volunteer teaching to students taking the Brevert d’Initiation Aéronautique (BIA) course at the Lycée Guébré-Mariam, an Ethiopian-French school teaching French-speaking pupils from nursery to high-school age.

The BIA is certified by the French Ministry of Education, and every year in France around 3,500 high-school students take this optional curriculum. The course consists of five main subjects: weather and meteorology; navigation; flight dynamics; aircraft systems; and aviation history.

Students complete a one-year course covering the fundamentals of aviation, with an examination that gives credit toward a private pilot’s license (PPL). A group of six 15- and 16-year-old students will sit for their exam in May this year, joining the 10 who took the exam last year—the first year the course was run at the Lycée in Addis.

Lemma, who is a pilot as well as a businessman (his company offers everything from ground handling and flight support to charter brokering), said that the weekly two-hour educational sessions are shared with fellow lecturer Pierre Lucas, chief of the United Nations Humanitarian Aid Service, UNHAS, in Ethiopia.

“It’s a great honor to be supporting the next generation of aviators here in Africa. It is well known that African economies are strengthening and consequently the need for aviation to support this growth will drive the need for more aviation professionals.

“Sharing our knowledge with the students is a real joy for us, and more importantly it helps them understand the practical reality of working in the aviation sector,” he added.

He noted that the French-speaking students represent many countries “including Switzerland, Cote D’Ivoire, France as well as Ethiopia.” Lemma himself is a Swiss citizen with Ethiopian origins and is president of the Ethiopian chapter of the African Business Aviation Association (AfBAA), of which Krimson is a member (as well as being a member of the EBAA).

Visits have also been arranged for the students, the most recent of which was to see the headquarters of Ethiopian Airlines.
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Here are some of the key results from AIN sister publication Business Jet Traveler magazine’s 2018 Readers’ Choice Survey, which attracted 1,487 respondents, a record number and a 24 percent increase from the previous year’s total of 1,182. To read the full report—which includes ratings of aircraft manufacturers, charter and jet card providers, and membership clubs—go to bjtonline.com/RC2018.

Note: Percentages don’t always total 100 due to rounding.

**Flying Privately**

What are the three most important reasons you fly privately?

![Bar chart showing the three most important reasons for flying privately: Security, Save time, and More comfortable flight.](chart.png)
Which three of these aircraft features are most important to you?

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<tr>
<td>Age of aircraft</td>
<td>6%</td>
<td>11%</td>
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<td>Aircraft model’s accident history</td>
<td>34%</td>
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<tr>
<td>Runway performance</td>
<td>11%</td>
<td>34%</td>
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<tr>
<td>Cockpit technology</td>
<td>44%</td>
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<tr>
<td>Cabin amenities &amp; technology</td>
<td>34%</td>
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<tr>
<td>Aircraft manufacturer</td>
<td>11%</td>
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<td>Economical operation</td>
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<td>Speed</td>
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<td>Range</td>
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<tr>
<td>Will fly a bit less</td>
<td>5%</td>
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<td>Will fly a bit more</td>
<td>34%</td>
<td>11%</td>
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<tr>
<td>Will fly about the same</td>
<td>44%</td>
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<td>6%</td>
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<tr>
<td>Will fly much less</td>
<td>11%</td>
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<td>44%</td>
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<tr>
<td>Will fly much more</td>
<td>34%</td>
<td>11%</td>
<td>6%</td>
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</tbody>
</table>

How do you expect your flying to change in the year ahead?

- Will fly a bit less: 5%
- Will fly a bit more: 34%
- Will fly much less: 11%
- Will fly much more: 6%
- Will fly about the same: 44%

Do you have a flight attendant on your typical flight?

- Definitely: 24%
- Probably: 37%
- Maybe: 17%
- No: 34%

How many passengers does your typical trip involve?

- Just me: 8%
- 2: 27%
- 3-5: 53%
- 6-8: 10%
- 9-11: 1%
- 12 or more: 1%

How has your private flying changed in the past year, compared with the year before?

- Flew about the same: 45%
- Flew a bit more: 22%
- Flew a bit less: 14%
- Flew much more: 12%
- Flew much less: 14%

Where is your typical flight?

- Within North America: 71%
- Within Western Europe: 9%
- Within Asia-Pacific: 4%
- Intercontinental: 3%
- Within South America: 12%
- Other: 7%

Might you ever be willing to fly on a pilotless aircraft?

- Definitely not: 37%
- Probably not: 8%
- Probably: 48%
- Definitely: 24%
Preferred Aircraft

If you could regularly fly on any of these aircraft, which would you choose in each category?

**Single-engine turboprops**

- **Pilatus PC-12**: 63%
- **Daher TBM 900/930**: 16%
- **Cessna Caravan**: 16%
- **Piper M600**: 5%

**Twin turboprops**

- **Beechcraft King Air**: 74%
- **Piaggio Avanti P180**: 20%
- **Nextant G90XT**: 7%

**Very light jets (VLJs)**

- **Cessna Citation 525 M2**: 39%
- **Embraer Phenom 100**: 34%
- **Honda Aircraft HondaJet**: 20%
- **Cirrus Vision SF50**: 4%

**Small-cabin/light jets**

- **Embraer Phenom 300**: 29%
- **Cessna Citation CJ4**: 26%
- **Bombardier Learjet 70/75**: 18%
- **Pilatus PC-24**: 18%
- **Hawker/Bechjet 400**: 6%
- **Nextant 400/400XTi**: 2%

**Midsize-cabin jets**

- **Cessna Citation Latitude**: 34%
- **Embraer Legacy 450**: 26%
- **Gulfstream G150**: 25%
- **Hawker 800/900**: 15%

**Super-midsize-cabin jets**

- **Bombardier Challenger 300/350**: 35%
- **Gulfstream G280**: 28%
- **Embraer Citation X+**: 23%
- **Embraer Legacy 500**: 14%

> continues on page 66
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**IT’S TIME FOR A BETTER APPROACH.**
Pilot report: Bombardier Global 7500

A fun-to-fly chariot with long legs

by Matt Thurber

When Bombardier announced two new jets in the Global series—the Global 7000 and 8000—in 2010, the clear intention was that the Canadian manufacturer planned to take away the mantle of building the largest purpose-built business jet from Gulfstream Aerospace's 7,500-nm G650ER. Originally the two new airplanes were meant to complement each other, with the larger 7000 projected to fly 7,400 nm, while the shorter 8000 would fly the farthest at 7,900 nm.

But times, and markets, change. Bombardier engineers carved out 300 nm more range for the 7000—for a Mach .85 NBAA IFR range of 7,700 nm—and the jet's moniker was changed to Global 7500. Bombardier also went through some serious financial challenges, resulting in the sale of its C Series regional jet program to Airbus. And while the company says that the Global 8000 remains an ongoing program, not much progress seems to be happening, and perhaps the market doesn't see the need for anything other than the Global 7500.

Now Bombardier is producing CRJs on the commercial airline side and the Globals (soon to include the upgraded 5500 and 6500), Challenger 350 and 650, and Learjet 70/75 for business aviation customers. Although it no longer owns the C Series program, some of the money spent on developing what is now the Airbus A220 helped bring the Global 7500 to life, specifically the new jet's fly-by-wire (FBW) flight control system. Both types share the same FBW system architecture, and future Bombardier models might also benefit from all that development spending and effort.

Bombardier’s first-delivered Global 7500, which is busy fulfilling the many requests for demo flights around the world, conveniently touched down at Teterboro Airport in late March. Engineering test pilot Andrew Sibenaler and demo pilot Kerry Swanson took some time out from their busy schedules to meet me at Stewart International Airport in Newburgh, New York, where we figured the reduced congestion compared to Teterboro would make flying a bit easier. As it turned out, our timing coincided with the back side of a cold front and resulting strong gusty winds, which at more than 30 knots precluded me from flying the takeoff and landing. For this flight, I sat in the jump seat during takeoff and landing and switched into the left seat with Sibenaler when we climbed above 10,000 feet. This afforded me the opportunity to spend some time checking out the massive four-zone cabin’s remarkably low noise levels and also to shoot some video of the takeoff and landing, which can be viewed on AIN’s YouTube channel.

Vision Flight Deck

Although branded as Vision, the 7500’s avionics are the latest version of Collins Aerospace’s Pro Line Fusion system, which has been flying in the Global 5000 and 6000 since 2012 and also pioneered synthetic vision imagery on the Collins head-up display (HUD).

In the 7500, there are four large displays arranged in a T format, with primary flight displays (PFDs) in front of each pilot and two multifunction displays (MFDs) in the center.

The Collins HUD with enhanced and synthetic vision is standard equipment, along with the Collins MultiScan radar (windshear prediction is optional), the latest performance-based navigation features, and controller-pilot datalink communications.

With just the three of us onboard, the Global 7500 carried 15,250 pounds of fuel, far less than the usable 51,850 pounds that it can carry for maximum-range trips. Maximum takeoff weight is 114,850 pounds, and with our light load, our takeoff weight was just 77,100 pounds. V1 and rotation speed were calculated at 108 knots, with V2 at 123 knots. Takeoff field length was less than a third of Stewart’s nearly 12,000-foot runway, at 3,074 feet. At maximum takeoff weight, the 7500 needs 5,800 feet of runway for takeoff under standard atmospheric conditions.

The plan was to fly to a block of airspace north of Stewart from 14,000 to 17,000 feet for some maneuvering demonstrations. Although it’s fun to climb to an airplane’s maximum altitude (51,000 feet for the 7500) and measure performance at more efficient mid-40s altitudes, we didn’t have time for that, and I wanted to feel how the FBW helps pilots fly this large jet. In any case, we know the story continues on page 46.
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SAFRAN
Once the electrically operated main cabin door is closed and with the two pilots seated up front, I pulled the jump-seat into position. With such a large flight compartment, there is plenty of space for a decent jump-seat that doesn’t require contortions to unfold; just slide it from the left side behind the pilot’s seat, make sure it locks in place, rotate to face forward or rearward, then fold the seat down. Sibenaler, in the left seat, and Swanson briefed the takeoff.

While the Global 7500’s performance has exceeded original projections, not only because of the growth in range but also because of recent record-breaking flights. Sibenaler and Swanson piloted the March 4 flight from Singapore to Tucson, Arizona, at the time the longest purpose-built business jet flight at 8,152 nm and a new speed record for that leg, landing with 4,300 pounds of fuel remaining. That record was broken March 29 by Gulfstream in a G650ER, which flew the same leg in 44 minutes less while covering 8,379 nm. Clearly, this is a class of business jet that will see strong competition in coming years.

Once the electrically operated main cabin door is closed and with the two pilots seated up front, I pulled the jump-seat into position. With such a large flight compartment, there is plenty of space for a decent jump-seat that doesn’t require contortions to unfold; just slide it from the left side behind the pilot’s seat, make sure it locks in place, rotate to face forward or rearward, then fold the seat down. Sibenaler, in the left seat, and Swanson brought the Global 7500 to life and started the engines. The jet’s dark-cockpit philosophy makes preparation for engine start a less-than-10-minute operation. During the start of the 7500’s 18,650-pound-thrust GE Passport engines, the Fadec automatically calculates any delay required for rotor bow, limiting N2 core speed to a low level while dry cranking for 15 to 78 seconds, then allowing the engine to start.

Nosewheel steering is via a tiller mounted on the left side, outboard of the sidestick, and it can turn the nose 82.5 degrees and within a minimum pavement width of 75 feet. Maximum nosewheel steering with rudder pedals is 9 degrees. While turning on the ground, pilots need to consider 4 feet 2 inches of wing creep as the wingtips grow through an arc that is greater than the wingspan.

Each pilot has a permanently mounted tablet holder with USB power, onboard of the display panels. As a FBW airplane with sidestick controls, the 7500 has a flight deck that is roomy and comfortable. Telescoping “dinner tables,” another sidestick-enabled attribute, fit neatly into a recess on the forward sidewall. The sidewall also is fitted with a cupholder.

Taking Off

We taxied out to Stewart’s long Runway 27 while Swanson briefed the takeoff. Once lined up on the runway, Sibenaler advanced the power levers until the autothrottles took over and set maximum power, and the Global 7500 accelerated rapidly, pushing me firmly into the jump-seat. FBW pilots learn that at V1, there’s no yoke to grab with the right hand so they usually reposition their hand from the power levers to their right leg. During takeoff the FBW system limits nose-up pitch to 17.5 degrees to prevent a stallstrike. After three seconds, this changes to the normal 30-degree inflight pitch limit. Despite the gusty conditions, Sibenaler easily maintained the 200-knot target speed while hand flying and the 7500 plowed solidly through the bumpy air.

With a few quick calls to the area controllers as the 7500 climbed rapidly, we were soon at 14,000 feet, and Sibenaler and I switched seats. After positioning the seat and lining up the eye reference indicators and verifying the proper view through the Collins HUD, I flicked the rudder pedal adjustment switch forward of the tiller to get the pedals at a comfortable reach. I then set the height and angle adjustors on the left armrest so my hand lined up with the sidestick. Global 7500 pilots will want to note their height and angle preset numbers in the little windows on the side of the armrest for easy resetting when swapping seats with fellow pilots.

The sidestick is clean and simple, and not cluttered with too many buttons. On top is a split-design trim switch, autopilot/priority switch, and a CVS CLR switch, which clears enhanced vision system (EVS) or synthetic vision system (SVS) imagery from the HUD. A microphones toggle switch is on the front of the sidestick.

Although Bombardier hasn’t announced whether it plans to offer combined vision system (CVS, a simultaneous overlay of enhanced and synthetic vision) imagery on the Global 7500’s HUD, it is developing CVS for the Global 5500 and 6500. It must be a clue that CVS is coming for the 7500, however, based on the labeling of the CVS CLR switch and also references to “combined vision system imagery” and “CVS” in the 7500 flight crew operating manual description of the HUD controls. In the meantime, pilots can select either EVS, SVS, or just normal flight symbology displayed on the HUD, and these choices don’t affect whatever the pilot has selected on the PFD. For example, turning off SVS on the HUD doesn’t switch SVS off on the PFD.

The Global 7500’s FBW system is a trim-stable system, so basically it replicates the flying qualities of an airplane with mechanical controls. Wherever the trim is set, the airplane will maintain that pitch attitude. This is the same FBW philosophy that Boeing and Gulfstream have selected for their FBW models, and it can make transitioning to a FBW airplane simpler for non-FBW pilots.

Most flying in the 7500 is done in normal FBW mode, while direct modes are for when equipment fails, leaving the pilot with full control of the airplane but not as many or none of the protections offered by FBW.

There is one key difference, apart from the protections, between normal and direct mode, and that is the trim system. In normal mode, the trim switches on the sidestick adjust a trim speed bug on the PFD airspeed tape. In direct mode, the trim switches control the horizontal stabilizer to trim the airplane.

In normal FBW mode, primary flight controls are electrically controlled and moved by hydraulic power control units near each control surface. Three primary flight control computers, in which normal control laws reside, are available, with one providing FBW control and the other two acting as standbys. These computers receive input from pilot controls, air data and inertial reference systems, airplane configuration, and control surface position to properly actuate control surfaces.

Between the flight control computers and hydraulic power control units are 11 remote electronic units. These send commands from the flight control computers to the power control units and also the horizontal stabilizer motor control electronic unit.

There are three direct modes to maintain control of the airplane in case of various unlikely failures. The primary flight control computers themselves can operate in direct mode if air data or inertial inputs become unavailable to any of the three computers. The remote electronic units contain their own set of control laws, and they can

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Bombardier Global 7500 Specifications and Performance

| Price: | $72.8 million |
| Engines (2): GE Passport, 18,650 lbs thrust |
| Avionics: Collins Aerospace Pro Line Fusion (Bombardier Vision) |
| Passengers: (typical) 3 crew + 14 pax (maximum occupants 22) |
| Range: (w/ NBAA reserves, 200 nm alternate) 7,700 nm at Mach 0.85 |
| High-speed cruise: Mach 0.90 |
| Long-range cruise: Mach 0.85 |
| Fuel capacity: 51,850 lbs |
| Max payload w/full fuel: 1,890 lbs |
| Ceiling (certified): 51,000 ft |
| Cabin altitude at ceiling: 5,680 ft |
| Max takeoff weight: 114,850 lbs |
| Balanced field length at mtow: (sea level, standard) 5,800 ft |
| Landing distance: 2,520 ft |
| Length: 111 ft |
| Wingspan: 104 ft |
| Height: 27 ft |
| Cabin: Volume: 2,637 cu ft |
| Width: 8 ft |
| Height: 6.2 ft |
| Length: (sitting area) 54.4 ft |
| Baggage capacity: (exterior) 195 cu ft/2,500 lbs |
| FAA certification: Part 25 |

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operate a direct mode in case the primary computers fail or can’t communicate with the remote units. In this case, the pilot inputs bypass the flight control computers and go directly to the remote units.

Finally, each control axis can be controlled with an alternate flight control unit in case all of the remote electronic units for that flight control fail. In this case, only the control with the failed remote units would be operated by the alternate flight control unit; the other flight controls would continue operating normally.

For the pilot, it almost doesn’t matter what direct mode is driving the controls, but just what being in direct mode means for flying the airplane.

In normal mode, built-in protections are available. Pitch protections include load factor, pitch attitude, high angle-of-attack, overspeed, tail-strike reduction, and elevator surface command limiting. Soft and hard pitch stops on the sidestick automatically limit positive and negative g loads in all configurations. Angle-of-attack limits are displayed on the PFD speed tape, with the soft limit showing as a half-red box above the solid red hard limit. Aural warnings start when speed remains below the soft limit for more than one second, culminating with continuous alerts and a stick shaker when speed remains below the soft limit. The FBW won’t allow the 7500 to slow below the hard limit, based on angle-of-attack. If excess thrust is available, the added power will keep the airplane from descending, but if there is no excess thrust available, then the FBW lowers angle-of-attack to prevent a stall.

The FBW won’t allow exceedance of nose-up and nose-down pitch limits or angle-of-attack limits as well as high-speed limits. Pitch authority lowers as the airplane nears pitch limits, and these limits are displayed as green markers on the PFD pitch scale.

Two ailerons on each wing provide lateral control, but not the inboard aileron actuators at speeds above 295 knots. Between 275 and 295 knots, the outboard aileron deflection proportionally less as speed increases. Below 275 knots, both ailerons move together. Multifunction spoilers assist the down wing during turns, and the spoiler deflection is reduced in primary flight control computer and remote electronic unit direct modes, with no spoiler deflection available in alternate flight control unit direct mode.

Roll and yaw axis protections include roll-rate limiting, bank-angle limiting, wing-maneuver-load alleviation, in-flight partial engine-out compensation, and rudder-surface-command limiting. At up to 30 degrees of bank, the FBW automatically maintains the bank angle when the pilot lets go of the sidestick. Above 30 degrees, releasing the stick returns the bank angle to 30 degrees. Maximum bank angle is 80 degrees, and at maximum angle-of-attack, roll rate is lowered to 10 degrees per second from the normal 20 degrees.

The Global 7500’s Vision avionics system is Bombardier’s interpretation of Collins Aerospace’s Pro Line Fusion system. It incorporates four large displays filling multiple roles.

**Flying FBW**

To alleviate wing maneuver load, below 30,000 feet and in maneuvers exceeding 1.55 g, the FBW raises ailerons to reduce wing root bending.

Rudder surface commands are limited, depending on structural loads and handling requirements and they decrease as speed increases. During one-engine-out operations, the FBW automatically applies rudder toward the operating engine, but some yaw remains to help the pilot perceive the failure, and return to coordinated flight must be achieved by stepping on the operating-engine-side rudder.

Electrical failure is the big concern for FBW airplanes, but these designs also must meet stringent certification requirements for reliability. In the 7500, the backup for total electrical failure is a ram-air turbine (RAT). Normal FBW mode is maintained to as low as 110 knots, and below that, FBW reverts to direct mode.

The FBW system is powered by two FBW power converters, each of which is supplied by DC BUS 1 and 2. Permanent magnet generators on each engine supply backup power to the converters, which convert AC power from the two backup generators to DC for the FBW system.

Before the RAT would be needed, the two engine-driven variable-frequency generators would have to fail, followed by the APU generator, the two engine-driven permanent magnet generators, then the 28-amp-hour NiCad main ship and APU batteries.

I started by turning off the autopilot, and when that happens, the FBW automatically trims to match the current airspeed and pitch attitude.

Moving the trim switches on the yoke changes the bugged airspeed on the PFD speed tape. Just like on a conventional airplane, if I want to fly faster than the trimmed speed, then I need to push forward on the sidestick, or pull to fly slower. But releasing the pressure returns it to the trimmed/bugged speed.

I flew some gentle turns to get the feel for the controls, and the 7500 was surprisingly responsive and easy to control precisely. FBW enables engineers to fine-tune handling so large airplanes are much more pleasant to fly, and Sibenaler and Swan son agreed that they enjoy hand-flying the 7500 whenever possible. At less-than-35-degree banks, the 7500 maintained the turn and also compensated for the loss of lift. I tried some steeper turns, which require back pressure to maintain altitude, then let go of the sidestick to see how it returned to 30 degrees.

I did some turns at 200 knots with slats extended, then we slowed to 160 knots and added flaps 2 then slowed to 140 knots and extended flaps 3 and finally stopped slowing down at 118 knots with full flaps and landing gear down. This was about five knots above Vref for our weight. The handling felt just as crisp as in any other configuration, and the 7500 flies hands-off when trimmed. “It’s amazingly stable,” Swan son said. “This is what it’s going to feel like on approach.” There was a small amount of rumble with full flaps and landing gear down, and a bit more noise.

To replicate getting too slow in the traffic pattern, I turned to the left at a 45-degree bank and pulled the sidestick back to the soft stop. As we slowed to the half-red box on the airspeed tape, we heard the “speed” aural alert, but the airplane just remained stable in the turn while the autothrottles prevented the jet from slowing further. “It’s pretty benign,” he said. “It’s hard to mismanage the airplane.”

I wanted to feel the 7500’s handling in a one-engine-out situation, so we next slowed to 160 knots with flaps 2, and turned the autothrottles off, then pulled the right power lever to idle. There was little feel of any yaw as the FBW compensated for the “dead” engine. The 7500 is certified to fly with autothrottle on for the good engine, so I switched this back on for the for engine, and power advanced to maintain the selected speed.

Before returning to Stewart, I practiced some hand-flying at varying speeds in clean configuration, changing trim settings and setting power manually just to get some more feel for the 7500’s handling.
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EASA proposes SMS for parts OEMs and part 145 maintenance providers

by Gordon Gilbert

A notice of proposed amendment (NPA) from the European Union Aviation Safety Agency (EASA) would require that safety management systems (SMSs) be applied to EASA Part 145 maintenance organizations for non-general aviation aircraft and to EASA Part 21 aircraft parts and component manufacturers. Currently, SMS programs are required for commercial flight operators in Europe.

EASA said that the new rules are based on the 2013 ICAO Annex 19 recommended standards for application of SMS principles for Parts 145 and 21. As such, organizations with a general aviation scope would not be required to implement an SMS; in addition, Part 147 maintenance training facilities would also be excluded. This means that SMSs would be required only for a Part 145 organization that maintains aircraft operated by air carriers and complex motor-powered aircraft, such as turbine business airplanes and helicopters.

The NPA is divided into three parts. Part A contains the procedural information pertaining to the regulatory proposal overall; explanatory notes to the proposed amendments; the regulatory impact assessment; and a detailed summary of the proposed amendments. Part B proposes the draft implementing rules (IRs) as well as the draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) for Part 21. And Part C proposes the draft IRs, AMC, and GM for Part 145.

EASA said application of SMS principles would enhance safety for maintenance facilities and parts providers by establishing safety policies and objectives that are associated with sufficient resources; the systematic identification of hazards; encourage a risk management system; and give consideration to safety performance and safety promotion. The proposed amendments also aim to “streamline the procedures for oversight, and introduce a set of new, common management system requirements for [state] authorities to increase their efficiency.”

The proposed changes also introduce flexibility provisions regarding an SMS that would be commensurate with the size of the organization and complexity of the operations, so it will limit the impact on small Part 145 facilities and Part 21 manufacturers with a limited scope of work.

Part 21 SMS Multifaceted

Starting from the scope defined by ICAO Annex 19, three options are proposed to define the applicability of SMSs to Part 21. Option 0 strictly follows the recommended standards of ICAO Annex 19. All organizations that design and produce parts, including aircraft, engines, and propellers would be covered by the proposed requirements.

Option 1 would require the implementation of ICAO Annex 19 by all organizations that design and produce only aircraft, engines, and propellers. Manufacturers that design and produce “parts and appliances” would be excluded from SMS requirements. Under this option, Part 21 parts and appliance manufacturers are entitled to demonstrate their design capabilities with the acceptance of certification procedures that are alternatives to design organization approvals (DOAs).

“This option would imply that, in some cases, an organization may be required to be approved even without having an SMS in place (such as in the case of a European TSO),” EASA said. In this case, two types of DOA and production organization approval (POA) would be needed: those who are required to implement an SMS and those who are exempted.” This leads to Option 2.

Under Option 2, the implementation of ICAO Annex 19 would be limited to all approved organizations that design and produce aircraft, engines, and propellers and to organizations that design and produce parts and appliances when a DOA or POA is required. “In other words, when a POA is required for a TSO or a POA/DOA is required for an APU.”

Benefits, Drawbacks of NPA

The proposed changes, which essentially implement ICAO Annex 19 through the introduction of SMS principles, safety risk management, and continuous improvement programs, will “foster an organizational safety culture for effective safety management and effective occurrence reporting, whether it is mandatory or voluntary,” EASA said. The proposal will also serve to “streamline as much as possible” the oversight requirements for Part 145 and Part 21 organizations, due to an approach that is common throughout all the European Union states.

However, for some organizations, the transition to establishing an approved SMS program will not be without an economic impact. These transitional drawbacks stem from (a) developing a safety policy and its related objectives; (b) appointing key safety personnel to execute the safety policy; (c) establishing, implementing, and maintaining a safety risk management process; (d) establishing, implementing, and maintaining a safety assurance process; and (e) promoting safety in the organization.

The negative impact is likely to be greater on smaller organizations that have fewer staff and less financial capabilities, as well as Part 21 facilities in general compared to Part 145 companies. To mitigate this negative impact, the NPA includes so-called “proportionality provisions” that it says can “contribute to a significant reduction of the costs, notably for small organizations or when the risks associated with the business are limited.” Nevertheless, EASA concludes that, “Considering there are both significant positive and negative economic impacts, an overall neutral effect is expected.”

Comments on the NPA are due by July 17.

Spain awards GA terminal contract

Universal Aviation (Booth J75), part of a consortium that includes United Aviation Service and General Aviation Service, has been selected by AENA SME, Spain’s state-owned entity that manages its airports, to renovate and co-manage the existing general aviation terminals (GAT) at Madrid Barajas (LEMD) and Barcelona-El Prat Airport (LEBL). They are the two major aviation gateways in the country, and the agreement covers the next five years.

Both of the GATs, which will operate under the names Spanish FBO Madrid and Barcelona, respectively, will feature new lounges and meeting rooms for crew and passengers.

Work at both locations has begun with LEBL expected to be completed this June. At LEMD, the refurbishment will be paused to ensure that all GAT facilities are available to operators and passengers attending the 2019 Union of European Football Champions League Final on June 1.

“The renovation of the GATs in Madrid and Barcelona will greatly enhance the experience of business operators to these airports,” said Gonzalo Barona Jr., general manager of Universal Aviation Spain, who also will serve as general manager of both of the upgraded locations. “The refurbishment will make the GATs feel like a brand-new facility.”

In addition to shared common lounges, each of the three companies will also have private areas and facilities for their individual customers. “We will have huge new offices and our own beautiful crew and VIP lounges, which clients will be able to use free of charge versus paying a fee to the airport,” added Barona.

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VGH’s JetSmarter acquisition taps per-seat charter market

by James Wynbrandt

What do luxury charter programs that operate the newest business jets have in common with discount per-seat brokers that rely on well-worn aircraft for their bargain prices? They will both be available through Vista Global Holdings (VGH) in the wake of its announced plan to purchase U.S.-based per-seat charter brokerage JetSmarter for a reported $20 million.

Founded in 2012, JetSmarter’s per-seat charter model and the free seats on shared shuttle flights that came with membership drew thousands of customers and large media attention. But changes in JetSmarter’s program rules—particularly the elimination of free seats a year ago—and heavy-handed management tactics caused a backlash among customers, negative media attention, and flagging sales, reportedly reducing the one-time unicorn’s value to as low as $20 million on the eve of its purchase.

Thomas Flohr, founder and chairman of VGH and VistaJet, told AIN the transaction will be conducted “on the basis of an equity swap,” with JetSmarter investors Clearlake Capital and Jefferies Financial Group gaining a stake in VGH. The value of its charter brokerage aside, the proprietary technology and booking app underpinning JetSmarter’s operations has long been considered an industry benchmark, which VGH plans to exploit aggressively.

“Customers today want speed, reliability, and value,” said Flohr. “JetSmarter’s technology will digitize Vista Global’s market-leading customer offering to program members and on-demand customers, accelerating our vision of digitizing the entire private aviation offering.”

JetSmarter customers can buy individual seats on a handful of scheduled shuttle flights operating on high-demand routes in the U.S. Alternatively, they can propose a crowdsourced flight that others can buy seats on, or buy seats on a crowdsourced flight another customer has proposed. If a minimum number of seats aren’t sold, the crowdsourced flight is never confirmed and funds are returned to customers. JetSmarter no longer requires them, but memberships, which provide discounted per seat rates and other perks, are still offered.

VistaJet, founded in 2004 and based in Malta, provides on-demand and guaranteed-access block-charter programs on its owned and operated fleet of late model, ultra-long-range Bombardier Globals and Challengers.

Flohr launched Dubai-based VGH last August to acquire and manage an amalgam of companies that could provide a complete spectrum of “asset light” access services to meet evolving global charter demand. Last September, VGH bought XOJet, owner and operator of the third-largest U.S. charter company (based on flight hours). JetSmarter was XOJet’s exclusive online sales agent, which brought the company to VGH’s attention.

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The planned purchase comes on the heels of JetSmarter’s reported agreement to settle a class action arbitration stemming from members’ claims the company’s rule changes vitiated promised benefits. Several lawsuits have also been successfully filed. Flohr declined to comment on JetSmarter’s legal issues but said, “VistaJet and its shareholders, after extensive due diligence, came to the conclusion [the acquisition] will add a lot of value.”

No changes at JetSmarter are anticipated should the transaction close, expected by Q3. “JetSmarter was built by a lot of very, very smart people,” Flohr said. “It’s the intention to keep this great workforce. This isn’t about consolidation of human resources. We’re looking at using the global scale we have to extend the platform.”

20-week Integration Period
JetSmarter founder and CEO Sergey Petrossov, who seemed to personify the company’s brash and sharp-elbowed style, went unquoted amidst the transaction announcements.

Once cleared to proceed, Flohr estimated it will take about “a 20-week period of execution” for system integration, after which “the [JetSmarter] technology will be embedded throughout Vista Global Group.” That will bring immediate benefits to online offerings including catering, flight tracking, and concierge services. Meanwhile, “VistaJet customers will always have a human interface, a dedicated services person” available,” Flohr said, though “there are elements of fulfillment going very fast and strongly toward the digital channels.”

As for the viability of per-seat charter, JetSmarter’s signature offering, “I had to be educated about it,” Flohr said. “It could have merit on certain routes, it could be an alternative to the airlines. We believe it’s a valid business model. We need to see on what routes this is going to be accepted.”

“From a sourcing and operational excellence point of view, seat-sharing and dedicated charter are not different,” Flohr continued. “One flight has a lead passenger who pays for everything, and if you bring in the crowdsourcing element, you’re basically lowering the cost for the lead passenger. They operate under very similar execution rules.”

As for doubts in the per-seat model’s future: “If you would have asked the world five years ago about the Uber pool concept, the world would have said no,” Flohr said. “One has to stay very open-minded in the shared economy trend we’re in,” he said. “I don’t think there’s a reverse gear on the shared economy.”
Avinode can verify if your charter is ‘Takeoff Ready’

by Jerry Siebenmark

Avinode (Booth B71), a Swedish provider of online charter aircraft sourcing and booking software for operators and brokers, is unveiling at EBACE 2019 a new product aimed at helping its customers find and sell more short-notice charter flights. Called Takeoff Ready, the product ensures that not only is an aircraft available for charter in the next four days but that there is a crew to fly it.

A lot can happen between the time an aircraft’s availability for charter is scheduled—as long as 90 to 180 days in advance—and the actual flight, including crew illness and availability, or an owner deciding he needs his airplane on this date when six months ago he didn’t. “Especially now, with pilot shortages and owners that are flying a lot, just because the schedule shows the aircraft isn’t doing anything doesn’t necessarily mean that aircraft is available for charter,” Avinode executive v-p of the Americas Per Marthinsson told AIN.

Per Marthinsson, executive v-p of the Americas, Avinode.

“Especially now, with pilot shortages and owners that are flying a lot, just because the schedule shows the aircraft isn’t doing anything doesn’t necessarily mean that aircraft is available for charter.”

More than a third of requests through Avinode’s system are for flights within the next 96 hours, which is why Takeoff Ready’s focus is only on that time period. “The reason for [96 hours] is that’s when you know what your crew schedule basically looks like,” he said, adding schedulers should also have a pretty good idea of an aircraft owner’s intentions in that window of time. “Thirty-five to 40 percent of all the requests in the Avinode system are sent for this time period,” which would be about 7,000 of the 20,000 average daily charter requests made through Avinode’s system, Marthinsson added.

One possible drawback to Takeoff Ready is the requirement that operators, including aircraft management firms, have to manually input an airplane and crew’s availability into the system. In the past, Avinode has been asked to overlay crew schedules with aircraft schedules while also factoring in the needs of owners of managed aircraft, which make up the majority of charter aircraft in Avinode’s system, according to Marthinsson. “And what we have said is we don’t believe you solve this by collecting more data from computerized systems.” Motivation to manually input information into the system will come from operators and aircraft management companies eager to put their airplanes and crews to work, Marthinsson believes. It enhances their exposure to the market and generates revenue for an asset that would otherwise be sitting on the ground, he said. “We are not relying only on computer availability, but we are having users coming in saying, ‘This is what I want to sell, this is what my owner wants to sell,’ and be able to promote that to a community of 7,000 users around the world.”

Belgium-based ASL Private Jet Services and its Dutch sister company JetNetherlands will be adding four aircraft to their combined fleet in the coming months. The group also recently expanded its third-party ground-handling services. All four aircraft will be managed and operated on behalf of their respective owners and will also be offered for charter.

The four new additions consist of three Cessna Citations and a Hawker 4000, which will be based in Antwerp, Belgium and will begin operations starting this month. A Citation X will also be based in Belgium, at the regional airport of Kortrijk-Wevelgem. Meanwhile, a Citation XLS+ and CitationJet will be based at Rotterdam-The Hague Airport in The Netherlands.

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Navigating Brexit will be ‘exponentially chaotic’

by Cathy Buyck

Athar Husain Khan, secretary-general of the European Business Aviation Association (EBAA), is quite straightforward about the Brexit process and how the UK’s departure from the European Union might affect EBAA members. The process so far has been “exponentially chaotic and unpredictable,” he said. At the end of April, he pointed out, the Brussels-based lobby trade group and its wide variety of members still had no clarity on what they must do to be fully compliant with the post-Brexit UK and European Union (EU) regulations, and by when. “We still don’t know whether Brexit will happen, if we’ll have a transition period, or if the current extension will last even longer,” he told AIN.

Brexit’s unpredictable outcome poses risks, both operational and financial, to everyone: our operators, the entire aviation supply chain, the British economy, and the European economy.”

Initially, the UK was due to leave the bloc on March 29 at 23:00 GMT. Then the date was postponed to May 22 because the members of the UK Parliament did not support the 585-page withdrawal treaty that Prime Minister Theresa May had negotiated with Brussels. Last month, the EU27’s leaders granted yet another extension until October 31—though the UK can depart the EU before that if May can somehow get her deal approved by the country’s lawmakers. Throughout this jigsaw of delays, a hard Brexit loomed on March 29 and April 12, forcing the bizav ecosystem to prepare twice for a worst-case situation where EU laws would stop applying to the UK and plow out of the European Common Aviation Area (ECAA)—including EU-negotiated Air Transport Agreements—immediately.

“Our biggest concern right now is unpredictability,” Kahn asserted. “Brexit’s unexpected outcome poses risks, both operational and financial, to everyone: our operators, the entire aviation supply chain, the British economy, and the European economy.”

security, market access for UK airlines, and regulate the validity and/or recognition of the EASA certificates and licenses held by UK organizations. The basic air connectivity rules will give UK airlines third- and fourth-freedom rights to and from the EU—they may not operate intra-EU flights—conditional to reciprocity from the UK side. As regards ownership and control, the legislative act will give airlines holding an operating license issued by an EU member state but not meeting EU ownership and control requirements six months to fully meet all those requirements. EU law requires EU interests to majority own—50 percent plus one share—and effectively control its airlines. Also, the UK government has released the technical details of the measures it plans to take to ensure flights will continue if the UK leaves the EU without a deal.

SaxonAir applied and was accepted by EASA as an approved Foreign Carrier. The application process for the EASA Foreign Carrier Approval was relatively straightforward and was processed relatively quickly, Durand said. Even though the websites for both the UK, the CAA, and EASA were rather late appearing, “they did provide as much information as we could expect to have.” Likewise, FAI Aviation Group in Nuremberg, Germany, obtained the permits from the UK CAA needed to continue operations into and out of the UK, the company’s chairman and founder Siegfried Axtmann said. The UK national and/or EU regulator and authorities have been accommodating to help FAI prepare, as was EBAA, he said.

“We informed our members on either side of the channel about the necessary steps to be taken to operate post-Brexit,” Kahn emphasized. “We believe most of them were ready.” Regarding the extensions, no one was able to predict them. “Indeed, one might consider that our operators did rush to be compliant, but being able to operate to/from the UK was so critical that our operators had to do their homework to be ready in case of hard Brexit,” he added.

SaxonAir is not too concerned that his company, Germany’s largest business jet operator with 25 jets and over 13,500 hours logged in 2018, did spend time and money on preparing for something that might not happen. “We’ve incurred costs applying for an approval we may not need, as well as direct costs planning to subcontract intra-EU flights in the days following March 29 and then April 12, as well as re-planning fuel stops for long-range flights away from the EU. We also didn’t roster EU nationals for this period in case of delays to the UK license validations,” said Durand. The costs for the additional approval are relatively little compared to the cost of setting up an EU operation, he admitted. “However, any costs aren’t welcome after a quiet winter, and the larger cost has been the charter-traffic slowdown caused by a stagnation of investment and activity in the UK due to uncertainty around Brexit.”

The “real” costs are the ones related to the energy and efforts deployed by operators, their staff, and advisors to be compliant, EBAA’s secretary-general pointed out. Often, this necessitates the involvement of law firms and legal experts, which may have even more impact on costs than those linked to obtaining certificates and licenses, especially for small operators. The real question is not whether the association’s members spent time and money on preparing for something that might not happen, according to Kahn, but “what would be the cost of being unprepared if Brexit does happen.”

Brexit has been a “very frustrating process” from day one—the referendum held on June 23, 2016—he concluded. “But one thing is certain, Brexit not happening would solve all the challenges our operators face today and will likely face in the future.”

Textron Aviation is posting ‘Help Wanted’ signs in Wichita, Kansas

Textron Aviation hired 1,000 workers last year and will do the same this year as the market has improved for the manufacturer of Cessna and Beechcraft business jets. President and CEO Ron Draper told an audience of 600 customers and suppliers at the opening of the airframer’s annual customer conference on April 30 in Wichita.

“We hired 1,000 people last year and we’re probably going to have to hire another 1,000 this year, and that’s great,” Draper said. “Some of that is replacing retirements, but most of that is growth. It makes our employees feel like we’re winning again after a number of difficult years.” The company employs 9,500 people in Kansas. In keeping with what Textron Inc. CEO Scott Donnelly said earlier last month, the company’s goal is to finish up the type certification process on the super-midsize Longitude for third-quarter deliveries. “It’s a little bit late to our communicated goals,” Draper said. “We’ve been wrestling with all the paperwork and some of the FAA’s new design assurance processes that have been put on the airplane. Our goal is to get that all done in the second quarter.”

Draper also noted some changes to the executive team, including Chris Hearme who has been appointed senior v-p of engineering, replacing Brad Thress, who is now senior v-p of global parts and programs. “Parts and programs, and customer service are becoming more and more critical to our company, everything we do,” Draper explained.

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Bizav taking strides in alternative fuels

by Curt Epstein

It has been a year since a coalition of industry organizations introduced the “Business Aviation Guide to the Use of Sustainable Alternative Jet Fuel (SAJF),” and the business aviation sector has continued to increase its commitment to the utilization of the drop-in replacement fuel. The document, highlighted at last year’s EBACE, provided an overview of emerging biofuel options and a roadmap for their development and use.

It described how in 2009, the business aviation community set goals to mitigate its impact on climate change that included achieving carbon-neutral growth by 2020, making it “the only industry to have developed internationally agreed carbon emission reduction standards.” Yet, while the use of SAJF represents the single largest potential reduction in aviation’s greenhouse gas emissions, the guide noted, “progress has been uneven over the past eight years.”

In January, the industry came together at California business aviation hub Van Nuys Airport (VNY) for “Business Jets Fuel Green: A Step Towards Sustainability,” to amplify the guide’s message of the compatibility of the alternative fuels with all jet-fueled aircraft. For the first time, SAJF was available to the business aviation community on a trial basis, with World Fuel and Arfuel supplying the four FBOs on the field with more than 14,000 gallons of blended SAJF produced by California-based World Energy and Gevo respectively. The biofuel blend was in some cases, pumped directly into the FBO’s fuel farm to illustrate its absolute compatibility with the existing neat jet fuel and the FBO’s tanks and pumps, while others chose to keep it stored in the refueler and distributed on customer preference.

To further demonstrate the fuel’s acceptability, several OEMs sent aircraft to provide demonstration flights, taking on SAJF at VNY. Gulfstream, which maintains its own supply of SAJF at its Savannah, Georgia headquarters to support its demonstration fleet, dispatched a G280, which set a city-pair speed record in the process. The Savannah-to-Van Nuys sprint covered 2,243 nm in 4 hours and 49 minutes at an average airspeed of Mach 0.85. Flying through headwinds averaging 76 knots, the G280 demonstrated the high performance possible with SAJF.

“This is drop-in fuel, this is jet-A,” Charles Etter, Gulfstream’s head of environmental and regulatory affairs and technical fellow, told AIN during the cross-country mission. “It has better freeze-point qualities to it, it has more energy density to it, it’s actually a better fuel.” Likewise, Bombardier sent a Challenger 350, and Embraer a Legacy 500, for the SAJF-fueled flights, which took groups of conference attendees on an hour-long tour over an overcast Southern California. Given the more than 250 turbine-powered aircraft operations at VNY in the 24 hours after the renewable fuel was delivered for the event, the entire amount was quickly consumed.

Paradigm Shift Under Way

At its most basic, the use of SAJF represents a paradigm shift, according to Steve Csonka, executive director of the Commercial Aviation Alternative Fuels Initiative (CAAFI). Instead of pumping new hydrocarbons from the ground as petroleum, SAJF simply recycles the carbon that is already in the atmosphere and is extracted from plants, which use photosynthesis to utilize it as carbon dioxide.

While there has been much discussion about SAJF over the past decade, there has been seemingly little increase in volume. That is attributed to the 2008 global economic meltdown, which struck in 2008, a crucial juncture for the nascent biofuel industry. Companies became starved for development capital, thus handicapping the commercialization of large-scale production.

“The financial markets completely seized up, and they were closed for the better part of half a decade before the banks were able to do debt financing again,” said Bryan Sherbacow, COO of commercial biofuels producer World Energy. “It’s now just starting to loosen up again.”

With that funding becoming more available, fuel producers are looking to expand their production capabilities. Texas-based Gevo, which currently produces SAJF on a per-batch, on-request basis, expects to increase its output from 100,000 gallons of alternative fuel to 12 to 15 million gallons in the 2022 time frame. Likewise, California-based World Energy, the only commercial producer of SAJF in North America, has a renewable fuel capacity of 40 million gallons a year (currently 15 percent of which consists of SAJF) and is also planning to boost its production to 350 million gallons over the next two years.

The worldwide consumption of jet fuel, accounting for all its uses, is approximately 87 billion gallons a year, according to Steve Dreyzella, World Fuel Services’ senior vice president for business aviation bulk fuel. “In the last couple of years, we’ve been at an order of magnitude of 4 to 5 million gallons total [SAJF] production, so a very small amount of total worldwide use.”

Of that current amount, most is purchased by the airlines. Indeed, anyone flying commercially out of Los Angeles International Airport is flying on a jet burning some component of SAJF, courtesy of United Airlines. Due to an offset agreement, the airline has poured approximately three million gallons of SAJF a year into the airport’s general fuel supply for the past several years.

In March, Gulfstream announced its first commercial sale of SAJF to a Gulfstream operator. The customer, a U.S.-based multinational corporation, purchased 20,000 pounds of the renewable fuel from the OEM’s Long Beach, California facility for its Gulfstream G550. World Energy, which has a refinery approximately 10 miles from Long Beach Airport, produces the SAJF Gulfstream uses.

The business aviation groups hope that, with future production increases, SAJF will soon be readily available for their constituents, at least at some key airports. There is an “underlying need to improve fuel access and infrastructure,” David Coleal, Bombardier Business Aircraft president and chair of GAMA’s environment committee, told AIN, adding that will ultimately be triggered by supply and demand. “The bottom line remains that as demand increases, we will need more fuel at more airports, and this will require more production.”

Last November, the European Commission (EC) presented its strategic, long-term vision for a prosperous, modern, competitive, and climate-neutral aviation economy by 2050, and from an aviation perspective, the EU has invested approximately 65 billion over the last decade to support those commitments including programs such as flexJET, a four-year project funded by the EC through the Horizon 2020 research initiative. Coordinated by the UK’s University of Birmingham, 13 partners from five countries are assisting in the long-term goal of bringing biofuels from sustainable raw materials to market. FlexJET’s goal is to diversify the feedstock available beyond vegetable oils and fats to biocrude oil derived from a wide range of organic waste, diverting it from landfill or incineration. “The main

Not only does sustainable alternative jet fuel (SAJF) reduce aviation’s carbon footprint, but it also has better freeze-point qualities and more energy density than fossil-based jet fuel.

continues on page 58
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A new Vista for jet charter
by James Wynbrandt

VistaJet (Booth B71, SD108) arrives at EBACE 2019 following a transformative year. The past 12 months have taken the global charter company from a stand-alone operator to a crown jewel of an aviation conglomerate, with assets spanning a spectrum of lift models, from discount per-seat charter (JetSmarter) and mid-price service (XOJet) to high-end guaranteed access and lease programs (VistaJet, Vista Lease).

The change began with the launch of Dubai-based Vista Global Holding (VGH) last August, a vehicle to “industrialize and consolidate the fragmented business aviation market across the entire range of flight service offerings,” said VistaJet (and now VGH) founder and chairman Thomas Flohr, proclaiming the group “my vision ever since I started VistaJet in 2004.”

Longtime financial backer Rhône Group invested an additional $200 million to fund future acquisitions, an undisclosed amount of it spent the following month for the XOJet acquisition, bringing the third-largest air charter operator in the U.S. (by flight hours) under the VGH umbrella. (XOJet’s owned fleet of 43 Bombardier Challenger 300s and Cessna Citation Xs had flown 46,739 hours the prior 12 months, according to Argus International.)

“Our mission is to provide customer-centric solutions for every segment of business aviation, and [the XOJet purchase] is a major step in that direction,” Flohr said at the time. XOJet, which disrupted the transcontinental charter space last decade with point-to-point pricing, offers on-demand charter in addition to monthly subscription plans. It will serve as VGH’s “value air charter proposition,” said group COO Ian Moore. “It will appeal to those who fly less than 30 hours a year and don’t mind riding in older super-midsize jets.”

VGH also plans to expand XOJet into a global operator.

This year, VGH launched its planned Vista Lease program, staffed by Flohr and his team from a former aircraft leasing and trading business, powered by VGH orders for 30 of Bombardier’s flagship Global 7500, which claims the title as the world’s largest purpose-built business jet. Vista Lease also has the capitalization to act as principal buyer in the preowned segment and offer inventory for lease.

Flohr told AIN he is “super excited” about the coming 7500s and “very proud to have the largest order book” of early deliveries. “This airplane is a game changer in cabin size—a true four-zone cabin,” he said. “It will change the experience for top-end customers.”

Some 7500s will join VistaJet’s all-Bombardier fleet of Global 5000/6000 and Challenger 650 jets, but “a significant number will be going with Vista Lease,” Flohr said, adding, “They won’t all be silver with a red stripe,” an allusion to VistaJet’s signature livery. VGH “will offer dedicated solutions” for lease customers, he said, structuring flexible customized arrangements around individual needs.

The first 7500 is slated for delivery in September and will embark on a world tour to introduce it to customers and prospects. In 2020, about six months later, high-volume deliveries commence, continuing over about 42 to 48 months.

VGH has also been growing the TechX division announced at the group’s launch, tasked with developing digital tools to synthesize VGH operations and assets. Some 50 technology specialists are working to create end-to-end services, enabling third-party companies to find customers, manage charter bookings, track flights, and plan trips directly with operators on a single platform.

VGH technology ambitions received a long-term boost when it announced plans to acquire per-seat charter broker and digital booking app pioneer JetSmarter. The final tentpole supporting VGH’s long-term growth strategy, JetSmarter, headquartered on the U.S. East Coast, brings both an entry-level charter offering and highly regarded proprietary technology to the fold.

“The digital platform of JetSmarter will make its way throughout the entire organization,” Flohr said. “Vista Lease is an example. We can lease a dedicated airplane to a client and at the same time, we can guarantee 50 to 100 hours of on-demand revenue because we have the distribution platform. This is very, very powerful for the consumer. And that’s where all of these products play very, very well together. The digital platform will help the VistaJet side and vice versa.” When JetSmarter is onboard, VGH will have the “key ingredients” for growth and plans no more strategic acquisitions, Flohr said. But he added, “If we see in years to come a component of this industry [worth acquiring], we will stay very open-minded.”

As for business at VistaJet, after a slow January, activity picked up and accelerated all the way into April, Flohr reported, before he reflected on the bigger story the company is highlighting in Geneva. “If you think who we were three years ago, even two years ago, and what’s happening now, it’s a complete transformation,” he said.

Bizav and biofuels

VistaJet’s commitment to sustainability and “a complete transformation” is part of the industry-wide effort to address climate change and reduce the aviation sector’s environmental impact.

The aim of this project is to deliver more than 1,000 tons of aviation fuel from sustainable biogenic waste feedstocks, said Dr. Miloud Ouadi, from the University of Birmingham. “This will mark the first pre-commercial plant for subsequent future deployment.”

According to a recent study by the U.S. Department of Energy’s Lawrence Berkeley National Laboratory, sustainable, plant-based jet biofuels could provide a competitive alternative to conventional jet fuels if currently planned development and scale-up initiatives continue to progress.

The study, “Techno-economic analysis and life-cycle greenhouse gas mitigation cost of five routes to bio-jet fuel blendstocks,” published in the journal Energy & Environmental Science, provided evidence that optimizing the biofuel production pipeline is well worth the effort.

While the production cost of biofuels is currently around $16 a gallon at the refinery gate, compared with $2-2.50 for conventional jet fuel, researchers demonstrated that all five SAJF production pathways could create fuel products at that target price, providing the leftover biomaterial from the process could be developed into and sold as a profitable byproduct.

“Our hope is that early in the research stages, we can at least simulate what we think it would look like if you develop these fuel production routes to the point of maturity,” said Corinne Scown, lead author and researcher. “Thankfully the answer is they can be viable, and we’ve identified improvements that need to happen all along the conversion process to make that happen.”

That comes as welcome news to Aerion, developer of the AS2, which when completed would be the world’s first super-sonic business jet. It plans to certify the $120 million aircraft to be able run on pure biofuel, as well as the currently mandated jet-A blends that are seeing increasing use in commercial and business aviation.

According to the Business Aviation Guide to the Use of Sustainable Alternative Jet Fuel (SAJF), the blend limits are to ensure the appropriate level of compatibility with the aircraft fueling systems, mainly due to ensuring a minimum level of aromatics, which are necessary to maintain seals in the systems.

“From a technical standpoint, we don’t see any obstacles at this time,” said Gene Holloway, the airframer’s vice president for environmental responsibility. “The modern materials used in today’s seals do not require aromatics to promote proper sealing. Our engine, the GE Affinity, incorporates seals that allow for 100 percent biofuels.”

As it continues its support of the use of sustainable aviation fuels within the business aviation sector, the International Business Aviation Council (IBAC) participated in the first ICAO Stocktaking Seminar toward the 2050 Vision for Sustainable Aviation Fuels, which took place from April 30 to May 1 in Montreal. The event provided a forum for the exchange of aviation fuel information and served as the first step towards the establishment of a quantified 2050 ICAO Vision for Sustainable Aviation Fuel.

IBAC represented the business aviation community at the event, which featured policy and decision makers from the member states, technical experts from the fuel supply chain, airlines, airports, fuel producers, and aircraft manufacturers.

“The goal is to inspire states, industry, and other stakeholders to substitute a significant proportion of conventional aviation fuels with sustainable fuels by 2050,” said IBAC director general Kurt Edwards.

“The business aviation community is making progress, but more work needs to be done to increase availability and expand awareness that these drop-in fuels are ready to use today.”

“Business aviation has a role to play in the adoption and the logistics associated with SAJF and making it available in the marketplace,” noted Keith Sawyer, Avfuel’s manager of alternative fuels. “Our call to action has to engage the flight departments so that over time they become aware that the sustainable alternative jet fuel can become a component of their sustainability efforts as a company.”
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London Oxford continues to grow

by David Donald

London Oxford Airport continues to expand as the airfield cements its position in the UK’s top five business aviation locations, despite a 7.5 percent drop in business aviation movements in the overall London region. In the year through April 2019, 84,644 movements were recorded, of which Luton and Farnborough accounted for 55 percent, while Biggin Hill and Stansted shared another 25 percent. The remaining 20 percent was distributed among Oxford (Booth A67), Northolt, Gatwick, Heathrow, Stansted, London City, Cambridge, Denham, Fairloaks, and Blackbushe. Luton and Stansted saw the biggest reductions, where business aviation is increasingly being squeezed by the low-cost commercial carriers, especially at night during the summer months.

Numerous Sectors Grow

Oxford’s figure of 5,500 movements in the same period places it just behind the UK’s “big four,” and the airport has seen large-cabin jet traffic rise by 2 percent, light jet and midsize traffic remain stable, and turboprop traffic increase by 34 percent, largely due to the operations of JetFly’s fractional ownership fleet of Pilatus PC-12s. JetFly PC-24 operations are expected to further swell traffic numbers.

The OxfordJet FBO has seen passenger numbers increase by 20 percent to 10,000 per annum. Light general aviation movements are on the rise, too, through the activities of the existing CAE and Airways flight schools, which have been joined recently by two more in the form of Leading Edge Aviation and Go Fly Oxford.

Helicopter activity is steady at 6,000 movements annually, many of which are 20-25-minute interlining missions serving the London Battersea heliport, which is owned by London Oxford’s owners, the Reuben Brothers. Interlining with the helicopter service is being promoted by a 50 percent reduction in landing fees for arriving jets if passengers then travel on to Battersea. Airbus Helicopters is a major tenant at Oxford, with its main UK MRO activity located there. A specialty is the outfitting and support of aircraft for police and air ambulance services.

In terms of airfield infrastructure, the principal recent development is the completion of Hangar 14 Bay 4, into which MRO start-up JMI has moved. Resident Volare Aviation has also added Gulfstream and Leonardo helicopter models to the list of types it provides MRO support, while Austria’s GlobeAir has established a Part 145 facility to provide in-house line and base maintenance for its 20-strong fleet of Citation Mustangs, which were previously supported at the airport by Gama Aviation until it moved out in 2018. Over the next one to three years Oxford plans to add a number of new hangars, along with possible student hostel and training facilities.

Oxford expects to gain a new fuel farm as a result of a recent change of fuel provider. The airport’s policy is to review and re-compete its fuel supplies every few years and, following six years of Air BP providing the service, World Fuel Services has been awarded a five-year contract for both Oxford and Battersea, including maintenance, support, and access to World Fuel’s training platform. World Fuel began the service on February 1 and is designing and implementing a new fuel farm for the airport. Although the plan has yet to receive final approval, the fuel farm will be built in a new site, allowing the clearance of the old installation to make way for the planned hangar expansion.

At the Oxford Technology Park, adjacent to the airport, construction work has begun on a 101-room hotel and 150-cover restaurant, due for completion in late summer. This will provide affordable accommodation for flight crews and technicians during stopovers and short-duration deployments.

However, Oxford has had to return to the drawing board regarding its Airspace Change Proposal that was initiated in 2015 to provide global navigation satellite system (GNSS) approaches. The airport is now looking at combined radio and transponder mandatory zones with nearby RAF Brize Norton. The UK’s National Air Traffic Service is designing new GNSS approaches, and a new proposal will be submitted with the aim of gaining approval by 2020. The initial ambition is to have an LPV200 RNAV approach to Runway 01.

In another move, the airport—which already enjoys operating hours from 6 a.m. to midnight—is exploring with local authorities the ability to offer a number of slots outside of those hours to capitalize on the inability of Luton and Stansted, in particular, to offer any nighttime landing slots to business aviation while Northolt is closed to all fixed-wing traffic until October due to runway work. Out-of-hours operations would most likely be restricted by nightly, weekly, monthly, and annual caps.
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TAG Farnborough sees sustained traffic
by Ian Sheppard

TAG Farnborough Airport is attending EBACE this year with its own stand—separate from parent company TAG Aviation—for the first time (Booth M73). The UK airport saw strong growth in traffic in 2018 (13.8 percent compared with 2017) and according to CEO Brandon O’Reilly, “We’re pleased to say that for the first four months of 2019 we are the same level as we were during 2018—it hasn’t tailed off. We’re in a good position.”

With Northolt closing for six months starting in April, he said Farnborough was expecting “an uptick in traffic”—the airport has projected that it expects to get up to half of Northolt traffic, but O’Reilly recognized it would be shared with other London-area airports.

“My view on the London market? To me, it seems robust. We’re seeing stability and a slight increase due to Northolt for now.” And with Brexit? “As I’ve said before, the uncertainty is seen by some as a business opportunity, but there is nil effect I can attribute to it [at present].” Meanwhile, he added, “There has been no change in terms of origin and destinations [of traffic] and aircraft types. All is very much the same as last year, which is very pleasing.”

During the Ramadan holiday earlier this month, O’Reilly said, “we always get some movements of larger aircraft associated with that.” The largest business jet types Farnborough can accommodate are Boeing BD75 and Airbus ACJ320s, although for the biennial airshow (the next one is in July 2020) the airport receives even the largest aircraft, such as Airbus A380s, but they are not fully laden with fuel and passengers going on long trips.

Two Major OEMs Moving In

In terms of notable developments at the airport, O’Reilly said the 16-acre plot earmarked for Gulfstream has now been transferred to the U.S. airframer on a 30-year lease (with two possible five-year extensions). “We first entered the bidding on that in January 2017, and we’d been successful at EBACE last year. We’ve been busy preparing the land and achieved our target of handing it over by 31st March.

“Gulfstream is now in possession of the site and they’re mobilizing their construction workforce. What they’re constructing will be the largest piece of infrastructure here at Farnborough, and they’re hoping to complete it in summer 2020.” He added that Gulfstream has also leased one of the “wavy” hangars that make Farnborough’s terminal/FBO design so iconic, “Bay 6, down at the far end. They’re already doing some light maintenance there,” he noted. “We’ve started to see an increase in movements of Gulfstream aircraft.”

Meanwhile, Dassault has acquired TAG Aviation’s maintenance operations. “Dassault has bought TAG Aviation Engineering and will have a major foothold here once the transaction is complete,” he said. The airport will then have two of the big five aircraft OEMs with service centers at Farnborough. Bombardier’s facility is at London Biggin Hill Airport.

O’Reilly also noted that Farnborough is now accredited as a carbon-neutral airport by ACI, and it continues to work on schemes to maintain and enhance that. Following its success in this area, on May 18 the airport hosted an event in partnership with EBAA relating to sustainable alternative jet fuel (SAJF). After the event, participating aircraft flew to EBACE powered by the new fuel. “The idea behind the event with EBAA is to educate the community on the availability and use of the fuel,” he said, adding that Farnborough hopes to offer SAJF to its customers. The fuel for the May 18 event was supplied by Air BP, Nesta, Avfuel, and World Fuel Services.
Austria’s Hilitech (Booth V115), the joint venture linking interiors and composite materials specialists F/List and the Hintsteiner Group, respectively, is highlighting at EBACE 2019 lightweight cabin components and systems. The company arrives in Geneva on the heels of opening a new production plant last month in its Kindberg home.

With more than 20,000 sq ft in its initial phase, the facility is expected to have 100 professionals on staff by year-end, manufacturing components ranging from sliding doors, tables, toilet seats, and shower trays to full cabinet systems such as galleys, wardrobes, stowage compartments, and lavatories. Hilitech also offers exposed panel components incorporating laminar to multidimensional application of exposed carbon-fiber as a decorative surface.

Proprietary production methods and a unique blend of materials produce parts 15 to 25 percent lighter than those made with conventional production techniques, according to Hilitech. The blend of composite materials is customized for each application, rarely re-using its patented solutions.

“Our aim, to put it simply, is to offer the lightest cabin systems on the market,” the company said. The technology innovations are driven by “understanding what our customers need and providing answers to questions that haven’t even been asked yet.”

Tooling Produced In-house
The modern plant’s production infrastructure includes autoclave-/prepreg technology, vacuum processes, compression molding, wet-laminate technology, rapid prototyping, CNC milling, prepreg cutter, and 3D scanning. The new facility will support variable manufacturing processes, allowing quick production of components for multiple areas of application. For maximum precision and flexibility, Hilitech produces all its tooling in-house whether for one-off or serial production. The components, benefitting from high-quality veneer processing and high-gloss finishes by and through F/List, are delivered as complete and tested interior solutions.

Hilitech also has an in-house structural testing facility with life-cycle and acoustics testing capabilities; in-house DO-160 temperature and humidity testing; and an Austro Control-approved fire laboratory. Development services including technical design and planning; load-bearing optimization via calculation and simulation; stress engineering; and certification support are also available.

In conjunction with the plant opening, celebrated with a gala ceremony and ribbon cutting, Hilitech announced launching an apprentice training program for model makers, “to build up and retain know-how and experts for the long term.” The skill, the company said, “is a multifaceted craft, which can be a starting point for an exciting and challenging career with many-fold development possibilities.”
After I swapped places again with Sibe - naler, I went for a walk in the quiet cabin, which is equipped with 14 seats. Adding to the low-noise environment is the lack of traditional gapers for passengers. Instead, Bombardier designed a retractable gaper that generates less noise. The GE Pass - port engines are almost impossible to hear throughout most of the cabin and on the flight deck, not only because of the excel - lent soundproofing but also because the engines' integral “blisk” integrated fan disk. Cabin air is 100 percent fresh and flows through a HEPA filter and another filter with acti - vated carbon. Heating and cooling is com - fortable and provides speedier temperature changes, thanks to Bombardier's “turbo” heat and cool environmental system. At FL450, the cabin altitude is 4,500 feet.

Opposite the galley is a crew rest area with its own monitor and two large win - dows. Bunk beds can be installed if needed, but it looks more comfortable in the normal single-occupant configuration. The galley is huge, with more than enough storage space as well as two large chiller drawers and a big trash receptacle. There is enough room also for both a coffee maker and espresso machine. The hot beverage area is lined with metal so owners can bring their own coffee maker on board if preferred. This 7500 fea - tures two ovens, a microwave/convection oven on top and below that a convection/steam oven. A retractable faucet pulls down into the sink so the sink can be fully covered when not needed. The forward lavatory is aft of the galley, so passengers using that lav don't have to walk past the flight attendant.

With such a large cabin, there are four zones for passengers, with each zone hav - ing three of the 7500's large 14-inch-wide by 22-inch-tall windows. Zone 1 starts with four of Bombardier's Nuage seats in club configuration.

Bombardier engineers spent seven years developing the Nuage (French for “cloud”) seats and divans, and these are a key feature in the 7500. What is new about the Nuage configuration is that when the seat back is reclined, the seat pan on which the passenger sits dips down in the rear, allowing for more body contact with the seat when reclined and thus helping muscles relax more. The Nuage seat's headrest tilts as well as the passenger to adjust the headrest to the right angle to maximize comfort at the correct spot at the head-neck junction. The seats also sit on a “floating base” swivel mechanism, which eliminates tradi - tional seat rails and keeps the center of gravity of the seat and occupant directly over the center swivel axis. One control on the forward right armrest allows the passenger to move fore and aft, sideways, and to swivel.

The next zone features an asymmetrical conference grouping, with two-one seating configurations opposite each other. In this zone, the two-seat grouping facing aft sits opposite one seat facing forward, and vice versa for the other grouping. Each grouping has an unusually shaped table between the seats, and the shape's purpose is evident when the center leaf is installed, making a large dining or conference table in this zone. Of course, when the leaf is installed, it blocks passage fore and aft, but with two lavatories, this isn't a problem.

The Nuage divan in zone 3 sits oppo - site a credenza holding a 40-inch monitor, making it a comfortable entertainment suite. Doors close off this zone so other occupants won't hear the excellent sound from the Lufthansa Technik nice Touch cabin management system. The bottom of the divan slides out to provide more comfort for viewing movies, and it also turns into a bed. A unique Bombardier feature with the Touch system is the OLED retractable side-ledge dial nested within the side-ledge at each seat, providing touch control of functions within the passenger's immediate environment.

The nice Touch system runs on a high-bandwidth fiber-optic backbone, with two wireless 802.11ac dual-band Wi-Fi access points, USB 3.0 ports at every seat, and three Bluetooth 4.0 mod - ules. The USB ports enable passengers to charge devices or transfer content either to or from the airplane. The system includes two media centers that provide on-demand audio and video in any zone and aggregate media content. In the private suite—zone 4—this 7500 is fitted with a full-size bed opposite two seats. A queen bed is an option, but that would take up some room in the center of the zone walkway. The lavatory can be equipped with an optional shower. With all-LED lighting throughout, there are many options available for preset cabin lighting, ranging from ordinary to dynamic schemes tied into the airplane's FMS. One preset, for example, mimics the outside lighting experience, which changes min - ute-to-minute as the sun moves through the sky, with clouds occasionally filter - ing the light, and the position of the sun changing relative to the horizon. Another preset illuminates upper lights in the cabin as passengers board, then turns on side lights as they sit down.

Of course, a variety of interior configu - rations and materials are available—up to 10,000, according to Bombardier—making moot the question of whether the 7500 is customizable. All completions are being done by Bombardier at its Montreal facility.

What some might consider the most important part of a cabin is airborne con - nectivity, and the 7500 comes standard with Bombardier's Wave satcom (the Honeywell JetWave system that runs on Inmarsat's ka-band satellite network). In the rear, the large baggage compart - ment is accessible at any altitude up the 51,000-foot maximum as it is located out - side of the engine rotor-burst zone.

**Final Approach**

I returned to the jumpseat, then Sibe - naler flew the landing, demonstrating the 7500's automatic elevator nose-down fea - ture after touchdown. All the pilot has to do during touchdown is leave the side - tick alone, and the nose automatically and smoothly lowers. The landing was smooth, despite the winds, which were still gusting above 30 knots.

Having flown a variety of FBW business jets, this flight in the Global 7500 more than piqued my interest, and I would like to spend more time exploring its many fea - tures. For a large airplane, it is easy to fly and will be a relatively simple transition for experienced Bombardier Global pilots.

The 7500 ups the ante in performance and range, and at the Mach .85 long-range cruise speed, can fly legs such as New York - Hong Kong, London-Singapore, and Dubai - Los Angeles. At a base list price of $72.8 million, Bombardier expects to deliver 15-20 Global 7500s during 2019, and the model is sold out until 2021. NetJets holds an order for 20 Global 7500s and 8000s, and will take delivery of its first 7500 in 2021.
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www.nbaa.org/2019
EBAA calls for bizav inclusivity in EU plans

by Gordon Gilbert

EBAA secretary-general Athar Husain Khan has emphasized the need to include business aviation in a European aviation framework to enable “improved connectivity, efficiency, competitiveness, and regional cohesion across the continent.” Speaking at an aviation conference last month in Bucharest, Romania, Khan said that due to an expected doubling of global air passenger traffic by 2037, “new standards, technologies, harmonized regulations, and adequate infrastructure” will be required to accommodate this growth.

For instance, according to EBAA, in the first three months of this year, business aviation traffic in Romania alone increased by 35 percent compared to the same period in 2018. “This demonstrates the ever-pressing need for the closely tailored, flexible, point-to-point air transportation for governments, businesses, and local communities in the most time-efficient way possible that business aviation provides.”

Business aviation is not just a time machine, Khan said. “New technologies such as electrification, VTOL, blockchain, artificial intelligence, and alternative fuels are igniting the pace of innovation in aviation. And nowhere is it more prevalent than business aviation.” What’s more, business aviation can make an even more significant contribution to local communities and economies because we fly where others don’t,” he said. “As such, we need to ensure that a European aviation framework is inclusive, taking into account the specific needs and challenges of our sector.”

These much-needed improvements and technological advances “will only be made possible if the EU is able to provide adequate infrastructure for business aviation operators in Europe,” said Kahn. “In particular, access to airports and airspace, which remain major hurdles for our sector.”

New ATC Performance Targets ‘Weakest Ever’

Kahn said just a week before his remarks in Romania, that “despite record delays as well as industry calls for urgent EU airspace reform, EU member states approved the weakest performance targets ever for Europe’s ATC providers by agreeing to extend the threshold for delays. These new targets will not incentivize the performance improvements the European airspace network desperately needs, nor will they support the delivery of the Single European Sky benefits.”

Kahn claimed these performance targets “will reward poorly performing air navigation service providers (ANSPs) whilst frustrating those who are already delivering.” He added, “Combined with outdated staffing practices which do not provide the required resource levels in peak periods—for example when European citizens and passengers go on holiday—it becomes evident that real reform of this sector is urgently needed.”

The performance targets Kahn is referring to are part of the findings of a recent study done for the European Commission (EC) to benchmark the performance of ANSPs. The study estimated EU-wide cost inefficiencies in the range of 25-30 percent, due to ANSPs’ “poor performance.” The latest performance targets “will do little to address these inefficiencies. In fact, they will make a situation which allowed ANSPs to generate €1.3 billion [$1.45 billion] in surplus [over the past 10 years] on top of their regulated profits, even worse,” Kahn said.

“The current underspending by ANSPs on planned capital investments and staffing—already paid for by airspace users and their passengers—should not continue to be rewarded. In 2018, this contributed to delays of more than 19 million minutes—105 percent more than in 2017. Appeasing key member states rather than challenging them on their lackluster performance will further burden airspace users and passengers with rising costs, even more delays, and unnecessary additional CO2 emissions.”

Moving forward, Kahn urged every participant in the target-setting process to ensure that national performance targets “will challenge ANSPs to deliver consistent improvements or face financial penalties.”

Kahn concluded his presentation in Bucharest by quoting from a recent European Commission report comparing air traffic management in the U.S. versus Europe. The study found that in 2017, despite the U.S. controlling nearly 50 percent more flights (15.3 million in the U.S. versus 10.4 million in Europe), the total number of flights with reportable delays was 387,000 in Europe compared to 2,386,000 in the U.S. Kahn said: “This means that 50 percent more flights are delayed in Europe than in the U.S. due to Europe’s fragmented system.”

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BACA achieves a milestone, targets gray charter issues

by Ian Sheppard

BACA—The Air Charter Association (Booth F3) said its membership hit “a record high” in early 2019 as the number surpassed 250 companies. Positioning itself as the global voice of the air charter industry created the surge in member numbers, BACA said. In addition, taking a strong stance on illegal charter has also garnered support from the industry.

The association, which grew out of the Baltic Exchange in London, is due to mark its 70th anniversary this year and will hold a “special event to mark the occasion” on July 4. “This is a significant step forward for the association,” said BACA chairman Nick Weston. “We always knew that 250 members was an objective we would like to meet, but to achieve it in our 70th year is very satisfying.” The association’s membership includes air carriers, professional charter brokers, and “myriad specialists working in the charter industry,” according to BACA.

Turning to what has commonly been referred to as “gray” charter, Weston said, “We are working hard to ensure that the authorities are aware of our stance on illegal charters, and we have seen some significant progress in combating the issue. The more members we have, the greater the global influence we have when speaking with the relevant authorities.”

Weston noted that BACA had become increasingly concerned about illegal air charter, and with the crash north of Guernsey earlier this year that killed soccer player Emiliano Sala it has added new impetus to the campaign as it looks to “educate the general public about illegal charters and what the difference is between them and legal commercial air transport with air operator certificate [AOC] holders.”

“To the average traveler, if someone in a pilot’s uniform meets you at the bottom of the aircraft steps, then you’ll generally take it at face value that everything about that flight is safe, legal, and compliant,” said Weston. “For those of us in the charter industry, we all know and recognize that there is a monumental difference between an aircraft being operated by a pilot-manager and one being operated within the boundaries of a professional AOC structure.”

He urged those booking aircraft to exercise more caution. “If you are paying for a charter flight, take the simple option, use a professional charter broker and choose a commercial aircraft operating on an AOC.”

BACA CEO Dave Edwards added: “We still need to get away from the term ‘gray charter’—implying that, in some way, it’s legal. In the vast majority of cases, aviation law is very clear and charter flights are either legal or illegal.”

AOC regulations are far stricter than those covering private flight operations, noted BACA. “Aircrewmembers are subject to more regular training and checks, the flights take place within a regulatory environment where there are substantially more layers of oversight, and fully supported by safety and compliance structures, designed to minimize risk as much as possible,” it said.

In addition, it’s difficult for legitimate charter operators to compete with those who cut corners, given their avoidance of certain key costs. “An illegal charter flight not only risks lives, but it also risks jobs and livelihoods in a sector that complies with the law and operates professionally and honorably,” concluded Weston.

Thus, BACA is campaigning for regulators throughout Europe to take a stronger line on enforcement action and is “spearheading a fresh campaign to help educate the traveling public about the dangers of illegal aircraft charter.”

Bermuda Aircraft Registry Reaches 900th Registration

Bermuda Aircraft Registry, which is owned and managed by the Bermuda Civil Aviation Authority (BCAA, Stand C29), announced this week at EBACE that it has added a Dassault Falcon 8X as the 900th aircraft on its current registry. Covering around 2,000 aircraft during its 90-year existence, the registry includes both private and commercial aircraft that are domiciled all over the world. It is the oldest and largest offshore aircraft registry designed for aircraft operating under Article 83 bis agreements, which allow them to reap the benefits of being registered outside of their home countries.

Recently the registry has found competition from other countries with tax-neutral treatment of aircraft and yachts, which are often subject to high value-added taxes (VAT) and sales taxes in certain jurisdictions. The BCAA recently began a marketing program to increase awareness of its online registration process and customer service.

“We strive to be flexible, transparent and responsive to make the process of registering an aircraft as quick and easy as possible, while maintaining the highest standards of regulations, professional service, and courtesy,” said registry Director General Thomas Dunstan. “The Bermuda Registry has earned a solid reputation internationally,” he continued. The BCAA website walks potential registry clients through the process, including crew licensing, regulation, and even online payment of fees for the program.

To place an aircraft on the registry, a person must be a UK national, Commonwealth citizen, or national of any European Economic Area state. Also qualifying are bodies incorporated in any part of the Commonwealth (including Overseas Territories and Crown Dependencies) and have their registered office or principal place of business in any other part of the Commonwealth, or undertakings formed in accordance with the law of an European Economic Area state and have their registered office, central administration, or principal place of business within the European Economic Area. That said, there are plenty of entities that have been incorporated in Bermuda or one of the qualifying states to meet the above qualifications.

Dassault marks 1,000th MRO technician Alumnus

Dassault’s Training Academy recently graduated the 1,000th student from its Falcon practical training course designed for maintenance technicians. Dassault (Booths 299, H18) said it marked underscores the growing popularity of the hands-on educational tool, which provides a comprehensive approach involving real-life working conditions.

Founded in 2013, the academy provides a range of training options on Falcon aircraft in locations in Merignac, near Bordeaux, and Paris Le Bourget. Dassault Aviation said it is the first business jet manufacturer to obtain EASA approval to operate as a Part 147 training center. The academy offers accredited, two-week, model-specific courses for technicians on all Falcon 900, 2000, 7X, and 8X models.

Training covers the full life-cycle of the aircraft, beginning with entry into service. Trainees gain access to the latest Falcon technologies and maintenance standards while benefiting from the hands-on experience of seasoned Dassault Aviation technicians and engineers,” said Jean Kayanakis, senior VP of worldwide customer service and service center network.

Falcon Practical Training is the baseline course, designed to complement instruction from Dassault authorized training providers CAE, FlightSafety International, and Global Jet Services. A key feature in the syllabus is Dassault’s Falcon immersive practical training, which uses a 3D virtual reality tool that enables trainees to access any component or part without using actual hardware.

The academy further provided specialized offerings such as structural repair training, a five-day course in mapping and handling corrosion, and composite repair. That course is offered in partnership with Aerocampus Latresne near Bordeaux. Dassault is planning to add further specialized course offerings in other areas, such as pilot maintenance familiarizing service tasks and cabin system maintenance.

By Kerry Lynch

The academy further provided specialized offerings such as structural repair training, a five-day course in mapping and handling corrosion, and composite repair. That course is offered in partnership with Aerocampus Latresne near Bordeaux. Dassault is planning to add further specialized course offerings in other areas, such as pilot maintenance familiarizing service tasks and cabin system maintenance.
FlightAware built its business by offering flight-tracking services all over the world, starting in the U.S., but it had to modify its approach when it came to serving customers in Europe, where data privacy rules are much stricter.

"In most respects the technology and level of service we’re providing is the same in Europe," said FlightAware CEO Daniel Baker, “but there is a different understanding of it.”

In the U.S. the FAA is required to share its data feed from radar services and ADS-B with the public and with entities that wish to publish that data on their own websites. Blocking of registration numbers is available via request to the FAA, although no one can block data captured by a privately owned ADS-B receiver. However, data providers such as FlightAware are required as a condition of using FAA data to honor blocking requests.

"In Europe," Baker explained, "although ADS-B is present and we have a network, there data from Eurocontrol is private by default.” To see Eurocontrol data, a user must sign up with a service provider such as FlightAware, but not all such providers are able to deliver more than just the aircraft position. FlightAware can also offer information about the aircraft’s departure and destination points, which is helpful for FBOs and handling providers that want to serve their own customers.

FlightAware (Booth L97) gets its information from air navigation service providers (ANSPs) in more than 45 countries, many in Europe, and a network of ADS-B receivers deployed by people who sign up to provide data to FlightAware.

This ADS-B network includes more than 20,000 stations in almost every country, according to Baker. Other data sources include space-based ADS-B information provided by Aireon (FlightAware is an Aireon partner) and the FAA data feed. "We’re the only ones taking this data and fusing it and providing it as a service," Baker said.

FlightAware began signing up European customers about seven years ago, and at EBACE the FlightAware team is explaining that its full range of services is available in Europe. "We try to educate customers," he said. "But it comes as a great surprise that FlightAware has the same service in Europe as the U.S. Most operators would benefit from having additional data." Because of European privacy laws, customers signing up for FlightAware’s flight-tracking services must “have some operational interest or involvement,” Baker said.

A customer “can designate who they want to have access to data. [The authorities] want to prevent abuses of data and sales or marketing to aircraft operators.” Even in the U.S., customers who have requested blocking can share information on their aircrafts’ flights with select users.

In a new partnership with Signature Flight Support, operators can select their destination Signature FBO before departure or even during flight (when Wi-Fi equipped) and the FBO will get notified of that flight’s arrival time. If that aircraft is blocked, the FBO can still track the aircraft, but only for the final flight leg to the destination airport so FBO personnel can prepare for the arrival.

Now that more aircraft are ADS-B Out equipped, FlightAware’s Ready to Taxi service is becoming more useful, and the company is demonstrating the service for the first time in Europe at EBACE. Launched in October 2018, Ready to Taxi begins working when the avionics power on, including when the aircraft is plugged in to ground power, giving the customer real-time information as to when the aircraft starts taxiing, then after landing, taxis to the ramp, and parks. "We can track aircraft on the ground at more than 2,000 airports around the world,” he said.

One of the fruits of the Aireon and FlightAware partnership is the GlobalBeacon worldwide tracking service, which meets the ICAO Global Aeronautical Distress Safety System tracking requirements. In addition to using Aireon’s ADS-B information for its customers, FlightAware also works with companies such as Collins Aerospace’s AirDirect, which licenses Flight-tracking information from FlightAware.

Another interesting FlightAware service is its Cockpit Situational Insights service, which stores avionics information for post-flight analysis. This can include true airspeed, heading, altitude preselect settings, nav modes, and the like. “We can do this globally,” Baker said, “but without putting additional hardware on the airplane and without having to use an iPad to capture data.”

FlightAware has about 10,000 business aviation aircraft signed up and serves 100 airlines. Prices for a typical super-medium jet in Europe including global flight tracking, Ready to Taxi, and Aireon space-based ADS-B range from $1,000 to $2,000 per year per aircraft.

FlightAware CEO Daniel Baker pointed out some differences between flight tracking in the U.S. and Europe.

GA airplane shipments get a running start in 2019

by Curt Epstein

General aviation airplane deliveries got off to a good start this year, climbing 145 percent in the first quarter according to statistics compiled by the General Aviation Manufacturers Association (GAMA). All sectors, including business jet, turboprop, and piston-powered airplanes showed an increase in deliveries year-over-year for the first three months of the year, while overall industry billings rose by 10.5 percent, to $43.3 billion. “While our rotorcraft segment experienced some headwinds, our airplane segment remains strong,” said GAMA president and CEO Pete Bunce. “Statements by our member companies point to solid order intakes during the first quarter, laying down a positive marker for later in 2019.”

For business jets, the first quarter saw 141 deliveries, an increase of nine aircraft from the same period in 2018. Gulfstream led the way, with an additional eight of its large-cabin jets in the first three months of this year, while deliveries of its super-middle G280 remained static at seven. Textron Aviation reported a 22 percent increase year-over-year, showing increases or the same number of deliveries across its entire product line as its first-quarter totals rose from 36 in the first three months of 2018 to 44 this year. The Wichita aircraftmaker increased its output of the Citation M2, Sovereign+, and Latitude by two each. Pilatus delivered five PC-24s, up three from last year.

Embraer remained even with 11 deliveries in each year, the two Legacy 450s handed over in 2018 offset by the delivery of an additional Legacy 500 and a Legacy 600/650 this year.

Canadian OEM Bombardier noted a nearly 33 percent decrease in deliveries for the quarter, moving from 31 in the first three months of 2018 to 24. All models saw declines, with the exception of its flagship Global 7500, which received certification late last year.

Honda Aircraft saw first-quarter deliveries of its light HondaJet delivered by nearly 42 percent year-over-year, moving from 12 in the first quarter of 2018 to seven in the first three months of 2019.

Dassault presents its delivery totals for its Falcons at midyear and year-end.

In the bizliner category, Airbus handed over a pair of ACJ320 neo’s in the first quarter, after posting no deliveries in the same period last year. Boeing Business Jets, which had four deliveries in early 2018, had none through March of this year.

Embraer did not deliver any of its Lineage 1000es during the first quarter of either year.

While the overall turboprop segment saw a 7 percent rise in shipments year-over-year, the higher-end pressurized models remained flat, with 50 deliveries in the first quarter of both years. Textron Aviation handed over five additional Beechcraft King Air 250s in the first quarter, contributing to a 35 percent overall increase for the manufacturer, as Daher and Pilatus remained steady on their single-engine turboprops, delivering eight and 12 both years, respectively.

Piper handed over seven M50s during the first quarter of 2019, down from the same period last year when it delivered three M50s and seven M60s. Piaggio, which delivered three Avanti Evo twin pushers in the first three months of last year, reported none in the same period this year.

On the rotorcraft side, total shipments were down more than 19 percent year-over-year, and billings declined by nearly $100 million, while turbine-powered helicopters slid more than 22 percent, from 134 in the first quarter of 2018 to 104 during the same period this year.

Bell, which delivered 46 helicopters in Q1 2018 saw that total fall to 30 in the first three months of 2019. It transitioned from the 407GXP with 17 deliveries in the first quarter of 2018 to just one this year, while ramping up to the 407 GXI, with six handed over in the first three months. It also delivered seven fewer 505s year-over-year.

Airbus Helicopters, which delivered 46 civilian rotorcraft in the first quarter of 2018, handed over three fewer this year, the difference mainly being four fewer H135s in the first quarter.

Leonardo was down by 34 percent from its first quarter 2018 totals. The company delivered no AW169/149s in the first three months of 2019, as compared to the six it handed over a year earlier. Likewise, it had no AW119Kx deliveries, having four in the first quarter of 2018. It did exceed its Q1 2018 tally on the AW169 by three units, delivering six in the first three months of 2019.

Robinson Helicopter dialled back deliveries of the R66 by six, handing over 12 in the first quarter, while Sikorsky which had one delivery, an S-92, in the first three months of 2018, had none this year.
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Pegasus unveils VTOL bizcraft with jet-like range
by Kerry Lynch

Pretoria, South Africa-based Pegasus Universal Aerospace is debuting a model of its Pegasus One VTOL business aircraft this week at EBACE 2019. On display at the Pegasus booth (D12) by the EBACE Innovation Zone, the two-by-two-meter (six-by-six-foot) model will showcase Pegasus’s design that combines capabilities of a helicopter with those of a turbine business aircraft.

Working with an engineering partner, Pegasus is hoping to secure certification for the aircraft’s avionics, (retractable) landing gear, and powerplant.

Plans call for a six- to eight-seat aircraft that will be powered by 2,330-shp turboshaft engines and travel 4,400 km (2,375 nm) from a runway or 2,124 km (1,146 nm) when taking off in VTOL mode. The company is targeting a cruise speed of 430 knots.

Pegasus One will be designed to fly for 3.5 to six hours, depending on takeoff configuration. The company claims that operating costs will be competitive with business jets of similar range, but will have lower fuel burn. At the same time, noise levels are expected to be lower than comparative rotary-wing aircraft.

The idea, Pegasus said, is to enable transportation between urban airports, small and unpaved landing zones, yachts, and regular helipads, among other operating locations. Pegasus One will be able to access the same locations as a helicopter, but can travel further since it can be propelled like an airplane.

It is expected to attract interest from a broad customer base spanning both commercial and business operators, Pegasus founding chairman and visionary Reza Mia said, anticipating strong interest in Europe, India, and China, in particular.

Banyan equips HondaJet Elite with Gogo

Fort Lauderdale, Florida-based FBO and MRO Banyan Air Service (Booth E89) has announced a first-of-its-kind installation of a Gogo Avance L3 Wi-Fi system in a HondaJet Elite, it announced this week at EBACE. The system provides in-flight connectivity for a startup charter business whose ambition is to move into a fleet of HondaJets. The standalone avionics installation was completed in 15 business days, which was actually a day earlier than scheduled, according to Banyan avionics manager Danny Santiago.

A week later, Santiago and his staff were tasked with a hybrid installation of the Gogo Avance product, allowing the customer to upload real-time data and engine trend information. This time it was completed in 11 days, having been quoted for 14 to 15 days. In the next few weeks, both the customer and Banyan avionics techs will be testing the system rigorously.

“This kind of data extraction and transmission system could streamline the way engine warranty programs work to maintain warranty coverage,” said Santiago.

As an FAA WDR618M and EASA-certified repair station, Banyan has completed more than 20 Gogo installations to date, including air-to-ground transmission systems and L3 and L5 platforms. The FBO/MRO also holds repair station designations for Argentina, Araba, Brazil, Cayman Islands, Chile, Mexico, and Venezuela.

Vertis adds tech appeal
by Curt Epstein

Swiss aircraft charter provider Vertis Aviation (Booth B71) is debuting its new booking application this week at EBACE 2019. According to the Zug-based company, the new app—which has been under development for a year—was created in response to the growing trend for using digital technology to supplement personal service. It provides users with access to near-real-time charter flight information, including empty legs, as well as the ability to book individual private jet seats with Austria-based JetClass.

“We are not a tech company, as we’ve always focused on providing a boutique and personal service, but equally we recognize the convenience a well-developed app can give to our customers,” explained company chairman Julian Burrell. “The app aims to really enhance our customer experience.”

A “book seat” feature allows users to join an existing business jet flight at prices comparable to business-class airline fares, while the empty-leg watchlist gives information about available aircraft flying a specific route without paying passengers and enables users to set up alerts for when specific routes are available. This gives instant access to competitively priced charters, Vertis said.

“We’ve been known for our long-range expertise, but we’ve always arranged charters on smaller aircraft, too,” said Burrell. “This app will highlight our full range of services, broaden our client base, and hopefully attract new users to the industry, particularly from the luxury leisure market.”
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Germany-based Junkers Flugzeugwerke flew its new-build F 13 to Geneva for display at EBACE 2019. Billed as “the first-ever business airplane,” the model made its first test flight in 1919.

JSSI inks supply-chain pact to support Contour Aviation

by Curt Epstein

Aircraft maintenance program provider JSSI has announced a new supply-chain agreement with Contour Aviation, with JSSI’s parts and leasing division to provide parts procurement, logistics, and billing support to the latter’s business jet fleet. Under the agreement, JSSI’s staff will support all part requests for Contour’s charter and managed aircraft, from the initial request through delivery.

JSSI’s team will provide logistics support and tracking services throughout the order process, including core return support. Consumption analysis and forecasts will be utilized to assist with advanced planning and cost projections, with periodic program and cost-performance reviews.

“The JSSI Parts & Leasing team has helped us effectively manage not only parts procurement and logistics, but also vendor agreements to streamline tasks, such as timely core exchanges, that ultimately impact our bottom line,” said Bob McConnell, executive v-p of Contour Aircraft Maintenance. “With the range of business aircraft that we operate, efficient parts management across our expanding fleet will allow us to deliver an even greater level of service to our clients.”

According to JSSI Parts & Leasing president Jim Sellers, “Each year, we support more than 8,000 maintenance events for clients across virtually every make and model of aircraft. With over 30 years of expertise to draw on, and the global buying power of JSSI behind us, we are uniquely positioned to support the Contour fleet and bring significant time and cost savings to their business.”

This week at EBACE, JSSI subsidiary Conklin & de Decker will demonstrate its flagship aircraft comparison tool at the company’s booth (B89). Show attendees will get a first look at the new European data add-on, which reflects the region’s unique operating costs in a variety of currencies.

“We deliver impartial and accurate data to customers operating around the globe,” said Conklin & de Decker president Jason Schwab. “We recognize the cost of maintenance, fuel, pilots and hangar space for a business jet can differ significantly depending on where it operates, and naturally the European market was first on our list of regions to add more granularity.”

The Conklin & de Decker Report integrates the company’s Aircraft Cost Evaluator, which uses key performance data and imagery from its Aircraft Performance Comparator tool, and also incorporates the AircraftPedia database to create a comprehensive browsing experience. Recent updates allow it to customize user-specific data, and mobile customers can now purchase individual reports from the Apple App Store and Google Play. Limited features are available through the app or users can subscribe to the report for full access.

Finally, JSSI has named Ash Reddy to the position of v-p of global strategy and corporate development. Most recently with Mars Inc., he was responsible for leading the confectionery company’s strategy development and growth initiatives. His new role includes JSSI’s MROs use the info as a market intelligence tool to see how their aircraft are competing as far as flight hours. It also gives really good utilization info on individual aircraft,” he explained, noting that the product is expanding rapidly into the European market.

Moggenberg also commented on the growth of Argus’s five-year-old charter broker certification program in Europe. The program is designed to confirm to clients that a charter broker is a legitimate business entity, understands and adheres to industry best practices, and is committed to safety and service.

“The majority of the brokers right now are in North America, but Europe is becoming our largest growing market. Having our registered broker or certified broker designation gives the flying public a lot of information about the broker and shows they are legitimate,” he said. “In creating the program, we worked closely with BACA-The Air Charter Association in that program and use their code of ethics.”

Argus is approaching its 25th birthday and has branched out from safety audits for business and commercial aviation into unmanned services, with the purchase of the Unmanned Safety Institute in 2016. “The unmanned space is growing so rapidly. We have trained more than 7,000 UAV pilots as part of this program, and we expect that demand to grow with the publication of regulation for Beyond-line-of-site UAV operation,” said Moggenberg.

Argus International adds free Traqpak ‘lite’ product

by Amy Loboda

Cincinnati, Ohio-based Argus International aviation research group (Booth U90) has enhanced its popular Traqpak product to include a free version that offers live flight tracking and seven days worth of historical aircraft movement data for fixed base operators and aviation service providers, as well as maintenance operations and third-party fuel providers.

The new product, announced this week at EBACE 2019, is a “lite” version of Argus’s Traqpak FBO and Fleet products, which are web-based aircraft movement intelligence tools that include live flight tracking with fully integrated functionality integrated with historical aircraft activity data and analysis, FlightView aircraft movement data, ADS-B tracking, Eurocontrol’s European flight data, and Ascend aircraft owner/operator contact information.

“Beyond the aircraft tracking our free tool provides an FBO or MRO with nearby airport activity, so they can see inbounds and possible competitor activity. We see it as a marketing tool, to view what is going on in the local aviation area,” Argus International CEO Joe Moggenberg told AIN. “The OEMs and MROs use the info as a market intelligence tool to see how their aircraft are competing as far as flight hours. It also gives really good utilization info on individual aircraft,” he explained, noting that the product is expanding rapidly into the European market.

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The 10th Annual Fund an Angel Cocktail Reception, held on the second day of the NBAA Business Aviation Convention & Exhibition (NBAA-BACE), is an invaluable networking event for business aviation leaders and influencers. The reception will feature an auction to benefit Corporate Angel Network (CAN) who organizes critical flights for cancer patients to treatment centers throughout the country.

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NBAA
First ACJ319neo delivery imminent, VIP fleet growing

by Kerry Lynch

Airbus is expanding its portfolio of ACJ neos in the marketplace, delivering the first two ACJ320neos earlier this year and preparing to deliver the initial ACJ319neo in the coming weeks.

The European manufacturer kicked off the flight test campaign for the ACJ319neo last month, with an initial one-hour and 55-minute mission taking place on April 24. That was followed with a record 7,000-nm flight. Lasting 16 hours and 10 minutes, the flight was the longest ever for an A320 family, said Airbus Corporate Jets (Booth Z55). The aircraft flew from Toulouse to northern Greenland and back, simulating a diversion under 180-minute ETOPS rules. Incorporating wingtip-mounted sharklets—five additional center fuel tanks and either CFM Leap-1A or Pratt & Whitney PW1100G engines, the ACJ319neo has a maximum range of 6,749 nm with eight passengers. It further has a lower average cabin altitude of 6,400 feet. The first of the model will be handed over to K5 Aviation and outfitted by Fokker Techniek in the Netherlands. Meanwhile, Airbus delivered the first ACJ320neo to Acropolis Aviation in January, and then the second to Comlux in March. The ACJ320neo offers the same engine choices but incorporates four additional center fuel tanks that enable the aircraft to fly 25 passengers 6,000 nm. Airbus Corporate Jets has secured orders and commitments for 15 of the ACJ320neo family in all. In addition, Airbus Corporate Jets received an order from Four Seasons Hotels and Resorts for one of the newest members of the neo family, an ACJ319LR. The order, Airbus Corporate Jets said, launches a new role for its family. Four Seasons provides luxury tour packages around the world through its Four Seasons Private Jet service. To enter service in 2021, the ACJ319LR will replace a Boeing 757 currently operated by the resort specialist for its Private Jet operations.

“Building on the tremendous success of our Private Jet program to date, with consistent sellouts, waitlists, and near-perfect guest satisfaction rates, our drive to continuously innovate and push the conventional limits of travel has led to this new opportunity to experience Four Seasons like never before,” said Christian Clerc, president of worldwide hotel operations, in announcing the order. The aircraft will be designed with a spacious lounge, 54 lie-flat seats with ottomans, and two large washrooms. EASA and the U.S. FAA granted certification for the ACJ319LR last fall. Also incorporating the new engines and wingtip-mounted sharklets, the ACJ319LR is fitted with three additional fuel tanks, giving it a 4,000-nm range.

Airbus Corporate Jets has experienced a strong start to the year with its wide-bodies as well, bringing in announced orders for four ACJ350s. Germany became the first government customer for the ACJ350-900 XWB, placing an order for three of the model. The aircraft will be configured for a mix of government, troop transport, and medical evacuation roles, with the delivery of the initial aircraft in 2020 and the next two in 2022.

The ACJ350s will be designed using ACJ’s Easyfit cabin-outfitting concept that involves pre-installed attachments and standardized interfaces to simplify the installation of walls and furniture in the carbon-fiber fuselage. The aircraft can fly 25 passengers 11,100 nm or up to 22 hours. In addition to the German government order, Airbus Corporate Jets said it has received an order for a fourth, also using the Easyfit cabin, from a private customer.

Currently, about 200 Airbus corporate jets are in service, flying on every continent, including Antarctica. At EBACE, Airbus Corporate Jets is displaying an ACJ319 in the static park (SD101). K5 operates the aircraft for VIP charter and can fly up to 19 passengers. The aircraft can be viewed by appointment.

JetNet’s Q1 analysis shows less inventory, fewer sales

by Amy Laboda

Utica, New York-based aircraft market analysis firm JetNet (Stand W127) has reported both good and bad news about the preowned business and commercial aircraft markets in the first quarter. On a positive note, unsold turbine inventories are down across the board, with 120 fewer preowned aircraft being offered for sale compared with the year-ago period. There is what the company described as a “pronounced” decline of 25 percent in first-quarter retail sales and leases of all fixed- and rotary-wing aircraft as compared to a year ago. For business jets, the decline is 19.9 percent for full sale transactions versus the year-ago period.

JetNet noted that business jets are taking around 21 fewer days to sell than last year in the same quarter. Business turboprops, on the other hand, are selling in about the same amount of time (around 320 days) and showed a decrease of 9.6 percent in sales transactions. JetNet does not cover all piston aircraft inventory or sales, but does track the Beechcraft Baron 58; Cessna 414 and 421; Diamond DA62; and Piper M350, Malibu, Matrix and Mirage.

Commercial airlines (including airlines sold for conversion to VIP) and turbine helicopter sales were both down by 31.7 percent year-on-year in the first quarter. That is where the similarities end, however, with helicopters taking 132 days longer to sell, where commercial airliners were taking about 265 fewer days to sell compared with last year.

The company acknowledged that the disappointing figures could improve a bit as late-quarter transactions continue to trickle in. Some intriguing statistics did show up upon deeper analysis of the data, indicating that older aircraft, from 31 to 40 years of age and more than 40 years of age, had increased retail transactions. Younger aircraft markets saw business jet sales suffering, with 50 fewer of the newest jets—zero to five years old—being sold during the period.

JetNet’s own assessment is that the late-December U.S. stock market correction and prolonged U.S. government shutdown were most likely the causes of the downturn in preowned aircraft sales in the first quarter.

However, most brokers are explaining the downturn in preowned sales as being caused by a lack of good aircraft to choose from at what a buyer would consider the “right” price. They point out that U.S Bureau of Economic Analysis forward estimates indicate that real gross domestic product (GDP) was up by 3.2 percent in the period covered by the analysis.

The “social area” of Four Seasons Hotel’s Airbus A321LR will help the aircraft fill the role of luxury tour platform for the chain’s Private Jet division. The bizliner will enter service in 2021.
Sustainable jet fuel faces supply/demand conundrum
by Ian Sheppard

Capacity for aviation biofuel is now at a stage where it is down to operators to start saying they are willing to buy and use it, according to a panel of experts gathered at the Sustainable Alternative Jet Fuel (SAJF) conference hosted by TAG Farnborough Airport on Saturday.

By their very design, the “drop-in” biofuels now available from various suppliers such as Air BP, World Fuel, and Avfuel at a small but growing number of locations can use existing distribution infrastructure and have no effect on current engines. However, panelists also lamented that operators are proving reluctant to adopt biofuel blends, despite offsetting incentives offered within carbon offsetting schemes such as EU-ETS and the upcoming CORSIA international scheme.

Many operators still believe, erroneously, that the fuels might not be good for their engines. “One of the biggest problems we have is convincing the industry it is a drop-in fuel and it is not going to gum up your engine,” said Brad Nolen, vice president marketing and product strategy at Bombardier Aviation (Booth Z125).

At present, as long as biofuels are used as less than 50 percent of the fuel used, in a blend with jet-A, the engines experience no difference from a technical standpoint. It has been shown that the “aromatic” components in jet-A are more than sufficient to allow the fuels to work with all the engine components, while not affecting the service lives of seals and other parts. Although biofuel is currently around three times the price of jet-A— and falling gradually—it has been shown to actually improve engine efficiency. And SAJF currently uses up to 50 percent less energy input and overall lifecycle emissions compared to fossil fuels. Up to 82 percent is possible with some SAJF feedstocks and manufacturing processes.

He noted that SAJF can be a “key contributor, and is probably going to make the biggest impact—and it’s available now.” The sector always knew that to start using it sooner it would need drop-in fuel, which meant it would have to be viable for current aircraft, match the performance of jet-A, and work with the currently available infrastructure. This has been achieved using various production pathways, and now ASTM-spec jet-A-equivalent biofuel is available. Airlines have in fact used biofuel blends on some 180,000 flights since 2011 and a few airports now have the fuel available, including Los Angeles International, Bergen in Norway, Arlanda in Sweden, and Brisbane in Australia. Gulfstream has been using SAJF to power its flight test and demonstration airplanes at its Savannah, Georgia headquarters for many years, and it now offers customers SAJF at its Long Beach, California facility. On May 20, Gulfstream sold its first load of SAJF to a customer after a completion job at Long Beach. Edwards added that “there are five approved pathways already to produce this fuel,” and nine airlines have signed for 1.6 billion gallons of SAJF under forward-purchase contracts.

Although business aviation represents a far smaller contribution to global emissions and only 2 percent of overall aviation fuel burn, panelists were unanimous that the sector has the best chance of playing an early-adopter role for two reasons: clients are less sensitive to price than airline passengers and there is often an element of corporate social responsibility where those chartering or owning aircraft have larger, top-level goals to improve environmental performance.

continues on page 78
more widespread use of SAJF. “People are asking for it, and the day we can offer it efficiently and cost effectively will come.” Eurocontrol’s Brennan also wants SAJF to succeed, but he said, “Just at the moment, it’s fantasy. It’s difficult to get on a day-to-day basis. Policymakers need to incentivize [SAJF], We have to make it cheaper and more available.” At the same time, Brennan warned that meeting the environmental goals for aviation is difficult given the constraints of the 41 separate Eurocontrol member-states, the lack of capacity in the European air traffic system, and frequent strikes that shut down airspace. He cited one recent example where a French ATO strike forced a TAP Air Portugal flight to route all the way around France to reach its destination, more than doubling the time and fuel needed. “Tell me how that benefits the environment,” he said.

David Coleal, president of Bombardier Aviation and chairman of the GAMA environmental committee, is encouraged by the SAJF efforts but is well aware of the challenges to produce and distribute the new fuel. The GAMA committee has been working on sustainability issues since 1996, and last year the SAJF Coalition published the “Business Aviation Guide to the Use of SAJF.” “The chemistry is fascinating,” Coleal said. “SAJF is viable and safe. This will be a long journey, but this is change that will have a real-time positive impact.”

Other speakers affirmed their commitment to the initiative. “We’re here today to raise the awareness of SAJF,” said NBAA president and CEO Ed Bolen. “We want to [fly] more sustainably than anyone can imagine.” NATSA president Gary Dempsey noted, “This is a significant event. The focus now needs to be on making it easier for companies to produce SAJF to meet the demands of business jet owners.”

“I’m extremely encouraged,” said Embraer Executive CFO Michael AMALFITANO. Sustainability, he added, “is a big part of Embraer’s DNA.” Brazil has long invested in alternative fuels, with significant capacity for manufacturing ethanol for automobiles. Embraer’s piston-powered Ipanema agricultural airplane is ethanol-powered, and the company spends 10 percent of annual revenue on research and development, which includes sustainable alternative fuels.

All of Embraer’s jets brought to EBACE were powered by an SAJF blend, with airframe and engine approval. All the Embraer jets on show were supplied 8,000 gallons of SAJF, which it produced by biofuel supplied by Gevo, for business jets departing from Republic Airport near New York City on their way to the Farnborough event and the EBACE show.

Meanwhile, Marcelo Gonçalves, a chemical engineer and Embraer product development engineer, said there were many projects related to SAJF feedstocks and this would lead to more pathways being approved in the future. He is a member of the ASTM Aviation Fuels Sub- committee and also Embraer’s representative in partnership with Boeing at the Joint Research Center for Sustainable Aviation Biofuels in Brazil. “We can play an important role in finding new feedstocks and supporting certification,” he suggested. Currently there are five primary feedstocks approved for SAJF production and another five under development. Key to sustainability, he explained, is using feedstocks that are scaleable and don’t affect the production of food. One plant that looks promising is carinata, which grows well in winter rotation with soybeans. Research is also underway to use waste products from sugar cane manufacturing and operating refineries at sugar cane facilities. “By 2020, we’ll have 10 processes approved, and we’ll have more competitive prices,” he said.

Tom Parsons, biojet commercial development manager with Air BP (Booth 281), reiterated that “the next step is to send that demand signal. I’m expecting the market to double next year and maybe it will grow faster after that. The capacity is there, so let’s demand the fuel!”

Several journalists departed Farnborough for Geneva on a Bombardier Global 6000 powered by an SAJF blend, with air- craft from other OEMs following over the next 24 hours. The SAJF at Farnborough was produced by Gevo using the alcohol-to-jet process from non-food corn and was shipped across the Atlantic by World Fuel Services to the UK, where it was blended at 17 percent biofuel with conventional jet-A to create 75,000 liters of SAJF. ■
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