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Embraer redefines its Legacy

by Matt Thurber

Embraer Executive Jets has redesigned the Legacy 450 and 500 fly-by-wire business jets, adding two new models—the Praetor 500 and 600—that improve performance to a significant degree. The Praetor 500 and 600, expected to enter service in 2019, will sit at the top of Embraer’s midsize and super-midsize offerings, but the company will still manufacture the Legacy 450 and 500 as long as there are buyers.

“We’re unleashing the Legacy 450/500 potential so customers can fully enjoy the value these products offer,” said product strategy manager Alvadi Serpa.

What that means is that by modifying the Legacy 450 and 500 airframes, engineers were able to extract performance that makes the Praetor 500 and 600 more efficient and capable. Praetor, from the title for the Roman magistrates in the government hierarchy or from the word Praetorian, derives from the verb praeire, which means “to go before, to precede, to lead the way.” Serpa added, “We’re positioning these as products that will be there for the principal and help them achieve new heights and conquer new territories.”

The Praetor 600 steps up the capabilities of the Legacy 500 with new winglets, additional fuel capacity, and more powerful Honeywell HTF7500E engines.

The Praetor 500 and 600 also introduce a newly designed “Bossa Nova” interior from Embraer design chief Jay Beever. The idea was to match the interior styling with the jets’ new longer-range, “a stylish, sophisticated, and well-crafted interior,” he said. Some of the features include a reinvented diamond stitching on the seats, which mimics the design of the walkways on the beachfront promenade in Rio de Janeiro; carbon-fiber finish that wraps around corners without showing the structure of the material; and a philosophy of technology disappearing when it isn’t needed. This is embodied in the upper tech panel, which displays flight information and provides cabin-management system (CMS) features.

The CMS is Honeywell’s Ovation select. Gogo Vision will be an option when the Gogo Avance L5 air-to-ground connectivity system is installed. All of the models continue on page 104.

Aerion’s supersonic Affinity

by Mark Phelps

Aerion is well into laying out its “technology roadmap” for reintroducing civil supersonic transportation via its AS2 Mach 1.4 business trijet, announcing the first supersonic engine in 55 years on Monday at NBAA 2018.

Dubbed the Affinity engine, the supersonic-capable GE Aviation (Booth 244) powerplant will also meet upcoming Stage 5 environmental and noise standards. Separately, Aerion further announced the AS2’s avionics suite—a Honeywell Primus Epic package.

Working closely with partners on the AS2 and its possible follow-on program, Aerion (Booth 3838) has found the borders for its technology.

NetJets’ big deal

Up to 325 Longitudes and Hemispheres › page 4

G600 gets more range

Gulfstream finds another 700 nm › page 10

Forecast

Honeywell sees bizav boost › page 68

Full of Promise

NBAA-BACE arrives with optimism › page 12
Defining the future of aviation together.
TODAY

The best-selling Citation Latitude elevates our alliance to new levels of success.

TOMORROW

The Citation Longitude will set new standards in private travel, taking us both even higher.

BEYOND

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BEYOND

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The Citation Hemisphere will continue our shared legacy of offering the ultimate aircraft.

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© 2018 Textron Aviation Inc. All rights reserved.
The best-selling Citation Latitude elevates our alliance to new levels of success. The Citation Longitude will set new standards in private travel, taking us both even higher. The Citation Hemisphere will continue our shared legacy of offering the ultimate aircraft. Thank you, NetJets. You've landed directly in our Hemisphere.
Textron Aviation and NetJets signed an agreement Monday at NBAA-BACE 2018 for an option for the fractional-share provider to purchase up to 175 Citation Longitudes and 150 Citation Hemispheres. The agreement also makes NetJets the launch customer for the large-cabin, fly-by-wire Hemisphere.

"It’s hard to believe that it’s been over 30 years since we purchased our first Citation SII back in 1984,” said NetJets chairman and CEO Adam Johnson. “That was the aircraft that launched the shared-ownership program.” Since then NetJets has bought more than 500 Citations, the most recent being its order for 100 Latitudes, 75 of which have already entered service. “The Citation Latitude has been a great deal of effort and energy to participate in that process I just described in terms of design, so it’s a partnership at this phase.”

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Although the agreement is an option to purchase, Donnelly said “it’s more than an intent to purchase. NetJets is investing a great deal of effort and energy to participate in that process I just described in terms of design, so it’s a partnership at this phase.”

“Achieving a world-class powerplant aircraft in our worldwide fleet”

The decision to be launch customer and sign the agreement to potentially purchase 150 Hemispheres signals strong support for the Hemisphere program. Textron Aviation had placed the new large-cabin jet into suspension following development problems with the jet’s Safran Silvercrest engines. While the NetJets deal doesn’t yet remove the Hemisphere from its suspended status, this will be the case once the Silvercrest’s issues with its compressor are resolved.

“IT will be out of suspension effective the engine milestone in mid next year,” said Textron chairman and CEO Scott Donnelly. “We have been working for the last year with the Safran team in great detail and we’re very confident with where they are in the design process. We won’t make an official date [for Hemisphere certification] until we’ve seen that. But we’re certainly confident enough that we’re going to continue our design development activity. We’re confident that we’re going to have a world-class powerplant. All of the teams at NetJets as well as our own, are [working] with our partner Safran to make sure we have a successful motor to drive this thing.”

Draper now leading Textron Aviation

Textron Aviation CEO Scott Ernest is shifting over to lead Textron’s industrial and specialized vehicles unit that makes snowmobiles, E-Z-GO golf carts, and lawn mowers. Ernest was replaced on Friday at the helm of Textron Aviation by Ronald Draper, who had been senior vice president and director of supply chain production for the U.S. Military Academy at West Point since 2012, including support services. He joined Textron in 1999 and has held various senior capacities, including director of procurement for the V-22 tiltrotor program at Bell Helicopter and director of supply chain production development at Cessna. Draper holds an engineering management degree from the U.S. Military Academy at West Point and an MBA from the Wichita State University. He is a former U.S. Army helicopter pilot and company commander.

Draper has “driven solid gains for the [aviation] business in recent years,” said Textron chairman and CEO Scott Donnelly, “including the successful integration of our Beechcraft and Cessna operations, expansion of our quality management systems and global sourcing strategies. I am confident he is the right choice for leading Textron Aviation through its next phases of product development and growth.”

Matt Thumber

NetJets takes options for Longitudes, Hemispheres

by Matt Thumber

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“Our intent is to take delivery of these aircraft," added Johnson.

NetJets expects its first Longitude delivery in the fourth quarter of next year. Certification and first delivery of the Longitude is expected in this year’s fourth quarter. “We expect to announce firm orders starting in the next couple of weeks,” Johnson said. “Then for the remainder of this year several more orders, then all throughout 2019. We expect this plane to be in the fleet for up to 15 years.”

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Matt Thumber
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The future. Rolls-Royce.
Vref launches bizav residual value forecast

by James Wynbrandt

A $57.9 million Gulfstream G600 is predicted to retain 89 percent of its value in 15 years and be worth $51.78 million, while the new Pilatus PC-24 is forecast to retain 88 percent of its $8.9 million purchase price in 2033, fetching $7.82 million. These are the highest among the predictions in Vref’s first-ever 15-year Residual Value Forecast released this morning at NBAA 2018. It expects to publish this outlook annually going forward.

The aircraft valuation and appraisal service’s forecast currently contains about 70 in-production business jets, turboprops, helicopters, and piston aircraft. Available at its website, it displays Vref’s projected year-by-year residual value of each model for the next 15 years.

“We feel pretty good about the numbers,” Vref president Jason Zilberbrand told AIN. “People ask whether it’s a crystal ball or magic, but the truth is we have 60 years of data and experience and we did a ton of research—not just looking at airplanes, but we included economic factors, too.”

In an industry that typically looks in the rearview mirror to fathom where the market is going, the Vref forecast represents a sea change in residual value determination, though it’s old hat in other industries. “In the car world, this stuff has been available for a decade,” said Zilberbrand, “but for whatever reason our industry has been the last to jump on board and use some of these analytical tools.” He admitted the relatively low consumption numbers of business aircraft complicate the long-term valuation process.

The forecast predicts most new aircraft will fall far short of the G600 and PC-24 value retention figures, however. The Cessna Citation CJ3 forecast to retain a sizeable 74 percent of its $8.235 million cost over the next 15 years, but a new Citation XLS+ is estimated to keep just 15 percent of its $13.05 million list price by 2033, according to Vref.

Eventually, Vref intends to expand the forecast to include all production business and general aviation aircraft, as well as some narrowbody commercial airframes.

Meanwhile, Vref also released a new set of analytical charting tools this week at the NBAA show. This enables its subscribers to compare the Vref historical databases to numerous commodity charts, including Money Factor, CPI, PPI, and other indexes. The new tools “give aircraft traders and bankers and insurance agents more clarity” in making their business decisions, Zilberbrand said.

The company is updating and enhancing the functionality of its website and the new tools “are the first step in what the new platform will do,” Zilberbrand said.

Jet Aviation expands, renovates U.S. facilities

by Curt Epstein

Jet Aviation has launched a major renovation and rehabilitation program for its FBOs across the U.S. “Our customers will soon find new or renovated facilities from Teterboro, New Jersey, to Van Nuys, California, and at Dallas, Texas, in between,” said David Paddock the company’s senior vice president and general manager for U.S. regional operations. “We like to say we’re investing in our customers by ensuring our FBOs have the space, fixtures, and capabilities to deliver the very best service to owners, passengers, and flight crews, and their aircraft, no matter where their business or leisure flights take them.”

At Teterboro, the General Dynamics subsidiary is about to begin construction on a new 40,000-sq-ft hangar, which will be able to accommodate the latest ultra-long-range business jets. Jet Aviation expects to complete the hangar next summer. While the construction takes place, the company’s terminal will also be renovated.

In California, construction has begun on a brand new FBO complex on its Van Nuys Airport leasehold where eight previous buildings were demolished earlier this year. Plans call for a 10,000-sq-ft terminal, along with a 44,250-sq-ft hangar that has an additional 20,000 sq ft of office space. The company is currently operating from a temporary facility in Van Nuys. Its new fuel farm, which includes two 30,000-gallon tanks, will be expanded with another pair of 30,000-gallon tanks and a 12,000 tank by the time the new facility debuts in summer 2019.

Meanwhile, a major rebuild of the first floor is in store for the Jet Aviation terminal at Dallas Love Field. The improvements will include enlarging the CSR desk area and expanding the lounge for more seating.

The company (Booth 274) recently completed the refurbishment of its 30,000-sq-ft terminal at Boston-area Laurence G. Hanscom Field Airport, and added a new 40,000-sq-ft hangar, bringing it to a total of more than 124,000 sq ft of aircraft storage space. Duncan Aviation has since established a new avionics facility in one of the location’s hangars.

Along with the improvements to its bases, Jet Aviation has also expanded its global aircraft management fleet by 28 aircraft, including 15 in the U.S. and 13 in the EMEA and Asia regions. Of the 15 in the U.S., eight are available for charter, ranging from a Gulfstream G650 to a Sikorsky S-76D helicopter. The remaining 13 consist of eight based in the Middle East and Africa, three in Europe, and two in Asia.

Jet Aviation also noted its Basel facility has received an FAA STC for ADS-B Out compliance for the Boeing 747 series, following its earlier EASA approval announced in August.
Train with FlightSafety and benefit from our unequaled experience, team of master instructors and safety-focused programs using state-of-the-art simulation technology. Trust that we’ll always go above and beyond for you and your flight department and deliver the value you deserve and expect. It’s all about you.
Falcon 8X EFVS approved to 100 feet by FAA and EASA

by Matt Thurber

The FAA and EASA have approved Dassault’s Falcon 8X FalconEye combined vision system for operational credit for approaches to 100 feet. The FalconEye head-up display (HUD) in the Falcon 2000LX and 900LX should receive the new enhanced flight vision system (EFVS) 100-foot operational approval by the end of this year.

FalconEye was first approved on the 2000LXS/S and 900LX in October 2016, followed by the 8X in early 2017. A dual HUD FalconEye system is under development, and this will allow certification under new EFVS rules for EVS-to-land capability, expected to be approved in 2020, according to Dassault. EVS-to-land means that pilots will be able to land solely by viewing EVS imagery through the HUD, without using natural vision to see the runway and its environment.

FalconEye is the first combined vision system to be approved in a business jet application. It displays both enhanced vision system (EVS) and synthetic vision system (SVS) imagery on the HUD at the same time, with a pilot-adjustable split between the EVS and SVS imagery. The portion of the airport surrounding the runway, however, always is displayed inside an SVS runway clear zone or cutout so the close-in terrain, the approach lights, and the portion of the airport surrounding the runway always shows up in EVS.

FalconEye combines enhanced vision system (EVS) and synthetic vision system (SVS) imagery on the HUD, but the area surrounding the runway is always displayed in EVS, in an SVS clear zone.

Long-time FlightSafety chief Bruce Whitman flies west

by Chad Trautvetter

FlightSafety International chairman, president, and CEO Bruce Whitman, 84, passed away at his home Wednesday morning, the company confirmed. NBAA called him “an industry ambassador who leaves a lasting legacy of tireless advocacy” for business aviation safety and several other important causes.

“The aviation community has lost a leading light,” said NBAA president and CEO Ed Bolen. “[Whitman] was a leader who saw the big picture, but nevertheless delighted in quietly rolling up his sleeves to help countless organizations tackle their everyday needs...He surrounded himself with people who shared his values of working hard and treating people with professionalism and courtesy. His handwritten notes often wished recipients “blue skies and tailwinds”—now, we wish him the same.”

Whitman graduate from Trinity College in 1955 and was commissioned as a lieutenant in the U.S. Air Force. earning ratings as pilot, navigator, and bombardier in the Strategic Air Command. In 1957, he was appointed assistant to the commander at Homestead Air Force Base. After active duty, he attended George Washington University Law School while flying as a captain for East Coast Flying Service and serving as an Air Force Reserve pilot.

Whitman joined FlightSafety International in 1961 as assistant to the president after serving for two years as NBAA’s senior executive assistant. At FlightSafety, he was promoted to executive vice president in 1962 and then, in 2003, to chairman, president, and CEO.

He held advisory roles on committees and boards at a long list of companies and organizations, including NBAA; Flight Safety Foundation; Civil Air Patrol; Petroleum Helicopters; Aviall; Passur Aerospace; FlightSafety Boeing Training International; Aerospace Industries Association; NATA’s Air Charter Safety Foundation; The Wings Club Foundation; Congressional Medal of Honor Foundation; Orbis International; Smithsonian National Air and Space Museum; Corporate Angel Network; General Aviation Manufacturers Association; National Aeronautic Association; Air Force Academy Falcon Foundation; Kent School; National World War II Museum; and the USO of Metropolitan New York.

FlightSafety will have a reception at its booth (2638) today at 4 p.m. to honor Whitman.
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Avfuel: sustainable bizav jet fuel is not that far away

by Curt Espein

Biofuel has been an aviation buzzword for many years now, and while the use of sustainable alternative jet fuels (SAJF) has made inroads in commercial aviation, many in business aviation wonder when the tide will reach them. Industry fuel provider Avfuel (Booth 2219) believes that day is not far off.

“It will become a reality, and we’re well on our way for business aviation to get its day,” said C.R. Sincock, the Michigan-based company’s managing director of business development, adding that it is working on smoothing out the market introduction hurdles of awareness, cost, availability, and logistics. These are standard considerations when introducing any new product, but are magnified when dealing with a product as highly-regulated as aviation fuel. “Working through such complexities, our goal is to release a product that is both safe and cost effective for business aviation customers,” he said.

The industry took a step towards the adoption of SAJF use in May, when the Business Aviation Guide to the Use of Sustainable Alternative Jet Fuel, a multi-organizational effort, was released at EBACE. The document sought to answer many of the questions FBOs and flight departments were asking about the use of these fuels.

Cost of SAJF is another consideration as it currently sells at a higher price than regular jet-A. Avfuel sees the price dropping over the coming years as commercialization increases production. Possible federal and state fuel credit programs could also help counteract the higher price.

As far as availability, SAJF is a highly concentrated product that is blended with standard jet-A to produce a drop-in fuel. Yet that concentrate is not yet available in large enough amounts to serve the entire aviation industry. Avfuel signed an off-take agreement recently with SAJF producer Gevo as its exclusive distributor as it ramps up production, but recognizes more sources will be required.

The logistics of transporting, storing, and blending SAJF represent other challenges that might limit the supply-chain availability in the early years of market introduction. However, Sincock said the industry is making progress towards bringing SAJF to market for business aviation.

“Meetings to form partnerships and discuss strategies for introducing the product into the market are being held on a daily basis,” said Sincock. “Avfuel has a team of experts whose main focus this year has been on securing relationships that will help provide the product in the safest, most cost-effective, and streamlined way possible.”

Gulfstream ups G600 range

by James Wynbrandt

Gulfstream Aerospace has increased the range for the in-development G600 for a second time, extending its high-speed Mach 0.90 cruise range to 5,500 nm, a 700 nm increase from original projections. With the boost announced on the eve of NBAA 2018, the G600 can now fly nonstop from London to Los Angeles, São Paulo to Aspen, or Hong Kong to Vienna at Mach 0.90. Maximum operating speed for the aircraft is Mach 0.95.

A year ago, Gulfstream (Booth 256; Static SD41) had initially increased the high-speed Mach 0.90 cruise speed of the G600 from 4,800 nm to 5,100 nm and the long-range cruise speed at Mach 0.85 from 6,200 nm to 6,500 nm. At the same time, the Savannah, Georgia airframe manufacturer announced range increases for the recently certified G500, extending high-speed cruise range from 3,800 nm to 4,400 nm, and long-range cruise from 5,000 nm to 5,200 nm.

“Lessons learned on the G500 have enabled us to move with more efficiency through the same tests for the G600,” now nearing the end of its flight testing and certification program, said Gulfstream president Mark Burns.

Since December 2016, five G600 flight-test aircraft have accumulated more than 2,600 flight hours over more than 685 flights. Certification testing for flying qualities, engine and thrust reverser operations, ice protection and environmental control system, field performance, smoke evacuation, flight controls, ventilation and cooling, fuel system, and flammable fluid drainage have been completed. Only crew workload, flight into known icing, and function and reliability tests remain. Type certification is expected by year-end and service entry is slated for 2019.

The G500, announced in parallel with the G600 in 2014, received FAA certification in July and is awaiting EASA type certification. The first customer aircraft entered service last month. Burns noted the first production G500 “set almost 30 speed records before certification,” as the company worked to “ensure the maturity of the airplane at entry into service, which was unprecedented for us and the industry.”

In addition, the G500 is the first aircraft certified to use an enhanced vision system (EVS) to land, and the company also announced the same capability will be available across the entire Gulfstream fleet. “All large-cabin aircraft have completed their test for the enhanced vision system,” said Colin Miller, vice president of flight operations, with the G600 expected to receive approval this year, and the other models to follow.

Gulfstream is showing its complete line of business jets—the G280, G550, and G650/G650ER along with the new G500 and G600—at the NBAA static display.
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NBAA CEO Bolen on this year’s BACE event: Reflections on the past, present, and future

by Kerry Lynch

NBAA-BACE 2018 is shaping up to become one of the more upbeat conventions, with a strong economy, strengthening industry, new aircraft coming to market, and rapidly evolving technologies, said NBAA President and CEO Ed Bolen.

“Every convention has a kind of a vibe to it—a feel to it—and we expect that this year will be enormously positive,” Bolen said. “We’re going to shine a light on the past, present, and the future in ways that we think reflect how special this industry is, how far we’ve come, how far we can go, and how much we can shape our destiny.”

Bolen pointed to numerous factors playing into a positive mode of the business aviation community, from flight hours on the upswing and preowned inventory shrinking; to an economy that is performing well. “I think there is a lot of excitement, a sense of opportunity that is going to be very palpable in Orlando,” he added.

NBAA typically draws around 25,000 attendees, nearly 100 aircraft on static display, and close to 1,000 exhibitors, in addition to numerous educational and networking sessions. This year’s event includes “one of the most exciting lineups of events we’ve ever had,” Bolen continued, saying the convention will serve as a platform to increase awareness of opportunities, rapidly shaping technology, and even the political environment. This will be coupled with new products and service announcements, which typically generate “a lot of buzz and enthusiasm.”

The “bright lights” begin with safety, Bolen said, noting that events focusing on safety are bookending the convention.

“Safety is the pillar of our foundation, and we’re going to underscore that.”

On the eve of the convention, NBAA’s scheduled single-pilot safety standoff included key industry leaders who have flown as single pilots and also bring a strong business acumen: Crutchfield Corp. founder and CEO William Crutchfield, along with Aircraft Owners and Pilots Association president Mark Baker, and Experimental Aircraft Association president Jack Pelton.

Then, on Thursday, the final day of the convention, NBAA will host its National Safety Forum, which will look at the basics of maintaining skills and understanding automation. That event will further look at physiology and psychology that affects human performance, along with leadership and professionalism. “We will have a lot of safety experts from the industry and government talking about how we can use data to prevent accidents, [such as] the corporate FOQA programs where we tried to identify dangerous situations before they become accidents,” he said.

Looking back, Bolen said, “We always try to use our conventions to express our reverence for the past.” This year will be through the association’s Meritorious Service Award, which will be given to Women Airforce Service Pilots (WASP). The award will recognize the role the WASP played in developing the aviation industry and serving the country.

What’s Ahead for the Industry

In addition, NBAA will provide a forum for the National Aviation Hall of Fame to recognize the past with its annual presentation of the Combs Gates Award, which honors individuals or organizations that have been “exemplary in the promotion and preservation of America’s air and space heritage.”

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NBAA further will celebrate the present, he said, including a recognition of famed airshow performer Sean Tucker with the Al Ueltschi Award for Humanitarian Leadership for his work with at-risk youth through his Bob Hoover Academy. Along with recognitions, Bolen added, “We’ll talk about the leadership we are seeing today.” This includes keynotes from Enterprise Holdings CEO Pamela Nicholson and COO Christine Taylor during the opening general session. “We’ll have an opportunity to talk to two key people about how they view leadership at the time when technologies are changing and evolving and adapting quickly.”

The opening session will have a further focus on current affairs in Washington with CNN commentator Paul Begala and political consultant Matt Schlapp participating to provide contrasting insights into the upcoming elections. Bolen called this “an opportunity to showcase to our community what the stakes are in the upcoming elections this year,” adding that the midterms have the potential to be very consequential.

As for the future, Bolen pointed to panel discussions planned for the NBAA Innovation Zone, including a focus on electric vertical takeoff and landing vehicles. The convention will host Bertrand Piccard, who will discuss his Solar Impulse flight around the world, in addition to displaying technologies such as flying cars. “We’re trying to capture the excitement about the future,” he said, noting these topics are particularly pressing right now.

“We’re right on the precipice of a lot of things… in terms of UAVs, urban mobility vehicles, electric aircraft, solar aircraft, supersonic aircraft, and commercial space launch,” Bolen said. “There’s just so much going on in our industry and new players, including companies like Uber, Google, and Amazon, and all of this is going on right now.”

Also looking to the future are workforce issues. BACE will highlight that with activities such as the recognition of 40 under 40. “Recognizing that there’s a new generation of leadership out there, we want to foster that.”

“There will be a lot going on this year because there’s a lot going on in our industry,” Bolen concluded. “Looking back, looking forward, changing technologies, new players. It’s a very exciting time. There’s just so much to do. We’ve got something special. We want to adapt and change it in ways that are good for our industry.”
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Zunum Aero has chosen a new turbine engine from Safran Helicopter Engines (Booth 2235) to drive the electrical generator in the hybrid-electric commercial aircraft it expects to reach the market in the early 2020s, the Washington state-based venture announced on October 4. Internally dubbed the ZA10, the 12-seat hybrid aircraft capable of flying to a range of 700 miles would derive its power from two sources: propulsion batteries and a Safran turboshift engine, the Ardiden 3Z, rated from between 1,700 and 2,000 shaft horsepower.

After receiving funding from Boeing HorizonX and JetBlue Technology ventures in 2017, Zunum announced JetSuite as a launch customer earlier this year. Near-term project milestones include ground- and flight testing scheduled for 2019, followed by delivery of the ZA10 in the early 2020s. Zunum has chosen a Rockwell Turbo Commander 850 to modify for the flying testbed. The airplane offers weight and performance similar to that of the ZA10, and Zunum says its “excellent single-engine capability” will allow program engineers to modify and test in phases for a high degree of safety.

In preparation for flight in 2019, Zunum Aero conducted ground tests of the hybrid-electric power system at Chicago-area facilities earlier this year. Through the fourth quarter of 2018 and early 2019, it will continue to upgrade and test the power system in stages to advance it for flight. Meanwhile, the Ardiden 3Z engine will undergo ground tests in France and the U.S., ahead of integration with the flying testbed in 2019.

Modifications of the test aircraft began on schedule for a series of flights in the second half of 2019, leading to full hybrid-electric conversion with the Safran engine. Zunum says it will continue to upgrade the flying testbed with “successive” prototypes until the start of the type certification process in 2020 or 2021. The Ardiden 3Z will couple with an electric generator; the resulting integrated turbo-generator will deliver 500 kW of electric power to supplement the battery packs on key stages of flight and over long ranges. Zunum says that upgrades such as advanced materials and integrated lifecycle management for hybrid service will “dramatically” reduce operating costs of the engine by extending the life of critical components.

Zunum expects the new aircraft to operate at a cost of $8 per cent available seat mile, or $250 per hour, which is 60 to 80 percent lower than comparable conventional aircraft of a similar size. The company has designed the ZA10 to cruise and land on turbo-generator power alone, offering full redundancy, according to Zunum.

Zunum co-founder and chief technology officer Matt Knapp characterized the partnership with Safran as a natural choice because a compact and lightweight 500 kW-capable gas turbine accounts for a key element of the MW-class hybrid-electric powertrain needed to complement the airplane’s propulsion batteries.

“Today marks a significant milestone on the path to delivery of the ZA10,” said Knapp. “The Zunum ZA10 will bring breakthrough performance to regional aviation, paving the way to fast, electric, affordable high-speed air services to communities everywhere.”

**PNC Aviation Finance sees a record 2018**

by Mark Huber

A robust used business aircraft sales market is driving another record year at PNC Aviation Finance (Booth 3045), according to Keith Hayes, the firm’s senior vice president and national sales manager. “We are doing more deals with used aircraft, and that is following the market. The used aircraft market has been extremely active and we’re seeing a direct correlation on the finance side,” he said. PNC has closed more transactions annually since 2009 than any other aviation finance company in the U.S. and 2018 is shaping up to be a record year, Hayes added. “Activity is as high as it has ever been since the downturn [of 2008].” The midsize jet space is particularly hot at the moment, he said, “But we are committed to all cabin sizes. We’ve also seen quite a bit of turboprop activity.”

Hayes believes the table has been set for new aircraft sales to make a meaningful move, perhaps as early as next year. “People are concerned about what is going to happen in 2019. As the used market drops down to single digit inventory levels and you get past the U.S.-registered fleet to aircraft with less desirable pedigrees, and as used prices begin to rise in some cabin sizes, at some point, used aircraft buyers will take a more serious look at buying new aircraft,” he explained.

According to Hayes, recent changes in the corporate tax law appear to have had minimal effect on the specific market so far. Instead, he said, the overall improved health of the macroeconomy seemed to be a more decisive factor in the immediate improved prospects for business aircraft.

“The 2018 tax law changes don’t seem to be having much of an impact on the market so far. If someone could use the [depreciation] tax benefits before, they can use them now. And if they couldn’t use them before, they can’t use them now,” Hayes said.

He also doesn’t think that changes in the tax law that limit the deductibility of certain entertainment and personal use of business aircraft have made much of a dent in utilization. “I think our clients are doing a little more due diligence with regard to individual flight missions and use of aircraft,” he noted. “But because the economy is doing so well and our clients are doing so well, utilization is up.”

Hayes said PNC “is seeing more debt than lease transactions. We’re fortunate to have a product that no one else has—an asset-based, non-disclosure, limited-recourse product. That particular structure is very desired in the marketplace as it aligns itself perfectly with the small and midsize cabin airplane.”

**New Amstat app maximizes data utility, facilitates leads**

Business aviation data specialist Amstat (Booth 2275) is highlighting a new Amstat for Salesforce app along with other product enhancements this week at NBAA 2018. The Amstat for Salesforce app is designed to enable subscribers to maximize data use by providing access to Amstat contact and fleet data without having to always jump between different applications and by linking current Amstat data to Salesforce accounts, contacts, and leads. This ensures the late data is always displayed within the CRM. The app further will produce alerts for linked records from within Salesforce to provide a heads up on sales opportunities. Amstat data can be used to create leads.

“Our investment in this solution will enable users to more fully utilize Amstat data within the Salesforce and reinforces our commitment to helping business aviation sales and marketing professionals achieve their goals,” said Amstat general manager Andrew Young.

Amstat further will offer the ability for users to integrate its data in other third-party applications, and is rolling out upgrades including notes management and search functions.

“Amstat subscribers have always been able to share proprietary notes, edits, and report formats between users under the same subscription,” said Chris Skurat, director of sales and customer service for Amstat. “Amstat has now added powerful notes management and search functionality and also the ability for users to store and share associated materials, such as contracts and pictures within the Amstat service, making these materials accessible wherever they can log in.”

Amstat has scheduled two breakout sessions for tomorrow in Room N320C at the Orange County Convention Center. The first, scheduled for 10 a.m., will introduce Amstat by Salesforce. The second, to be held at 3 p.m., will serve as a tutorial on Amstat’s Aircraft Valuation Tool that Amstat introduced a year ago. **K.L.**
Elbit's SkyLens wearable head-up display (HUD) enables situational awareness previously available only on larger, newer aircraft. Pilots can control avionics with “look and select” technology, enabling them to perform functions that previously required “head-down” time to operate a flight management system (FMS). With the HUD, they can perform those functions while keeping their eyes outside the flight deck.

Wearable HUD offers high-tech retrofits

by Matt Thurber

Universal Avionics (Booth 2268) has unveiled a new wearable head-up display (HUD) for business aircraft at NBAA-BACE 2018. It integrates Universal’s InSight display system avionics suite with parent company Elbit Systems’s SkyLens wearable HUD. This new technology is a direct result of Elbit’s acquisition of Universal Avionics in April.

“We’ve started to integrate our product portfolio, mostly head-down and head-up [products],” said Dror Yahav, Elbit Systems v-p of commercial aviation. “‘Head-up, head-down’ technologies have of course been integrated before in various business jet platforms,” he said. “The integration of Universal’s InSight and Elbit Systems’s SkyLens takes this technology into a new level of functionality which the market has never seen before.”

The integration of the two companies’ products allows the SkyLens wearable HUD to show flight management system (FMS) information superimposed over a view of the outside world, allowing for a better understanding of navigation data, the company said. It also provides a more intuitive user interface that allows users to “look, point, and click” with SkyLens as well as allows the pilot to program the FMS while looking outside the aircraft.

“Leveraging the fact that these two systems are now owned by the same design house and company enables us to bring the augmented reality [AR] trend into the aviation world so operators can receive full flight management information generated by the FMS, superimposed on the real world,” he said. “The operator can control the avionics by ‘look and select’ while maintaining his/her complete attention looking out of the window. The integration also allows for improved performance with a significant reduction of workload, better single-pilot operation, and a new level of safety and operational effectiveness.”

Reliance on SkyLens and InSight varies during phase of flight, according to Universal Avionics. During the en route phase, the pilot is most likely to monitor and rely on InSight (head down), but in the approach-to-landing phase, SkyLens (head-up) becomes key.

Simplifying Approaches

“We looked at the approach phase as the one that is most challenging,” said Yahav, “especially if you’re getting new instructions or changes. Typically, one pilot will put his hand to the FMS, and the other will monitor to make sure the other pilot doesn’t make a mistake. The workload increases dramatically. If there’s a mistake in the FMS, you could go to a different waypoint or approach while the autopilot is coupled to the FMS. It’s hard to recover, and takes a lot of attention within the cockpit.”

What the new AR technology does, he explained, “is couple the FMS and HUD display to be superimposed on the real world.” Looking through the SkyLens, the pilot wearing the device can not only “see” outside the aircraft in any direction, because vision isn’t just limited to a fixed-in-place 35- to 40-degree field-of-view HUD, but the pilot can also “see” all the elements of the flight on the SkyLens display. SkyLens tracks the pilot’s eye position, so it always knows where the pilot is looking. And because SkyLens is worn on the pilot’s head, essentially the pilot has an unlimited field-of-view, in any direction.

“When you look out at the real environment,” he said, “you see the runway, the approach, the flight path, initial approach fix, all layered over the real world.” These elements are presented on synthetic vision system (SVS) and enhanced vision system (EVS) imagery layers. “This is important when you do a go-around or fly a curved approach, like an RNP approach. You can see the whole thing, not just information captured through 40 degrees [field-of-view], but all the way, visually.”

After the final approach fix, SkyLens goes beyond the traditional HUD information and symbology by providing the ability to see the runway in low visibility and at night via SVS and EVS. The EVS will conform to FAR 91.176, eventually enabling a full landing to touchdown looking only at EVS imagery without using natural vision.

Look, Point, Click

The new key functionality, which is being demonstrated this week at NBAA-BACE 2018, permits control of the FMS and flight deck with the pilot’s sight using SkyLens. This look, point, and click capability allows the pilot to program and update the flight path, runway selected, and other FMS commands during critical approach phases without looking at the instrument panel or console.

For example, suppose ATC instructs the pilot to switch to a different approach or a parallel runway before the final approach fix. “We will allow the pilot to look at the airport, select visually the new approach, then auto reprogram the FMS,” Yahav said. “The outcome of the new flight plan will be visually presented on the real world view.”

When maneuvering to intercept the new final approach course, SkyLens will make this much easier. Instead of having to select from a list of waypoints and not knowing exactly where these waypoints are or which ones are already behind you,” Yahav explained, SkyLens will help “you intercept in a reasonable way. When you look at the whole new flight plan graphically presented in front of you, superimposed on the real world, you’re able to look with your eyes where you would like to intercept [the inbound course] on the approach. And you can select that as the next waypoint you want to fly to. The FMS will be updated and the autopilot will direct you to that particular waypoint.”

With ADS-B In capability and datalinking, pilots will also be able to see traffic and other information on SkyLens.

“The combination of these technologies provides existing operators with added utility and capabilities that were never envisioned during the original type design of the aircraft they were operating,” said Universal Avionics CEO Paul DeHerrera. “Many flight decks cannot accommodate a ‘traditional HUD’ system due to space restrictions and cost.”

Thus, InSight/SkyLens provides a retrofit path for thousands of operators, he added, while improving reliability, safety, and situational awareness during all phases of aircraft operations. “The wearable HUD technology of SkyLens integrated with the latest-generation flight display system of InSight brings two of the most advanced technologies together, operating in harmony across the various phases of flight. Bringing these new technologies together for the first time, making new things possible, and forward-fit customers is game changing.”

“This is going to be the first step in our new innovative way of flying,” said Yahav. “We have a list of more items, this is only the beginning. We can do magnificent things to improve the effectiveness of flying.”
FlightSafety International spices up its training menu

by Amy Laboda

FlightSafety International (Booth 2638) is no stranger to issues involving its workforce and finds itself challenged to keep instructors on both the maintenance and pilot training sides of its business, according to David Davenport, executive vice president, commercial training.

“We are recruiting constantly,” Davenport told AIN. “We’re all about customer service, however, and we are continuously managing the situation so that we can deliver all the training that our customers expect,” he continued.

At this year’s NBAA-BACE event FlightSafety announced several new programs and expanded on progressing programs, including its learning centers worldwide. This month, it announced that it’s ramping up its Gulfstream G500 pilot training in Savannah, Georgia, its Master Aviator program, and expanding its Part 107 drone operator curriculum. FSI is also upgrading its new LEAP executive management training program.

The company’s Paris Le Bourget center is about to accept three more simulators, including an Embraer E2 sim. Plans for adding a Pilatus PC-24 simulator are in progress there, as well.

“We have now produced 100 Master Aviators—the safest, most proficient business aviation pilots out there,” said Davenport. The company’s longstanding Master Technician program, initiated with Gulfstream, has more than 4,000 graduates. “It’s an exacting program, and the accolade is one pilots and techs have every right to be proud of,” he continued.

Finally, FlightSafety International is introducing its LEAP (Leadership for Aviation Professionals) program to NBAA attendees Wednesday morning at 9:30 a.m. in room N320G. LEAP is designed for business aviation managers and line personnel who are moving into management and director positions. The course, which was in beta trials, is ready for its first influx of students this month.

Jeff Lee, executive director, business aviation development at FlightSafety International and former NBAA director and chair, co-teaches the classes with Doug Schwartz, another NBAA director alum who is currently on the Board of Governors of the Flight Safety Foundation.

“In my first major flight department position after my Air Force stint, I think I survived more by luck than by skill,” reminisced Lee. “The most common comment I have heard about the LEAP program is people telling me, ‘Boy, I wished I’d had this before I took my job.’”

“That corporations move people around in the companies so that they build leadership skills over time. That doesn’t happen in flight departments,” he lamented. “Just being senior isn’t enough. The operational environment is very complex; you are taking on a lot of skills that, frankly, most technical professionals, aircraft maintainers, pilots, or dispatchers never really get schooled in. We hope to answer that need with the LEAP program,” he said.

Company executes need training as well as pilots and mechanics, and FlightSafety International’s Jeff Lee helps educate professionals through the LEAP curriculum.
Keynote speakers address a variety of salient issues

by Chad Troutvetter

FAA Acting Administrator Dan Elwell, U.S. Rep. Ralph Abraham (R-Louisiana), and Uber aviation program head Eric Allison are the keynote speakers at today’s NBAA 2018 opening session, held at 8:30 a.m. in Hall B on the show exhibit floor.

“They will address a range of issues of interest to the industry, and we know attendees will appreciate hearing their perspectives and insights as we kick off the show’s opening day,” said NBAA president and CEO Ed Bolen.

Elwell has overseen the FAA, and crucially the agency’s NextGen ATC modernization program, since he took over as acting administrator in January. After retiring as a U.S. Air Force aviator, Elwell was an airline pilot at American Airlines before serving in senior roles at the Aerospace Industries Association and Airlines for America before joining the FAA as deputy administrator in 2015.

Abraham, a member of the House Armed Services Committee, is a doctor, former veterinarian, farmer, and rancher, in addition to a fixed-wing and helicopter pilot. He currently flies reconnaissance missions for the Coast Guard Auxiliary and is a certified flight instructor. In addition, Abraham was featured in the November/December 2017 issue of NBAA Business Aviation Insider, where he discussed his passion for aviation and the importance of business aviation.

Meanwhile, Allison, who is leading the company’s Elevate urban air transportation initiative, will also speak at the session about the developing industry for electrically powered vertical takeoff and landing (eVTOL) aircraft. He joined Uber earlier this year to spearhead development of a real-time, on-demand, global network of “aerial ridesharing” vehicles through partnerships with eVTOL manufacturers. The project’s goal is to launch UberAir to allow consumers to use their smartphones to get a flight.

Dallas-Fort Worth/San Frisco and Los Angeles are slated to be the first UberAir cities, with the goal of flight demonstrations in 2020 and Elevate commercially available service in 2023 in these cities.

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NBAA-BACE 2018 session to explore aircraft asset management

Jeff Agur, CEO of business aviation consulting firm VanAllen Group, Sean Lancaster of aircraft brokerage Bristol Associates, and aviation attorney Mark Ringel of HCH Legal will lead a seminar on aircraft asset management during NBAA 2018. The presentation will be held at the Orange County Convention Center in Orlando, Florida, today from 10:30 a.m. to noon.

Titled “Asset Management for Aviation Leaders,” the session aims to help provide aviation department managers and directors of maintenance the tools and knowledge to effectively manage their aircraft over the ownership cycle.

Topics will include obtaining reliable information on the state of the preowned market, understanding the potential impacts of new tax legislation and timing of aircraft transactions, and specific strategies to preserve an aircraft’s value.

According to Agur, the session will hit three main points of aircraft asset management: life-cycle planning, aircraft transactions (both buying and selling), and maximizing aircraft reliability and availability. “We are looking to provide attendees with strategies in various aspects of asset management at the beginning, middle, and end of aircraft ownership,” he told AIN.

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truebluepowerusa.com Booth 2265
Bombardier bumps up Global production

by Kerry Lynch

With Transport Canada type certification (TC) in hand, Bombardier is turning to full production ramp up of its 7,700-nm, four-zone, flagship 7500. The Canadian airplane-maker formally received the much-anticipated TC for the aircraft on September 28 during a ceremony held at its Global Completion Center in Montreal, U.S. FAA and EASA certification are anticipated shortly, with deliveries slated to begin before year-end.

“The certification of our clean-sheet Global 7500 business jet is a defining moment for Bombardier, for our employees, and for the industry, as we approach entry-into-service,” said Bombardier Business Aircraft president David Coleal. “Thanks to the rigor and innovation of our design and test program, the Global 7500 has succeeded in elevating every standard by which a business jet is measured: comfort, luxury, performance, and a smooth ride.”

Certification comes eight years after Bombardier took the wraps of its longest range and largest business jet to date. Unveiled as the Global 7000, the aircraft was renamed the Global 7500 this past spring, to provide “clear visibility” into the growing Global family, according to Bombardier. The series also includes the recently introduced Global 5500 and 6500, along with the 5000 and 6000.

While the 7500 program incurred a two-year delay to accommodate a wing redesign, certification followed just two years after the first flight test vehicle took to the skies. That first aircraft, FTV1, dubbed “The Performer,” took off on Nov. 4, 2016, and recently was officially retired from flight testing after completing all of its designated missions.

FTV2, also through with its flight-test missions, has moved into initiatives to support technical publication development. FTV3, meanwhile, is being used for post-certification testing, and FTV4 was involved in function and reliability testing. The fifth, FTV5, which had a slightly altered wing and represents the final configuration, required fewer than 300 hours for certification testing. By September, the five flight-test aircraft had accrued a combined 2,700 flight hours.

This was augmented by a ground program that included more than 2,900 hours in an engineering simulator, along with a fatigue testing rig that has already completed one life cycle—representing 17,000 cycles—and has begun to undergo a second life cycle. Static testing also was fully completed.

The results of all those tests enabled the company to boost range by 300 nm to 7,700 nm at Mach 0.85, opening up city pairs such as New York to Hong Kong. Looking at the range map, said Michel Ouellette, senior v-p, Global 7500 and Global 8000 program, “It’s not so much about where you can go now. There’s not much where you can’t go.” That range bump already has boosted sales, helping to close some critical deals, added Brad Nolen, vice president of marketing and communications.

Tested to a speed of Mach 0.995, the aircraft has a certified maximum speed of Mach 0.925. The test program also enabled the company to confirm a published takeoff distance of 5,800 feet and landing distance of 2,850 feet.

“During the certification process the team successfully validated all customer and regulatory requirements to yield a highly integrated, state-of-the-art aircraft with the highest level of safety that meets or exceeds the needs of our clients,” said François Caza, vice president, product development and chief engineer, product development engineering.

**Service Entry Preparations**

As progress continues toward FAA and EASA approvals, Bombardier has turned its attention to market entry. This includes taking authorities through the 7500 simulator in the Montreal training center next to CAE—the builder of the simulator—and securing Level C approval, with Level D up next. Instructor training on the simulator has begun. Further the airplane flight manual is under Transport Canada review and instructions for continued airworthiness are completed.

The first customer aircraft was well into completions in September. “We’re pleased with how far along we are with the first aircraft,” Ouellette said. In fact, more than 20 aircraft were at some level of production by September, with the line full. Bombardier is estimating that about 20 will be delivered through the end of 2019, moving toward 40 the following year. This will help keep pace for an aircraft sold out into 2021.

The company has realigned existing spaces and opened a center of excellence (COE) to accommodate completions of the first jet purposefully designed for a dedicated four-zone interior. It has been ramping up hiring, announcing last year that 1,000 new positions were being created in Montreal alone for completions work.

Green aircraft are built in Toronto, while paint and interiors installation takes place at the Global Completion Center. To accommodate this, Bombardier is shifting Global 5000/5500 completions from Montreal to Wichita, Kansas, and the Global 6000/6500 program from the center to a separate facility in Montreal.

The COE, formally dedicated last November, is finishing cabinetry and other interior components in house, with new precision laser measurement tools and a dedicated Global 7500 test rig that will save up to weeks on installation.

Located minutes away from the Global Completion Center, the facility has no aircraft “but plenty of things that feed the aircraft,” said Sophie Valcourt, general manager of the facility, noting the COE has three full shifts running.

One of the key technologies at the COE is a Leica geographic, dimension, and tolerance measurement tool that ensures precise fit of cabinetry before installation. This is designed to eliminate as much of the trim-to-fit process on aircraft as possible. Cabinetry trimming can become costly and time consuming, requiring refurbishing of expensive veneers—and possible return to the supplier—should even the slightest nick occur during the process. The precision measurement tool is accurate within 0.003 of an inch.

“The whole principle is to minimize downtime of the aircraft,” said Valcourt, “When the aircraft flies from Toronto to Montreal, we can deliver it in the shortest possible time because we took all the risk and we mitigated it before installing on the aircraft. The worst thing is to install something on the aircraft and then removing it and then reinstalling. We de-risked everything we could.”

This is critical given the attention paid to the cabin. Bombardier has provided considerable focus on not only an array of choices for finish and fit, but on real design features such as the patented Nuage seats, a fully functional kitchen, and the ability to have a fixed bed. Bombardier further has opted for the latest in cabin electronics and communications, such as Ka-band Satcom, the nice Touch cabin management system, and the Bombardier Touch dial.
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APG adds flight planning with enhanced Genesis app

by Matt Thurber

Aircraft Performance Group (APG) launched in 1999 with a clear mission, according to CEO Mike Caflisch, to help pilots determine “can you clear that hill at the end of the runway?” Since then the mission has grown to include more pre-flight planning functions in the form of an iPad app appropriately named iPreFlight. Now APG has launched a new flight-planning app called Genesis, and the mission has morphed into “how can I get to where I need to go after I clear that hill?”

Genesis picks up where APG’s iPreFlight app leaves off, by adding a new flight-planning engine that adds the finishing touches to iPreFlight’s weight-and-balance and runway analysis modules. With Genesis, pilots, dispatchers, and flight operations can plan and file a flight plan after loading up the airplane and evaluating runway performance capabilities, which include takeoff and landing data for that particular airplane. Demonstrations of Genesis are available at the APG booth (4179).

Genesis starts with a logical flow, with a trip button that answers questions about planning a trip anytime from right away to well into the future. The trip considers passenger and baggage loading for a particular airplane, plus departure, en route, and destination weather, for optimizing performance and to help determine if conditions allow the planned flight. Evaluating these parameters takes just 20 to 30 seconds, giving dispatchers and pilots the ability to respond to requests quickly and with a high degree of confidence.

The next step is the summary page, which shows the departure and arrival airports and their weather conditions, the flight plan route, and runway analysis information for the selected runway at the departure airport. The analysis shows the departure procedure for each runway and the weight limits, given the forecast weather conditions, up to 240 hours (10 days) from the estimated time of departure or arrival. For flight plans outside of 240 hours, APG has purchased historical weather data for nearly 9,000 airports, allowing users to evaluate a future trip based on that data, to give an idea of the runway performance well in advance of the trip. The weather database includes 10 years of airport weather and 20 years of winds and temperatures aloft.

Once critical parameters are shown in green on the summary page, the user can then file the flight plan. Any of the parameters can be changed quickly by clicking on the weight-and-balance or runway analysis buttons. For example, passengers, cargo, and fuel can be adjusted on an image of the aircraft. On the runway analysis module, all of the available runways are shown along with weight limits. Performance criteria can be changed, such as flaps settings, runway condition, bleeds closed or open, and others.

Genesis optimizes the flight plan based on winds and temperatures aloft using the SelectRoute tool, which also offers recently cleared and preferred routes. The user can see how weather affects the planned route by looking at a visual representation of the flight with weather layers that include various flavors of radar as well as lightning, pilot reports, etc.

Smart Routing Features

Genesis has an autorouter that automatically plots the route based on the airport settings. For example, a non-RNAV-capable aircraft won’t be given a flight plan that it can’t fly. If the aircraft isn’t equipped with life rafts, Genesis won’t try to send it on an overwater route.

For cruise performance, the user can select long-range or high-speed cruise or in-between speeds. But if that doesn’t match actual experience in flight, the user can set biases for climb, cruise, and descent to adjust those to match actual experience. In a future version of Genesis, pilots will be able to use data points from flights to modify the performance database.

APG’s Genesis designers used a unique method for changing the route. Instead of rubber-banding or rewriting the textual description of the route, the user simply draws a rectangle around the weather then pushes the “finish” button. Genesis automatically recalculates a new flexible route. The new route knows the aircraft’s RNAV capability and whether or not the flight plan must remain on airways or can fly off airways. This solution avoids the problem of a rubber-banded change generating a flight plan that will get rejected. It also removes the need for

Left, a screen shot showing the Genesis weight and balance floorplan with crew, passenger, and baggage inputs as well as GC calculations. Right, a screen shot of the flight-planning module, which shows the route, graphical depiction with weather overlay, and user-selected constraints. The user can see how weather affects the planned route by looking at a visual representation of the flight with weather layers that include various flavors of radar as well as lightning, pilot reports, etc.

APG brings runway analysis to bizav ops

Rogers Hemphill and Mark Thelen started Castle Rock, Colorado-based Aircraft Performance Group (APG) in 1999, after leaving the Part 121 airline business, where runway analysis is a common aspect of aircraft performance evaluation.

“The [Part 121] world has a good handle on runway analysis,” said Hemphill, but there was little application or understanding of the concept in the Part 135 charter community or in Part 91 business aviation. APG was founded to help change that.

Runway analysis has been in use by airlines since the 1950s, according to Hemphill, who developed some of the earliest computer programs that ran runway analysis calculations when personal computers came on the scene in the early 1980s.

For any multi-engine jet, but especially for Part 25 jets, the FAA requires certain performance capabilities after losing an engine on takeoff. The one-engine-out (OEU) performance, including minimum climb gradients that it must be capable of achieving, isn’t always optimal when flying a standard instrument departure (SID) procedure. For example, there may be obstacles in the SID path, and during OEI operations, the jet must clear the obstacles by a specified minimum distance.

To clear those obstacles, the airplane may not be able to take off at maximum takeoff weight (mtow), depending on local density altitude. Airlines learned that complying with a SID sometimes limited the allowable payload, which cut into potential revenue.

However, in an OEI emergency, pilots can deviate from the SID. By designing a flight path that could be flown during an OEI emergency that was different from the SID, airlines could carry more payload with an equivalent level of safety. The alternative flight path is designed to avoid obstacles and provide the necessary clearance during the OEI emergency. This is runway analysis. “We’re going to find the lowest gradient path,” Hemphill explained, “so we have the highest margin of success.”

Runway analysis is somewhat simpler for airlines, which fly to a limited number of airports in airplanes that are relatively homogeneous. There is wide variety among business jets, even within the same type, with modifications that often change performance. And business jets can fly to many different airports, so runway analysis calculations become much more complicated.

APG has to input every business jet’s particular configuration into its system before pilots can use its runway analysis products. Runway analysis services are available through APG’s iPreFlight 3 and new Genesis iOS apps, and APG also offers runway analysis through partnerships with OEMs such as Embraer and handling providers FltPlan.com, Arinc Direct, Honeywell, Universal Weather and Aviation, Satcom Direct, RocketRoute and more.

APG has analyzed 9,000 airports and developed more than 2,200 engine-out procedures, with over 350 airplane types and configurations in its system and about 11,000 tail numbers supported. The company also offers a service to develop private procedures for customers that need such a solution.

Both CAE and FlightSafety International offer training on APG procedures, for customers that subscribe to APG runway analysis services.

M.T.

Departure paths using APG’s runway analysis. The left image shows obstacles.

continues on page 38
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Aloft takes BBJ aux tanks to the Max

by James Wynbrandt

Aloft AeroArchitects, VIP airliner completion and MRO specialist, lands at NBAA 2018 between last month’s delivery of a new BBJ2 to a private company in Asia and next month’s intake for refurbishment of a BBJ on which the Maryland-based company installed the current interior 12 years ago.

The just-delivered BBJ2 features an Edése Doret-designed interior and the latest Astronics CMS and Honeywell Ka-band technology, said John Eichten, Aloft’s senior v-p for sales and marketing. The incoming BBJ’s interior was designed by Warja Borges of Germany’s Unique Aircraft and will be installed in conjunction with the jet’s 12-year check and landing gear overhaul.

At its two-story display area (Booth 1012), Aloft is showcasing its three core business lines: completions and MRO services; ODA engineering support; and precision manufacturing. A cross-section of representatives from the company’s sales, engineering, supply chain, and ODA team, led by company president and CEO Bob Sundin, is on hand to welcome attendees.

For its completions on the coming BBJ Max 8/9s, “Our approach is to tackle only one or two at a time so we can focus on the intricate details of each completion,” Eichten said. Meanwhile, MRO demand for BBJs has been “very strong” this year, driven by a combination of modification projects and maintenance, he said.

Aloft’s second business line, ODA (Organization Designation Authorization) and third-party engineering services, consists of internal certification engineers and ODA staff. External engagements range from STC development and certification to turnkey engineering, with the team’s ODA credentials covering “virtually every commercial aircraft in operation including the B787 and A350,” Eichten said.

ODA Is a Game Changer

Internally, ODA services have been “a game changer in our ability to process and issue STCs for our own designed products and services,” he continued. That includes STCs on major interior completions, technology upgrades, mandatory regulatory requirements such as its ABS-B Out STC for the BBJ, and STCs for its auxiliary fuel system. All told, Aloft anticipates issuing or amending more than 25 STCs this year, Eichten said. The fuel system STCs have been particularly important lately.

Aloft is the exclusive provider of auxiliary fuel systems for BBJs, and with the BBJ Max line poised to enter service in the near future, the company has been working on system upgrades to accommodate the new models and their more efficient engines. Aloft’s 737 Max 8 auxiliary fuel system “is currently being installed, tested, and certified on the prototype aircraft, with STC issuance scheduled for later this year,” Eichten said.

The Max 8 system includes new, enhanced APS tanks, LRUs, and maintenance-friendly tanks and installations, according to Aloft. The upgraded tanks have been engineered to maximize fuel capacity, speed fueling, and minimize reconfiguration efforts, and the system is fully integrated with the airplane’s ground fueling and fuel management system.
ICAO readies requirements to set CORSIA’s baselines

by Cathy Buyck

In less than three months, all International Civil Aviation Organization Council member states with aircraft operators undertaking international flights are expected to start compiling and transmitting their airlines’ carbon dioxide (CO₂) emissions information to the Montreal-based body to ready its planned Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) for take-off. The global-market-based measure, which aims to cap the growth of international aviation CO₂ at 2020 levels, starts with a pilot phase in 2021, but all airlines producing annual CO₂ emissions above 10,000 tonnes will need to measure their emissions on cross-border flights beginning in January to allow for the calculation of a sectoral 2020 emission baseline. The average emissions of 2019 and 2020 will form this baseline.

“The more airlines that contribute to the baseline, the better the scheme will be,” explained European Aviation Association’s senior environment manager Bruce Parry. ICAO did work very quickly to put guidelines and key templates in place since its Council adopted CORSIA’s international standards and recommended practices (SARPs) at the end of June, he said. “So far so good,” he told AIN, noting that both the emissions monitoring plan (EMP) and the CO₂ emissions reporting tool (CERT)—which can be downloaded from the ICAO website—are straightforward Excel spreadsheets. The EMP template was released in July and the CERT followed in August.

Airlines will need to submit their EMP to their administration state, the country where their aircraft are registered, by February 28, 2019. EBAA, however, advised its members to do it as soon as possible and preferably before September 30 to “get familiar with the scheme,” Parry said, while warning it “may take a bit of determination” to find out to which authority or agency the EMP has to be submitted. “There is no consistency. In the U.S. it is with the FAA and in the UK with the Environmental Agency.”

Also the CERT—which needs only four data sets: origin, destination, aircraft type, and number of flights—has been designed with an eye toward the small operator, Parry said. He admits it is confusing to know which country is participating in the scheme’s voluntary pilot phase and first phases from 2021 to 2026, “but that is up to ICAO to know,” he stressed, as he reiterated the association’s frustration with the European Commission for failing to provide clarity on how the EU ETS for intra-EEA flight will be aligned, and hopefully replaced by CORSIA. “I’m not going to speculate on what the EU is going to do, but our members want to know where they stand.”

EBAA is not alone in its frustration. In August, the heads of 11 airline associations from across the world urged the European Commission to “take all necessary measures” to fully implement CORSIA and remove EU ETS duplication. “All international flights to/from/between airports in the EEA should be subject exclusively to CORSIA and removed from the scope of the EU ETS as from 1 January 2021,” they wrote in a joint letter to European Transport Commissioner Violeta Bulc and her counterpart for Environment Miguel Arias Cañete, warning that failing to do so would “compromise the implementation of CORSIA.”

Aligning Requirements

The trade bodies also asked the commissioners to ensure that the EU ETS monitoring, reporting, and verification (MRV) requirements for international flights be aligned with the CORSIA SARPs to prevent an “unnecessary administrative burden” for both operators and authorities in Europe having to administer and comply with two schemes in parallel, using two sets of rules. Aligning EU ETS MRV requirements with the ICAO rules “would not raise any significant difficulties as the SARPs have been developed on the basis of the experience gained under EU ETS and with the same guiding principles,” they pointed out.

Environmental campaign groups, however, last month called on Brussels to reject the airlines’ request, demanding the EU continues to regulate aviation emissions under the bloc’s ETS “given CORSIA’s unresolved issues, its environmental weakness, and lack of alignment with European climate ambition.”

The non-governmental organizations—among them Transport & Environment, Carbon Market Watch, and Aviation Environment Federation—asked the European Commission to delay a response to ICAO about the SARP draft rules until the completion of the ETS review, which they point out is mandated by EU law. ICAO member states have a December 1 deadline to notify their differences to the SARP rules. The Commission is not an ICAO member state but it will propose a common position for EU member states to adopt. It did not respond to AIN’s request for comment on the issue.

ProFlight is Bose’s headset for jet pilots

Pilots who don’t want to wear a headset with full ear cups while flying a jet but still want the benefits of high-end audio might want to visit the Bose booth (4292) and try on the ProFlight headset.

The ProFlight, which went on sale in May and retails for $995.95, features a comfortable in-ear configuration and three user-selectable levels of digital active noise cancellation, which allows pilots to select the noise-cancellation level appropriate for the aircraft. The new headset also has a tap control for talk-through communication, enabling pilots to hear anyone on the flight deck even if they are not connected to the intercom, without removing the headset or earpiece.

When compared to the popular Bose A20 model, the ProFlight has a different fundamental architecture, and its headband in-ear design is meant for crewed aircraft that are typically pressurized and less noisy. The A20 has an around-ear design that makes it more suitable for louder aircraft such as non-pressurized single-engine models. According to Bose, the A20 delivers much greater noise reduction compared to the ProFlight, but the ProFlight is significantly smaller and lighter, weighing just 4.9 ounces. The ProFlight is not intended to replace the 12-ounce A20.

The ProFlight headset is powered by two AA batteries that provide more than 45 hours of use without Bluetooth and at least 25 hours with Bluetooth on. The audio prioritization feature allows users to mix Bluetooth audio with intercom audio, or intercom audio can temporarily mute the Bluetooth audio. Aircraft-powered variants of the headset are also available, and optional configurations include twin-plug, five-pin XLR, seven-pin XLR, or six-pin Lemo plug. The downcable and microphone can easily be swapped to either side without tools. More than 30 U.S. design and utility patents support the ProFlight, which is FAA TSO and EASA E/TSO C139A certified.

NBAA bookended by bizav safety forums

NBAA hosted a National Safety Forum on October 11 and 12 at the AFAE and is planning a Single-Pilot Safety Standdown on October 18.

Held from 9 a.m. to 2 p.m. on October 15, the 10th-annual Single-Pilot Safety Standdown provided an interactive learning environment with expert speakers and peer-to-peer discussions focusing on operational safety and risk mitigation. The forum was designed to help expand knowledge and skills of pilots who are involved in single-pilot operations.

Meanwhile, the fourth-annual National Safety Forum will be held from 9 a.m. to 1 p.m. on October 18, the final day of the convention. With a theme of “Safety Begins With You,” the forum will highlight the basics of maintaining skills and understanding automation in aircraft. In addition, it will cover the physiology and psychology that affects human performance, along with the relationship of leadership and professionalism in aviation safety.

“Continuing with our town-hall format, the National Safety Forum will engage with operators on several topics, including airmanship, fitness for duty, and professionalism/safety leadership,” said NBAA Safety Committee Chair David Ryan.

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West Star Aviation is celebrating at NBAA 2018 the official opening last month of the MRO’s fourth full-service facility, at Perryville Regional Airport (PCD) in Perryville, Missouri. Occupying the former Sabreliner Aviation facilities, the site includes four hangars comprising more than 120,000 sq ft of hangar and shop space, including a 28,800-sq-ft paint facility built in 2011 with a downdraft filtration system.

“We’ve been working our tails off trying to get everything ready,” Kyle French, general manager of West Star PCD, said on the eve of the September 19 event.

Prep work for reoccupation began in February. “It took a good solid five weeks to get things cleaned out from what was left behind,” said French. “The place sat empty for a year and a half.”

Nonetheless, the facility was able to induct its first aircraft in the second week of March and has “been continuously improving since then,” said French.

The opening drew a close-knit crowd of community representatives, company leaders, employees, and their families.

“This is a big deal for West Star,” CEO Jim Rankin said in welcoming guests. “We really do feel confident that we’re going to be able to continue to grow and get the types of employees that make West Star what it is today.”

Missouri state representative Rick Francis (R), a Perryville native, gave West Star (Booth 2656; 2219) a warm welcome in return and issued a call for more vocational education in the state. “We need to encourage and make available technical skills education and provide a better path for some of our kids,” Francis said, citing the need for technicians in fields including robotics, welding, and diesel technology. “We don’t need everyone going to a four-year university.”

Roderigo Renaud, West Star president and COO, noted that he began his aviation career at the Perryville Sabreliner facility. “I never imagined any scenario that brought me all the way around to here, but I’m very, very happy,” he said. “Now we have the opportunity to build something back we can all be proud of again, and provide good paying jobs to the community.”

Cleaning Up Well
The hangar bays, covered in years of grime during the latter Sabreliner days, are now a crisp white from floor to ceiling and brightly lit.

PCD, with 28 employees now, currently operates as a workaway facility under the West Alton’s repair station approval and is in the process of acquiring its own certificate and hiring additional personnel. “At one point Sabreliner had 400 people, so we’re able to do some pretty extensive background checks and get to who we want,” French said.

West Star has FAA maintenance authorizations for all major turbine and turboprop OEM’s products. Four GIVs, in for heavy maintenance, were in one hangar. A Falcon 2000 is inbound for stripping and painting and avionics, and two Gogo Avance L4 installations have been completed.

For customers overseeing projects on site, the facility offers private offices with printers, Wi-Fi and “everything you could think,” French said. Perryville boasts good hotels and restaurants and points of interest, and St. Louis is less than an hour away.

The opening represents a homecoming for French, also a Perryville native, who worked the airport in high school and has been at West Star’s headquarters facility in East Alton, Illinois, for the past five years.

“It’s just great to be able to come down here and provide jobs for the economy in town,” French said.

In addition to its East Alton location, West Star has major MRO facilities in Chattanooga, Tennessee; and Grand Junction, Colorado; and provides FBO services in East Alton and Grand Junction. The company also operates five satellite maintenance operations.

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Global Aerospace adds crisis management benefit
by Chad Trautvetter

Aviation insurance underwriter Global Aerospace is now offering enhanced family assistance, including crisis management benefits, to turbine business aircraft hull and liability policyholders in the U.S. Its Enhanced Family Assistance endorsement, to be available beginning January 1, will respond in the event of significant injuries to passengers or crewmembers, as well as provide critical crisis management cost reimbursement.

Under the plan, insurers will pay expenses associated with the emotional care and support of the spouse, child, parent, grandparent, legal guardian, brother, or sister of an injured passenger or crewmember. This includes family member care, counseling, travel to and from the accident site, and recovery of personal effects.

Insurers will also reimburse or pay crisis management expenses incurred for securing a public relations firm and media management services following a crisis event. All payments under the endorsement are made in addition to the policy’s limit of liability.

“We recognize that families need care when their loved ones are injured in an aviation accident,” said Jeff Bruno, president and chief underwriting officer at Global Aerospace (Booth 1438). “This new option gives owners and operators peace of mind that two of their most important assets—their people and their brand—are protected.”

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CAN reprises shorter-format fundraiser

Corporate Angel Network’s (CAN) annual fundraiser, Fund An Angel Cocktail Reception, will be held tomorrow from 6 p.m. to 8 p.m. at the Hilton Orlando. This continues the new format rolled out last year, as organizers shortened the fundraiser’s format to allow guests to network and support CAN before heading to dinner or other parties. Tickets, which cost $150 each, are still available. Last year, the event raised $435,000 for CAN’s mission to transport cancer patients to treatment centers.

“We were thrilled with the success of last year’s new format, where our entire live and silent auction program all occurs within a condensed cocktail reception,” said CAN executive director Gina Russo. “We are anticipating approximately 700 people this year, offering great industry networking opportunities and a lively auction hosted by world-famous auctioneer Spunky Assiter.”

Auction items available this year include a private jet trip to the Super Bowl, a one-week stay in a villa in Mexico, a Textron Stampede all-terrain vehicle, business-class airline tickets, EAA AirVenture VIP experience, a Flight Research pilot upset recognition and recovery course, FlightSafety advanced training courses, and use of a vacation home in Jackson Hole, among others.

Meanwhile, earlier this year fractional provider NetJets expanded its partnership with CAN, which could double the number of flights the charity can secure to transport cancer patients to and from treatment centers. Over the past 21 years, NetJets and its owners have donated hundreds of flight hours to CAN for this purpose. In addition to giving CAN access to ferry flights, NetJets matches owner-flight donations up to 50 hours annually.

“Corporate Angel Network is an extraordinary organization that makes it possible for cancer patients to get the life-saving treatment they need,” said NetJets chairman and CEO Adam Johnson. “It is our privilege to support the incredible efforts of CAN by providing expanded access to flight operations.”

NetJets is coordinating full flight operations information, allowing CAN to quickly secure positioning flights for patient travel. The company has also arranged for lodging providers Marriott, Hyatt, and Hilton, and ground transportation companies Empire CLS and Savoya, to provide free lodging and ground transportation when possible, it added.

CAN has flown more than 56,000 cancer patient flights to date. Last year, the organization arranged 2,633 flights for cancer patients.
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Textron Aviation optimistic for the future
by Matt Thurber

“It’s been a good exciting year,” said Rob Scholl, Textron Aviation senior v-p, sales and marketing, at a pre-NBAA show briefing at company headquarters in Wichita, Kansas. “We’ve seen market conditions improve, and across the product line we’ve enjoyed good activity.”

Since 2013, Textron Aviation has delivered more than 900 jets and 1,100 turboprops and certified 10 new airplanes, backed by an investment of more than one billion dollars in new products, he said. “We really do stand by business aviation and general aviation.”

As of mid-September, Textron Aviation had delivered 136 Citation Latitudes, which have logged more than 15,000 flight hours. “It’s outselling the competition by four to one,” Scholl said. “We couldn’t be more thrilled with how this airplane has been received and how it’s performing.”

The newest and largest Citation, the 3,500-nm Longitude, was close to achieving certification before the start of NBAA-BACE, with deliveries to begin shortly after approval of the new jet’s type certificate. At the Wichita factory, the 20th Longitude was already on the assembly line.

During a recent demonstration tour, the Longitude flew a leg of 3,603 nm with five passengers, from Columbus, Ohio, to Paris, aided by 52-knot tailwinds.

Progress continues on Textron Aviation’s newest designs, the single-engine turboprop Denali and the twin-turboprop utility SkyCourier. Cabin mockups of both airplanes are located at Textron Aviation’s NBAA-BACE static display exhibit at Orlando Executive Airport. The entire Textron Aviation fleet is also on display, including the Longitude with a production interior.

VR Prototyping

During the pre-NBAA BACE visit, journalists took a tour of Textron Aviation’s Industrial Design Studio, where preliminary work is done to refine new airplane designs. One of the first steps in the prototyping process, before any metal is cut, is to develop a virtual reality (VR) version of the design. Engineers, pilots, company managers, and potential customers can put on HTC Vive VR goggles and view a virtual representation of the cabin and flight deck.

With the goggles on, I could see what it looks like to look through the cabin windows outside the virtual SkyCourier. I could sit in the flight deck and reach out to virtually touch controls and buttons with digitally represented hands, which looked like colorful bony virtual appendages when looking through the VR goggles. In this VR version, the user sits in a chair and doesn’t physically move around. There is no haptic feedback for the virtual hands, but it’s still helpful to see which controls can be reached.

“You can start to interact with this thing before it’s ever been built and get a feel for what it looks like,” said Chris Pinkerton, an engineering manager in the design studio. An example of how this helped designers was the pilot’s view of the wings and what it looked like with the ice light shining to check for ice accumulation. “Initially we thought we had a problem,” he said. “It was the prop that was obscuring the visibility to the wingtips. We did a whole study here in the shop with plywood and replicas to confirm that we had the sight lines that were necessary. It’s kind of a fun example of how we can use this tool to identify things we need to work on or things that are working well.”

Another tool in the studio is augmented reality, where people can use Microsoft HoloLens augmented reality (AR) glasses and walk around the outside of a rough mockup of portions of the airplane to see how it looks in true scale.

“You can see through the lens so when you’re looking at the models, you’re bringing them into your space instead of viewing them in a purely digital space,” Pinkerton explained.

The AR tool is useful for human factors evaluations. For example, engineers 3D printed a mock battery that they pretended to install and remove from the SkyCourier to test maintenance procedures. “They get inside the augmented model and practice the routine to see if it was too hard to reach,” he said. “What you’ll get [with the AR tool] is the sense of scale. Since the model is in the room and you’re seeing the context of the room, then you start to understand how tall things are, how wide they are.”

Another way that engineers use the AR tool is to add animations of doors opening and closing, which is a useful way to see how the SkyCourier’s cargo door operates.

Voice commands are incorporated in the tool so engineers can quickly swap from the SkyCourier’s passenger interior and cabin to the freight version, which has no windows or cabin seating.

“We get feedback as to what people like and don’t like and iterate on the design,” said Pinkerton. “We deal with the aesthetic world. Disciplines that are represented are industrial design, mechanical engineering, electrical engineering, aeronautical engineering, and an array of skilled craftsmen that can then take some of the ideas and build replicas and prototypes.”

These early prototypes take further shape in a physical mockup of the cabin, called Aimee, which is phase two of the process in the studio.

Textron Aviation has patented the design of the Aimee mockup tool, which is made of wood and equipped with adjustable clamps that hold vertical wooden stakes on the outside. The stakes move in and out to change the cabin dimensions, so any size cabin can be replicated. Inside this model are fabric “walls” that move along with the setting of the adjustable stakes. The mocked up cabin is also fitted with items that typically fill the space inside a real aircraft, such as representations of seats, divans, consoles, overhead valences, etc. “The point is to iterate as easily as possible,” said Pinkerton, “and make the design better.”

Once the shape is settled on, then engineers turn that into aesthetic designs that can be crafted into a mockup of what the real cabin will look like, and this is what is on display at shows until the actual airplane makes its debut.

Denali Details

Meanwhile, three Denali airframes are well under way in the Wichita factory. The fuselages for the prototype and first flight-test articles are nearly complete, as are flight controls, with wings starting construction in assembly jigs.

Metal building is a key technique, especially for wings, which helps lower the number of potential fuel leakage pathways. Another assembly technique that is well-proven in Citation jet manufacturing is automatic drilling, which saves many man-hours and prevents injury. A crawler-driller from the old Beechcraft factory used on the Hawker 4000 program is employed for this purpose on the Denali program.

Modern assembly techniques, including careful routing of edges where major assemblies are attached together and pin-locating tools, make for extremely precise mating of the cabin to the nose and tailcone and other structures. Many large parts are either monolithically machined from a single aluminum billet, such as the wing spar and main entry door, or chemically milled, such as the titanium firewall, cutting down on hole drilling and the number of fasteners needed.

GE will be flight testing the Denali’s Catalyst 1,240-shp engine on a King Air 350, including the engine’s single-lever power control. All work is on schedule for first flight in early 2019, followed by certification in 2020. The $4.8 million Denali is designed to cruise at 285 knots and it will have a full-fuel payload of 1,100 pounds, giving it a range of 1,600 nm at high-speed cruise with one pilot and four passengers. Avionics is Garmin’s G5000 suite, which includes ADS-B Out, TAWS, and solid-state weather radar.

Modern manufacturing techniques ensure a precise fit between airframe sections, such as the nose and cabin of the Textron Aviation Denali turboprop single now under development.

Hemisphere remains part of Textron’s future

Although Textron Aviation has paused development of its largest-yet Citation—the Hemisphere—due to delays with the jet’s Sncma Silvercrest engines, “The Hemisphere is still a program that we’re very excited about,” said Rob Scholl, Textron Aviation senior v-p, sales and marketing.

In early September, Textron Aviation president and CEO Scott Ernest and Brad Thress, senior vice president of engineering, visited Sncma for an update on the Silvercrest. The engine had suffered problems with its HP axial compressor during flight testing. “We’re working with them to see how their testing’s going,” Scholl said. “We’ll probably know in about 12 to 18 months where they are. But we are still very much committed to the Hemisphere.”

According to Thress, “Next July they’re supposed to run that test with the redesigned compressor and prove that the engine is where it needs to be. So that’s what we’re waiting on. In the meantime we’re working closely with them, and they’re giving us engineering performance data as they gain it [and modeling the performance changes]. We’re staying hand in glove with them as they work through it to make sure that we understand the design limitations on the overall airplane.”

Scholl explained that Textron Aviation is still collecting customer feedback on the Hemisphere design. “We’ve had the mockup over in our advanced design studio and we take customers through it. We’ve gotten their feedback.”

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Rosen launches a line of smart displays

by James Wynbrandt

Rosen Aviation is demonstrating at NBAA 2018 its new RosenView Access family of HD smart displays and new ACC100 plug-in tablet holders. Also showcased at the veteran cabin IFE products provider’s exhibit (Booth 1084) are its sleek and ultra-slim high-def (HD) displays, HD source equipment, cabin controls, and mapping systems.

The new RosenView Access smart displays can host select apps and store media content including movies, audio files, and briefings, and combined with Rosen’s Media Input Panel (MIP), enable passengers to bring on HDM devices or content on USBs, and stream to the smart displays or personal devices. Monitor and cabin functions can be controlled via Rosen’s touchscreen control unit, PEDs, or IR remote.

The new ACC100 line of plug-in tablet holders features 360-degree rotation and a universal mount for left- or right-side positioning, and an adjustable cradle that allows hands-free operation. Designed for customers who already have Rosen plug-in displays, the new holders are drop-ins for existing micro D and pogo pin bases, requiring no interior modification or wiring changes to support the unit’s USB charging feature.

Rosen also offers more than a dozen thin, lightweight personal and bulkhead displays for business aircraft cabins, ranging in size from 9 inches to 55 inches, all with 1080P HD performance. A selection of Slimline bases can serve as mounting receptacles for the personal display screens.

For getting content to the displays, Rosen offers a range of compact and lightweight onboard source and distribution products, including Blu-ray players and its MIP, complemented by video and headphone distribution amplifiers and an audio control jack. In-flight information-wise, the RosenView MX Moving Map combines satellite imagery and a roadway data view for its graphics, has multiple zoom levels, and supports optional video and audio cabin briefings, and multiple languages.

Rosen designs, manufactures, supports, and repairs all its products at its Eugene, Oregon facility, and in addition to its off-the-shelf products, works with clients to develop custom solutions for cabin management and entertainment needs.

Satcom Direct now offers connectivity consulting service

When considering connectivity options for a business aircraft, it’s easy to get overwhelmed by the choices—satcom or air-to-ground network (and, if the former, L-, Ku- or Ka-band, or a combination of these?) and what provider, service plan, and in-aircraft hardware? Operators often have to sift through the marketing hype on their own, with hopes they make the right choice for a likely six-figure investment.

Thus, Satcom Direct (Booth 250, Static SD40) has launched SD Xperience to provide an end-to-end solution to help operators select the best data, airtime, and communications services; hardware; flight operations software; and pricing plans tailored to their usage and need. The global connectivity solutions provider pledged to serve as an “agnostic consultant” under the new service.

“SD Xperience is an integrated suite of services available from a single trusted source,” Satcom Direct COO Chris Moore told AIN. “Satcom Direct is in control of all elements of the end-to-end solution, and customers are empowered to select and choose systems that are appropriate to them. It will simplify procurement and pricing.”

Meanwhile, Satcom Direct is expanding its line-up of satcom service providers, adding Intelsat as a new partner. Under this tie-up, the company is now able to offer Ku-band service from Intelsat with by-the-hour pricing, which it calls FlexExec. “This means operators can pay only for what they use,” noted Moore. An Astronics T310 terminal hardware enabling the Intelsat FlexExec service is expected to receive STC approval in the second quarter of next year.

C.T.
How Not To Buy An Airplane.

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**Date:** Tuesday, October 16  
**Time:** 4-6pm  
**Reservations:** Stop by the Stevens Booth #656 to confirm your spot.
At each NBAA annual gathering, the organization recognizes individuals and groups for their contributions to business aviation and those within the industry. This year is no exception. The following are some of the awards and honors to be handed out for 2018.

**JAY EVANS**
Retiring from NBAA in January

Jay Evans, NBAA’s director of professional development and 23-year veteran of the organization, will retire at the beginning of January. Evans has been involved in NBAA’s educational and training efforts since 1995, including the development of the certified aviation manager (CAM) credential, professional development program, and scholarship offerings. Additionally, Evans launched NBAA’s flight attendant and flight dispatcher committee, which led to the evolution of the flight attendant and flight technicians conferences.

“Every day, Jay brought tireless commitment, unfailing discipline and deep concern for others to his work,” said NBAA president and CEO Ed Bolen. “He is widely regarded as one of the most principled and conscientious colleagues many of us have known. Even as he moves on, his many contributions continue to shape the lives and careers of business aviation’s dynamic workforce.”

After a 22-year career in the U.S. Air Force, Evans left as a lieutenant colonel. He earned his bachelor’s degree from East Carolina University and a master’s from Auburn University in public administration. Evans also holds an ATP certificate and is a CFI with more than 5,000 hours of flight time. His flying career includes flights with more than two dozen Young Eagles aviators.

Evans has served as staff liaison to NBAA’s business aviation management committee and has devoted efforts to developing the schedulers and dispatchers committee. The NBAA scholarship program was expanded from one $5,000 award to more than $100,000 worth of annual awards under his guidance. Evans’ retirement from NBAA will mark an aviation career that spanned 45 years.

“For over two decades, Jay has established and upheld the standard for professionalism in business aviation,” said Bolen. “He has been transformative in our industry, lighting the path of career development and training for a broad range of professional careers in the industry. We thank Jay for his many years of leadership and service.”

**WASP honored with top award at NBAA-BACE**

NBAA is planning to recognize the Women Airforce Service Pilots (WASP) with the Meritorious Service to Aviation Award, one of the association’s highest honors. To be presented tomorrow during the second-day keynote session (10:30 a.m. to 12:30 p.m. at the keynote session area on the exhibit floor), the Meritorious Service award honors “lifelong contributions to aviation.”

Erin Miller will accept the award on behalf of the WASP. Miller played an instrumental role in passage of legislation in 2016 that provided innumerable rights for WASP at Arlington National Cemetery. She made that push after her grandmother, Elaine Harmon, a WASP, passed away.

The WASP, formed to support the Army Air Forces during World War II, traces its roots to 1942. With male pilots in short supply and required for the war, the Army was in dire need of pilots to deliver training aircraft to flight schools, NBAA recounted.

Twenty-eight women pilots volunteered for the ferrying jobs and established the first female squadron in summer 1942. That served as the genesis of the WASP organization, which encompassed two civilian-flying groups that had formed in the volunteer effort: the Women’s Auxiliary Ferrying Squadron and the Women’s Flying Training Detachment, according to the National WASP WWII Museum.

Ultimately, more than 1,100 WASP pilots flew more than 60 million miles and delivered 12,650 airplanes, including every aircraft in the Army’s arsenal. They ferried airplanes, towed gunnery targets, transported equipment and personnel, and flight-tested airplanes returning from maintenance. The women served at more than 120 bases around the country before the program was suspended in December 1944.

But it wasn’t until 1977 that President Jimmy Carter signed a law granting extended military status to WASP members.

NBAA president and CEO Ed Bolen said, “These brave and accomplished women were instrumental to the success of the war effort. The courage and skill of these pilots exemplify the spirit of NBAA’s Meritorious Service to Aviation Award.”

**Pete Agur**
NBAA Doswell Award Winner

NbAA has selected business aviation veteran Pete Agur as this year’s recipient of the John P. “Jack” Doswell Award. To be presented during NBAA’s 2018 Business Aviation Convention & Exhibition, the award honors “lifelong individual achievement on behalf of and in support of the aims, goals, and objectives of business aviation.”

Agur, the chairman and founder of aviation management consultancy The VanAllen Group, has had an aviation career that spans 50 years, beginning as a U.S. Army helicopter pilot and safety officer. Following his service, he spent more than a decade as a marketing manager and sales representative for aircraft manufacturers. His consulting career began in 1985 with Mescon Group. He founded VanAllen in 1993, providing expertise in aircraft acquisition services, leader search and development, operational reviews, peer evaluations, bridge management, and technical solutions.

Along with his consultancy career, Agur has become deeply involved in NBAA activities, as well as a safety advocate. He has served on several NBAA committees, including those now known as the Business Aviation Management Committee and Safety Committee. In addition, he has chaired an NBAA convention local committee, played a role in the launch of the Schedulers and Dispatchers Conference, and founded both the NBAA Leadership Conference, as well as Georgia State University’s Business Aviation Leadership certification program.

Agur further has served as vice chairman of the Flight Safety Foundation’s Corporate Advisory Committee and served as a member of the Society of Aerospace Communicators, as well as the Aviation Speakers Bureau.

“NBAA and the business aviation community are indebted to Pete for his lifelong dedication to the safety and growth of business aviation,” said NBAA president and CEO Ed Bolen. “Through his involvement with many industry safety and performance initiatives, Pete has had a positive and lasting influence on the industry.”

**Gen. Lloyd “Fig” Newton**
Wright Trophy Recipient

Gen. Lloyd “Fig” Newton, the current chairman of the NBAA board of directors who made history as an African American military aviator, was selected as this year’s recipient of the Wright Brothers Memorial Trophy. One of the highest honors in all of aviation, the National Aeronautical Association (NAA) awards the trophy annually to a living American for “significant public service of enduring value to aviation in the U.S.” NAA called the recognition “one of the most important, historic, and visible aerospace awards,” saying it honors innovative inventors, explorers, industrialists, and public servants in aeronautics and astronautics.

Newton, who will receive his award at the annual Aero Club of Washington’s Wright Memorial Dinner on December 14, spent nearly three decades as a military aviator, logging more than 4,000 flying hours, commanding three wings and an air division, and holding numerous senior posts. He flew 269 combat missions in Vietnam and became the first African American to join the U.S. Air Force (USAF) Thunderbirds demonstration team, in 1974.

During his USAF service, he was a congressional liaison officer to the U.S. House and led the Air Education and Training Command that encompassed 13 bases, 45,000 active-duty personnel, and 14,000 civilians. Newton retired from the USAF in 2000 as a four-star general.

On the civilian side, he has served as executive v-p of international military programs and business development for Pratt & Whitney and is on the boards of directors for L3 Technologies, Torchmark Corp., and the National Defense University, in addition to NBAA. Newton is a founding member and strong supporter of Polaris Tech Charter School, a South Carolina institution that will offer six career pathways, including one in aerospace, and further has been a supporter of the Tuskegee Airmen.

In addition to the Wright Trophy, he is a 2018 inductee of the International Air & Space Hall of Fame.

Newton was selected for this year’s Wright Trophy in recognition of “his extraordinary achievements as a history-making, African American military aviator and his continuing contributions to the advancement of aviation education and advocacy,” NAA said.

“Gen. Newton has served his country with great energy, commitment, and distinction,” added NAA president and CEO Greg Principato. “His passion for the promotion of STEM education in the years since his retirement from the Air Force ensures that his legacy of service will endure for a long time to come.”
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VisionSafe tackles airborne smoke, fire
by Matt Thurber

Any kind of fire in an aircraft is extremely dangerous, and VisionSafe offers products that help mitigate smoke and fire issues in both flight decks and cabins. The company pioneered a way for pilots to be able to see through smoke with its Emergency Vision Assurance System (EVAS). And with lithium-ion battery-powered devices proliferating throughout the aircraft, VisionSafe is recommending the Highwater Innovations PlaneGard Lithium Battery Box for containment of a lithium-ion battery fire.

The EVAS looks deceptively simple, consisting of an inflatable bag with see-through windows that allow one of the pilots to view the instrument panel and see through the windshield in a smoke-filled flight deck. The bag inflates, powered by its own set of alkaline batteries, and a fan fills the bag with air and holds it firmly against the instrument panel and windshield. The pilot, wearing an oxygen mask, pushes his or her face against the clear window of the EVAS, which allows a clear view through the smoke-free bag.

How the EVAS works is easier to understand after watching a demonstration at the VisionSafe booth (763), where a dummy cockpit fills with smoke and a “pilot” sits inside and shows how the bag enables a clear view of the instrument panel and windshield. The EVAS is STC’d in a number of business aircraft and airliners and is a factory option on jets such as the Gulfstream G450, G550, and G280 and standard on the G650. The G280 STC was issued last month. All of Dassault’s in-production Falcon jets are approved for the EVAS as well as out-of-production models such as the Falcon 50. More than 5,500 EVAS units have been sold, 60 percent for business aircraft, with 30 percent for airlines and 10 percent for government/military aircraft.

“Recent news and recommendations from the FAA have highlighted the importance for cockpit smoke protection to ensure the safety of pilots and passengers,” said VisionSafe vice president Jonathan Parker. “Since 1992, the FAA has recommended that aircraft are certified to a higher standard for pilot vision protection in smoke.”

Extinguishing Device Fires

VisionSafe took on representation of the PlaneGard system because customers had been asking what to do about fires in the cabin due to growing numbers of lithium-ion battery incidents.

A few weeks before the NBAA show, VisionSafe hosted a demonstration of a lithium-ion battery thermal runway in the parking lot at Signature Flight Support West at Teterboro Airport. Although the demo included containment of the fire using a PlaneGard box, the purpose of the demo was to show flight crew the risk of carrying lithium-ion batteries on aircraft. So many passengers and pilots carry multiple mobile devices on board, and lithium-ion battery chemistry has become the go-to power source for manufacturers that want to deliver a lot of features and capabilities.

For the demo, an old laptop powered by the ubiquitous 18650 lithium-ion battery was set up with wires attached that would slowly heat the batteries to 300 degrees F. Although the laptops contain six of these battery cells, for the demo only two cells were installed.

The laptop was placed behind a Plexiglas barrier, and viewers were encouraged to wear face masks to mitigate toxic fumes emitted by the burning batteries. It took about five minutes for the batteries to heat up enough to burn, and when they did, a jet of flame shot out of the laptop. This happened twice, once for each cell. The flame was at least two feet long.

PlaneGard’s George Brilmyer took the PlaneGard box and held it over the smoking laptop, then opened the box fully and lowered it onto the laptop and pushed the sides together to contain the fiery debris. He wore heat-resistant gloves and a pair of protective goggles, which are included with the PlaneGard box, along with a grabber device that can be used to flip a burning device onto a flat surface where it is in position to be contained with the box.

Once the device was contained, the smoke remained in the box and didn’t leak out. The PlaneGard box includes a port for adding water, which the FAA recommends for putting out lithium-ion battery fires, but Brilmyer said water isn’t necessary because the box fully contains any flames and smoke. The box is lined inside with heat-absorbing tile material.

Once the fire is contained, the flight can continue to its destination, and the PlaneGard box handed over to airport firefighters.

VisionSafe and PlaneGard don’t recommend using insulated bags to contain lithium-ion battery fires because of the risk of leakage of smoke and toxic fumes. During a second demonstration, the burning laptop was placed in one such bag, the type with a hook-and-loop seal. Smoke escaped from the bag during this demo. Of course, there are other bag systems with double containment that includes a sealed zipper, but that type of system wasn’t part of the demonstration.

The companies’ recommendation regarding bags has more to do with the safety of handling a burning device. The FAA has issued a Safety Alert for Operators (SAFO 09-013) that addresses the handling issue, warning that “Transferring a burning appliance into a burn bag may be extremely hazardous.” Until all the cells in a device burn out, there is a possibility of a cell exploding or shooting flames, and this could injure a person trying to pick up the device to put it in a bag.

The SAFO still does recommend water for fighting lithium-ion battery fires: “Fighting a fire that contains either disposable or rechargeable lithium battery cells requires extinguishment of the fire and cooling of the remaining cells to stop the thermal runway. Water is the most effective coolant.”

PlaneGard comes in three sizes, and prices start at $2,500.

Cybersecurity Lunch

Wednesday, October 17 at 12 p.m.

Good data protection practices are essential, both on the ground and during flight, especially the latter since much sensitive information is transferred through satcom systems on business aircraft. The problem is that cybersecurity is an ever-changing landscape, not to mention that flight department personnel are not typically experts in this field.

To help address this knowledge gap, AIN is holding a free event this week to provide attendees with the latest technological advancements in aviation cybersecurity, along with other steps airborne broadband providers are taking to protect data and personal information when traveling on business aircraft. The event will be held tomorrow at 12 p.m. in Room N310E here at the convention center. Attendees will explore why threats are real and how teaming around and misinformation are also an issue. Topics will also include the difference between data protection on the ground and in flight, as well as precautions for more safely using Wi-Fi on an aircraft.

The event will be moderated by AIN editor-in-chief Matt Thurber, and a DJI MavicPro drone will be raffled off to one lucky attendee. Gogo Business Aviation is sponsoring this seminar.

Register at AINonline.com/cybersecurity.
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Competition, refurbishment, and MRO provider Flying Colours lands at NBAA 2018 (Booth 1756) amid significant expansions at its Peterborough, Ontario headquarters and St. Louis, Missouri facilities, which will almost double the Canadian company’s North American footprint to some 320,000 sq ft from the current 180,000 sq ft.

Eric Gillespie, executive v-p of sales and marketing, said, “The latest aircraft models require high-quality interior monuments for completions, while the active preowned market has driven a rise in refurbishment demand. And the frequency of heavy maintenance checks has grown as more models become due.”

Along with its three hangars for maintenance, completions, and refurbishment, the 22,000-sq-ft fourth hangar expansion at Spirit of St. Louis Airport (KSUS) in Chesterfield brings its footprint to almost 100,000 sq ft and adds 70 employees for a total of 180, and the “hiring” sign is out.

Among the projects seen in the hangars during a recent tour, a Falcon 900 was undergoing a heavy maintenance check with all the fairings off, stripped bare inside. Customers often want interior enhancements and/or avionics upgrades performed in conjunction with such maintenance work, but “If a client puts down an airplane for three or four months, they want it all done,” said Kevin Kliethermes, director of sales. “If you couldn’t do the avionics upgrade, you’re not going to get the heavy check [contract].”

A Bombardier specialist, on the completion side Flying Colours often takes on interiors projects on behalf of OEMs for customers with more unusual interiors requests or requirements.

“Typically we will do the things the OEM shies away from,” said Dave Stewart, v-p of operations and general manager in St. Louis. “Oh, the guy wants a shower in it? That’s our niche.”

Flying Colours’s in-house 3D team uses 3D modeling to create and review designs with customers, and for ensuring fit for monuments and other to-be-installed interior components before the aircraft even arrives for a project.

MRO and interiors work goes on 24/7. The manufacturing side of the house runs two shifts per day and a full weekend shift. In the manufacturing building, which began operations in January, the layout of the shops and production flow is based on lean manufacturing techniques and primarily supports designing, building, and finishing woodwork monuments for large-cabin jets.

Its capabilities mirror those in the Peterborough headquarters but have some newly incorporated equipment. In the CNC room, where materials start their transformation into business jet interiors, a new edge-fill machine works in concert with the computer-controlled CNC cuts, removing a time-consuming, tedious, and less precise manual labor step from the process.

Further expansion at SUS is under way. Flying Colours announced in September it will take over a fifth hangar at the airport, set for inauguration in December. Meanwhile, in Peterborough, groundbreaking for the new 100,000-sq-ft fourth hangar is expected in the fourth quarter.

A second 40,000-sq-ft area has been designed for simultaneous heavy maintenance and/or interiors work on up to four Global 6000-size aircraft.

Third, two higher levels will be used for new customer offices, a second dedicated design center, and general office and storage space, with total space of more than 20,000 sq ft. Flying Colours expects the Peterborough hangar to open in mid-2019.

Flying Colours is also expanding its third facility, in Singapore, which provides refurbishment services and is co-located in the Bombardier Singapore Service Centre at Seletar Airport.
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JetNet to unveil new products and capabilities at NBAA-BACE

Industry data provider JetNet (Booth 4449) will celebrate its 30th anniversary here at NBAA’s annual convention, where the company will be demonstrating some new products and capabilities. Utica, New York-based JetNet will now feature the Asset Insight’s eValues aircraft valuation system, which will provide market-to-market and projected residual value information that will appear within the JetNet Values feature for aircraft sales market intelligence. This will give it the same methods, techniques, and processes an aircraft appraiser would use to electronically calculate current market values and estimated residual values, according to Asset Insight president and CEO Anthony Kioussas.

JetNet has also improved its flight-activity and route-analysis reporting capabilities to allow its customers to compare and contrast utilization across airports, fleets, operators and individual aircraft. “Our clients require powerful tools that reduce the time on task to sift through huge data sets to find and easily extract the key flight data and contact information to make that report actionable,” said Jason Lorraine, advanced technical support and sales with JetNet.

Keeping pace with mandatory maintenance and airworthiness requirements, the company’s aircraft profiles now include contact information for the continued airworthiness management organizations (CAMO) that are responsible for each aircraft’s maintenance tasks, to ensure it complies with EASA requirements.

Today at the Orlando show, JetNet will once again present its annual state of the market briefing.

APG’s Genesis app adds flight planning

APG tested Genesis extensively with pilots and users, with seven rounds of focus group testing and beta testing by operators. “We wanted to get the visuals and workflow right,” Caflisch said. “And we wanted to have full-featured robust flight planning capability to work seamlessly with runway analysis and weight-and-balance calculations, including offline.”

Genesis will eventually replace iPreFlight, he said. While Genesis was designed to be platform-independent, it will be offered only as an iOS app. Eventually, it could be ported to Android and Windows devices. Genesis is priced per aircraft, and all three modules are included in the cost, as well as domestic and international flight planning. There is no extra charge for flight plan filing.

“For us [Genesis] is a new beginning,” Caflisch said. “It’s the next generation of where we’re going as a company, just a natural next step.”

Three alternate airports with weather reporting are selected automatically, based on airports at which the selected aircraft is able to land safely.

APG’s Genesis app adds flight planning

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APG’s Genesis app adds flight planning

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JSSI growth continues with S3 Aero Specialists addition

by Mark Huber

Jet Support Services, Inc. (JSSI, Booth 1134) is continuing to grow organically and via strategic acquisitions. On Tuesday, it announced that it acquired the assets of S3 Aero Specialists, a provider of business aviation consulting services, including appraisals, safety compliance, asset management, and technical oversight. Richard Thompson, principal of S3 Aero Specialists, has been named director of JSSI Advisory Services and will be responsible for business development.

Thompson has held a range of positions during his 25-year career in the aviation industry, including A&P technician, completion manager, service center manager, director of maintenance, consultant, and qualified appraiser and auditor. He holds a senior appraiser accreditation from the American Society of Appraisers (ASA) and is Uniform Standards of Professional Appraisal Practice (USPAP) compliant as a senior appraiser. Thompson is also an accredited auditor for the International Business Aviation Council’s (IBAC’s) operations and aircraft handling safety standard programs: IS-BAO and IS-BAH, respectively.

Decades of Hourly Cost Data

Separately, recently acquired JSSI unit Conklin & de Decker has launched a cloud-based mobile app that gives subscribers instant access to its aircraft comparison data, including the Conklin & de Decker Report, and intuitive access to the mobile app with limited features or they can subscribe via the Conklin & de Decker website for full access. Existing subscribers can sign in immediately to view comprehensive performance and cost data on the go, as well as the option to download and share a detailed Conklin & de Decker Report.

Combining Conklin & de Decker with JSSI gives the combined company a better opportunity to monetize its data and provide business aviation with more transparency, said Book. “We have 30 years of hourly cost data on 2,000 aircraft as a result of being in that business. I think the [business aviation] industry is craving access to that data.”

Monetizing and adding value to its data and moving heavier into the appraisal sector are just two of the ways JSSI is continuing to vertically integrate, Book said, noting that its JSSI Parts business, initially begun as a customer convenience, has grown 75 percent annually over the last three years, expanded into the general marketplace, and now includes engine and APU rentals and whole aircraft purchases for teardown, including, recently, a Gulfstream V.

Conklin & de Decker’s new app allows instant access to aircraft comparison data.

News Clips

Baldwin Aviation now can quantify your SMS results

Addressing the growing role of safety management system (SMS) in aviation, Baldwin Aviation (Booth 2653) has combined a series of algorithms to develop its Safety Monitor product. One of the complications of instituting an effective aviation SMS is accurately measuring its effectiveness. Multiple audits of the same operation often result in differing opinions.

Safety Monitor provides quantifiable measures of each of the four components of an SMS: safety policy; risk management; safety assurance; and promotion. Baldwin measures each component every month, tracks them, and documents the results. The goal is a definitive report that customers, auditors, and the operator can use to assess and quantify overall safety performance. The Safety Monitor is part of Baldwin’s overall performance monitoring program, used to assess SMS conformity. According to the company, its program differs from others in that it provides ongoing documentation, compared with competitors’ “snapshot” views.

Founded in 2004, Baldwin’s mission is to support SMS programs for commercial/noncommercial programs, medical transport, defense, airports, FBOs, OEMs, UASs, and ground vehicles. Baldwin’s technology provides “customized, real-time safety systems with 24/7 support,” according to the company.

Sherwin-Williams’ new color-changing cabin coatings

Sherwin-Williams Aerospace has added a new two-stage Radiance coat to its JetFlex Elite aircraft cabin coatings system. The new coating features a color-changing mica appearance that creates a softer, richer, and more sophisticated atmosphere in the cabin, according to the Kansas-based company (Booth 4863).

JetFlex Elite is designed for use in commercial and private aircraft interiors and easily applies to plastic, metal, and composite surfaces, and now features improved appearance and application features. Based on Boeing qualified technology (BMS-1083), it meets the most stringent requirements for stain and abrasion resistance. The line also offers options as a single-stage product for colors or a two-stage radiance coat system for whites and light colors.

The color tones have been inspired and derived from the company’s most popular interior design and architectural color lines. Sherwin-Williams’ new Interior Topcoat Selector and Fan Deck Set were showcased at NBAA include 40 single stage JetFlex Elite colors and 30 different two-stage radiance coat options, “just a sampling of the various color options available to paint aircraft seats, bins, galleys, lavatories, and trays,” according to the company. Responsive to LED lighting, the coatings create a subtle glow with highlights and colored shadows not seen with current interior cabin coatings, Sherwin-Williams said.

Lynn Thomas to lead Raisbeck Engineering

Acorn Growth Companies named Lynn Thomas president of Raisbeck Engineering (Booth 1616), a portfolio business of Acorn that is based in Seattle, Washington. Thomas previously served as vice president of sales and marketing for Raisbeck after joining the company in April 2017. Before his aviation career, Thomas worked as an investment advisor for Everen Securities and PaineWebber. Thomas then held leadership roles at Banyan Air Service, Quest Aircraft, and Aviat Aircraft. He also holds a commercial certificate with instrument ratings for land and sea, with more than 6,500 hours of flight time.

“Since Lynn joined Raisbeck Engineering in the spring of last year as our vice president of sales and marketing, he has transformed our sales organization, achieving consistent growth,” said Rick Nagel, managing partner of Acorn Growth Companies. “As a pilot, his passion for the business and 35 years of business experience will have a continued, positive impact on the growth and profitability of Raisbeck Engineering.”

Raisbeck develops, markets, and manufactures performance improvement systems for commercial and general aviation aircraft, including Beechcraft King Airs and Learjets, and aftermarket products. “It is a true honor to lead the most talented team of men and women in the aviation industry,” said Thomas. “The opportunity to build on the legacy that James Raisbeck began and maintain our position as the innovative leader in aviation performance and comfort solutions for business and commercial aircraft is truly the highlight of my career.”

FAA grants Aero Armor PMA

Skandia has received FAA parts manufacturing approval (PMA) for its line of aircraft exterior erosion protection products sold under the Aero Armor brand. The approval signifies the paint protection films are manufactured to quality standards equal to the OEMs, making these the only such PMA-status exterior protection products, according to Illinois-based Skandia (Booth 5027). The products are designed to protect aircraft surfaces from contamination and erosion that impede airframe weather radar performance, exterior antennas and other electronic equipment, and degraded paint on leading edge surfaces from bugs and other debris.

The Aero Armor Radome and Antennae line products are offered in pre-formed condition and available for most aircraft nose or radome surfaces, and the PMA approval defines a clear path to return the aircraft to service. Aero Armor Edge Tape, offered in a variety of widths, can be applied to aircraft leading-edge surfaces—including wheel pants, struts, wings, and tails—and will never discolor or fade.

Aero Armor is sold directly by Skandia to original equipment manufacturers, MROs, and paint completion centers, but will soon be available to purchase online through the company’s website.
Rockwell Collins extending Fusion suite to CJ1+, CJ2+

by Kerry Lynch

Rockwell Collins (Booth 228) is continuing to expand its Pro Line Fusion flight deck aftermarket applications with plans to certify the avionics suite next on the Cessna Citation CJ1+ and CJ2+.

Based on a similar platform certified in 2017 on the CJ3, the Fusion suite will replace Pro Line 21 avionics with three 14.1-inch wide-format displays and advanced NextGen capabilities such as WAAS-LPV, said Craig Peterson, senior director of marketing for commercial solutions at Rockwell Collins, adding this will bring the aircraft into compliance with airspace modernization mandates.

The touchscreen displays include interactive maps with high-resolution topography, weather, and obstacles, along with georeferenced electronic charts displaying own-aircraft position. Rockwell Collins’ ChartLink is further added to the package. In addition, the new suite will offer high-resolution synthetic vision, including Rockwell Collins’ airport dome feature and extended runway centerlines. The suite is designed for “future proofing” to accommodate new technologies, he added.

Working with Textron Aviation, Rockwell Collins plans to have the option available on the market in 2019—before the U.S. ADS-B mandate takes effect. But recognizing that this might be later in the year, Peterson said Rockwell Collins will work with customers to devise packages that reflect the costs operators might have already put into upgrading their aircraft to meet the Jan. 1, 2020 mandate.

Rockwell Collins has discussed the option with operators and the Citation Jet Pilots organization, Peterson said, adding the response has been positive and noting a potential market of 328 CJ1+ and CJ2+ jets in service.

The CJ1+ and CJ2+ programs will benefit from the certification work that Rockwell Collins has already completed on the CJ3. Peterson said, adding that is a big part of the risk reduction on the program. “There is a tremendous amount of architectural similarity and commonality,” he said. Currently, the upgrade has been installed on 30 CJ3s, with another 10 in line.

“The CJ3 Fusion upgrade has been very popular and we’ve received considerable feedback from CJ1+ and CJ2+ operators that they are eagerly waiting their turn,” said Christophe Blanc, vice president and general manager of business and regional programs on a range of aircraft, from Beechjet 400 series. The company received FAA supplemental type certificate (STC) for its replacement glass with two stretched acrylic layers, which are designed to resist hazing and leaking, which can degrade visibility in precipitation.

“It incorporates a weather seal with pre-molded pressure seals on the edge attachment, eliminating the need for additional sealant, according to the company. That seal, combined with PPG’s interlayer, better resist hazing and leaking, which can degrade the interlayer. At NBAA’s annual convention, attendees can see the windshield on display at the PPG booth (3005).
Falcon 6X nacelles deal is part of UTAS’s expansion strategy

by Kerry Lynch

Dassault Aviation’s selection of UTC Aerospace Systems (UTAS, Booth 633) to provide the nacelles for the Dassault Falcon 6X marked the first step in a multi-faceted strategic expansion for UTAS’s Aerostructures business that includes the return to the business aviation market and an extended reach of its repair capabilities.

The French aircraft manufacturer earlier this year selected the UTAS Aerostructures group to design and produce an integrated nacelle system that includes the inlet, fan cowls, thrust reverser, and engine build-up system for the Pratt & Whitney Canada PW812 engines that will power the 6X.

While that selection recognized UTAS’s decades of experience in the nacelle business, it involved the first business aviation platform for the San Diego-based group since the late 1990s. Over the past few decades, the Aerostructures unit had turned its attention to the commercial aviation sector, a move that proved successful as the group certified 16 different nacelle systems and developed more than 300 active patents, said Dave Foos, vice president of business development for UTAS.

“We have spent the last 15 years focused on large commercial aircraft,” he noted, adding, that over that time, “We also added a lot of industrial capacity.” This includes more than 4.5 million sq ft of industrial space and another million square feet of MRO capacity.

With this capacity, UTAS executives began looking at possibilities for potential expansion, including the business jet market, Foos said, calling the Falcon 6X announcement “the start of it.”

The timing was right for a strategic return to business jets, added Gary Reynolds, vice president of regional and engine systems for UTAS. “We’ve been focused on where and when we would enter the business jet market for quite a few years now.”

On the commercial side, Reynolds added, the big surge is in ramp up of existing programs. “There likely is not going to be another commercial platform launch for quite some time,” he said. “This was a very opportune time to focus our energy and grow the business in that business jet market space.”

The partnership with Dassault is progressing with the initial phase of preliminary design of the nacelle program completed and now moving into detailed design. Plans call for the delivery of the initial nacelles for flight test vehicles next year.

Although noting UTAS was well established in the nacelle business, Reynolds added, “Now we have credibility in the business jet market space with the 6X under our belt.”

But for UTAS Aerostructures, this was only the first of what it hopes to be a number of opportunities, he said. “We stepped into this market to have more than one nacelle program.”

The business aviation expansion extends to its repair capabilities as well. UTAS was selected by business jet and VIP completions specialist AMAC Aerospace to provide nacelle maintenance. Under the five-year agreement, UTAS will provide nacelle and engine build-up services, along with lease and exchange.

“This agreement will enable us to leverage our global MRO network and commercial aircraft experience for the business jet and VIP aircraft segment,” said Aerostructures president Marc Duvall, adding the agreement partners the group with a premier provider of business jet and VIP completion services.

Rolls-Royce adds nacelles to ‘enhanced’ CorporateCare coverage

Rolls-Royce (Booth 3800) is rolling out an enhanced version of its CorporateCare fixed-cost maintenance program that provides a more comprehensive approach to powerplant system coverage, including nacelles for the first time. Announced at NBAA 2018 on Monday, the CorporateCare Enhanced package will become the standard offering for new engine customers, as well as an upgrade option for existing CorporateCare clients beginning in January.

The new package provides an “all-inclusive solution” that takes services to the next level, said Andy Robinson, Rolls-Royce senior v-p of services for business aviation. Nacelle coverage—encompassing cowls, thrust reverser units, and engine build-up will include maintenance, Service Bulletin support, corrosion, and other standard inspection checks.

This will be offered on the engines where Rolls-Royce has the direct procurement relationship with the nacelle provider, including for the BR750 (for the Gulfstream G650), the BR710 (G500/550 and Bombardier Global 5000/6000), and the new Pearl 15 (Global 5500/6500).

Nacelles traditionally haven’t been included under engine maintenance programs, falling into coverage area gap between the engine and airframe, Robinson said. And, customers in past haven’t thought about nacelle coverage because unlike engines, which come with specific maintenance requirements, they do not have fixed maintenance intervals, he added.

“There’s no prescribed time on wing... [when] it will have to be repaired or removed,” agreed Alan Mangels, vice president of sales and marketing of business aviation for Rolls-Royce. “But when it does happen, it’s a big source of headache and financial burden.” This is particularly true when issues with thrust reversers crop up or corrosion is found, he added, estimating a catalog price for an entire nacelle could top $5 million.

This coverage does not extend to nacelles where the airframe has the direct relationship with the nacelle providers, including for the Tay 611 and AE 3007. However, Rolls-Royce is offering other enhanced support such as troubleshooting labor, Mangels said. Other expanded coverage areas include engine oil and labor associated with oil changes, access to documentation, and AOG on-wing services, the latter including mobile repair team travel. Rolls-Royce has built up a team of more than 50 on-wing mechanics globally.

This expanded coverage comes with a philosophy that if Rolls-Royce provides it, the company will cover it, he added. “We want to be seen as the holistic provider.”

—K.L.

NBBAs Hurricane relief options

NBAA is reminding members how to access related resources and assist with Hurricane Michael relief efforts in Florida, Georgia, North Carolina, and Virginia.

The NBAA’s Air Traffic Services team at the FAA ATC System Command Center provides regular updates on the status of airspace restrictions and airport closures in areas impacted by Michael; however, operators should check all applicable Notams as airport conditions are changing rapidly and also call ahead to confirm the availability of services regardless of airport status.

Operators can register with the NBAA’s HERO (Humanitarian Emergency Response Operator) database. HERO collects information about aircraft and individuals that can be shared with relief organizations and government agencies in the wake of natural disasters, but does not commit registrants to accept mission requests. NBAA asks that those who registered with HERO before August 2017 do so again to ensure the database has the most updated information. HERO registrants who participate in relief efforts are asked to share mission details with NBAA via email to Dan Hubbard at dhubbard@nbaa.org.

At least one exhibitor has already flown Hurricane Michael relief missions. Quest Aircraft reported that it diverted a Kodiak Series II turboprop to Tallahassee en route from its base at Sandpoint, Idaho, to Orlando to deliver bottled water, dog food, and blankets; transport Red Cross workers from Tallahassee to Panama City; and fly local and state officials on aerial damage surveys.

—M.H.
Signature adds new services and partners by Curt Epstein

Signature Flight Support has formed a partnership with international real estate development and asset management brand Nexus Luxury Collection to develop a series of private Nexus Sky Lounges in its FBOs that are situated in major cities. The first is to debut at Teterboro Airport in New Jersey in June. That flagship location will occupy the upper level of the terminal and feature a gym with locker rooms, golf simulator, grab-and-go food and beverages, a Dylan’s Candy Bar, meeting room, children’s area, and concierge services.

“This partnership between Signature Flight Support and Nexus will bring an unprecedented offering to our current and future Signature customers,” said Mark Johnstone, CEO of the FBO chain, as well as chief executive of parent company BBA Aviation. “Our goal of providing world-class service globally will only be enhanced with the addition of Nexus Sky Lounge and the benefits we’re able to extend to those who travel with Signature.”

In addition, Signature’s TechniAir maintenance division has introduced mobile service operations across the U.S. The five new units are based at the company’s Teterboro, Dallas Love Field, Scottsdale Airport, North Carolina Piedmont Triad International Airport, and Kansas City Wheeler Downtown Airport locations. Those locations join the three existing operations in the UK, at London Luton, London Biggin Hill, and Bourneemouth Airports.

The new aircraft service vehicles are outfitted with new tooling and staffed by crews with an average of 25 years of experience, which will provide AOG, on-call, and light scheduled maintenance. The company has introduced a new, dedicated AOG hotline for 24/7/365 live access for troubleshooting, and estimates of cost and timeline. “We are excited to introduce this highly valued service to our customers and to our greater family of operators frequenting Signature Flight Support locations,” said Dean Obr, TechniAir’s vice president of operations.

Signature also announced it has signed a nationwide, full-service flight-support agreement with ATP Flight School, the largest training provider in the U.S. Under the agreement, Signature will be the preferred provider of avgas and piston aircraft ground support for ATP’s fleet of more than 330 aircraft, when they are used for instructor-led training or during student solo flights.

Overseas, Signature was recently named as the handling agent/FBO of the year by the Baltic Air Charter Association (BACA), and it noted that the nighttime flight ban restriction at London Luton Airport, where it operates a facility, was removed at the beginning of October, improving access for its customers departing in the late evening or arriving in the early morning hours.

Evie Freeman, Signature’s managing director for EMEA, stated the company was honored by the BACA award. “We see this as recognition for the hard work, innovation, and especially safety that Signature Flight Support provides for its customers,” she said.

The company is also pleased to have the night-time ban lifted at London Luton, Freeman noted, adding, “This development has dramatically increased access to the London-area for our customers, especially those traveling to or from the Americas.” Also in London, Signature’s Biggin Hill FBO is its latest European location to achieve IS-BAH registration, joining Luton and Nice, while Dublin and Shannon are currently in the process.

Finally, the company (Booth 1600) and the Aviation Community Foundation (ACF) announced their continued support for Universal Elite Aerospace—a non-profit aviation education organization that aims to provide positive options for urban youth, women, and veterans in the Houston area—this week at NBAA 2018. In cooperation with ACF, Signature has supported educational outreach programs that have reached more than 35,000 students over the past year.

Piper’s continuing sales growth creates need to attract and train new employees

Piper Aircraft (Booth 2609, Static SD22) is touting its best quarter and year-to-date performance in 10 years. The Vero Beach, Florida-based single- and twin-engine aircraft manufacturer delivered 65 aircraft worth $69.5 million in the third quarter, representing a 54 percent increase (22 additional units) from the same period in 2017. Third-quarter revenue soared 43 percent to nearly $21 million, making the 2018 third quarter Piper’s largest volume delivered in a single quarter since 2008. Through the first nine months, Piper has delivered 152 aircraft, which is 53 units more than those delivered during the same period last year. According to the company, the growth is being led by the single-engine Archer TX trainer, with 60 percent more units delivered year-over-year, as well as the M-Class product line, which boasts a 42 percent increase, with 51 units delivered year-to-date.

The company’s continued growth has expeditied a need for “well-trained, high potential employees,” said Piper president and CEO Simon Caldecott. To that end, the manufacturer has launched an accredited apprentice program in cooperation with Indian River State College for local high school graduates. The two-year program will begin next year with 10 individuals and grow to 20 by year two. The program will include a salary and full benefits, as well as on-the-job training, mentoring, and support, for chosen apprentices.

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PILOT REPORT

Gulfstream engineers have designed an airplane that pilots are going to love

by Matt Thurber

The recently certified G500 represents a leap forward in flight deck and flight control interface design, a bold move for a manufacturer as conservative as Gulfstream yet also a logical progression in business jet design. The G500 is a delight to fly, a significant step up in handling compared to the non-fly-by-wire (FBW) designs (G550 and below). And the many touchscreens that run the avionics and systems feel as natural as wings on airplanes.

The new cabin measures 91 inches wide and 74 inches high, while the G550 is 84 and 72 inches and the G650 is 98 and 75 inches. Range at Mach 0.90 with eight passengers and three crew is 4,400 nm in the G500 and 5,100 nm in the G600. Throttle back to Mach 0.85 and range climbs to 5,200 and 6,500, respectively. Those numbers, incidentally, are higher than originally projected: the G500’s range grew by 600 nm at Mach 0.90 and 200 nm at Mach 0.85. The G600’s range climbed 300 nm at both speeds.

SYMMETRY FLIGHT DECK

While the cabin features the latest in Gulfstream interior design and manufacturing, what sets the G500/G600 apart from other Gulfstreams, even the G650, is the Symmetry flight deck. There is much more to it than just replacing the G650’s yoke controls and traditional avionics with active-control sidesticks (ACS) and touchscreens, and engineers spent an enormous amount of time on human factors design and testing. The sidesticks (also known as active inceptor systems) are electronically interconnected and move in concert, and they are designed by BAE Systems and also the first commercial application of ACS.

From a systems perspective, the big change with Symmetry is a newly added data-concentrator network (DCN), which forms the backbone of the new jets’ electronic network. The DCN connects all systems, and any data from those systems can easily be shared, published on synoptics displays, used for systems controls, and support health and trend monitoring. More than 15,000 parameters are monitored, and data is distributed via 14 routers installed throughout the airframe, connected via Ethernet cable. If there is a failure anywhere in the DCN, the data is still available because it is published to multiple routers. Adding new features to the G500 and G600 will be far simpler, because they can be plugged into the DCN instead of adding new wiring. The big advantage of the DCN is that it eliminates 200 to 300 pounds of components and wiring and makes new space available for cabin furnishings.

The most dramatic change in the flight deck is the proliferation of touchscreen controls. There are 11 touchscreens, although the number most often mentioned is 10 because one of them, the security system interface, is not something pilots would usually use during flight.

It’s normal for pilots, especially those who haven’t flown any aircraft with touchscreens, to question their utility, especially in turbulence. But there are other considerations that make touchscreens so sensible in modern aircraft, and in any case, flying through turbulence doesn’t take up a large percentage of flying time. Scott Evans, now Gulfstream director of demonstration and corporate flight operations, and previously a project pilot on the G500/G600 program, spent hours testing touchscreens while driving in a van on bumpy roads and airborne in turbulence to make sure the controllers were ergonomically as good as they could be in a variety of conditions. Bevels or plinths around each of the touchscreens allow the pilot to maintain a firm grip while actuating the touch features.

The Gulfstream touchscreens are resistive, which requires more finger pressure (at least 100 grams or three ounces) than typical consumer tablets or phones that have capacitive touchscreens, and this helps avoid inadvertent moves. Actuation of the selected element occurs when the pilot lifts a finger off the screen. Other gestures are available too, including swipes for quick access to various pages, pinch-to-zoom, etc.

It should be noted that the Honeywell Epic-based displays in the G500/G600’s Symmetry flight deck will be abundantly familiar to Gulfstream pilots. They are not touchscreens, although Honeywell has designed fully touchscreen Epic displays that have yet to be selected by an OEM. For a pilot familiar with the G450/G550, the cursor control device-based user interface remains exactly the same. The difference with the G500 is that the CCDs live in the center pedestal instead of on the outboard ledge, a vast improvement in my opinion as the CCD’s stalks in the G450/G550 take up a lot of valuable space.

There are four touchscreen controllers in the forward flight deck, one each outboard, and in the pedestal, two that replace the FMS multifunction control and display units (MCDUs). The jumpseat has a dedicated touchscreen controller, which is also available for maintenance technicians. The banks of mechanical circuit breakers are almost gone now, with 45 percent replaced by electronic circuit breakers.

The overhead panel is wonderfully clean, with three identical Esterline Korry touchscreen replacing what seems like the gazillion overhead switchlights, knobs, and buttons on the G450/G550.

With just one switch on the center pedestal—the flight control reset switch—engineers were able to make it skinnier and add two cupholders on the rear. As continues on page 46
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The horizontal stabilizer is a trimmable surface, and there are no elevator trim tabs. During the functional check of the trim system, after the zero fuel weight center of gravity is input in the avionics, the stabilizer is automatically tested through its full range of travel then set to the correct takeoff setting.

The baggage compartment volume is 175 cu ft and it is accessible in flight up to 40,000 feet, although that is an FAA limitation and not an EASA limitation. Gulfstream is working with the FAA on eliminating that restriction.

The G500’s Pratt & Whitney Canada PurePower PW814GA engines each produce takeoff thrust of 15,144 pounds and they match the 90-inch fan diameter found on the G650’s Rolls-Royce engines. The PW814GA fan is a one-piece blisk, and the engine’s bypass ratio is 5.95 to 1. Its Talon X combustor helps the PW800 series deliver double-digit improvements over CAEP 8 emissions standards, and it also offers a double-digit noise margin compared to ICAO Stage 4 limits.

PREPPING FOR FLIGHT

The G600 was relatively light, loaded with 12,000 pounds of fuel for our flight, which was scheduled for 1.5 hours. Takeoff weight was 59,863 pounds, well below the 79,600 mtow. The avionics calculated V1 at 116, Vr 118, V2 132, and Vref in case of immediate return at 126 knots.

Without the limitations of a traditional FMS and its multiple deep-pages interface, the Symmetry design allowed engineers to get creative in how pilots interact with the avionics. For example, pilots start on the touchscreen in FMS mode, which mimics the traditional FMS inputs, although in a much simpler and more intuitive interface. Tabs along the top of the touchscreen make available just what is needed, such as FMS init, flight plan, perf init, perf takeoff, landing.

In the perf takeoff tab, not only does the touchscreen show the runway required (3,828 feet) versus available runway (7,002 feet), but it does so with a little runway diagram with color bands highlighting the required amount of pavement, making it easy to determine if there is enough runway or if it is going to be marginal. Green bands are good. Other information on this screen includes V speeds, takeoff weight, power setting, and accelerate stop/go distances.

Once all the planning is done, switch-to-phase-of-flight mode brings up tabs for each phase of flight, including start up, taxi, takeoff, en route, and arrival.

The takeoff tab, for example, includes V speeds (which remain yellow until the aircraft is properly configured), autobrake control, obstacle and runway information, flight plan departure and destination, and most handy, transponder setting and code and TCAS TA/RA switch. Being able to look down at the touchscreen to see all the information needed for the phase of flight—and that the checklist wants you to verify—makes so much more sense compared to earlier flight deck designs.

More looking at three or four different displays or FMS MCDUs; the information is consolidated on the touchscreen controller.

There is much more to the Symmetry interface, and learning it will not take pilots long as it is simple to understand and logically laid out.

The flight guidance panel, itself, is a vast improvement on earlier Gulfstreams’, with a logical layout clearly marking and separating speed, lateral, autopilot, vertical, and altitude controls. Another pilot-friendly feature is that button lights are separate from the button, so a pilot can make a selection and instantly see the light switch on or off without having to lift a finger off the button to verify what the light is doing.

Before getting under way, it’s important for pilots to set up the armrest behind each sidestick. The armrest tilts fore and aft and can be moved up and down. The vertical adjustment is numbered, so pilots can remember their sidestick number for quick adjustments when switching seats or airplanes.

The nosewheel steering system switch (a physical guarded switch) and the pedal steering switchlight and tiller are in the normal position on the left side, aft of the sidestick. But unique to the G500 is rudder pedal steering authority up to 40 degrees when below 13 knots, making the tiller necessary only in tight spaces. I never had to steer with the tiller during the flight, and steering with the pedals is far smoother and helped me avoid the sudden jerky movements that I sometimes cause when tiller steering a long airplane.

GETTING GOING

Taxiing the G500 is so much more pleasant with the pedal steering, and there is a new feature that Gulfstream is the first to implement in a new jet, Honeywell’s 3D Airport
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The G500 retains the T-tail and clean-wing layout of previous models and incorporates the trailing link landing gear of the G650.

Now that the G500 is FAA and EASA certified, Gulfstream also gained approval for EVS-to-land operations with EVS III, which means that properly trained pilots with a letter of authorization can fly an approach then touch down and roll out solely by reference to the HUD, with visibility as low as 1,000 feet RVR.

The thunderstorms were splashing a multicolored picture on the RDR-4000 radar overlay on the moving map as we descended toward Savannah. As soon as we descended below RVSM airspace, I switched off the autopilot to get some more hands-on time, which didn’t surprise Dickerson and Evans at all.

At the time that I flew the G500, it was not yet certified, and there was a strict limitation to avoid any lightning strikes, so we had to give the storms a wide berth. ATC vectored us all over the Georgia skies while we tried to find a relatively clear path to the airport.

We finally ended up flying offshore to the east and then flew back for an RNAV approach to Runway 28 at Savannah while the bulk of the storms roiled to the north. This is a situation where having autothrottles is a real benefit, with constantly changing altitudes it was easy to keep my head outside the flight deck and focus on flying the airplane while the autothrottles automatically adjusted power to maintain the airspeed set on the guidance panel.

Flying the G500 around multiple heading and altitude changes was simply a pleasure; the stick responded instantly to my every nudge, and it felt comfortable using just finger pressure to fly this responsive jet. The level of precision available with FBW flight controls is unsurpassed, and Gulfstream engineers have managed to design an airplane that pilots will love and that maximizes comfort for passengers.

Dickerson briefed me that the landing, in typical Gulfstream fashion, requires care to avoid trying to flare and finesse the touchdown. That big flat wing and the massive flaps will cause a fat ballon of lift if the pilot pitches too high before touchdown. He recommends flying right down to the runway and at 20 feet lifting the nose just a degree, then letting it fly right onto the runway.

We daked to an extra few knots on the Vapp for the gusty wind, so it was set at about 124 kias.

Visibility was fine as we trundled down the glidepath, and flying with the HUD helped me nail the approach.

As we cleared the fence and dipped down to the runway, I focused on keeping the nose down and resisted the urge to put a little back pressure on the sidestick. The G500 responded perfectly when Dickerson agreed that we were low enough, and I gave the stick a tiny pull, then the main wheels touched smoothly, followed by the fuselage dropping gently onto the nosewheel. A touch of reverse thrust as the autobrakes caught hold—we had set them to medium—and the G500 quickly slowed to taxi speed.

With full weight on wheels and below 60 knots, the synthetic vision automatically reverts to the exocentric 3D Airport Moving Map, a handy feature that pilots will appreciate, especially at an unfamiliar airport. I taxied back to the Gulfstream ramp—no tiller needed—and we shut down.

Gulfstream’s newest jets, the G500 and G600, are arguably among the most advanced business jets ever developed. After two hours flying the G500 (a little longer than planned thanks to the thunderstorms), I have no doubt that pilots, especially those with Gulfstream experience, will instantly feel comfortably at home in these airplanes. They may even feel that the initial training time is too long, because once they get used to the FBW sidesticks and the touchscreen interface, other than a big step up in performance, there is little new to learn.

The G500, with certification now in hand, entered service on September 28, and the G600 is expected to achieve certification by the end of 2018.
It’s easy to see which Falcon owners have long-range plans.

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See us at NBAA BACE Booth 800
Rosen launches a new line of smart screens

by James Wynbrandt

Rosen Aviation is demonstrating at NBAA 2018 its new RosenView Access family of HD smart displays and new ACC100 plug-in tablet holders. Also showcased at the veteran cabin IFE products provider’s exhibit (Booth 1084) are its sleek and ultra-slim high-def (HD) displays, HD source equipment, cabin controls, and mapping systems. The new RosenView Access smart displays can host select apps and store media content including movies, audio files, and briefings, and combined with Rosen’s Media Input Panel (MIP), enable passengers to bring on HDM devices or content on USBs, and stream to the smart displays or personal devices. Monitor and cabin functions can be controlled via Rosen’s touchscreen control unit, PEDs, or IR remote.

The new ACC100 line of plug-in tablet holders features 360-degree rotation and a universal mount for left- or right-side positioning, and an adjustable cradle that allows hands-free operation. Designed for customers who already have Rosen plug-in displays, the new holders are drop-ins for existing micro D and pogo pin bases, requiring no interior modification or wiring changes to support the unit’s USB charging feature.

The new ACC100 line of plug-in tablet holders features 360-degree rotation and a universal mount for left- or right-side positioning, and an adjustable cradle that allows hands-free operation. Designed for customers who already have Rosen plug-in displays, the new holders are drop-ins for existing micro D and pogo pin bases, requiring no interior modification or wiring changes to support the unit’s USB charging feature.

Rosen also offers more than a dozen thin, lightweight personal and bulkhead displays for business aircraft cabins, ranging in size from 9 inches to 55 inches, all with 1080P HD performance. A selection of Slimline bases can serve as mounting receptacles for the personal display screens.

For getting content to the displays, Rosen offers a range of compact and lightweight onboard source and distribution products, including Blu-Ray players and its MIP, complemented by video and headphone distribution amplifiers and an audio control jack. In-flight information-wise, the RosenView MX Moving Map combines satellite imagery and a roadway data view for its graphics, has multiple zoom levels, and supports optional video and audio cabin briefings, and multiple languages.

Rosen designs, manufactures, supports, and repairs all its products at its Eugene, Oregon facility, and in addition to its off-the-shelf products, works with clients to develop custom solutions for cabin management and entertainment needs.

Rosen’s Media Input Panel (MIP) interfaces with passengers’ personal devices to deliver content such as movies, music, and other audio files.

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HIGH ABOVE. FAR BEYOND.
Signature’s Epic acquisition merges two giant networks

by Curt Epstein

With BBA Aviation’s purchase of privately held industry fuel supplier Epic Aviation completed in July, this year’s NBAA convention marks the first time Epic and Signature Flight Support will exhibit under the same banner. The two are occupying adjoining booths (1600, 2000). The $88.1 million deal announced before EBACE in May encountered no regulatory hurdles, according to Mark Johnstone, who was promoted from president and CEO of BBA’s engine repair and overhaul division to group chief executive and Signature CEO in April.

In the time since the deal was consummated, the company has maintained Epic as a separate business within its portfolio, with Kevin Cox remaining president.

Signature operates the world’s largest FBO network with more than 200 locations, including 19 licensed Signature Select facilities globally, and Epic brings its own branded network of approximately 220 FBOs, plus nearly 100 more unbranded facilities. “We don’t control them, we don’t control the leases, nor do we control the pricing,” explained Johnstone, “so I think it’s very clear in my mind that we need to make sure that there is customer clarity between the two [networks].”

Yet, going forward, the company will look to leverage its newly expanded influence, through cross-promotion between the two separate networks. “You have a bunch of independent operators that pride themselves on their independence,” said Cox, referring to the Epic member FBOs, but who are also looking to put more tails on the tarmac and deliver more customers to their bottom line, and that’s obviously what Signature can bring to these Epic FBO owners.” Here at the show, Johnstone will host a welcome reception and question-and-answer session for Epic’s network-member FBOs.

“When you look at our network today, before Epic, you would find Signature at seven out of 10 of the top destinations business and general aviation flights fly to,” said Johnstone, describing that as his definition of customer relevance. “Anything we do in the M&A space, whether it’s Epic or acquiring other FBOs is all about becoming more relevant to our customers so we can effectively meet their needs at both ends of their journey.”

One of the most obvious benefits to the deal lies in economies of scale. “Signature procured over 300 million gallons of jet fuel last year,” Johnstone told AIN, “Epic another 200 million-plus, so you put those two together it gives us a lot bigger purchasing power both from the fuel providers, but ultimately direct from the refineries.” He noted that this will allow the company to better control fuel costs not only in the Signature FBO network but also for Epic’s members.

“I think one of the things that would benefit the [Epic] branded dealers is having the opportunity, should they wish, to transition into a Signature Select and really have the full portfolio of support that Signature offers to those licensed locations,” added Patrick Sniffen, Signature’s vice president of marketing.

The purchase also expands the existing relationship between the two companies, which saw the development of the Epic/Signature Multi-Service Aviation Card. It is accepted for payment at more than 8,000 locations worldwide, through U.S. Bank’s Multi-Service Aviation Network.

Along with the Epic purchase, BBA acquired the fueler’s QT Pod (petroleum on demand) subsidiary, which produces self-serve avgas fueling systems. The largest distributor of such devices, the company currently has more than 1,600 of its M3000 fuel dispensers in service as it ramps up deliveries on its new M4000, which was launched in February at NBAA’s Schedulers and Dispatchers Conference. “That is a cloud-based system that basically allows anybody to pull their aircraft up and self-service for just the price of fuel,” said Cox, adding the product has generated a good amount of interest from FBOs and airports. “We’ve already seen some 320 M4000s ship out in just the last few months.”

In addition to Johnstone’s replacement of Simon Pryce and then interim CEO Wayne Edmunds as BBA’s overall head, the company has made several other recent executive changes. Tony Lefebvre, who previously headed up BBA’s former ASIG commercial aviation ground handling division and also runs the company’s global engine services division, was named as Signature’s president and COO, succeeding Maria Satter, who held those positions until her departure at the end of April. Joining the FBO operator as chief commercial officer is former U.S. naval aviator Shawn Hall. For the past decade, he served as a consultant with McKinsey and Co, advising the aviation and hospitality industries. All three will be at the company’s booth during the show.
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ForeFlight app adds PDC and D-ATIS

by Matt Thurber

“We’re continuously bringing new enhancements and features to the marketplace,” said Stephen Newman, ForeFlight executive v-p of sales and marketing. To that end, ForeFlight is showing two key new technologies at its NBAA booth (4854), including pre-departure clearances and new Trip Assistant features.

Both of these are part of ForeFlight’s efforts to “create a service around flight planning from end to end,” he explained, “designed to reduce workflow and keep you focused on the things that matter the most to your operation or business.”

The newest of these features is the ability for ForeFlight Mobile app users to receive pre-departure clearances (PDC) and digital-automatic terminal information service (D-ATIS) messages via text and email, in a partnership with Satcom Direct.

PDCs are available at more than 70 airports in North America, and once signed up for the ForeFlight service, pilots can receive D-ATIS and PDC messages 30 minutes or sooner before departure time. “PDCs are official text clearances issued for U.S. IFR flight plans, and include the filed route, the cleared altitude, transponder code, departure frequency, and any special instructions,” according to ForeFlight. Using the PDC service eliminates the need for pilots to contact clearance delivery via radio. However, for clearance changes, pilots do need to contact clearance delivery.

“These two valuable tools make flight and avionics setup efficient by eliminating a set of radio communications, they reduce controller workload, and help get the aircraft to the runway faster, which improves controller workload, and help get the aircraft to the runway faster, which improves controller workload, and helps get the aircraft to the runway faster, which improves controller workload, and helps get the aircraft to the runway faster, which improves controller workload,” said Newman.

“Pilots can use the app’s route advisor to help choose routing that is likely to be cleared as filed, as PDC clearances are only for as-filed routes. If ATC chooses different routing, then the pilot won’t receive a PDC but will get an expected route notification. ‘That’s where our route advisor is really helpful,’ said director of marketing Angela Anderson, ‘because it presents the recommended route and altitude, looking at aircraft performance and also recent ATC history, so you have a good shot of getting cleared as filed.’

“The recommendations are based on the likelihood [of getting that route] and optimizing performance, winds, weather, etcetera,” said Newman. “All of these pieces are valuable when viewed on their own, but when used together on the workflow as we have designed it in this flight planning tier, it ratchets up the value.”

Trip Assistant Feature

Another recently added feature is ForeFlight’s Trip Assistant, also bundled with the flight planning tier. The idea is to give pilots and dispatchers a tool to calculate door-to-door time for a trip instead of just the flight time.

“We often think [in terms of] airport-to-airport,” Newman explained, “but life is not happening at the airport, it’s happening wherever we’re going once we leave the airport.” Trip Assistant takes into account ground traffic, turn times for a fuel stop, the aircraft type’s performance, and en route wind and weather. If the aircraft can’t fly a desired trip without stopping for fuel, Trip Assistant will provide a list of optional fuel stops, including FBO fuel prices or pricing from ForeFlight’s JetPlex service.

“Then it spits out an itinerary,” he said, “including when to leave, how much time will be spent in traffic, turn times, and when to depart or to arrive by to do the trip you want.”

The target market for Trip Assistant initially was small flight departments like ForeFlight’s own with an executive assistant helping plan trips. “The first question she gets is, ‘When do we leave?’” Newman said. “It’s just a mess. What we discovered as we started showing this feature is that it’s equally valuable for large flight departments with dispatch teams and charter quoting. They can do a whole scenario and get an idea of what the trip going is to take.”

ForeFlight has also added other useful features, including a filed flights list; an alert that notifies pilots that they are on final approach for a particular runway to help avoid wrong-runway landings; jet currency tracking in the logbook; organized track system depictions over the Atlantic and Pacific oceans; and traffic targets in synthetic vision, which includes a glance mode for adjusting the pilot’s point of view in any direction.

Honeywell authorizes ACI Jet as a dealership

ACI Jet (Booth 2219) is now an authorized Honeywell dealership and service center at the company’s San Luis Obispo County Regional Airport (SBP) location. The addition of personnel and a supporting facility are expected in the wake of the authorization as ACI Jet has set a target of $2 million in annual sales of Honeywell equipment by 2020. The company is also anticipating resulting gains from equipment sales and employment distribution taxes along with fuel sales and taxes from supplemental charter flights as aircraft undergo maintenance services.

With the need to remain competitive in the avionics market amid a looming ADS-B mandate deadline, ACI Jet recognized the value of the Honeywell authorization and its relationship to the continued growth of the maintenance arm of the business.

“We wanted to make sure we established ourselves as one of the leading avionics facilities in the Western U.S.,” said Dave Jensen, vice president of aircraft maintenance at ACI Jet. “The Honeywell dealership helps solidify us as a legitimate avionics repair and install facility. From a capabilities standpoint, and specifically regarding the cost savings and efficiencies afforded through our new Honeywell dealership and service authorization, our once small and growing aircraft maintenance company has catapulted into a position of offering more services from our prime location than anywhere else in the state of California.”

ACI Jet will supplement the new authorization with a planned $19 million expansion project including an avionics maintenance and repair facility at SBP. “The growth we’ve experienced on the aircraft maintenance side of our business over the last year and a half, as well as with our aircraft management and executive terminal and FBO business units, has been staggering,” said Jensen.

Growth across all facets of ACI Jet has resulted in a dedicated effort to hire and retain personnel. “Presently, we stand in need of 21 talented aviation professionals to fulfill our staffing requirements across the organization,” said William Borgsmiller, president and CEO of ACI Jet. “We’re on the road day in and day out meeting with candidates, attending trade events, and participating in employment and youth events to get the word out. With the growth of ACI Jet and our expanding business with Honeywell, there will be significant opportunities for both seasoned and young professionals.”
Terrafugia setting the stage for Transition production

by Matt Thurbur

Flying car developer Terrafugia is making its NBAA show debut this year, highlighting its TF-2 eVTOL transportation concept at Booth 334 and displaying a Transition flying car in the indoor static display.

China’s Zhejiang Geely Holding Group purchased Terrafugia in late 2017, and the influx of resources by the new owners has led to growth in staffing, opening of new facilities, and a plan to begin producing the Transition flying car next year. In August, the company leased 6,750 sq ft of hangar and office space at Nashua Airport in New Hampshire. Earlier this year, Terrafugia added a research and development facility in Petaluma, California. Staffing has grown from 20 to more than 200 people.

Founded by five Massachusetts Institute of Technology graduates in 2006, Terrafugia pursued a unique path to bringing a flying car to market. The Transition has wings that fold up against the cabin after landing, for a simple transition between flying or driving modes. But what makes the Transition different from other flying cars, including two that achieved FAA certification but never made it into production, was the light sport aircraft (LSA) regulations that came into effect in 2004.

Terrafugia’s engineers calculated that they could design a roadable airplane—a true flying car—that would fit within the strict LSA weight and performance constraints. While the company did try to meet those constraints, it petitioned the FAA for an exemption, which was approved in 2016, for a higher maximum weight for the FAA for an exemption, which was approved in 2016, for a higher maximum weight of 1,430 pounds, the same weight approved in 2016, for a higher maximum weight.

Terrafugia unveiled design changes and improvements to the two-seat Transition, which will meet FAA LSA and U.S. National Highway and Traffic Safety Administration standards. Terrafugia expects LSA validation of the Transition in 2019.

The burden on the Transition’s Rotax engine will be reduced in driving mode, aided by a new hybrid mode. A new lithium-ion battery system will help power the Transition on the ground. The engine will have a boost mode to provide “a brief burst of extra power while flying.” New safety systems include improved seat belts, airbags, and three rearview mirrors. Terrafugia has selected Dynon for avionics and BRS to supply a whole-airframe parachute system.

Terrafugia plans to manufacture composite components in its Lianjing, China facility, then ship them to company headquarters in Woburn, Massachusetts, for final assembly, followed by delivery at Nashua Airport, according to a company spokeswoman.

Current pricing of the Transition is not yet available, but the company is taking deposits with letters of intent for purchase. Terrafugia had more than 10 deposit holders as of the end of September, she told AIN.

The TF-2 is Terrafugia’s concept for an eVTOL-type system that separates a passenger cabin or cargo container from the aircraft or ground vehicle portion.

Congress finally passes long-term FAA authorization

by Kerry Lynch

The U.S. Senate passed the sweeping five-year FAA reauthorization bill earlier this month, sending the measure to the White House for signature and enactment. The vote culminated a four-plus-year process that involved six short-term extensions, several versions of the bill, hundreds of meetings on Capitol Hill, dozens of hearings, and one of the most contentious debates surrounding the future of the air traffic control organization.

Ultimately that process led to bipartisan legislation that passed the House by a 398-23 vote and the Senate by 93-6 and has broad support from most corners of the industry. Senate Commerce Committee chairman John Thune (R-South Dakota) praised its passage, noting it is the longest FAA authorization to be adopted since the 1980s and adding it represents “our collective effort” and bipartisan negotiation.

The bill provides for long-term funding for the FAA—up to $96.7 billion through 2023—and touches upon numerous issues of importance to the industry, from certification and regulation to the enabling of the future of supersonic travel and the facilitating of an emergence of a range of new electrical and autonomous systems.

More specific to the business aviation community, it delves into issues surrounding Part 135 flight and duty time and accident data, the protection of the aircraft registry from the whims of the budget process, and a review of flight-sharing regulations, among many others.

But perhaps most important on the FAA front is what is missing from the bill: the proposal to carve the ATC organization out of the U.S. FAA and into an independent, user-funded entity. “This bill will provide a stable path forward for the FAA without controversial proposals to privatize our nation’s ATC system,” said NBAA president and CEO Ed Bolen, hailing its passage. “It is imperative that the agency be allowed to focus on modernization of our National Airspace System without distractions.”

Unveiled jointly by House and Senate leaders in the early hours of September 22, the compromise bill, the Aviation, Transportation Safety, and Disaster Recovery Reforms and Reauthorization (H.R.302), encompasses far more than just FAA issues. It also includes reauthorizations for the National Transportation Safety Board and Transportation Security Administration and further encompasses issues such as sports medicine licensing and disaster relief.

Latitude Technologies earns FAA STC for SkyNode satcom suite

Canadian avionics manufacturer Latitude Technologies (Booth 3808) has received an FAA STC with approved model list of Part 23 aircraft for its SkyNode S200 suite of satellite communication and tracking solutions. The STC also supports the installation of the IONode flight data monitoring system, which can provide fully automated data gathering and distribution, real-time alerts for flight operations, and maintenance quality assurance, including fuel management programs.

According to the Victoria, B.C.-based company, the S200 includes an internal fast-fx 20 channel WAAS GPS receiver, and provides multiple voice communication interface options.

Among the business aircraft supported by the STC by both the FAA and Transport Canada are the Embraer Phenom 100 and 300, Pilatus PC-12, Cessna Caravan and Grand Caravan, and Viking Series 400 Twin Otter. Rotorcraft include the Bell 204, 205, 206, 212, 214, 407 and 412, and Airbus A350, A350S, EC130B4, and EC135. For pressurized aircraft installations, Latitude also offers an additional library of antenna installation STCs. C.E.

Massachusetts-based Terrafugia, with an influx of development cash from Chinese ownership, plans to begin building its Transition flying car as early as next year.
Vision Systems introduces Nuance V2 window system
by James Wynbrandt

High-tech optics provider Vision Systems is showcasing Nuance V2, its new electronically dimmable shading system, introduced this year, which offers increased optical quality and lower cost compared with previous systems. The dimmable windows are made using a new industrial lamination process, creating an interlayer combined with previous systems. The dimmable windows are made using a new industrial lamination process, creating an interlayer combining UV infrared and hydrophobic barriers, which “greatly improves product reliability,” said Eric Sorrell, sales account manager for aeronautics and marine at the French company’s North American headquarters in Melbourne, Florida. “You also have the ‘wow’ factor, because it’s new technology,” he added.

Passengers can program the Nuance V2 to automatically dim based on the sun’s position, adjusting for the aircraft’s movement. In addition, the system features multi-zone shading capability. “With this you can have full customization of the view out the window: where the darkness is, where the tint is,” said Sorrell.

In addition to Nuance V2, Vision Systems (Booth 1964) is displaying its high-end motorized roller and pleated shades, and the Eclipse dimmable cabin divider, which goes from clear to opaque through light-scattering technology. The same technology can be incorporated in everything “from outboard windows to the shower stall,” Sorrell said.

The new Info-Vision technology, made possible by the layered laminate technology, is also on display. It allows textural data—from flight information to customized graphics—to be displayed on the window via “electro luminescence” through embedded electronics and touch-screen panels. Vision Systems invested $4.7 million for a new clean room facility and machinery at its French plant, and the production capability “is expected to migrate to the U.S.,” said Sorrell, adding, “Down the road, we will see new technologies where we could have very intricate graphics on the window.”

Vision Systems recently reached an agreement with PPG to collaborate on developing new applications for Nuance V2 and Info Vision.

Many air travelers are familiar with the electro-chromatic dimmable windows on the Boeing 787, but that’s “an older technology,” said Sorrell. Nuance V2 uses advanced technology, which has a faster dimming response time, reacting within five seconds and going from clear to full dark “within 15 to 30 seconds.” SPD also allows shades to be made in either glass or polycarbonate, and shaped into a flat panel, two-dimensional curve, or 3D compound curves. Moreover, the windows can be made in sizes “that can be one meter in width and unlimited length,” Sorrell said.

The company wants “to expand commercial agreements with other BBJ completion centers and distribution networks on the U.S. side,” Sorrell said.

Vision Systems opened its Melbourne facility four years ago, and this year opened a new trade office in Canada, focused on the land transportation market, complemented by sales offices in Dubai and Singapore.

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I Innovation at NBAA: Attendees to explore VTOL, blockchain, and future career paths

NBAA’s Innovation Zone is returning to NBAA-BACE this year for a fifth time, highlighting numerous forward-looking topics from remote-piloted VTOL aircraft to blockchain and the future for young professionals. Tucked within this year’s convention floor at the north end (Booth 694), the Innovation Zone was first staged during the 2014 NBAA-BACE, hosting panels on topics such as unmanned aircraft systems and the Ebola virus.

The area is designed to “showcase presentations focusing on forwarding-thinking topics and new technology,” Tyler Austin, NBAA project manager, professional development, said describing the area.

In 2018, panels will follow suit, such as the session that will explore how remote-piloted VTOL aircraft will coexist with business aircraft operations and how the technologies may affect the industry.

“Presenters will examine current research and development efforts, identify technical challenges, and speculate on a timeline for viability in the marketplace,” Austin said. “Technologies such as electric propulsion and artificial intelligence are converging, and these sessions will provide valuable information to help the industry determine how they will affect operations and the next generations of business aircraft.” In the young professionals arena, sessions will discuss attracting and developing young talent.

On Tuesday, a handful of sessions are scheduled: Is Safety Really Our Top Priority?, from 10:30-noon; Young Professionals: Changing the Face of Business Aviation, from 1 p.m.-2 p.m.; General Aviation 2025, 3 p.m.-4 p.m.; Quick Ascent: Perspectives from Rising Industry Leaders, 4:30 p.m.-5:30 p.m.; and the 5th Annual NBAA YoPro Networking Reception, 5:30 p.m.-7 p.m.

On Wednesday, four more sessions will be held: The Electric Aircraft Revolution, 9:15 a.m.-10 a.m.; Imagining the Future of Pilotless VTOL Aircraft, 12:30 p.m.-1:30 p.m.; Blockchain for Business Aviation, 2 p.m.-3 p.m.; and I Like Big Data and I Cannot Lie, 3:30 p.m.-4:30 p.m.

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Gentex thinking ahead on interior dimming options

by James Wynbrandt

You can’t get a clear view of Gentex just by looking at its products on display at NBAA 2018. Mike Behm is the director of sales and marketing for the manufacturer of electronically dimmable windows (EDW), which are currently installed on Boeing’s 787, and he noted that the technology behind the large (approximately 24- by 30-inch) curved Generation 3 EDW on display (Booth 1281) has undergone significant development since it made its debut last year. That’s underscored by a contract for a commercial system from “one of the major airline OEMs,” whose identity is undisclosed for now, scheduled to launch in the first half of 2019.

The same technology could quickly be adapted and certified for business aircraft, Behm added. “If an OEM said, ‘I want to put this in this plane, year 2020,’ we’d be ready to go.”

While new long-haul platforms from Gulfstream and Bombardier seem natural fits, “The reality is, in this business we see people willing to spend money to have cool, innovative things in aircraft,” Behm said. “So even for some of the smaller, regional-focused business jets, we’re still in a position to offer value.”

The new EDWs can be programmed to automatically respond to changes in sunlight, as when an aircraft turns, using technology the Zeeland, Michigan company developed for the auto industry. “No one in aerospace has said, ‘We want to have that happen,’” Behm said of the self-adjusting capability, but “If someone put their hand up, we would do it.”

Gentex is now AS9100 certified, the same production standards to which aircraft OEMs operate, and should an OEM want windows delivered direct, “We’re capable and willing to go as a Tier One supplier,” Behm said.

Though slower to dim than suspended particle display (SPD) technology, Gentex windows offer reliability, with mean time between failures “in the tens of millions of flight hours,” and complete black-out capability, said Behm, citing a total opaque dimming time of “under 30 seconds.” Behm noted his dimmable windows do require electricity to darken, so when the aircraft is parked on a ramp with engines shut down, the windows are transparent, allowing light, heat, and perhaps unwanted eyes inside the aircraft.

But Gentex recently entered a technical agreement with ATG to produce electromechanical shades for Gentex, incorporating a design change that creates a combo electronic/electromechanical dimming system. Gentex can now offer high-end products for both the dimmable and pleated fabric shade markets, Behm noted, the latter allowing for a “harmonized interior experience.”

Aerospace and dimmable windows represent less than 1 percent of Gentex’s business, but Behm said the $2 billion company will expand its presence and product line in the business aviation market going forward.

“We’re looking at a lot of different technologies that could be applicable in VIP aircraft and the business jet industry,” said Behm, citing biometric authentication and sensing technologies among them.

Gentex’s windows formerly had been marketed by PPG as the Alteos Interactive Window, but Gentex is handling marketing in-house now. “We felt we could manage our product ourselves,” said Behm. PPG has since signed a marketing agreement with Gentex competitor Vision Systems.
SkyLens™ wearable HUD brings a new vision in flight deck avionics to business aircraft. Ideal for retrofit or forward-fit, SkyLens is the all-weather EFVS solution. Lightweight, comfortable and easier to install than fixed-mounted HUDs.

Vive la révolution!
Stevens sees strong growth in demand for AOG services

by James Wynbrandt

MRO powerhouse Stevens Aviation of Greenville, South Carolina, almonds at NBAA 2018 amid a large spike in demand for its AOG and mobile maintenance services, followed by upicks in its refurbishment and avionics upgrades businesses.

“Our AOG [Aircraft on Ground] services—that business came out of nothing a couple of years ago,” said Phil Stearns, director of sales and marketing. Business was up 30 percent year over year before the third quarter’s end. “It was all due to demand for quality technicians and better response time,” he said. Technicians dispatched in AOG trucks to get grounded aircraft flying are on the road within an hour of the phone call. “They’re living on the road. That’s a different type than you will find on the hangar floor. It’s a different ball game.”

The Stevens AOG & Mobile Maintenance team can service Citations, Bombardier Challengers and Globals, and Gulfstream, and has grown to more than two dozen trucks and some three dozen technicians. Who’s using the AOG and mobile support? “Without naming names, our customers are all the big charter fleets,” Stearns said. “We’ve become their best friend.”

In the refurbishment arena, demand for the company’s Gulfstream and Bombardier Global work, a capability that “didn’t exist three years ago,” is also strong, Stearns said. “These are fantastic aircraft and we have some very high-end craftsmen who know how to take care of the interior.” A recent Global Express refurbishment included installation of a Honeywell Ovation Select CMS.

Stevens (Booth 635) also has a Citation Excel cockpit mockup showcasing a Garmin G5000 installation, as a replacement for the legacy Honeywell Primus system. Garmin representatives are on hand to demo the panel and explain the conversion process. The STC for that upgrade is expected in the first quarter of next year. A variety of other demo-able avionics upgrades is also on display, and more than a dozen Stevens team members from all its divisions and regions are here to meet with visitors.

Stearns added that even though “everybody’s sick of ADS-B” talk, Stevens just completed with L3 an STC for legacy Learjets, Citations, Falcons, and Gulfstream “that do not have integrated avionics.”

On Wednesday at the Stevens display, Dallas Airmotive (Booth 1600) will provide a presentation on what to expect during an engine overhaul. “There are lots of myths about what could or does happen when you put an engine through a hot section [inspection] or overhaul,” said Stearns. The presentation will provide the answers.

Stevens also has a new app, Stevens AOG, it’s showcasing in Orlando, available through the App Store and Google Play. It connects users directly with individual company divisions, including the sales team and military division, the latter of which has also seen an uptick in activity. “The last couple of years in the military have been better than the previous eight,” Stearns said. Booth visitors can download the app at the show and be entered to win a prize.

One of the largest providers of Blackhawk conversions for King Air turboprops, Stevens is also highlighting the recent completion by its Nashville, Tennessee facility of the first certified installation of the Blackhawk X67A engine upgrade on a King Air 350. The conversion includes a five-blade MT prop and was performed in conjunction with a panel upgrade to a Garmin G1000 NXi integrated flight deck, which now supports the X67A.

Lufthansa Technic (LHT) is staging at NBAA 2018 a Welcome Home celebration; that’s the theme and name of LHT’s VIP interior design concept for the forthcoming ACJ350 XWB. At its display (Booth 1435), the completion specialist is showcasing a mockup of a cabin section and a new scale model of the widebody exelinier, both outfitted in the Welcome Home style.

The design incorporates “all the features necessary for people who are traveling to relax and take care of themselves: exercise, freshly prepared food, aroma therapies, and so on,” said Wieland Timm, LHT’s senior director for VIP and special-mission aircraft.

At EBACE in Geneva this year, LHT announced becoming an Airbus-approved outfitter for the all-carbon fiber jumbo, and the big display in Orlando would “suggest we will be successful in sales in the next months,” said Timm.

The Welcome Home mockup showcases “all the new Lufthansa Technik technology you can put into a real VIP cabin,” said Timm, with electronics and lighting operated via its proprietary nice cabin management system, and touches like images of clouds moving along the ceiling.

The large model of the ACJ350 XWB on display shows all the interior elements in reduced size, as well as its unique, eye-grabbing paint scheme: “The aircraft is looking like a reptile,” Timm said.

Guests can also sample gourmet cooking, prepared with the onboard kitchen equipment LHT offers for the VIP market, and also demo the latest entertainment products, all available for retrofits as well as green completions. LHT is also hosting a new “sound bar,” a dedicated room where visitors can hear the in-house developed loudspeaker system used in VIP cabins. It can get very loud inside, Timm cautioned.

Visitors can also virtually tour the ACJ350 and other LHT VIP interior designs, like the Mercedes-Benz Style cabin, by donning a VR “bubble,” a head strap with a goggle-like mount for holding a smartphone screen in front of one’s eyes.

With the bubble strapped in place, “You can move around and see all the details of the cabin,” Timm said. “You can go in each and every room, and open drawers, as if you’re walking through.”

Connectivity is a critical element of today’s VIP cabin, and LHT’s TIOS (Three-In-One-Solution) tail-mounted antenna installation offers a Ka-band solution in a configuration that provides several advantages over fuselage-mounted antennas, according to LHT, including weight savings and reduced installation time. TIOS is also part of the LHT display. Approved for BJJ narrowbody aircraft, the installation can accommodate a Ka-band alone, or be combined with Ku-/L-band antennas.

Meanwhile, at its Hamburg headquarters, LHT is reshaping its completions and refurbishment facilities and bringing in new tooling in preparation for the ACJ350 and to enhance the efficiency and reduce turn time in its MRO services.

LHT has recently signed new completion projects, Timm said, but “we have an NDA [non-disclosure agreement] even to not mention which type of aircraft.” These don’t include a previously announced 787 completion scheduled for induction this month. Last month LHT delivered an ACJ321 to the German government, and it has another ACJ and BBJ in Hamburg nearing delivery. Heavy checks and upgrades on older VIP aircraft are also in demand. “The aircraft should be in use for the next five to 10 years, so they need a touch-up,” Timm said. He noted the company has expertise in legacy 747-300/-400 and can repair the airframe, refurbish the cabin, upgrade the IFE, and even overhaul the engines and landing gear, a unique capability among MRO facilities, according to Timm. J.W.
Nonstop excellence.
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C&L Aviation campaign 2018: director’s cut
by Alexa Rexroth

With a marketing initiative hallmarked by clever videos, Maine MRO provider C&L Aviation (Booth 2230) is at it again this year with a secret agent-themed series for promotion at NBAA-BACE. With Chris Kilgour, CEO of C&L, in the director’s chair and Pat Lemieux, director of marketing, ensuring success on set, this year’s campaign has kept viewers guessing as to its focus and sharing their speculations on social media.

The decision to develop viral video marketing spawned after Kilgour bought out billboards at Glasgow Airport ahead of a Saab Aircraft conference with pictures of him in a kilt. After attendees passed through the airport en route to the conference, they announced to him that they “saw him in the airport.” Kilgour said the marketing effort was “a huge success and I really wanted to carry on that sort of a theme.”

Lemieux helped to capitalize on Kilgour’s billboard success when he developed the idea to make National Basketball Association (NBA)-themed videos for the company’s campaign in 2016. “Without an aviation background, NBAA to me just sounded like NBA. The more we talked about it, the funnier we thought it would be, and the videos would allow us to position ourselves before the conference like we did with Saab,” said Lemieux. “We had a great response and it was a really unique way to get noticed and let people know more about us than they would get from traditional advertising.”

Funny, But Informative, Too

Using office and hangar space as their Hollywood, and employees as cast members, C&L ensures production promotes the company’s mission amid the entertainment value of the videos. “It has to be funny but at the same time we need to get information across about our company so it can take quite a while to develop an idea,” said Kilgour.

While some employees may be more camera shy than others, Lemieux said the videos have become a point of pride and excitement for the company and a reflection of their dedicated workforce. Kilgour furthered that sentiment when he explained, “These videos help [people] get to know us, and I think that’s important because the company is the sum of the people. Hopefully that comes across.”

According to C&L, its marketing efforts have helped provide an inviting atmosphere at their booth at NBAA-BACE. “It certainly makes some of the first meetings with customers easier. Everyone can kind of let their guard down a little bit, because they feel like they know us. That’s a hard thing to do with traditional outbound marketing and something the videos really do for us.”

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Atlantic Aviation's newest presence in Florida is at Miami Opa-Locka Executive Airport. Last year’s Hurricane Irma caused consternation at the time, as the purchase of the location was postponed to assess the possible storm damage to the facility. In the end, those concerns proved to be unwarranted as the FBO suffered negligible impact from the hurricane.

Atlantic’s Florida presence driven by acquisitions

by Curt Epstein

Atlantic Aviation currently has seven FBOs in Florida, which make up a significant portion of the company’s business, but until recently, that wasn’t the case. In 2014, Atlantic was the second largest FBO chain in the U.S., yet the company did not have a single base in the Sunshine State, one of the nation’s hotbeds of business aviation activity. In April that year it made a major splash when it closed on a $230 million deal for the Galaxy Aviation FBO chain. In addition to a location in Colorado, that brought a package of five locations as its first foray into Florida. That initial batch included facilities at Orlando International Airport, Northeast Florida Regional Airport in St. Augustine, Witham Field in Stuart, Palm Beach International, and Boca Raton Airport.

“When you look at the footprint of Atlantic Aviation, at least back prior to the Galaxy deal, the Florida market always stuck out like a sore thumb to us because we had virtually no presence at all in Florida,” said Kurt Schmidt, the service provider’s regional vice president. “It’s very common to have that north-south corridor of customers who are flying from New York to Florida for various reasons, so the Galaxy deal was very big for us and gave us a really strong presence in Florida.”

Atlantic (Booth 2244) further consolidated its position later that year when it acquired Showalter Aviation at Orlando Executive Airport, which traditionally hosted the NBAA static display when the organization’s annual convention was in town. With the purchase of the FBO, NBAA’s contract was transferred to Atlantic, which once again is hosting the aircraft display at this year’s show.

A year ago, the Texas-based company was slated to put the final approval on its acquisition of a seventh in-state location, the Orion Jet Center at Miami Opa-Locka Airport, when Hurricane Irma roared ashore. The storm forced a delay in the purchase in order for Atlantic to assess any damage to the FBO. “The Orion folks did a stellar job in securing the facility,” Schmidt told AIN. “We were delighted and lucky the hurricane didn’t have a significant impact on the facility, so it was right after that that we were finally able to close on the deal.”

Last month, Atlantic celebrated its one-year anniversary at the location. One of three FBOs on the field, it offers a modern 20,000-sq-ft terminal with an aircraft arrivals canopy, passenger lounge, a trio of conference rooms, crew lounge, snooze rooms, and showers. It also features more than 200,000 sq ft of newly built hangar space capable of sheltering aircraft up to a Global Express, along with 36,000 sq ft of office and maintenance space. 

“Now we span up and down the East Coast of Florida from St. Augustine all the way down to Miami, which is a very nice footprint in the market,” said Schmidt, who added that the addition of Opa-Locka helped open the company to Latin American customers. “The traffic profile in Miami is a little bit different than what we experience in some of the other Florida bases, and that’s one of the reasons it was a very nice addition to the portfolio.”

According to Schmidt, the bottom line is those additions have had an impact on his company’s bottom line. “We had a lot of base activity from the Northeast that we knew were traveling to those areas, but had no exposure to that marketplace,” he explained. “Now we can receive some of those customers who would make that trip on a regular basis.”
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Kaman Aerosystems is a division of Kaman Aerospace Group.
Austrian provider of VIP interiors company recently opened F/List Canada, expanding its market reach across the Atlantic to better serve the growing North American market.

**F/List spotlights new Canadian facility**

by James Wynbrandt

On the heels of the May opening of F/List Canada, its new North American production facility and center of excellence, the Austrian provider of VIP interiors components and services is touting at NBAA 2018 what it calls the “significant synergies” the new outpost offers customers on this side of the Atlantic.

“Our flame-retardant wood veneers are in high demand,” said Sean Johnson, CEO of the new branch. “The finishing of cabinetry and other products in Montreal for customers in North America gain us a competitive advantage by shortening lead times and boosting service quality.”

Johnson noted F/List “covers the entire value chain of aircraft interiors, from the initial sales contact up to comprehensive refurbishment services,” including the development, engineering, and manufacturing of all elements of the cabin interior, down to the floorings, linings, and systems. F/List Canada’s offerings fall into three categories: wood veneer production; refurbishment services; and cabin interior production. Primary customers are major OEMs, MROs, and completion centers in Canada and the U.S. The bulk of F/List’s OEM cabinet production will remain at its Austrian HQ, which has its specialty in flame-retardant wood veneers, Austria’s F/List also focuses on refurbishment services and cabin interior production. The company recently opened F/List Canada, expanding its market reach across the Atlantic to better serve the growing North American market.

**Narita opens its arms to business aviation**

In 2016, Japan received a total of about 13,000 business flights, of which Tokyo-Narita International Airport claimed a share of approximately 10 percent. China currently places first in terms of bizjet arrivals followed by those from the U.S., with 100 of 500 movements at Narita originating from America. Seeing the importance of the market, Narita Airport Corporation (NAA, Booth 4760), hopes to boost arrivals from America by showcasing the airport’s business jet terminal and its initiatives for attracting corporate jets.

“We are also participating in a Japan pavilion that will highlight all the different corporate jet programs around the country,” said Keiju Nishime, Narita Premier Gate, Passenger Terminal Management Department, NAA. NAA hopes to promote business aviation as a country-wide effort, rather than competing with other suburban airports in the region.

“We are working together with the other airports in Greater Tokyo to steadily increase demand by promoting Japan as an attractive destination and emphasizing the convenience of the corporate jet terminal,” Nishime told AIN. “However, we do present our strengths, which include 18 dedicated business aviation stands, relatively low landing fees, and a VIP lounge.”

The Narita Premier Lounge is situated at the airport’s Terminal 2, with the parking stands located closer to the maintenance area, about eight minutes by car. Currently, there are nine ground-handling companies providing services for business aviation at Narita. Landing and parking fees (for less than six hours) range around $467 and $41 for a Bombardier Challenger 600, or around $1,349 and $146, respectively, for a Boeing BBJ.

Unlike most international hubs, Narita has no slots dedicated exclusively to corporate jets and allocates them on a first-come, first-served basis. “There is congestion during the peak hours from 3 p.m. to 7 p.m., so it is necessary to secure those slots well in advance. Outside those hours, we tend to have extra slots and they are relatively easy to obtain,” he said.

With 18 dedicated business aviation parking stands, Narita Airport is reaching out to bizav.

Like the rest of Tokyo, NAA is expecting increased movements in 2020, during the periods of the Olympics. Japan’s busiest international airport is already carrying out extensive renovation and upgrading to improve passenger experience and has also announced the construction of a temporary terminal to cope with the influx.

“We expect higher-than-normal corporate jet movements during the Tokyo Olympics, including both Olympic-related personnel and tourists. To meet the demand, we are considering increasing the number of stands and adding a temporary terminal for the exclusive use of corporate aircraft,” Nishime added. C.C.
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Honeywell’s latest delivery forecast shows slight boost

by Curt Epstein

Honeywell Aerospace has increased its 10-year business jet delivery forecast slightly to 7,700 new business jet deliveries from 2019 to 2028, up approximately two percentage points from last year’s prognosis, worth $251 billion. The forecast excludes very light jets and private versions of commercial aircraft, but the addition of bizliners would boost the totals to 7,900 aircraft worth more than $270 billion.

This year’s forecast, the Arizona-based OEM and aviation services provider’s 32nd edition, changed from previous years in that it does not include the totals from the current year, better aligning with forecast planning models used by the airframers. “If you want to compare to last year’s forecast for the same period of 2019 to 2028, this is about one percent higher in dollars or 50 aircraft more than last year,” noted Gaetan Handfield, the company’s senior manager of market research. For this year, Honeywell (Booth 2600) sees business jet deliveries reaching between 630 and 640, which would be the lowest amount delivered since 2004. Handfield noted that total was affected by some program delays that resulted in aircraft entering service later than anticipated. “Because of that, some deliveries will not happen this year,” he said.

But the company sees signs of encouragement for next year. “A better used-aircraft market environment, coupled with the entry-into-service of many new business jet platforms, will lead to higher deliveries in 2019 after a virtually flat year in 2018,” explained Bill Kircos, Honeywell Aerospace’s vice president for global marketing. “We are excited about the used market and about new and innovative aircraft models that will not only drive solid growth in 2019 and 2020, but also have a significant impact on new business jet purchases in the midterm and long term.”

According to Handfield, the available used, young business jet inventory in the U.S. is down to 4 percent, a decrease he credits at least in part to the recent tax cuts and bonus depreciation. Overall, available young aircraft inventory has declined by 30 percent year-over-year and is currently almost three percentage points lower than the historical average of 8 percent. “Once the inventory runs out of good airplanes, they are going to go international, which is what they’re doing currently to brokers, and once that’s gone, people are going to start buying new planes,” he said. For 2019, the forecasters predict high single-digit growth in deliveries.

Upgrade Plans

Based on the results of Honeywell’s 2018 global outlook, which polled more than 1,400 corporate flight departments representing over 4,400 business aircraft, business jet operators expect to make new jet purchases equivalent to approximately 20 percent of their fleets over the next five years, up slightly from last year but still down several points from 2016’s survey.

While 14 percent of those purchases worldwide were expected to occur by the end of 2019, another 40 percent were slated between 2020 and 2021, indicating strong short-term activity. Super-midsize and large-cabin jets received 62 percent of all mentions and are expected to account for more than 87 percent of expenditures over the next half-decade.

The company’s longer-range forecast for the remainder of the decade predicts an annual growth rate of between three and four percent as new models, improved economic performance, and anticipated favorable exchange rates for international customers contribute to industry growth.

Among the most surprising results to Handfield in this year’s survey, was an increase in purchase intentions stemming from Europe. “Those purchase intentions rose to 33 percent, 14 points higher than last year and the best survey results from the region in the past five years. The results still indicate a cautious approach, however, with only 26 percent of the purchases planned for the first two years of the survey window.”

“I think it post-Brexit anxiety,” Handfield told AIN. “Brexit is not fixed at this point, but...at least they are talking and negotiating, so I think that helped a lot.” Purchase intentions are highest in England and Germany, he noted.

North America, which is home to 65 percent of the industry’s installed base, will be account for an estimated 61 percent of the global demand over the next five years, according to the survey respondents. Approximately 36 percent of operators there plan to schedule their new purchases within the first two years of the five-year survey window, 3 percent lower than last year, but still higher than the worldwide average of 30 percent.

Despite an increase from Brazil, Latin America’s expected purchase plans dipped by 7 percent from a year ago. The survey, which was conducted earlier this summer, saw a decrease in near-term purchase intentions from Mexico, which may have been tempered by uncertainty that had surrounded the U.S. participation in the NAFTA agreement. Based on the current purchase plan levels, Latin America would represent 12 percent of total business jet demand over the next five years.

The Middle East and Africa is projected to account for four percent of the global demand over the span of the survey. The percentage of respondents that indicated they will replace or add to their fleet declined from 18 percent to 14 percent year-over-year, impacted by political tensions and continued conflict in the area.

Operators in the Asia-Pacific region indicate a 12 percent acquisition plan for their fleet through 2023, which would account for 7 percent of global new jet demand over that period. Only 15 percent of Asian respondents plan their purchases within the next two years.

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Aviation management software provider WinAir (Booth 3679) is unveiling a new series of dashboards designed to better illustrate various data sets for a range of aircraft operations. The new pie charts, bar graphs, and line graphs are meant to enhance data presentation for managers of maintenance, inventory, accounting, administration, reliability, parts sales, and real-time labor tracking. These new graphics can illustrate performance data such as aircraft availability, hangar visits by aircraft, aircraft utilization, quarantine status queues, total labor per template, and aircraft defect per flight hour. The dashboards are available as add-ons for new WinAir Version 7 packages, as well as retrofitted to existing customer software as specific modules.
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IDEAS BORN TO FLY™
Avinode celebrates heritage, growing charter market

by Ian Sheppard

Avinode (Booth 4114), which specializes in supporting the business aviation charter market with its online platforms and software—Avinode, TripManager, and SchedAero—is celebrating its Swedish heritage this week at NBAA 2018. It said it is also enjoying a notable pickup in the charter market.

“A sense of renewed and justified optimism is building throughout the industry…”

— Senior commercial analyst Harry Clarke

“Avinode...Visitors to our stand will get a sense of renewed and justified optimism is building throughout the industry,” said Clarke, who said the trend toward use of online and mobile device booking was likely to continue. “The challenge ahead is to improve business aviation’s online offering to be as seamless and transparent as the digital services provided by the rest of the industry.”

Avinode is also reporting a 47 percent increase in air charter searches through API interfaces with its platform. It estimates 80 percent of the broker and operator community use Avinode, but only one in 10 of these use its “BaZaC” products. However, that still accounts for “almost 50 percent of total traffic on Avinode.”

Meanwhile, Avinode has upgraded two web apps, allowing operators and brokers to add full Avinode search capabilities to their own websites, with or without an “empty leg” app. This is all within the third-party’s own website and branding. Monitoring such activity is also included as a new feature in the updated web apps.

Executive AirShare is dropping “executive” from its name and rebranding itself with a new logo and website. “We felt strongly that we needed new branding to emphasize the incredible growth opportunity ahead of us,” said AirShare president and CEO John Owen. The company offers charter, aircraft management, flexible interchange, and fractional ownership for the Embraer Phenom 100 and 300, and Bombardier Learjet 45XR. Locations include Kansas City, Wichita, Tulsa, Oklahoma City, Fort Worth, Dallas, Houston, San Antonio, Denver, and Buffalo.

News Clips

飞行安全扩大US课程提供

FlightSafety International (Booth 2698) is expanding its UAS portfolio with an eLearning course geared for the FAA’s Part 107 Remote Pilot License Written Test and has laid plans for additional ground and flight-training courses. New courses will include a safety management systems course for professional UAS aviators and a UAS flight risk assessment tool supported by FlightSafety’s FlightBag app that is due to be released in mid-November.

In another eLearning offering beginning in December, FlightSafety will offer a crew cockpit resource management course designed specifically for professional UAS aviators and other crewmembers. In January, FlightSafety expects to begin practical UAS flight training at its U.S. learning centers that include both a proficiency series and industry-specific courses. The company also provides customized training courses for operators upon request.

飞行颜色标志着100架挑战者翻新

Canadian MRO and completion specialist Flying Colours (Booth 775) redeemed in early October its 100th major retrofit of a Bombardier Challenger 604. The design team at the company’s Peterborough, Ontario, headquarters facility worked with the 604’s new owner and current operator to create an interior featuring a black and gold palette. Six reclining seats adapted from Challenger 650-style seat frames with molded armrests are complemented by a three-place divan, all clad in black leather. The light trims, buckles, and control panels are in contrasting matte gold, and side ledges, panels, doors, and monuments are finished with a gloss anigre veneer.

The update also included Gogo Avance L3 connectivity and Rockwell Collins Venue cabin management system installations. Only minimal maintenance was performed on the aircraft, as it had undergone a 96-month check at the facility a year ago.

Sino Jet实现IS-BAO level 3认证

Hong Kong and Beijing-based Sino Jet, which manages more than 40 business jets in Greater China and around the world, has become the first Chinese operator to be accredited as IS-BAO Level 3 by the International Business Aviation Council (IBAC). Sino Jet has operating bases in Shanghai, Shenzhen, Guangzhou, Xiamen, Zhuhai, and Chengdu.

Level 3 registration is the highest achievable in what has been a five-year, performance-based assessment focusing on Sino Jet’s safety management system, implemented in 2013. “Safety is at the core of everything we do at Sino Jet,” said Jenny Lau, founder and president of Sino Jet. “The growth that we all expect and wish to see in China can only be achieved with a consistent application of best practices. We believe that this step forward supports not just Sino Jet’s objectives, but that it will also lead to an enhanced culture of safety for business aviation in China.”

Lau is also the current chairperson of the Asian Business Aviation Association (AsBAA), which will hold its annual awards on November 10 in Hong Kong with a James Bond 007 theme, “Diamonds in the Sky!”

Steve’s航空命名为SmartSkyDistribution

Steve’s航空已经作为一款授权的经销商进行销售和安装的设备的SmartSky Network 4G LTE air-to-ground network，which will soon roll out across the entire U.S. The MRO company (Booth 656) will sell the equipment from its three locations—Greenville, South Carolina; Dayton, Ohio; and Nashville, Tennessee—for “many business jet models, using STC licenses obtained from other SmartSky distribution partners.”

“The demand for reliable, full-functioning in-flight connectivity has never been greater,” said Phil Stearns, Steve’s Aviation sales and marketing director. “The SmartSky Networks [Booth 2015] 4G LTE system combines the bidirectional high-speed, large capacity and low latency necessary for a true office-in-the-sky experience, making it a breeze to surf the web, use VPNs, access the corporate cloud, play live games, videoconference, make calls, and more.”

The SmartSky network uses beamforming, a 5G technology, to deliver a secure signal to each aircraft in the network, added the company. “Each beam communicates with just one aircraft at a time, ensuring high performance regardless of network loading.”

FlightSafety增加PC-24模拟器培训

FlightSafety International (Booth 2650) will offer Pilatus PC-24 training at its learning center in Paris by the end of next year. Training for the Swiss-manufactured twinjet is currently offered at FlightSafety’s Dallas location, using a simulator qualified to level-D by the FAA and EASA.

The new Paris-bound Flitsoo simulator for the PC-24 is currently being developed at FlightSafety’s design facility in Tulsa, Oklahoma. It will come equipped with the Honeywell Primus Apex avionics suite, as well as many of FlightSafety’s latest technological advances.

A CrewView collimated glass mirror display allows for distortion-free optical clarity and sharpness and provides a spherical shape for exact geometry across the pilot’s viewing area, while the simulator’s Vital 1100 visual system “enhances training by providing highly detailed mission-specific imagery with vastly improved scene content and exceptional environmental effects.” FlightSafety also includes a whole-earth environment and worldwide database that incorporates real-time terrain information and satellite imagery.
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Seacoast National touts personalized banking style
by Amy Loboda

Most buyers don’t want outsiders to know the details of how they secured financing for their business or personal aircraft or yacht. Unless you are a public entity, that’s best left private. The financiers in the aviation and marine finance division of longstanding east-Florida bank Seacoast National (Booth 3526) recognize this, and it is their discretion and personal service that is making the bank stand out in financing turboprops, light, and medium business aircraft. The company recently announced it joined the National Aircraft Finance Association (NAFA), a professional network of aviation lenders.

Seacoast is a survivor, having existed continuously and grown as a community bank for more than 90 years. Today it holds more than $5 billion in assets and has branches throughout northeast, central, and southeastern Florida. It was known for its personal service and offering competitive interest rates in its marine and recreational vehicle loan division, but it wasn’t until the mid-2000s that the bank began making a significant number of aircraft loans.

According to Phillip Bartholomew, yacht and aircraft finance specialist at Seacoast Marine Finance, located in Fort Lauderdale, Florida, that decision was customer-driven.

“Our typical customers are high-net-worth business owners or professionals and small- to medium-sized corporations who are looking to purchase these assets. Our loans are typically up to about $9 million, which encompasses a huge percentage of the aircraft sales market,” he explained. How does a relatively smaller community-style bank compete with the behemoths of the mid-Atlantic, the Northeast, and Europe on aircraft loans? By understanding both the market for the collateralized asset (the aircraft) and the customer’s needs, Bartholomew told AIN. Without a solid understanding of the intrinsic value of the aircraft, its wear-limited parts, and long-term marketability (most of which require research, but not a crystal ball, according to Bartholomew), bankers sometimes make loans they later regret.

“Our business model is based solidly on excellent customer service. From the first call, the client will work with one loan officer, who stewards the project from start to final signatures. We have the flexibility to customize terms depending on the type of aircraft and the age of the aircraft. We don’t have a one-size-fits-all loan program. Instead, we spend a great deal of time earlier in the conversation trying to decide what’s going to work best for the customer and then crafting a solution for them,” he told AIN.

Business has been good for the past couple of years, which is part of what brings Seacoast to NBAA 2018. “Look, I love kicking tires, so to speak, at the displays, and seeing firsthand what is available for our clients. So it is nice when the show is nearby. The conference helps us keep track of industry trends and industry changes, including regulatory changes that might affect how we do our business,” he said.

“We come to the show to learn and expand our contacts, including attorneys who specialize in aviation law, title insurance companies, and of course aircraft sales professionals who we hope will refer their clients to us when the time is right. NBAA is a distillation of many facets of what makes us successful in our business,” he added.
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Dassault Aviation looking back

DECEMBER 2017
Dassault Aviation cancelled the Falcon 5X program on December 13 and scrapped its contract with Safran for the troubled Silvercrest turbofan that was to power the new twinjet. At the same time, Dassault CEO Eric Trappier launched a new Falcon, powered by Pratt & Whitney Canada PW800 engines, that features the same cross section as the Falcon 5X and a range of 5,500 nm. The delivery of compliant Silvercrest engines was originally planned for the end of 2013, but Safran met recurrent technical issues during the program development. Consequently, Dassault postponed the 5X’s service entry from 2017 to 2020, a date that further delays made unworkable.

FEBRUARY
Dassault released details about and revealed a large model of its newest business jet, the Falcon 6X, a replacement for the 5X, a project canceled due to multiple delays in the development of its proposed Snecma Silvercrest engines. The 6X will have Pratt & Whitney Canada PW812D (“D” for Dassault) engines. The 13,000- to 14,000-pound-thrust PW800 family has logged more than 20,000 test hours. It has also been selected to power the Gulfstream G500, with the Pure-Power PW814GA, and the G600 with the PW815GA. The engines are far from the only change. The new twinjet will have a 20-inch-larger cabin, enabling either a larger aft lounge area or a choice of larger forward galley or a crew rest area. The 6X will also have a 300-nm range increase over the 5X (to 5,500 nm), and first deliveries are scheduled for 2022.

MAY
Reliable and fast airborne connectivity is critical for the new passenger-facing products Dassault is planning, and at EBACE the company launched FalconConnect to address that side of the equation. FalconConnect simplifies the user experience by providing one-stop connectivity services for owners and operators of new and in-service Falcons. Instead of buying airborne hardware and then arranging for service with a service provider, FalconConnect bundles all of the service, billing, and technical support into one simple plan and one bill. Dassault has partnered with Honeywell GoDirect services to support FalconConnect.

JULY
Dassault Aviation logged orders for 18 Falcons in the first six months, compared with 14 in the year-ago period. The company delivered 15 Falcon jets to customers in the first half, two fewer than a year ago, though it still plans to deliver 40 Falcons in 2018 as it estimated earlier this year. Falcon backlog stood at 55 aircraft on June 30, worth €2.5 billion ($2.9 billion), compared with 52 at the end of 2017 when 5X orders were still included in the figure.

AUGUST
On a flight from Teterboro, New Jersey, to São Paulo, Brazil, for the LABACE show, Dassault’s Falcon 8X set a new speed record. The record flight was between Teterboro Airport (KTEB) and Foz do Iguaçu, Brazil (SBFI), and achieved an average speed of Mach 0.86 for a total time of 8 hours 46 minutes. The record has been submitted to the U.S. National Aeronautic Association and is pending formal approval.

JANUARY
Deliveries of Falcon business jets were nearly 9 percent higher last year than forecast by Dassault Aviation. The French aircraft manufacturer shipped 49 Falcons last year, four more than forecast and on par with its overall number of business jet deliveries in 2016. Order intake was also more robust as net orders for Falcons climbed to 38 units last year, up from 21 net orders in the previous year. Last year’s net orders include three cancellations for the Falcon 5X.

Serge Dassault, billionaire businessman and politician who led Dassault Groupe, died at his Paris office on May 28. He was 93.
SEA Prime prepares for FBO at Malpensa

by Ian Sheppard

Milan’s main international airport, Malpensa, to the northwest of the city, is set to get a dedicated business aviation facility in June 2019, according to SEA Prime, the subsidiary of the Milan airports operator that already runs the Milan Linate Prime FBO.

According to Chiara Dorigotti, general manager of SEA Prime S.p.A. (Booth 4079), Milan Malpensa Prime is currently being built and will be a 1,400-sq-m/15,000-sq-ft facility “located between Terminals 1 and Terminal 2.” She noted, “We already have GA traffic there but currently GA passengers have to go to Terminal 2, which is the easyJet terminal.”

Overall, the project is costing €4 million ($4.65 million) covering a new apron, parking and the FBO itself. SEA Prime also has a 5,000-sq-m hangar already dedicated to business aviation.

Dorigotti said Milan is its only focus rather than trying to expand elsewhere in Italy. “We are the airport manager in Milano unless our shareholder [SEA] looks at expansion. It is the largest market in Italy by far for business aviation, with over 22,000 movements a year, the fifth highest European city.”

She noted that according to WingX data, August was “the busiest for the last decade” for European business aviation, traffic increasing by 2.4 percent year-on-year. Milan Prime saw a 3 percent increase in movements in September and a 5 percent increase in aircraft max takeoff weight (to an average size of 17 metric tons) compared to September 2017.

Key events in Milan are driving a lot of business aviation traffic, in particular the Monza Grand Prix and Fashion Week in September, as well as Design Week in April, said Dorigotti. There has also been considerable activity from other companies locating at Linate. “We see a trend that is very positive,” she said. “Leonardo has opened a maintenance base for helicopters and has some based there, and Bombardier and Gulfstream also have capabilities there.”

Rather than being a direct part of an FBO chain, SEA Prime has a “minority stake in Signature for Italy; they’re part of the business and we lease space to them,” said Dorigotti. “We also have Universal, SkyService, etc…and we monitor the quality they offer here.”

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October 16 – 18, 2018
Booth 1281
NATA names new president after Hiller steps down

by Curt Epstein

Long-time industry veteran Gary Dempsey has been selected by the National Air Transportation Association’s (NATA) board of directors to succeed Marty Hiller, who announced that he will step down as president. Hiller was a board member of the trade group since 2010, and in 2016, he agreed to take on the role of president pro bono, after the departure of Thomas Hendricks, initially on a temporary basis. The announcement came on September 14 and Dempsey began his duties immediately after.

“Marty stepped in to lead at a critical point for the association and did an outstanding job,” noted Greg Schmidt, president and CEO of Pentastar Aviation and a former NATA board chairman. “He has helped put the association in a solid financial position for years to come, and led the battle on many of the threats facing the industry, including ATC privatization, workforce shortages, and illegal charter. Marty has consistently demonstrated the value of NATA to our members through the development of innovative products and services.”

Hiller will retain the non-operational title of director emeritus at NATA. In a note to the organization’s members, he thanked them for their support and willingness to assist both him and the organization over the past several years, adding NATA will continue to focus on helping its members as the leading voice for aviation business. “I am very confident in the future of the NATA, and the vital role a leading aviation trade association provides the general aviation industry.”

Dempsey, who recently retired from his position as Jet Aviation’s senior vice president of sales for the Americas, was a current NATA board member and former chairman before being tapped as the ninth president in the 78-year history of the organization. The transition follows a succession plan set up by the association to continue leveraging the experience of its members in driving its policy and effecting meaningful change in the industry.

“The board and executive team recognize the incomparable benefits that decades of industry experience and years of NATA board leadership afford in ensuring how to best direct the association and serve the unique needs of its membership,” explained current NATA chairman and Ross Aviation head Jeff Ross. “We welcome Gary and congratulate Marty on all his success serving as NATA president.”

From the Ground Up

Dempsey’s aviation career reaches back half a century, as he started working a night job for an airline while still in high school. He soon earned his pilot’s license along with an A&P certificate, began serving as a mechanic, and established his own FBO. Later positions included field service manager with Cessna, head of Beechcraft’s maintenance operation, and vice president of operations for General Dynamics Aviation Services. Dempsey joined Jet Aviation in 2003 as senior vice president for aircraft maintenance and OEM development.

“I grew up in the industry, so certainly it was a compliment to me to be selected by the board,” Dempsey told AIN. “I think when a board asks you to take the role, you feel obligated to serve. I still feel like I have something to contribute to the industry, to give back.”

Looking ahead, he sees opportunities for the organization to swell its ranks from all the new technologies that are developing, such as providers of new charter-booking software platforms. “We also have a number of smaller air carrier start-ups coming in and NATA would be a great source of information in best practices,” he said, adding that he envisions the organization taking an even larger role in helping increase industry safety through its popular training programs.

Another area of concern is shortages in skilled labor. “Aviation has been a great career for me, I know it is for thousands of other people and I think NATA can help lead that path,” Dempsey said.

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BizJet International exits completions biz, refocuses resources on engine MRO work

by Chris Kjelgaard

Tulsa, Oklahoma-based Lufthansa Technik subsidiary BizJet International Sales and Support has embarked on a large-scale expansion of its engine MRO business as the company’s business-jet and VIP interior completions operations come to an end.

Long a provider of engine MRO for Rolls-Royce Speys and Tay engines powering Gulfstream business jets, BizJet International quietly began performing MRO work—mainly by providing mobile engine services—on IAE V2500 turbofan engines for one major customer about a year ago. Now it is planning to expand its V2500 engine-MRO capabilities even further in the next few years by adding an additional 116,547-square-foot hangar it is now renovating, it will have 32 engine bays available. Others will become active later.

The additional bays will “provide more space than we need for the next to one or two years, but the area next to the engine shop is under construction, which is not good” for ensuring high-quality engine MRO work in closely adjacent areas, said Magunna. “So we are investing now to be prepared, so we get a balance between quality, growth, and [turnaround] speed.”

In addition to its two large engine-MRO facilities, BizJet has two 80,500-square-foot hangars. It uses one for aircraft visiting its seven-day FBO and for removing and storing Gulfstream jets’ Spey and Tay engines and the other as an overflow hangar. BizJet International’s site has additional space for facilities to handle future business opportunities, according to Magunna.

BizJet’s engine-MRO growth plan encompasses a staff increase commensurate with the rapid expansion of its physical capabilities. This year the company is hiring 60 more employees for its engine-MRO business to add to the 100 it had in January, according to Magunna. Next year it will add 30 percent, or about 50, more; and in 2020 it will increase its engine-MRO staff by another 30 percent—by then another 60 to 65 employees. In addition to mechanics, BizJet will hire customer-service, engineering, supply-chain, and administrative staff to handle its increased engine-MRO workload.

Many new employees are likely to be graduates of a 12-week A&P mechanic apprenticeship-initiation course BizJet International runs every three months at the request of the state of Oklahoma. While BizJet isn’t guaranteeing it will offer every graduate full-time employment, “at the moment” its engine-MRO expansion requires the company to hire more employees annually than there are graduates from the initiation courses, according to Magunna. The company began the courses in February and hired eight graduates by September.

BizJet International completed its last aircraft interior-completion job at the end of last month.
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Honda Aircraft looking back

OCTOBER 2017
Honda Aircraft selected Honsan General Aviation of Guangzhou as a HondaJet dealer in China. The company will also provide maintenance services for customers based in China, Hong Kong, and Macau. Honsan General Aviation is located at Guangzhou Baiyun International Airport.

FEBRUARY
Honda Aircraft signed a memorandum of understanding with French air-taxi firm Wijet for 16 HA-420 HondaJets. The deal is worth approximately $60 million at list prices, making it the biggest aircraft contract yet for the aircraft manufacturer.

Honda Aircraft was scheduled to begin deliveries in the first quarter, with the aircraft replacing the operator’s Cessna Citations over the next 18 months. Wijet said it hopes to expand operations from 1,200 to 1,500 airports across Europe and North Africa with the HondaJet.

APRIL
Honda Aircraft’s HA-420 HondaJet has received type certificates from Argentina’s Administración Nacional de Aviación Civil (ANAC) and Panama’s Autoridad Aeronáutica Civil (AAC), the company announced at FIDAE 2018 in Santiago, Chile, where the twinjet was making its debut appearance at the airshow.

In addition, Honda Aircraft and its dealer HondaJet Central Europe celebrated the entry-into-service of the first HondaJets in the region, debuting the aircraft in a ceremony at Chopin-Warsaw Airport. Polish operator Jet Story will manage the aircraft, which will be available for charter in Europe, the UK, Russia, and Scandinavia.

JUNE
Honda Aircraft expanded sales to Japan with the appointment of Marubeni Aerospace as HondaJet Japan, which will provide sales, service, and maintenance of the light twinjet in the region. The company submitted an application for Japan Civil Aviation Bureau type certification last month, and the first HondaJet Elite is expected to be delivered there in the first half of 2019.

JULY
Thirteen years after introducing a new light business jet design at EAA AirVenture in 2005, Honda Aircraft brought the latest version of its HondaJet—the HondaJet Elite—to the 2018 show where it made its U.S. public debut. Elite and original HondaJets are sharing the production line, but eventually, all new HondaJets will be in the Elite configuration.

JANUARY
Honda Aircraft exhibited at the Singapore Airshow for the first time, bringing two HA-420 HondaJets, one for display at the Singapore Airshow and another for customer demonstrations at Seletar Aerospace Park. The company also set its sights on expanding the number of countries in which the airplane is certified. The next type certification validation planned was for the China market, with Chinese CAAC approval expected in early 2019.

Honda Aircraft president and CEO Michimasa Fujino said the company is trying to change the attitude of business jet buyers in the Asia-Pacific region, but especially in China, hoping to convince potential owners that the light HondaJet is an ideal fit.

Interest in business jets in Asia tends to favor large-cabin jets, and that is where most sales have trended. “We’re looking to penetrate this market by introducing a very efficient jet,” Fujino said.

MARCH
ANA Holdings signed a memorandum of understanding with Honda Aircraft that will involve the use of the HondaJet on certain flights, particularly in the Japanese market. The companies formed a strategic partnership to expand the private jet market in Japan. Such an expansion has long been a goal of Honda Aircraft, which has held demonstration tours there even when the company did not have immediate plans to sell the HondaJet into the market.

The companies said only that ANA will introduce business jet users and its commercial flight customers to the HondaJet on charter and feeder flights expected to begin this summer. Honda Aircraft will support these operations, including establishing a ground support framework at various ANA transit locations.

MAY
Honda Aircraft unveiled a new version of its light jet, the HondaJet Elite: More than just a cosmetic upgrade, the Elite expands the light jet’s performance envelope while adding interior improvements and significant updates to the Garmin G3Xtope-based flight deck.

The FAA issued an amended type certificate for the HondaJet Elite on May 2 and the airplane is EASA certified. Thanks to additional fuel capacity and aerodynamic improvements, the HondaJet Elite needs less runway for takeoff and can fly farther. N12HM range with four passengers is now 1,437 nm, up 17 percent from 1,223 nm. Maximum takeoff weight is up 100 pounds, but some weight-shaving measures carved about 100 pounds from the empty weight, for a 200-pound payload increase. The additional fuel amounts to 16 gallons, achieved by redesigning the aft fuselage fuel tank to fill some unused space in the aft fuselage.

In addition, Honda Aircraft appointed Jetex Flight Support an authorized sales representative to the Middle East, representing HondaJet sales in the UAE, Saudi Arabia, Bahrain, Oman, Qatar, Lebanon, Pakistan, Jordan, Turkey, and Kuwait.

AUGUST
Honda Aircraft began deliveries of the new HondaJet Elite. The first twinjet, registered as N12HM, was delivered to an undisclosed customer in the U.S.
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Completions clients go wild, with bold cabin innovations
by James Wynbrandt

With a new generation of business jets and corporate airliners entering service and aftermarket activity strengthening, completions and refurbishment providers report strong demand for their services. Moreover, customers today are making fashion statements with their interiors, requesting unusual materials, bold colors, and other custom touches that put a unique stamp on their aircraft cabins.

“Clients want something completely different and individualized, from styled to wild,” said Marianne Parkinson, v-p of marketing and brand strategy at Constant Aviation. “They’re not as concerned about resale value; rather they’re more focused on their personal preferences and enjoying the interior to their specifications.”

Lori Johnson, marketing communications manager at Duncan Aviation, agreed. “It’s a change from the more generic and conservative trends in aircraft interiors we have seen since 2009,” Johnson said, citing “a marked increase in the requests for aircraft interiors personalized to the operator’s tastes and usage.”

No need to travel to the static display at Orlando Executive Airport to see examples of current cabin fashion trends first hand. Completion and refurbishment companies exhibiting at the convention center are presenting multimedia displays of their interiors, examples of their rare materials and high craftsmanship, and their interior experts who can explain all facets of the design, engineering and fashion trends that go into today’s aircraft cabins.

Aeria Luxury Interiors customers “have been gravitating toward cleaner lines, subtle three-dimensional textures on broader surfaces, and abstract patterns incorporated into carpets and art pieces,” said Ron Soret, executive v-p and general manager. The VIP completion unit of ST Engineering, Aeria lands in Orlando having recently secured a full cabin refurbishment project for a Boeing 777 from a return customer, as well as receiving approvals to perform modifications on EASA- and Bermuda-registered aircraft. Aeria (Booth 1023) is also celebrating two successful BBJ redeliveries, both featuring Honeywell MCS 5000 Ka-band communication system installations. On the aftermarket side, Aeria is fielding increased requests for cabin refurbishment, CMS/IFE upgrades, and improved connectivity solutions.

Recent interiors feature “a heavier integration of white hues to brighten up spaces and to bring forth a larger appearance,” said Soret. He also noted “requests to create aircraft interiors that feel more homey, almost as if intended to forget one is flying.”

Aeria has also “landed a considerable amount of heavy maintenance and modification projects in 2018” along with its VIP completion contracts, and its hangar in San Antonio, Texas, will be “nearly full for the better half of 2019, with available slots filling up quickly,” Soret said. “It’s fair to say that the market for VIP completions is taking a turn.”

New United Goderich (NUGI, formerly Goderich Aviation) customers are asking for “satin finish woodwork as opposed to high gloss, brighter, more neutral soft goods colors, and enhanced cabin connectivity,” according to Luc Masse, newly hired business development manager.

NUGI is spotlighting in Orlando its interior refurbishment capabilities, seen in projects such as its recent conversion, refurbishment, and repainting of JetSuiteX’s fleet of ERJ-135s. The makeovers included an ADS-B installation using a NUGI-developed STC.

The refurbishments complement the paint services the Canadian company has been known for throughout its more than 25 years in business. A full-service modification and maintenance facility with in-house cabinet and upholstery as well as avionics shops, NUGI (Booth 844) can offer turnkey cabin and cockpit upgrade solutions.

“We have tremendous refurbishment capabilities with a very good track record of quality and enjoyed a steady level of business,” said Masse. Yet with much of the market associating the company with painting services and overlooking the refurbishment side of the house, Masse said, “the company has yet to reach its full potential.”

“One factor that has kept the company off the radar of American operators is our location in Huron Park, Ontario, Canada,” Masse continued. “We may be perceived to be remote; however, our facility [located on a company owned airfield with a 5,000-foot runway] is within an hour’s flight from the American Northeast—well within an acceptable ferry distance.” He added the location “allows us to offer very competitive rates.”

NUGI also recently performed a complete interior refurb and paint on a Learjet for Northeastern Aviation, which was on static display at the NBAA Regional Forum in White Plains, New York, in June, and converted a Bombardier CRJ into a 15-seat VIP aircraft.

Newly appointed NUGI president Wee Hong Tang and the company’s sales and marketing teams are on hand at its convention center display where attendees can see videos documenting the recent CRJ and JetSuiteX Embraer ERJ conversions.

Automotive styling is also driving design trends, with more customers wanting new stitch patterns and seat upholstery design “found in luxury cars such as Ferrari, Bentley, Aston Martin, Jaguar, and Maserati,” said Tom Chapman, senior v-p of corporate aircraft at C&L Aviation Group of Bangor, Maine.

At its display in Orlando (Booth 2230), C&L is highlighting its new interior design and installation capabilities, and in-house ADS-B STC, together allowing the maintenance and repair company to offer turnkey upgrades that are “already bringing interior refurbishment business to Bangor,” said Chapman. “To be able to do this all in-house is big for us.”

Among the items showcased at its booth are C&L’s custom passenger seat upholstery design, and a before-and-after refurbishment display of a pair of aircraft seats that exemplify its “quality of work.”

The new interior design engineering division, C&L Engineering Services, was established this year to provide engineering support for the refurbishment projects. Concurrently, C&L moved its corporate aircraft maintenance into a dedicated 20,000-square-foot hangar. The added capacity has created more demand for refurbishments, “triggering plans to double the size of the upholstery shop.”

continues on page 84
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Continued from page 82
and cabinet shops,” Chapman said.

With experience in regional jet sourcing
and conversions, C&L is also developing a
program to transform Rh’s “into high-end
membership shuttles and private charter
aircraft,” said Chapman. “That’s going to
be a long-standing project.”

Additionally, C&L has added Cessna
Citations (XLS) to its maintenance
inspection approvals, joining those for
the Bombardier Challenger 600 series,
Hawkers, Beechjets, and King Airs.

C&L is also announcing at NBAA a
partnership to provide additional support
to sister company Sevenjet Private Travel,
a maintenance facility specializing in tur-
roprops and light jets located at Florida’s
St. Pete/Clearwater International Airport.

Robert Roth, president of Global
Aircraft Interiors, agrees, “The automotive
industry sets the trends for the aviation
industry.” In refurbishing an Astra for a
first-time buyer recently, “We matched the
exterior paint scheme to the custom-
er’s Ferrari, a spectacular white and blue

C & L Aviation Group

color scheme.” In-house designer Nelson
Medina handled the project.

About 80 percent of Global Aircraft’s
customers have their jets on Part 135
certificates to generate charter revenue,
while the other 20 percent are strictly
Part 91. Among the former group, “We’ve
seen a departure in the last couple of
years,” said Roth, with demand for “dif-
fiered colored leather inserts, and a lot of
individually, rather than basic charter,
‘beige-beige-beige.’” Additionally, “Grays
and blues have come back.”

At its convention center display (Booth
2636) the company is showcasing its full-
dimension Gulfstream G550 cabin mockup,
a 12-foot section of the interior outfitted
with custom lighting, seats with Aeristo
leather, ATG window shades, ebony
woodwork from Hi Tech Veneer and other
leather, ebony woodwork from Hi Tech Veneer and other
deluxe touches. “It showcases our uphol-
stery, our cabinet work, and of course our
entertainment systems,” said Roth.

In refinishing today, Wi-Fi connectivity
is mandatory, as are USB ports at every
single seat. “Everyone’s bringing lap-
phones, and so forth, and everyone
expects to plug into the USB port,” said
Roth. Meanwhile, with people bringing
personal devices onboard, demand to
have “the latest and greatest monitors”
seems to be ebbing, especially among
those who charter out their aircraft.

At the conventicn center display (Booth
2636), West Star Aviation, automotive
touches are only the beginning of the
demands. Customers today are asking for
“custom everything,” said Debi Cunningham,
V-p marketing and interior design:
“Custom seat designs, embossed logos,
contrastinng inserts, and the car trend:
customers are bringing their car seats in
and wanting a similar design look and feel
for their aircraft.”

Customers also want more flooring
options. “Where carpet has always been
the norm, we are expanding into lami-
nates, vinyls, and real stone flooring
that looks amazing, with minimal weight,”
Cunningham said. “Customers are asking
about these options now because they are
looking for more.”

West Star, headquartered in East
Alton, Illinois, arrives in Orlando amid
“full-throttle growth and expansion,” said
Cunningham, with the recent comple-
tion of its fourth full-service facility, in
Perryville, Missouri; the extension of its
satellite footprint to Scottsdale Airport
(SDL) in Arizona; and its about-to-open
new paint and maintenance facility at its
Chattanooga, Tennessee, base.

West Star also recently completed
notable exterior aircraft refurbishments,
including a total wing replacement on a
Hawker, and installation of winglets on a
Citation, which Cunningham called
“newer territory for us.”

West Star is co-exhibiting with subsidi-
ary companies Avant and DAS. Meanwhile,
West Star is also taking steps to confront
the growing technician shortage, devel-
opling a program to “educate the younger
generation about benefits of working not
only for West Star but also within the avi-
ation industry.”

For a growing number of owners, a fash-
ion makeover of the cabin isn’t enough.
More clients “are requesting complete
reconfigurations versus interior refur-
bishments,” said Marianne Parkinson,
V-p of marketing and brand strategy at
Constant Aviation. “Clients want high-
end materials, luxury designs, and veneer
styles that more closely emulate a living/
entertainment environment versus a typ-
ical private aircraft.”

One popular refurbishment item is the
company’s kibitzer seat. Introduced in a
Global 6000 a few years ago, it takes its
name from the Yiddish word for a spec-
tator who offers commentary or analysis.
Two kibitzer seats can be stowed within a
credenza opposite the dining/work table,
and unfold to create two additional seats
across from the table. The kibitzer seats
have become so popular, “almost all new
large-cabin reconfigurations clients are
requesting this add-on,” said Parkinson.

At the convention, Constant (Booth
2676) is highlighting the expanding geo-
 graphical range of its interior refurbishment
and modification services, complementing
the work performed at its headquarters
facility at Cleveland Hopkins International
Airport. This year Constant added interiors
services to its MRO facility in Mesa, Ari-
izona, following their rollout in Sanford,
Florida, last year and Las Vegas in 2016.

Comlux arrives in Orlando on the cusp
of inducting the world’s first BBJ Max 8
and among the first ACJ320neos for VIP
completions at its Comlux Completions
facility in Indianapolis, Indiana, with both
inputs scheduled for December. These
corporate airliner buyers set “aggressive
weight [limit] and [completion] down-
time requirements,” said Scott Meyer,
CEO of the Swiss company’s completions
business. “The clients have waited so long
to get their aircraft that they are not toler-
ant of a long completion cycle.”

At the VIP airliner level, “Customer
demands are progressively evolving with
technology,” Meyer said. “We are seeing
more integrated galley/bars that really
blend into the interior rather than the
traditional hidden-away work areas, and
there’s also a trend of new unique mate-
rals being selected and used.”

“Our challenges remain the need for a qui-
erier cabin, more amenities—humidification,
cook tops, pedestal seats, electro-dimming
windows, glass and more extravagant mate-
rals—all while wanting more range and qui-
erier cabins with a downtime tolerance of no
more than 10 months,” he said.

Comlux (Booth 1812) is highlighting at
NBAA its Comlux 3.0 initiative, which aims
to accelerate integration of innova-
tive technologies into company processes,
exemplified by its digital program tools,
3D modeling implementation, paperless
maintenance protocols, and digital manu-
facturing in the upholstery shop. The
initiative is also at work at the show, as
Comlux moves toward a paperless sys-
tem, offering all its brochures and leaflets
digitally, “easy to display, bookmark and
share,” according to Comlux.

The Comlux display, a two-story pavilion
able of hosting multiple meetings, this
year features a touchscreen with presenta-
tions highlighting its aircraft interiors work.

Meyer is leading the division’s man-
agement team, while senior management
from all Comlux group companies are also
on hand.

Continued on page 86
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Meanwhile, back in Indianapolis, while prep work for the induction of the next-gen bizliners continues, technicians are working on a VIP ACJ330 widebody completion for delivery in the new year, and a BBJ cabin upgrade slated for fourth-quarter delivery.

To prepare for the expected inflow of Airbus Neos and Boeing Maxes, Comlux Completions has almost doubled in staff to 300 this year and is still hiring.

In meeting its clients’ personalization demands, Duncan Aviation (Booth 3896) is using brighter colors, custom carpets in larger-scale patterns, and custom seat designs that use two-tone leathers, quilting, welt cord and contrasting stitching to provide more unique patterns and looks. Unique lighting such as colored and color-changing upwash and downwash lighting, is being used to enhance cabin ambiance or to highlight design and interior elements which could include cupholders, galleys, wine coolers and even lavatory elements. Alternative finishes such as carbon fiber material, painted finishes, and metal and leather on cabinets are also gaining popularity.

Technology advances in cabin management and in-flight entertainment systems and connectivity solutions are generating a substantial amount of refurbishment activity, Johnson noted, and “driving design changes to integrate new touchscreen switch panels, larger HD monitors, and carry-on devices” into the refreshed interiors.

A full spectrum of the Lincoln, Nebraska-based MRO’s cabin refurbishment and upgrade options for business aircraft are on display here at the convention center (Booth 3896), and interiors specialists are at the ready to discuss interior trends and answer visitors’ questions.

Flying Colours, the Canadian Bombardier completion and modification specialist, has also noted shifts in customer preference for colors, materials, and seating—and not just in the stitching for the latter. Seats are getting thinner and more organic in shape, replacing the bulky traditional shaped business class style, said Sean Gillespie, executive v-p, sales and marketing. Soft leathers on thinner frames give the structure a contemporary look, he added.

Additionally, “We’ve seen a change in color palettes recently with the white through gray palette in high demand. The wood veneers are also moving toward more exotic types, often stained in light gray or white. Matte and satin finishes on wood and metals are also proving popular.”

Changing tastes in color are helping bring new materials into the cabin. “We have worked with carbon fiber for a while, but we’re now experimenting with other materials, for example, fiberglass and Kevlar, to increase our color palette options,” Gillespie said.

Flying Colours (Booth 1735) arrives at NBAA amid major expansions, having just doubled the size of its St. Louis facility with the addition of 60,000 sq ft of space, while groundbreaking preparations for a fourth hangar at its Peterborough, Ontario HQ facility are in full swing. Meanwhile, NBAA 2018 marks the North American debut of its new display area.

“It highlights our design and showcases our professional approach to our customers,” said Gillespie. “We hope that our existing clients will come and enjoy a coffee with us and prospective new clients will be attracted by our new corporate videos highlighting our variety of services.”

The booth showcases Flying Colours’ interiors, its special-mission and medevac modification programs and maintenance capabilities. The key message of its full-service offerings, said Gillespie, are that “a single aircraft can benefit from refurbishment, maintenance, avionics upgrades, and paint work services performed under a single roof.”

The St. Louis expansion was primarily to support cabinetry and monument manufacturing and finishing, and Flying Colours is already at full capacity and looking at adding more space,” Gillespie said. “This also means we are recruiting heavily to support growing output.”

The new hangar at Peterborough is intended primarily for increased large-jet completion and heavy-maintenance demand and will accommodate narrow-body VIP airliners.

Flying Colours also added a dedicated paint booth at Peterborough this year to accommodate its contract paint work on Bombardier Global 5000/6000 fuselages for MHI Canada Aerospace.

The company is also touting its STC for ADS-B Out installations on Challenger models and Ka-band systems on Bombardier and Gulfstream airframes. Gillespie reports Gogo’s Avance L3 and L5 is “also becoming very popular amongst our North American customers.”

Flying Colours sold a minority interest this year to New Heritage Capital, a private equity firm. The investment amount “can’t be disclosed,” Gillespie said, but was “sizeable,” and is helping fund the Peterborough expansion, among other projects.

Capital Aviation is fielding customer requests for lighting and interior-panel upgrades, the latter to a “smooth” look, while demand for interior materials is shifting to dark wood; light gray or tan seats; more custom carpets; and less gold plating, said Bill Boettger, president and CEO.

The interior refurbishment and paint services firm, is celebrating its 25th anniversary in 2018, and also received this year an STC for a 16g divan for Challenger 300/350s, Boettger said.

Upgrade projects at the DGAC-approved repair station at Wiley Post Airport in Bethany, Oklahoma, this year have included interior floor plan changes in Falcon 900cs and Challenger 650s; WAAS/LPV and ADS-B installations on Challenger, Citation, Hawker, and Astra platforms; and FANS-1A installs in Falcon 900Bs.

Capital (Booth 2012) is also displaying Protek 5000 insulation, which it recommends for noise reduction, better temperature control, and enhanced safety and is showcasing the material’s thermal properties in demonstrations at its display area.

Capital announced at the show it is partnering with Mexican repair stations to provide engineering, parts and technical support for avionics installations in Mexico and at its Oklahoma facility. Capital can handle as many as eight corporate aircraft simultaneously. Capital’s Mexico sales representative is at the company’s display.
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Embraer looking back

SEPTEMBER 2017
Embraer Executive Jets delivered the first midsize Legacy 500 assembled at its recently expanded Melbourne, Florida plant to an undisclosed U.S. customer. The facility assembles all Phenoms and some Legacy 450/500s, with the remainder of the midsize jets produced at Embraer’s headquarters in São José dos Campos, Brazil. The Florida facility has assembled and delivered two Legacy 450s and nearly 260 Phenoms.

MARCH
Embraer Executive Jets delivered the first Phenom 300E. This follows recent type certifications of the light jet from the FAA, EASA, and Brazil’s ANAC. Cabin enhancements include new customizable seats, available in a wide choice of leathers and stitching, that incorporate extendable headrests with bolsters, extendable leg rests, and retractable armrests. Seat coverings can also be easily removed for repair or replacement.

OCTOBER 2017
Embraer introduced the new Phenom 300E, an updated version of the Phenom 300, at NBAA 2017. The “E” stands for “enhanced” and refers to the jet’s redesigned cabin and the addition of Lufthansa Technik’s nice HD CMS/IFE (High Definition Cabin Management System/In-flight Entertainment) system. Deliveries of the $9.45 million Phenom 300E were scheduled to commence in the first quarter of 2018.

APRIL
Embraer delivered 11 executive jets in the first quarter. In the same period last year it delivered 15 executive jets. The 11 executive jets consisted of eight light jets (three Phenom 100s and five Phenom 300s) and three “large jets” (two Legacy 450s and one Legacy 500). In the first three months of last year, the airframer delivered 11 light jets (three Phenom 100s and eight Phenom 300s) and four large jets (one Legacy 450, one Legacy 500, one Legacy 650, one Lineage 1000). The 14 commercial airliners delivered in the quarter included 11 E175s and three E195s.

Embraer Services & Support completed the first upgrade of a Phenom 300 with a two-person divan, increasing aircraft capacity to 11 people. The upgrade was completed at Embraer’s service center in Sorocaba, Brazil, via a Service Bulletin that is now available and applicable to the more than 430 Phenom 300s in service around the globe.

JULY
Boeing will take an 80-percent share of Embraer’s commercial aviation business under the terms of a non-binding agreement. Under the terms of the agreement, Boeing will hold an 80 percent ownership stake in the joint venture and Embraer will own the remaining 20 percent stake. The transaction values Embraer’s commercial aircraft operations at $47.5 billion and contemplates a value of $3.8 billion for Boeing’s 80 percent ownership stake in the joint venture.

The companies expect the transaction to close by the end of 2019, or 12 to 18 months after execution of the definitive agreements. The two companies made no mention of what will happen to the Embraer Executive Jets division, but a statement from an Embraer spokesman said, “Embraer Executive Jets will continue with Embraer.”

During 2017, Embraer Executive Jets delivered 109 airplanes, among them the division’s 1,100th jet (a Phenom 300). Net revenues for the business jet division during 2017 reached $1.485 billion, while the company’s commercial division generated net revenues of $3.372 billion.
As the business aviation industry continues to face a workforce shortage, salaries are rising, with several positions up by double digits and at least one position category experiencing a 30 percent increase, according to the 2018 NBAA Compensation Survey.

NBAA, which has conducted surveys on aviation department salaries since the late 1960s, released the results of the 2018 edition in late August. This year’s survey marked its largest data set to date, encompassing 790 NBAA operating member companies that provided data for 4,130 employees.

NBAA found an average of 3 to 4 percent increases across the 16 positions involved in the survey. The total cash compensation for non-flying aviation department managers jumped 30 percent, to $205,000 (numbers are rounded); maintenance foremen were up 14 percent, to $127,000; and senior captain’s cash compensation climbed 12 percent, to $197,000. This category represented the majority of the aviation department managers accounted for in the survey. By contrast, the number of non-flying counterparts, averaging $90,000, while line service personnel salaries—down 12 percent and 10 percent, respectively—which is cause for further analysis,” he said. The total cash compensation for a licensed dispatcher averaged almost $90,000, while line service personnel averaged just under $47,000.

For aviation department managers who do some flying, total cash compensation was just a little lower than that for their non-flying counterparts, averaging $197,000. This category represented the majority of the aviation department managers, with salaries of 368 factored in the survey. By contrast, the number of non-flying managers accounted for in the survey came in at 38.

Chief pilots, meanwhile, made an average $154,000 in total cash compensation, based on 315 salaries. The largest group measured was captains at 1,157, with an average of $132,000 in cash compensation. Directors of maintenance salaries averaged $138,000 and A&P technician salaries came in at $99,000. Flight attendant salaries averaged $87,000.

Avionics technicians led the 16 categories for average tenure with their companies (14.6 years) and in their positions (10.2 years). The highest turnover appeared in the co-pilot role, with an average tenure with their companies of 2.7 years and two years in their positions. The survey was fairly evenly dispersed by company size, although those with less than $100 million in annual sales made up the second largest category at 15.7 percent. The largest category, at 16.3 percent, involved companies with sales between $100 million and $500 million. Companies that bring in sales of more than $1 billion represented 9.3 percent of the survey respondents. Just over half (54.6 percent) of the survey participants have one aircraft; 27 percent have five or more. The financial, insurance, and banking industry was the largest represented at 12.2 percent.

“Industry leaders and our participants say this summit gives them a sharper focus on the direction of their businesses for the coming year.”

The event includes a workshop and reception on Tuesday, and an all-day program of industry speakers and panelists on Wednesday, ahead of the NBAA Regional Forum at nearby Westchester County Airport on Thursday, June 6.

“Industry data provider Jetnet (Booth 4449) will host its annual Jetnet IQ Global Business Aviation Summit at the Ritz-Carlton Westchester on June 4-5, 2019. The company will be sharing its latest market intelligence and business jet delivery forecast.”

“Earnings forecasts have proven to be 99.6 percent accurate for five years in a row, the best in business aviation,” noted Jetnet IQ creator and director Rolland Vincent. “Industry leaders and our participants say this summit gives them a sharper focus on the direction of their businesses for the coming year.”

The event includes a workshop and reception on Tuesday, and an all-day program of industry speakers and panelists on Wednesday, ahead of the NBAA Regional Forum at nearby Westchester County Airport on Thursday, June 6.

“As a company executive, if you value accurate information and forecasts, you should be there, front and center, to see, be seen and speak what’s on your mind,” said Mike Foye, Jetnet’s director of marketing. “These spirited sessions encourage intelligent interaction, penetrating questions and the wisdom of our participants as well.”

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AAR Composites broadens its portfolio of services

by Chris Kjelgaard

AAR Composites now supplies interiors for the wing for the A-10 Wing Replacement System.

AAR Composites broadens its portfolio of services

Having changed its name to AAR Composites (from AAR Aerostructures and Interiors) about 18 months ago to reflect its growth as a manufacturer of composite parts and structures for aerospace, the company (Booth 3785) is working on three fronts to strengthen its flat-panel product line for business aviation.

Citing his company’s advantages in production lead time and pricing, Victor Ho, v-p engineering for AAR Composites, told AIN that the company is “looking to further shorten lead time.” In a closely related second initiative, “We’re working on [increasing] the level of support for the product line,” said Ho. At the same time, a key third initiative is that “we’re working to increase the [product line’s] burn [resistance] and mechanical strength.”

Having begun life in the 1980s as an independent composite-manufacturing company named ATR International, which was purchased by AAR in 1997, AAR Composites has a considerable presence in commercial, business, and military aircraft manufacturing. According to Ho, it designed the interiors for all the single-aisle Boeing 737-700 models and in 2003-2004 developed a strong relationship with Sikorsky, designing the interior of the VIP version of the S-92 A.

AAR Composites now supplies interiors for every S-92A variant, he said. AAR Composites has also recently developed a business relationship with FlightSafety International. For FSI, AAR Composites manufactures the molded layup carbon-fiber composite “petals and skins” that together form the external shell of each full-flight simulator FSI makes for Gulfstream Aerospace’s business jets, said Fitzpatrick.

Strategic Development

Strategically AAR Composites’ bizav flat-panel product line is only one aspect of a larger strategic impetus to enhance its competitive position as a provider of flat-panel and structural composite parts to aerospace OEMs, MRO facilities, and completion centers, according to Fitzpatrick. As part of this process, AAR Composites is working to qualify certain of its flat-panel products so it can supply them to various OEMs in the commercial, business, and military aviation sectors, as well as providers of aviation support services such as MROs. The company expects to complete the flat-panel qualification effort by the middle of 2019. “AAR Composites is working closely with OEMs to qualify products for commercial[,] bizav[,] and military aviation,” noted Ho.

In another, wider strategic move, parent AAR started working in June to more horizontally integrate its composites, MRO services, and engineering services businesses, according to Fitzpatrick. AAR launched the effort so that each of the three units can make use of the other’s products and services “as applicable,” encouraging a higher degree of internal rather than external sourcing. The intention is to make each of the three business units as competitive for AAR’s own internal purchasing requirements as are its existing external suppliers.

To that end, along with the company’s component repair and landing gear services divisions, AAR’s composites, MRO services, and engineering services units were brought earlier this year under the oversight of Brian Sartain, who AAR recently appointed to the newly created position of senior v-p for repair and engineering services. AAR’s move to make its businesses divisions more horizontally integrated may already be paying off: on September 5, AAR Composites received a proposal from AAR MRO Services to supply a range of composite parts, some made from carbon-fiber composite material and others from compression-molded fiberglass, according to Fitzpatrick.

AAR Composites plans to grow its business in the medium term and is considering adding new composite-manufacturing capabilities. As of mid-September it was bidding on “a pipeline of $200 million to $300 million” in manufacturing contracts, according to Fitzpatrick.

He said that if AAR Composites were to win a substantial amount of that business, “the skill-set and the complexity of the work would probably take us a level or two above where we are” now in terms of its manufacturing capabilities. “Our technology insertions are our skill-set capabilities, and what we provide will be more complex than today,” said Fitzpatrick.

AmSafe highlights new restraint system for GA aircraft

AmSafe, manufacturer of passenger and crew restraint systems for corporate and GA aircraft, arrives at NBAA on the heels of July’s FAA approval of its state-of-the-art restraint system (SOARS) STC covering retrofit installations on 541 models of GA aircraft.

The universal seatbelt system is available in two- and three-point harnesses, with protection provided by a lap belt airbag that deploys within 50 milliseconds after detecting longitudinal deceleration of 9g lasting consistently for 40 to 50 milliseconds. SOARS can be installed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft. SOARS can be installed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft. SOARS is STC’ed on Part 23 (excluding Part 23.562). SOARS can be installed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft. SOARS is STC’ed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft. SOARS is STC’ed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft. SOARS is STC’ed on Part 23 (excluding Part 23.562) aircraft and as a retrofit on experimental aircraft.

AmSafe airbag seat belts have also been installed in AOPA’s Sweepstakes Super Cub, the latest aircraft sponsored by the GA pilots’ organization. AmSafe is a new restraint system that deploys from each of the restraint’s two shoulder harnesses. The electronics module assembly containing the system’s electronics and power is mounted in the fuselage. “Hard landings, vibration, or turbulence” won’t trip and deploy the system, according to AmSafe. Immediately after deployment, the airbag will deflate to ease egress from the seat belt and aircraft.

AmSafe restraints come standard on some new aircraft, including Cessna singles and the Cirrus, Diamond, and Mooney brands. Having electronics, power, and an inflator mechanism, the restraint systems require maintenance. An annual inspection and functional testing are among the mandated servicing requirements, and some seat belt components must be returned to the factory for refurbishment, and ultimately disposal.

AmSafe also makes TSO-C114 tradi- tional business jet seatbelts for forward- and aft-facing passenger seats, side-facing divans, attendant seats, and berthing or sleeper seats for Boeing Business Jets, Bombardier Aerospace, Cessna Citation, Dassault Falcon Jet, Gulfstream Aerospace, and Hawker Beechcraft models. Buckle choices for the business jet restraints include teardrop, classic square, and push button, with more than 150 web- bing colors and multiple hardware plating possibilities.

J.W.
Jetcraft sees solid outlook for used bizjet markets

by Ian Sheppard

Chad Anderson, president of U.S.-based aircraft broker Jetcraft (Static Display 14), has been having a good year. He is a pilot (he owns a Cirrus) and businessman who has been buying and selling business jets right through the financial crisis that started in 2008. In a pre-NBAA interview, he told AIN, “The key for me now is finally we are seeing normalized supply and relatively high demand, so we are in a more efficient market. We’re about 10 aircraft ahead of the same time last year,” Anderson said.

“One thing we have noticed is the replacement demand [from corporates] has not been as high as originally forecast, but demand from ultra-high-net-worth individuals is more than offsetting that,” he added.

Anderson believes that corporate buyers/flight departments might be waiting for the new aircraft from Bombardier and Gulfstream to come to market, whereas ultra-high-net-worth individuals “were at the end of their patience level!” and willing to leave fractional programs and chartering to own their own aircraft. In this case, it is the heavier users who feel they need their own aircraft and can’t wait.

“We’re hearing it industry-wide and worldwide,” he said.

Other analysts have reported that the markets outside of the U.S. are weak, but that is not Anderson’s experience.

“I’m seeing emerging markets such as Africa, Asia, and Latin America still seeing demand, but different. And we’re counseling our buyers to look at overseas aircraft,” noting the additional attraction of a continuing strong U.S. dollar.

Another factor in the used market is the emergence of demand in Asia, he said. “Asian buyers used to buy only new.”

Generally, Anderson says buyers still prefer larger business aircraft. The average transaction value for his company is $16 to $20 million. But overall the company sees everything from PC-12s to “on the high side” Boeing 787s. “It’s definitely trending to the large category.”

He also believes that the OEMs learned an important lesson since 2008: not to gear up to produce too many aircraft, such that a downturn would cause a major headache. He noted that Dassault was the conservative exception and didn’t get strung out as badly as the likes of Gulfstream and Bombardier.

Now, “this is adding heat to the pre-owned segment” as manufacturers are more cautious about ramping up. “I think that now they like 12-18 months as a lead time for new aircraft orders…I think the manufacturers will grow logically over the next 10 years, with the huge majority being ultra-long-range aircraft. It’s clear that they are seeing that’s where the aircraft buyers are; long-range is now the common trip, not domestic.” Still, said Anderson: OEM caution means “We see a slow-down in 2019 in terms of new aircraft deliveries.”
Daher looking back

**FEBRUARY**
The helicopter market has become an important segment for the French group Daher and accounts for 20 percent of the business of the group’s Aerospace business unit, the company said. Daher is Airbus Helicopters’ leading supplier of airframes and, at the same time, its main logistics partner.

Daher mainly manufactures rear fuselages of Airbus rotorcraft, as well as various parts such as avionics bays. Most of these fabrications are made at its plant in Tarbes (southern France). Today, Airbus Helicopters is its sole customer, but Daher is looking at possible expansion of its work in the market.

Daher added electrically heated seats as standard equipment on 2018-production TBM 910 and 930 turboprop singles. Once the pilot engages the mode via a master control in the cockpit, each occupant can choose whether to use the heating and select either light or moderate heat settings.

Other new features included in 2018 model year TBMs are tailored for improved pilot interface. This includes backlighting on the cockpit’s central console to provide enhanced visibility at night for the manual trim, power lever, flaps lever, and override controls. In addition, the pilot’s oxygen mask now has a high-fidelity microphone for clearer communications with ATC when the mask is in use.

Daher Aerospace announced its first supplier contract with Boeing. The production contract covers thermoplastic composite structural parts for the 787 Dreamliner. The elementary structural parts will replace existing components made with thermoset composite materials unchanged in more than 30 years, according to Daher.

Also this month, the company inaugurated a new plant in Tangier, Morocco, its third in the country. Located in the Tangier Free Zone near the airport, the facility will support aerospace programs for Airbus Commercial Aircraft, Airbus Helicopters, Dassault, and other customers. The €15 million site, spanning some 10,000 sq m (108,000 sq ft), will eventually employ more than 250 people; its two existing sites have about 550 employees.

**APRIL**
Daher introduced new features and functionality for the Garmin G3000 flight deck on its TBM 930 at Sun ’n Fun 2018. New functions include Surface Watch, Baro Vnav, visual approach, Flight Stream 510 Wi-Fi and Bluetooth connectivity, and enhanced symbology. The company also announced a new name for its North American division: Daher Aircraft Inc., from Socata North America.

**MAY**
Daher announced the availability of its new Me & My TBM Android and iOS app, for owners and operators of 2018 and later TBM 910 and 930 single-engine turboprops, it simplifies downloading flight data and updating Camp Systems maintenance-tracking and facilitates sending information to Daher’s TBM Care support team. The app automatically sends aircraft counter updates, as well as trend and report data files, to Camp. The ability for TBM Care to view and analyze flight parameters less than an hour after conclusion of a flight furthers Daher’s support capabilities, the French aircraft manufacturer said.

**JUNE**
During the international defense and security show Eurosatory 2018 Daher unveiled a new configuration of its TBM 910 and TBM 930 turboprop singles aimed at the intelligence, surveillance, and reconnaissance (ISR) market. The ISR-configured TBMs will be fitted with underlying hardpoints and electrical connections to accommodate sensors and large-format cameras.

Daher sees a range of applications for the ISR configuration, from defense, security, and medical evacuation to transport missions. The aircraft can provide more than six hours of surveillance capability and can be reconfigured rapidly for various duties, the French airframer said. Daher is further pointing to the aircraft’s ability to operate from 2,455-foot runways and its speed capabilities, compared with other ISR options.

**JULY**
Daher delivered the 900th TBM single-engine turboprop—30 years after the inaugural flight of the first TBM 700. Aircraft number 900, a TBM 930, S/N 1239, was handed over to Thomas Solano in Jacksonville, Florida, a repeat customer. The first TBM flew on July 14, 1988.

Last year, Daher delivered fifty-seven 900-series TBMs and it has delivered 22 through June 18 this year. Of the total TBMs delivered, 693 have been to North America.
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2018 NBAA Schedule

Tuesday, Oct. 16, 2018
ORANGE COUNTY CONVENTION CENTER

7:00 a.m.–8:15 a.m.  
No Plane No Gain Media  
Kick-Off Breakfast

8:30 a.m.–10:00 a.m. 
Day 1 Keynote

10:30 a.m. – 12 Noon  
Is Safety Really Our Top Priority?  
Location: Innovation Zone

10:30 a.m.–12 Noon  
Manager’s Nightmares:  
Workforce Retention

10:30 a.m.–12 Noon  
Vetting Your Supplemental Lift

10:30 a.m.–12 Noon  
Asset Management for  
Aviation Leaders

1:00 p.m.–2:00 p.m.  
Young Professionals: Changing  
the Face of Business Aviation  
Location: Innovation Zone

1:00 p.m.–2:00 p.m.  
Communicating the Value of a Business Aircraft

1:00 p.m.–2:00 p.m.  
UAS: The Future is Now

1:00 p.m.–2:00 p.m.  
Advanced Weather Technology

2:00 p.m. – 3:00 p.m.  
NBAA-BACE Coffee Social

2:30 p.m. – 3:30 p.m.  
Utilizing Datalink in Your Operations

2:30 p.m. – 3:30 p.m.  
Real Stories of Loss of Control:  
When Upset Training Saved Lives

2:30 p.m. – 3:30 p.m.  
Meet the Regulators

3:00 p.m.–4:00 p.m.  
General Aviation 2025

4:00 p.m.–5:00 p.m.  
Corporate Shuttle 2.0

4:00 p.m.–5:00 p.m.  
Safety Culture...  
Continuous Nurturing Required

4:00 p.m.–5:00 p.m.  
How Will CORSIA Regulations Affect Me?

4:30 p.m.–5:30 p.m.  
Quick Ascent: Perspectives from Rising Industry Leaders  
Location: Innovation Zone

5:30 p.m.–7:00 p.m.  
5th Annual NBAA YoPro  
Networking Reception  
Location: Innovation Zone

Wednesday, Oct. 17, 2018
ORANGE COUNTY CONVENTION CENTER

9:15 a.m. – 10:00 a.m.  
The Electric Aircraft Revolution  
Location: Innovation Zone

9:15 a.m.–10:00 a.m.  
Know Your Customers:  
How to Avoid Dealing with Bad Actors

9:15 a.m.–10:00 a.m.  
The Future of Part 135 Training

9:15 a.m.–10:00 a.m.  
Fatigue: The Silent Safety Epidemic

10:30 a.m.–12:00 p.m.  
Day 2 Keynote

12:30 p.m. – 1:30 p.m.  
Imagining the Future of Pilotless VTOL Aircraft  
Location: Innovation Zone

1:00 p.m.–2:00 p.m.  
Aviation Leadership for Women

1:00 p.m.–2:00 p.m.  
Clear The Taxiway: Avoiding Ground Handling Incidents

1:00 p.m.–2:00 p.m.  
Cyber Security Made Simple

1:00 p.m.–3:00 p.m.  
NBAA Local and Regional Group  
Best Practices Forum

1:00 p.m.–5:00 p.m.  
Friends & Partners in Aviation Weather (Day 2 of 2)

3:00 p.m.–4:00 p.m.  
Ethical Business Aviation Transactions

3:00 p.m.–4:00 p.m.  
CAM: Certifying the Future of Business Aviation

3:00 p.m.–4:00 p.m.  
Security How-To

3:30 p.m.–4:30 p.m.  
I Like Big Data and I Cannot Lie  
Location: Innovation Zone

6:00 p.m.–8:00 p.m.  
Fund an Angel Cocktail Reception  
Location: Hilton Orlando

Thursday, Oct. 18, 2018
ORANGE COUNTY CONVENTION CENTER

8:00 a.m.–5:00 p.m.  
Friends & Partners in Aviation Weather (Day 2 of 2)

9:00 a.m.–1:00 p.m.  
NBAA National Safety Forum

10:00 a.m.–11:00 a.m.  
Careers in Business Aviation Day—  
General Session

11:30 a.m.–12:00 p.m.  
Careers in Business Aviation  
Day—College/University Roundtable Session
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MEBAA’s Alnaqbi points to expanding Middle East involvement in U.S. market

by Peter Shaw-Smith

Expect increasing involvement of operators and service providers of Middle East and North Africa (MENA) origin in the U.S. business aviation sector, the Middle East Business Aviation Association (MEBAA) said on the eve of NBAA-BACE, asserting that this involvement is beneficial to the business aviation community.

Major international FBO operators like Jet Aviation, a unit of General Dynamics, and Switzerland-based ExecuJet, owned by Luxembourg’s Luxaviation Group, have thriving facilities in the Middle East, especially the Gulf. In addition, various Middle East-based players, such as Jetex Flight Support, Hadid International Services, and USAIG International Trip Support have evolved from flight-support providers into concerns with multiple service lines, beginning to make a name for themselves in the U.S.

“This is no surprise to see these companies spreading their wings in the U.S. We have great talents and we share our experience. No doubt the U.S. has a raft of experience all of its own, but the acceptance of Middle East companies in North America underlines the confidence the U.S. has in our products and services,” Ali Alnaqbi, MEBAA’s founding and executive chairman, told AIN, referring to the three companies, all headquartered in Dubai, UAE.

“In the next year or two, I think we are going to see a very healthy expansion of MENA companies into North America. This will add to growth in our region, and to U.S. business efforts. Of course, the association with companies from our region will also help U.S. operators flying to the Middle East.”

In addition to his MEBAA duties, Alnaqbi also serves as vice chairman of the Montreal, Canada-based International Business Aviation Council (IBAC). “My involvement in IBAC adds some international experience to the U.S. effort. Our role at IBAC involves helping U.S. companies when flying abroad, particularly to the MENA region, as well as the rest of the world. Operations outside America need to be discussed. The gray market is one of the issues that is always raised. IBAC seeks to promote business aviation worldwide and overcome problems facing international operations, whether they be in Europe, Africa, or Asia.”

Alnaqbi expects bizav to grow in excess of 5 percent in his region this year. “We see very good growth in the Middle East in spite of unrest in various areas. As of the end of last year, it is picking up, and we have improved access to new markets in the Middle East and Africa.

He predicted that for Tunisia, “We are discussing how to get the proper infrastructure in place for the growth of bizav, by meeting with the Civil Aviation and the Airports authorities, to make sure the [country is able to] cope with anticipated demand over the coming five years.”

Alnaqbi acknowledged that the Saudi market experienced difficulties after a government-mandated drive against corruption in November 2017, but said that it would soon put those problems behind it.

“I am very optimistic. The key regional markets of Saudi Arabia and the UAE are growing. We faced some [issues] last year in Saudi Arabia. [Most of the problems have] been resolved. We will soon see growth in the two countries getting back to normal. The confidence is there. Several international companies still believe that MENA is a good market. We are promoting the region very aggressively.”

Hadid spreading out, with offices in Fla., LA, and Texas

Dubai-headquartered trip-support firm Hadid International Services (Booth 1968), is looking to expand its presence in the U.S., building upon an investment that began five years ago with a team of individuals developing the business out of Texas, Florida, and California.

“This year Hadid has taken bigger steps than we ever have in this region. We have a new marketing campaign, and are looking at managing FBO business and laying the groundwork in the U.S.,” Houston-based business development manager Cade Schalla told AIN. “I know there are [other] Middle East companies operating here, and they are very aggressive.”

Hadid opened an office in Miami Beach, Florida, more than five years ago. “You have to do so [in the U.S.] to be a registered company here. I started working for the company in 2017 out of Houston. I put someone in the Miami office to cover the East Coast, and someone in Sacramento on the West Coast, who is mostly in Los Angeles. We have got the whole country covered. We are looking to expand in the U.S.”

From Dubai, Hadid offers flight support services, such as flight permits, charter, flight planning, navigation, governmental flight support and ground support, including handling, fueling, and concierge.

“We are able to offer all those services in this region too, including South America. Our colleague in Miami Beach speaks Spanish. We offer pretty much the full range of services. Dubai supplies services: my job, and that of my colleagues here, is to be the point person. We are involved in answering questions and planning. We don’t as of this time have offices outside the U.S., such as in South America, but we do have representatives in different South American countries and in Canada,” he said.

Schalla said Hadid’s 37-year-old pedigree was important in the U.S. market. “We are not a company that just arrived on the scene. When I call customers, they know who Hadid is. I have many connections. We can leverage contacts and fuel and get things arranged that some of our competitors can’t. The luxury [angle] is something we can offer. We can access difficult locations in the Africa or Asia regions, and clients know we have been in the business a long time.”

“We have a favorable administration now, and that is going to help business aviation over the next couple of years, because some of the larger companies are buying new long-range aircraft. While short-range aircraft usually operate [inside] the U.S., or to places like Mexico, people are purchasing longer-range aircraft like the Gulfstream G400 or G500 for international trips, and that’s good news” for companies like Hadid, he said.

P.S.S.

USAIG to offer FlightSafety training

Aviation insurance specialist USAIG, which is celebrating its 90th anniversary this year, has added FlightSafety International (FSI) products to its Performance Vector safety initiative choices. Established in 2011, the program allows eligible policyholders to select annually from a portfolio of training and safety-enhancing services delivered by industry experts. It is continually upgraded to keep pace with changes and improvements in aviation safety protocols. USAIG’s customers who choose the “Mix and Match eLearning package” option for their benefits can now access 17 FSI eLearning courses that have been added to the Performance Vector catalog, covering topics such as ADS-B, cold-weather operations, RVSM, TSA security, and weather radar.

“I’m especially pleased to integrate these eLearning courses into our Performance Vector program,” said USAIG president and CEO John Brogan. “FlightSafety’s reputation in training is unmatched and these programs play a vital role in keeping people sharp and up to speed on complex aspects of their aviation jobs.”

With nearly seven decades of training experience, FlightSafety develops courses designed to fit the needs and schedules of business aviation professionals, whether initial familiarization or recurrent refresher training. The online format means users can pursue the training at their own pace and on a variety of devices. As applicable, the courses are approved by the FAA, EASA and other aviation regulators.

“We are honored that FlightSafety International has become a Performance Vector program partner and appreciate the opportunity to have our comprehensive series of eLearning courses included in this important initiative,” said FlightSafety executive vice president David Davenport.

“The commitment and ongoing efforts of USAIG to enhance aviation safety among their policyholders are greatly appreciated and valued.”

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Athar Husain Kahn took on the role of secretary-general of the European Business Aviation Association (EBAA) on July 2, bringing with him a profound knowledge of the workings of the EU institutions and 25 years of experience in aero-political affairs and advocacy including several years at the helm of the Association of European Airlines. Husain Kahn is a Dutch national and a lawyer by education. AIN spoke to Husain Kahn ahead of his first attendance at the NBAA Business Aviation Convention & Exhibition.

What is your vision for the EBAA? Primarily I would like to effectively, forcefully represent our members’ interest in the broad sense of the word. This includes direct engagement with members: be very visible to them and be accessible as an organization to make sure that we are completely aligned in representing them and their key concerns whether it be operational, commercial, or regulatory.

I also aim to strengthen the external component of the trade association and translate our members’ concerns in what we believe regulators, politicians, media should be doing to facilitate their needs and enable the function of business aviation. Business aviation plays a significant part in aviation as an industry. It deserves to be treated as such by regulators, politicians—which would be certainly here in Brussels our target audience—and stakeholders.

In other words, bizav is under-recognized as an economic sector and not identified as a specific industry by the EU institutions?

I do agree with that. There are a couple of key areas where we feel our interests are not dealt with appropriately. Access to airports is a very obvious one. Flight-time limitations is another one; the FTL regulation as it is currently agreed is an impediment to very flexible operations, particularly on long-haul [flights]. And business aviation is indeed not really represented in the definitions of the [new] EASA basic regulation.

Which solutions do you see possible to increase business aviation operators’ access to slot-constrained airports?

There needs to be a recognition that bizav provides a service to the market, the economy, the community. Part of the slots, even at the large airports, should be allocated to business aviation. Why not ringfence or earmark some of the slots that are released from the slot pool to business aviation?

How damaging will Brexit be for Europe’s business aviation?

Brexit is a nightmare for the aviation industry, including business aviation, because it poses a threat to the liberalized, open market that we fought for for two, three decades. It has brought huge benefits to Europe, to the markets, to passengers.

We are concerned about Brexit, but it’s no secret that, like all other associations in Brussels, we have a diversified and mixed membership. Hence, the interests are not completely aligned.

However, it is key that we have a very close eye on the UK’s pending exit from the EU. We had a legal analysis conducted a couple of months ago, spelling out the different scenarios of what might happen.

Are you confident CORSIA is on the right path and will help deliver the sector’s environmental goals?

Very much so. Recently, the ICAO Council approved the Standards and Recommended Practices. Monitoring templates are published and in place to help simplify procedures for operators and, next to this, our operators are becoming more familiar with their monitoring and reporting responsibilities that commence in January through the many training workshops that are being organized. Acknowledging this, I am also confident CORSIA will help deliver business aviation’s climate change goals. Market-based measures were identified within the Business Aviation Commitment on Climate Change’s part of the “basket of measures,” improving the overall environmental impact of business aviation since it was published in 2009.
Dassault: 6X on track, next Falcon planned

by Ian Sheppard

France’s Dassault (Booth 2648, Static SD25) is forging ahead with its Falcon 6X program shortly after it amicably settled its dispute with Safran over the Silvercrest engine, the delay of which led to the cancellation of the 5X. “We’re currently entering the detailed design stage [for the 6X] and the Pratt & Whitney Canada PW812D [engine] certification campaign is progressing well,” Dassault Aviation chairman and CEO Eric Trappier said yesterday at NBAA 2018. First delivery of the 6X is on schedule for 2022, he added.

Trappier also alluded to the next Falcon model. “We are now planning a new program launch, which will [enter service] a few years after the 6X.” Looking further out, Trappier added, “We need to prepare for single-pilot [operations], but not for the 6X—it is a 10-year plan, hopefully.”

Olivier Villa, Dassault’s senior v-p of civil aircraft who is overseeing 6X development, said several engines are being tested by P&WC on benches and its Boeing 737 flying testbed. “The core engine has more than 12,000 hours of operation now,” he said.

All preliminary design reviews have been done for the 6X, Villa added. “We’re now doing the detailed design for the structural parts and systems.” In addition, the major partners and suppliers have been selected. Notably, Safran is still on the program, providing the OBIGGS fuel-inerting system that converts tank air from 21 percent O2 to “less than 5 percent” using nitrogen—a first for a Falcon and new in our industry,” Villa said.

The 6X will feature the newly-certified FalconEye vision system, developed jointly with Elbit of Israel. Villa said Dassault is targeting dual-HUD certification for FalconEye in 2022, initially for the 8X, as well as EFVS to land, which eliminates the need for the pilot to have any real-world vision to land.

The company is also preparing for the entry-into-service of its FalconConnect system, developed jointly with Honeywell, by “the end of 2018” for use on current and to-be-delivered aircraft. “It will revolutionize the way satcom is used,” said Villa, including providing far more control over use of connectivity, down to individual user/device settings to prevent large bills, for example.

Also, Dassault continues to enhance its service and support provision, including the opening soon of a new spares center at Paris Charles de Gaulle Airport now that Bordeaux has reached capacity.

However, Trappier said the company is being cautious about production ramp-up. “We delivered 49 aircraft last year and our target this year is 50—we adapt to the market. Step-by-step we are going to increase the production line.”

On the preowned aircraft market, Trappier said there had been a turn-around in 7X demand, with the type particularly hard to find now. He predicted pricing could soon trend upwards, having stabilized this year. He concluded by saying the new aircraft market is strong in the U.S. thanks to a strong economy and depreciation tax reform, while it has observed the market “picking up” in Europe, Russia, and Asia-Pacific, particularly for the 8X.

Wheels Up cruises toward stock offering

Wheels Up (Booth 1416) expects to generate revenues of more than $400 million this year, up from $300 million last year, and is positioning itself for a public stock offering in 12 to 18 months. The company has already consulted on a potential offering with financial firms, including Fidelity and T. Rowe Price, CEO Kenny Dichter said yesterday at NBAA 2018.

The company’s current fleet has grown to 93 aircraft—72 Beechcraft King Air 350is, 15 Cessna Citation XLSs and six Citation Xs. The latter type is a recent addition to the fleet, Dichter said. Wheels Up has commitments to take up to 35 more King Airs, which are going to remain the “backbone” of the company’s fleet.

While Dichter said the jets were “nice to have,” the cost structure of the King Airs is half of jets and a main customer draw. He said the eight-seat layout in the 350i is particularly attractive to customers and ruled out employing smaller aircraft including single-engine turboprops, which he said some corporate clients would likely find uncomfortable from a risk-management perspective.

Dichter said Wheels Up’s growth has enabled the company’s operator, Gama Aviation, to grow into the nation’s largest Part 135 operator, flying 75,000 hours last year. While Dichter conceded that the company—which began five years ago—had yet to achieve profitability, he did say he expected it to be EBIDTA (earnings before interest, taxes, depreciation and amortization) cash flow positive next year. Late last year Wheels Up raised an additional $117.5 million in investor financing and Dichter continues to stress the “up” side of the business.

“We’re in the membership business and people don’t want to own assets if they don’t have to,” he said, pointing out that the company’s King Air fleet was ideally suited to fly the most demanded routes in both North America and Europe, where 80 percent and 85 percent of the routes in each market were flights under two hours, respectively.

“The [business jet charter] industry is going big and we’re going the other way,” he said. “We’re the UberX of our space. We want to go where the people are.” Dichter said the 20,000 to 30,000 family businesses in the U.S. with annual revenues of $50 million to $1 billion are natural customers for Wheels Up, even if initially buying as little as 10 to 15 hours per year.

He also said that Wheels Up is well positioned to take advantage of consolidation in the charter market. “We’re going to play in the consolidation game,” according to Dichter.

Wheels Up is ready to “push the button” to begin European operations in earnest; the company has already established a flight desk there and identified 85 possible aircraft for use, Dichter said.
BendixKing scores new AeroVue orders

by Matt Thurber

Since receiving FAA certification in January for its AeroVue flight deck upgrade in the King Air B200, BendixKing (Booth 2600) has signed up electric-aircraft developer Eviation for an AeroVue package. Eviation is designing a regional airliner powered by electric propulsion and plans call for installation of BendixKing’s AeroVue Touch displays at a later date, according to BendixKing vice president Stephane Fymat. “To put our system into a new-generation aircraft is notable,” he said, “especially with all the new activity around electric aircraft.”

BendixKing also announced that Blackhawk Modifications is installing an AeroVue flight deck in its next five Beechcraft King Air B200 mod packages. Another contract announced this year is the retrofit of French regional airline Twin Jet’s Beechcraft 1900Ds with the AeroVue suite. Twin Jet is upgrading twelve 1900Ds and has an option for an additional four.

Weight savings for the AeroVue system versus the old avionics is 125 to 150 pounds. All avionics are replaced with the AeroVue upgrade, including the autopilot, radios, engine instruments, and displays. LPV approaches and ADS-B Out are standard, and ADS-B In is an option. The King Air package includes two primary flight displays and one multifunction display as well as a cursor-control device.

BendixKing’s next flight deck upgrade is the AeroVue suite for the Cessna Citation 560 (V, Ultra, and Encore), picking up the project that had been under way by the former Innova Aerospace, which closed in late 2017. The AeroVue upgrade, which is expected to be STC’d next year as the only glass cockpit solution for these Citations, will also feature three displays and a cursor-control device.

In the first release of available tools, the quoting tool will allow charter operators to create and send branded quotes with multiple aircraft and itinerary options. The trip-planning tool will grant users the ability to get estimated flight times, see scheduled flights, and profit margin along with preconfigured reports.

“Following the introduction of Stellar Cloud earlier this year, the launch of the next generation of FOS brings a powerful, web-based solution for flight operations management to an industry that badly needs it,” said David Fox, CEO of Stellar Labs.

U.S. operators currently using the Stellar Cloud will have access now to the quoting tool. The trip-planning tool is expected to become available to Stellar’s beta customers in November, while the reporting and analytics tool will also become available that same month for U.S. customers. According to Rockwell Collins, the first set of features of the FOS were designed to address charter functionality, with additional features expected to be included in future releases.

For buyers of new avionics, especially comprehensive flight deck upgrades, the initial cost of equipment can be daunting. To help customers manage these costs, BendixKing in July announced its Avionics-as-a-Service plan, which allows buyers to purchase new avionics with a monthly subscription fee.

Twin Jet is the launch customer and is using the plan to fund its AeroVue upgrades. Equipment that can be covered under Avionics-as-a-Service includes AeroVue, AeroVue Touch, xVue Touch, KSN 770 navigator, AeroWave satcom, and the MST 70B transponder with ADS-B Out.

The plan covers the equipment, installation by an authorized dealer, repairs, software updates, databases and charts, and technical support. In an example of pricing, the monthly fee for equipment that sells for $25,000 would instead be about $400. Terms are five or 10 years, and the plan can be transferred to a new owner if the airplane is sold, provided the aircraft has retained its value.

“You can step into a new panel without having to put any money out, just start paying monthly,” said Fymat. “We take care of everything!”

The AeroVue Touch display is now expected to be STC’d by year-end for 353 Part 23 Class 1 and 2 aircraft types. List price is $12,495, including synthetic vision.

Meanwhile, BendixKing’s KI-300 attitude indicator replacement for the electromechanical KI-256 is now TSO approved and available for purchase. The company is developing an STC for the KA-310 autopilot adapter and is targeting first-quarter 2019 for that unit.

Stellar Labs, Rockwell unveil cloud-based successor to ArincDirect FOS

Stellar Labs and Rockwell Collins (Booth 228), which combined forces to develop a next-generation flight operations management solution, is unveiling the first release of that partnership. Designed to succeed Rockwell Collins’ ArincDirect Flight Operations System (FOS), the solution will feature cloud-based applications and modules. Tools for quoting, trip planning, reporting and analytics will be included in the first released set of modules.

“Building upon the success of both Rockwell Collins’ ArincDirect FOS and Stellar Labs’ cloud-based applications, operators can expect to have all the functionalities of scheduling at their fingertips, on one mobile device versus several hardwired systems,” explained David Polorak, vice president of business and government aviation for Rockwell Collins. “Providing these new capabilities to our customers is just one way we are enhancing the user experience for ease, organization, and smoother back-end operations.”

The first release of available tools, the quoting tool will allow charter operators to create and send branded quotes with multiple aircraft and itinerary options. The trip-planning tool will grant users the ability to get estimated flight times, see scheduled flights, and view associated passengers, services, and itineraries. The reporting and analytics tool will give sales and revenue managers insight surrounding quoted and scheduled flight volume, conversion rates, revenue, and profit margin along with preconfigured reports.

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NEWS note

Air Culinaire Worldwide (Booth 2256) is launching its “lifestyles-as-a-Service” menu concept from its 19 owned and operated U.S. kitchens. The menu had been previously only available from its three European kitchens.

The five major lifestyles: adventurous, clean, fueled, influential, and innovative and are influenced by unique culture and regional local trends and include a variety of dietary styles such as gluten-free, vegetarian, and vegan in exclusive partnership with Petrossian Caviar. The latter affords a full menu of caviar options and luxury gift baskets, as well as aperitif, signature chocolates, cookies, and cupcakes.

“While food involves all five senses, mood also plays a large role in the food choices we make,” said Paul Schweitzer, senior vice president of global sales and marketing for Air Culinaire Worldwide, which is a Universal Weather and Aviation subsidiary. The company owns 22 kitchens and works with hundreds of associated catering partners on six continents.
The Fund an Angel Cocktail Reception, formerly the NBAA/CAN Soiree, will be an invaluable networking event at the NBAA Business Aviation Convention & Exhibition. The reception will feature cocktails, passed hors d’oeuvres, and live and silent auctions. Proceeds will benefit Corporate Angel Network, which organizes flights for cancer patients to treatment centers that help bring them closer to a cure.

"Corporate Angel Network has helped to open up trials and treatments for Ava that we otherwise could not afford. We are so blessed to have them on her team. They help to make sure that she gets the medical care that she needs.

-Ava’s Parents

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Jsfirm’s bizav survey: Hours and demand for pilots are up

by Alexa Rexroth

Results from Jsfirm’s (Booth 402) annual business aviation survey indicate that flight hours are up, but companies are continuing to feel the effect of the ongoing pilot shortage. Of the 279 companies surveyed this year, 67 percent reported an increase in flight hours, marking a 12 percent increase over last year. At the same time, 62 percent reported operations being affected by the shortage, up 26 percent over last year’s total.

“Over half of the companies surveyed reported a continuous increase in flight hours, while the shortage of pilots is impacting their operations,” said Jeff Richards, operations manager for Jsfirm. “The pilot hiring demand will continue to trend upwards for years to come. There has never been a better time to join the aviation industry.”

Of the companies surveyed, around 53 percent operate under Part 91, 11 percent operate under Part 135, 21 percent operate under both, and the remaining participants indicated operating under other conditions. The majority of flight departments in the survey employed between one and ten personnel. In the next 12 to 24 months, around 30 percent of operators indicated they would refurbish existing aircraft, 23 percent said they would acquire new aircraft, and another 30 percent expected to acquire pre-owned aircraft.

New Australian FBO raises bar for service providers

Making its debut at this year’s NBAA annual convention is the brand-new Australian FBO Melbourne Jet Base (Booth 848). The $71 million (AU$100 million) facility established by businessman Paul Little at the city’s Tullamarine Airport opened earlier this month, raising the bar for service providers Down Under and beyond.

Open 24/7, it features in-house customs and quarantine processing, with the option to be cleared onboard the aircraft; a grand foyer and private luxury passenger retreat lounges; business suites; spa services; an underground car park; two conference rooms; dining lounge with VIP catering; a crew rest area and lounge; prayer room; flight planning room; crew car; concierge; office space; porte-cochere; and planeside car access. Limousine and helicopter transfers are available as well.

“By providing a destination that facilitates private aviation travel in such an exceptional way, we hope to see an influx of global VIPs visiting Australia to experience all we have to offer,” said Little.

The location also offers aircraft maintenance and cleaning, with a five-bay narrowbody hangar and a two-bay widebody hangar large enough to accommodate an Airbus A380. A separate dedicated hangar displays Little’s fully restored DC-3 Kanana, one of the first of the type to be operated in the country. The facility has room to store approximately 18 business jets and has 619,000 sq ft (57,300 sq m) of ramp space.

Through an agreement with a local fuel provider, the location also operates its own 7900-gallon (30,000-litre) jet-A refueller.

Alto intros budget-friendly CMS for retrofit market

Business aircraft cabin audio and entertainment system provider Alto Aviation introduced its new “budget friendly” cabin management system (CMS) for the retrofit market this week at NBAA 2018. Based on “simplicity without compromising excellence in performance or features,” the fit-compatible solution preserves furnishing and veneers by directly replacing old, broken or non-serviceable switches with new Alto Cadence Switch System (CSS). CSS incorporates modular switch panels that use discrete logic and basic software, and can control every aspect of the cabin systems including audio, HD video, temperature, lighting, window shades, attendant call, and galley and lavatory functions. “One of the key features of this cabin management system is modularity," said Alto vice president of sales and marketing Kevin Hayes. “This approach allows us the ability to phase the upgrades based on scope and budget.”

The switch panels can also be upgraded to include USB charging and HDMI input. A smartphone/PED app under development and available next year will provide a fully featured graphic interface to all components.

Massachusetts-based Alto Aviation designs and manufactures passenger controls, relay and climate controllers, premium audio systems, interface electronics and accessories, and provides integration with third-party premium HD monitors, audio/video distribution, and Avionics source equipment. Alto’s cabin audio and entertainment systems are standard equipment on several business jet platforms, including the Gulfstream G650/G650ER and G500/G600; Dassault Falcon 7X, 900 and 900C; Embraer Lineage and Legacys; and Cessna Citation Sovereign and Latitude.

The company (Booth 1081) is demonstrating its new CMS and other cabin systems this week at the show.

West Star sponsors NBAA bizav career day Thursday

West Star Aviation (Booth 265G) will sponsor the NBAA Careers in Business Aviation Day on Thursday at NBAA 2018. During the event, aviation professionals will be invited to attend the annual conference to learn about the industry and speak with business aviation professionals. A keynote address will be given by Anthony Oshinguga and recruiters will be present during the event to support networking opportunities.

“There is a need for technicians now more than ever, and we are proud to support an event that has a main focus of sparking and nurturing the passion for aviation in students of all ages,” said Katie Johnson, vice president of human resources at West Star. “These students will get to see aircraft up-close at static displays, as well as mingle with potential colleagues, peers, and leaders in business aviation.”

West Star sponsors the Next Generation Aerospace and Dallas Aeronautical Services are hiring across their various locations. West Star expects to hire an additional 28 technicians to support its new 60,000-sq-ft hangar at the company’s East Alton, Illinois, location that is expected to be operational by year-end.

“Having a new hangar provides us the necessary capacity to continue offering world-class service to our customers and ensure we meet scheduled deadlines,” said Scott Sweeney, general manager of West Star. At the company’s Grand Junction, Colorado facility, Winglet Technology transitional winglets were installed on a Cessna Citation 680 Sovereign. The winglets provide increased aerodynamic performance, increased speed at high altitude, increased certified weight, reduced climb time, increased range and payload capability, and higher initial flight levels. “We are pleased that we have completed the first winglet installation at Grand Junction and look forward to growing this capability in the future,” said David Williams, Citation program manager for West Star.
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Aerion taps GE Aviation’s Affinity
roadmap have expanded beyond those envisioned for its AS2 supersonic business jets. “Aerion and our industry team, comprised of Lockheed Martin, GE Aviation, and Honeywell have solved many of the tremendous challenges in creating a supersonic renaissance,” said Aerion CEO Tom Vice.

Significantly, Vice discussed “next-generation” aircraft. “We are starting with the AS2s because the technology closes and the business case closes. We see a viable market for the AS2. It will be our springboard to larger and faster designs, both for business aviation and commercial airlines.”

Vice continued to describe a faster (Mach 1.6), larger-cabin, longer-range aircraft that could serve as both a business jet and a small airliner. He also said, “Entirely new engine designs hold the potential to build larger aircraft able to fly at Mach 1.8 and above.”

He further suggested that if and when hypersonic airplanes take to the skies in decades to come, “We expect they will say Aerion on the side.” “We’ve overcome some huge technical hurdles and we’re confident we’ll meet Stage 5 takeoff and landing noise requirements,” said Vice. He also addressed a white paper released over the summer by the International Council on Clean Transportation (ICCT) that opposed development of supersonic aircraft on environmental grounds. Even though the paper targeted mainly supersonic airliners and left business jets such as the AS2 outside its bullseye, ICCT has drawn the attention of critics of all forms of supersonic flight.

He said the Aerion team had thorough dissection of the ICCT paper, its methodology, and calculations. “We take this very seriously,” he said, “and we’ve developed our own paper in response.”

Regarding issues of sonic booms, he outlined research conducted by Honeywell and NASA on weather and data collection technology that can analyze atmospheric conditions in real time and couple the aircraft’s navigation system and autopilot to ensure that no sonic boom ever reaches the ground. “We still need to incorporate vertical wind into the algorithm,” Vice said, adding that more work remains on adding additional real-time data, improving onboard sensors, and increasing weather uplink updates.

In addition, he and Brad Mortier, GE vice president and general manager for business and general aviation and integrated services, pointed to ongoing research to ensure the AS2s and any follow-on aircraft would remain within Stage 5 noise limits and within current and future emissions standards.

Next-gen Fadec
GE Aviation has completed the initial design of its Affinity turbofan, described as “the first supersonic engine purpose-built for business jets,” according to the company. The Affinity is a medium-bypass-ratio turbofan, “a blend of proven military supersonic experience, commercial reliability, and the most advanced business jet engine technologies.”

GE describes the Affinity as a “twin-shaft, twin-fan turbofan with next-generation full authority digital engine control (Fadec).” The company said the engine is designed to meet Stage 5 subsonic noise requirements and best current emissions standards.

Features include a service ceiling of 60,000 feet, the highest bypass ratio of any supersonic engine, a proprietary non-augmented exhaust system (no afterburner required), a combustor with advanced coatings optimized for sustained high-speed operations, advanced acoustic technology to meet or exceed regulatory requirements, and additive manufacturing technologies to reduce weight and increase performance.

Formal launch of the Affinity project in May 2017 followed two years of preliminary study, according to GE. The next review is scheduled for 2020, when the detailed design is expected and the first test article is to be produced.

Honeywell’s Carl Esposito, president of electronics solutions, described the flight deck that will equip the AS2s, saying Honeywell would create “a comprehensive connected aircraft solution.” He cited Honeywell’s history of developing avionics for supersonic military aircraft, and described how that experience played into integrating business aviation avionics requirements with the differences related to supersonic flight.

Asked about funding sources, Vice said the company continues to be financed by Robert Bass, and that the financial business case remains in place through development and market entry for the AS2. Non-recurring development costs are expected to total approximately $4 billion, he said. He did say that future programs could involve investment from suppliers, and that the company is exploring incorporating outside investment.

Vice said Aerion has had discussions with a number of U.S. communities as to a final production site, and expects to make a decision within 18 months. Aerion anticipates a market for 300 AS2s over the first 10 years and 500 total aircraft at a price of $120 million each.

He also said revenue streams from the AS2 program would drive future programs. But, Vice said, financial planning for future programs is in early stages. “We’re an engineering-oriented company, and that’s the way we approach our finances, as well.” He added that just as technology advances while contemplating future airplanes, markets and finances also evolve. “You start with the market, and we’re analyzing that,” he said. “Right now, we’re getting AS2s done.”

Embraer builds on its Legacy
offer a new global airborne connectivity option with the Visat Ka-band satcom and IPTV. The satcom will cost $395,000 and will be available in second-quarter 2019. Retrofits will be available for existing Legacy 450s and 500s.

The winglets of the Praetor 500/600 add about 15 inches of length to both the left and right wing (50 inches increase in wingspan) and 22 inches in wingtip height.

The Praetor 500 boosts the fuel capacity of the Legacy 450 from 12,108 pounds to 13,058 pounds, by expanding the fuel volume to match that of the Legacy 500. Both the Legacy 450 and 500 share the same wing design, so this wasn’t a huge change.

Improvements and Modifications
The main visible physical change to create the Praetor 500 is the new winglet design. No structural changes were needed for the new winglets in the Praetor models because engineers were able to accommodate changes in loads on the wing by using the fly-by-wire software to alleviate loads in all configurations and conditions.

The key performance improvement for the Praetor 500 is greater coast-to-coast range at 3,520 nm (long-range cruise, four passengers, two crew, NBAA IFR reserves), up from 2,900 nm. Takeoff distance is longer, however, at 4,263 feet. Maximum payload is 2,921 pounds, and payload with maximum fuel 1,600 pounds.

The Praetor 600 does even better, thanks to the more powerful engines and a fuel capacity increase, which amounts to 2,928 pounds split between two tanks on the belly of the fuselage; a forward tank and what Embraer labels its “ventral” tank farther aft. Added to the 13,058 pounds in the wing, fuel capacity of the Praetor 600 is 15,986 pounds.

A subtle change that marks the Praetor 600 is the belly fairing that now covers more of the underside of the fuselage, toward the nose of the airplane. But an easier way to spot a Praetor 600 is the prominent belly skid, which protects the forward and ventral tanks in case of a gear-up landing.

Both the Praetor 500 and 600 fuel systems are pressurized with engine bleed air to meet FAA fuel tank flammability requirements.

The Praetor 600’s engines required no physical changes, just a software update to the Fadec, which now allows the HTP750e to produce 7,528 pounds of thrust, flat-rated to ISA +18 deg C, up from 7,036 pounds in the Legacy 500. With the added fuel capacity, the Praetor 600 can fly 3,900 nm with four passengers, two crew, and IFR reserves. Maximum payload is now 4,001 pounds and payload with maximum fuel 2,533 pounds.

According to Embraer’s calculations, this moves the Praetor to the head of the class when compared to the Bombardier Challenger 350 and Gulfstream G280. With eight passengers, the Praetor 600 can fly about 3,800 nm compared to about 3,600 in the Challenger 350 and 3,200 nm in the Challenger 350.

When carrying eight passengers, the Praetor 500 outpaces the Citation Latitude (the Legacy 450 also flew farther) at just under 3,200 nm versus about 2,650 nm for the Latitude, according to Embraer, while the Citation Sovereign+ can fly about 3,100 nm with four passengers.

The Praetors come with new capabilities for the Rockwell Collins Pro Line Fusion avionics, which add vertical weather and predictive windshear to the Multiscan radar; cockpit display of traffic information, which displays ADS-B traffic; and, most significant, synthetic vision guidance system (SVGS), which will be approved for a 50-foot reduction in Cat I ILS minimums to 150 feet without requiring a head-up display or special training. Embraer’s EAVS enhanced vision system and Rockwell Collins HGS-3500 head-up display, which can display both SVS and synthetic vision system imagery, is an option for both jets.

An optional Honeywell Laserfet VI inertial reference system is available, providing improvements in navigation in remote areas and other benefits for GPS and other navigation outages.

The Praetor 500 baseline price is $16.955 million and it will enter service in the third quarter of 2019. Priced at $20.995 million, the Praetor 600 will enter service in the second quarter of 2019.
Boeing delivers first BBJ Max

by Alexa Rexroth

Boeing Business Jets (Booth 1596) delivered its first BBJ Max—a Max 8 model—to a customer, the company announced yesterday at NBAA 2018. The aircraft is now scheduled to fly to an interior finishing center. Comlux last year announced it captured a contract to complete the first Max 8, estimating it would deliver the outfitted aircraft to the end customer in late 2019. The bizliner unit also revealed a new interior concept design for the aircraft in partnership with SkyStyle.

“We are excited to begin delivering a longer-range and more capable version of the world’s most popular business jetliner,” said Greg Laxton, head of Boeing Business Jets. “There has been great market interest and anticipation for the BBJ Max and our valued customers will soon be able to see the new standard in business travel.” To date, Boeing Business Jets has inked orders for 20 Max 7, Max 8, and Max 9 bizliners from customers around the world.

In celebration of the first delivery of a BBJ Max, the company has partnered with SkyStyle for an interior design concept called Genesis for the aircraft. “BBJ interiors have always been a sharp departure from the cramped cabins of smaller business jets, and the Genesis design is yet another example of our exclusive cabin capabilities,” said Laxton.

Earlier this year, Seacons Trading announced it is purchasing a BBJ Max 7. According to the company, the 737 Max family offers three times as much cabin area as competing business jets, a lower cabin altitude, and a lower total ownership cost when compared with other high-end business jets. BBJs retain higher residual values with less required shop visits as they age, the company claims, adding this value helps the BBJ Max to save customers millions in ownership expenditure during the aircraft’s lifetime.

HondaJet performance, avionics upgrades available

by Matt Thurber

Honda Aircraft’s newly formed Advanced Performance Modification Group (APMG) has developed an upgrade package for owners of the original HA-420 HondaJet, offering improved performance and avionics capabilities.

The APMG package, which is priced at $250,000, offers a shorter takeoff field length, 100-pound greater maximum takeoff weight (and payload), and upgrades to the HondaJet’s Garmin G3000 avionics suite

- The APMG package includes a software upgrade to the G3000 flight deck that adds more advanced takeoff and landing (TOLD) calculations, Flight Stream 510 wireless gateway compatibility, an enhanced electronic checklist, angle-of-attack indicator on the PFD, and visual approaches.

- A software upgrade to the G3000 flight deck adds more advanced takeoff and landing (TOLD) calculations, Flight Stream 510 wireless gateway compatibility, an enhanced electronic checklist, angle-of-attack indicator on the PFD, and visual approaches.

- Honda Aircraft president and CEO Michimasa Fujino briefly reported in advance of NBAA 2018.
Static display ready at Orlando Executive

by James Wynbrandt

“Should the airstairs be carpeted?” Joe Hart, NBAA director of static displays, didn’t need a moment to consider after being waved over by a pair of contractors as he checked on the display’s set-up progress from his golf cart at Orlando’s Executive Airport (ORL) late Saturday afternoon.

These airstairs were brought in specifically to service the luxurious VIP executive airliners being shown at NBAA 2018, but after a brief discussion of safety, aesthetics, and the technical issues of attaching carpet to metal, the decision was quickly made: no carpet.

It was just one of the thousands of pieces that go into the convention’s annual static display, or what Hart and his colleagues call “the world’s largest puzzle.”

This year as always the pieces include flagship business aircraft from all the major OEMs and a variety of gleaming pre-owned aircraft. “But the puzzle changes every single year, as aircraft come into or leave OEM fleets, and their exhibit spaces expand or contract a little each year,” said Hart, who has directed the displays for 19 NBAA conventions. “It’s an ebb and flow.”

This year, some 90 aircraft are being shown. “The number sounds a little smaller than in years past and it is smaller, but our aircraft are just getting bigger and bigger, so the space is getting used up,” said Hart. This includes contractors from Freeman convention services, the tent companies, tug team from Lectro, caterers, and teams from the exhibitors themselves.

As usual, work on the display started early this month. “We spend about two weeks preparing for exhibitors to arrive,” said Hart. The team uses GPS and lasers to lay out the exhibition areas, with a maximum one-foot error tolerance on the exhibition stands’ dimensions. Aircraft from the OEMs start arriving on the Saturday before the show and the preowned aircraft being shown typically arrive Sunday. Arrival times are coordinated with invasion-like precision, to ensure all can be moved into position efficiently.

“We try to manage the arrival pace of the aircraft so that they can be towed in within the exhibition stands’ dimensions,” Hart explained. “Our number-one goal is to ensure all aircraft are in position during daylight hours,” he said. “It’s a big balancing act to make sure we don’t have aircraft sitting around” waiting to be towed to their exhibit areas. “Our goal is to have all aircraft in position during daylight hours,” he said. “Our number-one goal is to increase the safety aspect.”

No more tower personnel are required than the usual OSL staff during the convention. One added contractor works a usually vacant Traffic Management Unit position from the tower that handles some airborne traffic between Orlando International (MCO), Kissimmee Gateway Airport (ISM), and ORL. On arrival days and departure days, an NBAA staffer attached to the FAA’s ATC command center in Warrenton, Virginia, also serves as a liaison with tower personnel.

But the static display activity doesn’t affect transient aircraft flying in for the convention, show display, or any other reason. “The [display] ramp is segregated just enough from normal aircraft operations areas that as soon as it’s set up, normal airport activity can resume.”

Hart is also responsible for the indoor static display at the convention center, and the two showcases are “a lot more linked behind the scenes than a lot of people know,” he said. For example, the design elements of the show’s “look and feel” for a particular year are replicated at both exhibitions. He also “finds the solution for towing all the aircraft to the convention center in the middle of the night,” which requires finding street routes that can accommodate the aircraft wingspans; this year the Pilatus PC-24 t윈jet, slided for indoor display, had to be withdrawn because it couldn’t fit on the streets; the PC-12 was able to navigate the route in previous years.

Hart also directs the static displays at ABACE and ERACE, but the annual U.S. gathering “is absolutely far by our biggest workload,” he said, given “the number and size of the aircraft, and the level of experience” required for the setup.
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