Urban air mobility (UAM) could be a $1 trillion business with a societal impact bigger than NASA's designs to put man back on the moon. That was the consensus of experts discussing UAM at the Association for Unmanned Vehicle Systems International (AUVSI) annual Xponential conference in late April in Chicago.

“This will truly be a trillion-dollar-plus business opportunity,” said Michael Dyment, managing partner of Nexa Capital Partners, a firm that is researching the viability of select cities for UAM investment.

“What we’re doing here, what we’re going to create over the next five to ten years, could have significantly more impact on society, clearly in terms of economics, than going back to the moon,” said Davis Hackenberg, NASA’s project manager for advanced air mobility.

However, all this optimism was tempered by numerous conference speakers in and out of government who repeatedly emphasized the need to create a system that is at least as safe as current commercial air operations. Deputy inspector general at the U.S. Department of Transportation (DOT) Anthony Zakel noted that when his superior, inspector general Calvin Scovel, recently testified before Congress he warned that it is not a matter of if, but when, a UAS brings down a passenger plane. “Nothing changes public opinion more than plane crashes,” said Zakel.

“The rules will be changed if a UAS ever brings down a plane. Especially in light of recent events with the 737 Max, from a legislative perspective there will be a default more to the safety position than there was before,” said Jonathan Hartman, disruptive technologies lead at Sikorsky, cautioned.

“Urban air mobility is seen community-wide as a no-fail mission,” and that public trust in UAM is essential for its acceptance. “The level of safety you pick today will determine how successful we will be as a marketplace,” he said.

Insurance market

The softer market buyers have gotten used to is tightening, experts predict, as they outline how the industry will change with the introduction of new technology and younger workers.
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AIRPLINES and ENGINES
10 XTI TriFan prototype makes first flight
12 ACJ319neo completes first flight
14 Bombardier snags deal for five Learjet 75s
15 Superfortress settles in at Wichita hangar
17 Cirrus addresses Vision AD for service return

AIRPORTS and FBOs
20 Competitive pricing coming for sustainable fuel
22 Study highlights airports’ economic impact
26 Jet Linx expands to Boston area
40 PrivatAir Saudi Arabia eyes regional growth

AIRSHOWS and CONVENTIONS
28 FSF Business Aviation Safety Summit
30 Regional Air Cargo Carriers Assn. conference
32 CityAirbus eVTOL makes ‘tethered jump’
36 Jet Linx expands to Boston area
38 Falcon 8X sets cross-country speed record
40 PrivatAir Saudi Arabia eyes regional growth

FLIGHT OPS, SAFETY, SECURITY, TRAINING
11 Weather data lacking for UAS operations
14 DOT audits FAA’s cybersecurity efforts
16 EASA to codify rules for aircraft cybersecurity
18 Canada reports rise in bizav accidents
28 FSF Business Aviation Safety Summit
30 Regional Air Cargo Carriers Assn. conference
44 Garmin adds features to King Air G1000 NXi
50 Air Transport Update
62 Calendar

CHARTER and FRANCHISE
6 Jet Edge lays plans for giant step in aircraft sales
32 Universal and STC wearable HUD in A320
40 PrivatAir Saudi Arabia eyes regional growth

AVIONICS and TECHNOLOGY
48 Garmin adds features to King Air G1000 NXi
48 IS&S STCs autothrottle for King Air
50 Air Transport Update
54 Touching Bases
58 Completions Update
59 Compliance Countdown
62 Calendar
72 News Briefs
74 Other Voices
76 People in Aviation
80 Touching Bases

DEPARTMENTS
56 Accidents
56 Air Transport Update
58 Avionics Update
58 Air Transport Update
60 Avionics Update
62 Calendar
62 News Briefs
62 Other Voices
64 People in Aviation
68 Touching Bases
72 News Briefs
74 Other Voices
76 People in Aviation
80 Touching Bases

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MAINTENANCE, MODS, and COMPLETIONS
42 Dassault strategy expands MRO footprint
42 EASA promises SMS for Part 145 maintenance orgs

ROTORCRAFT and UNMANNED SYSTEMS
1 Urban air mobility: a $1 trillion biz
3 CityAirbus eVTOL makes ‘tethered jump’
32 CityAirbus eVTOL makes ‘tethered jump’
44 Era CEO: offshore helo industry not sustainable
45 Dassault strategy expands MRO footprint
46 U.S. Army selects first FARA competitors
46 FSI reveals new helo training technology
47 U.S. Marines reactivating unmanned K-Max
47 Swiss Rega develops autonomous SAR drone
48 IS&S STCs autothrottle for King Air
48 IS&S STCs autothrottle for King Air
50 Air Transport Update
50 Air Transport Update
50 Air Transport Update
52 Aero Montreal showcases aerospace sector
53 Hot Section
54 Touching Bases
56 Accidents
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THE ART OF EXCELLENCE
Jet Edge lays plans for giant step in aircraft sales

by Kerry Lynch

A few months after Jet Edge raised $60 million in debt and equity, the Van Nuys, California-based charter and management firm lined up an additional $50 million in capital and formed a new division, Jet Edge Partners, to significantly build up a wholesale aircraft sales business.

Jet Edge brought veteran aircraft salesman Kevin White on board to serve as president of Jet Edge Partners and established a new office in Annapolis, Maryland. White, formerly an executive sales director for AvPro and before that a sales executive with Gulfstream Aerospace, will develop relationships with aircraft brokers as Jet Edge seeks to expand its reach in the aircraft dealership business.

The move to establish Jet Edge Partners with the $50 million line of credit is “a big play for us,” said Jet Edge CEO Bill Papariella, adding he believes this business will in turn help to feed the company's management business.

Jet Edge plans to leverage the expertise of Jet Edge Partners, as well as its own aircraft sales history to serve as a dealer. Papariella outlined plans for a full-service shop that works with a select network of brokers to sell aircraft.

Under this approach, Jet Edge Partners will work with aircraft sellers and OEMs to acquire aircraft, provide all of the necessary services related to making an aircraft saleable, and then turn to the open market through a network of dealers to list the aircraft. In fact, Jet Edge already bought its first two inventory aircraft—a Legacy 600 and a BBJ. And almost immediately, Jet Edge already lined up a potential buyer for the Legacy.

Broker Partnerships

Brokers working with Jet Edge Partners would use their own “storefronts” to sell the aircraft. “We are going to purchase the aircraft on behalf of the broker, inventory it, and put it up for sale via a partner broker. Our storefront will be other brokers’ storefronts,” he explained.

In turn, the brokers would be able to encourage potential buyers to use Jet Edge management services. “We believe buying, selling, and dealing airplanes, and partnering with the greater broker-dealer network worldwide, is a great way to grow your fleet organically,” Papariella said.

He believes the market is ripe for a new entrant, noting the difficulties in aircraft dealing. “It is a market that lacks smart capital,” he said. “Most the capital is extraordinarily expensive, but traditionally comes from private individuals...very few companies have access to this kind of capital.”

But Jet Edge Partners can act as a funding source, providing such “smart capital.”

This is a strategic approach to growth of its management fleet, he said, adding Jet Edge prefers to bring in new customers, rather than to take away customers from other firms.

While Jet Edge is evolving and building other parts of its business, one area that has not changed is its focus on management of large-cabin and super-mid-size aircraft. Founded with three or four Gulfstreams, the company has built up expertise with those models, now managing close to 40 Gulfstreams. It already has laid plans to accept its first G600 into the fleet next year. And, part of the original $60 million raise will be dedicated to developing new aircraft management and charter programs, many of which will align to the controlled floating fleet of Gulfstreams, the company said.

Jet Edge’s Van Nuys headquarters is well positioned for this business, he said, noting the greater area is home to one of the largest concentrations of Gulfstreams. But Jet Edge also in recent years has branched to other fleet types, Papariella said, adding, “We’re having good success there.” These included the Bombardier Global, Embraer Legacy, and Dassault Falcon. In fact, along with being in line to add the G600, Jet Edge has a deal in place to add a Global 7500 to its fleet next year.

In addition to Van Nuys, Jet Edge operates bases in the Palm Beach, California, and New York areas. But Papariella said the company will manage aircraft worldwide, doubling its current fleet to 100.
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Weather data lacking for UAS operations

by Mark Huber

The current weather tools and weather training for the UAS industry are woefully inadequate. That’s the assessment of Don Berchoff, a former U.S. Air Force meteorologist and the CEO of TrueWeather. “Our Part 107 [UAS pilot] certification training has a weather section in it that is totally irrelevant,” Berchoff said. “We have a mismatch right now in standards and requirements,” he said, adding that current standards may allow UAS operators to “check the box” for regulatory compliance but fall short of operational needs.

Berchoff said that while “micro weather is really going to be a big issue in terms of enabling this industry to be successful and profitable,” a recent MIT Lincoln Laboratory study found that commercially available weather products do not completely meet the needs of the UAS industry. To be truly useful, weather data must “be used at the right time, at the right location, and be the right data for the right application.” And that means “interpreting it properly for actual decision-making.”

Weather delays, in terms of lost productivity as opposed to natural disaster, already cost the U.S. economy $640 billion annually, Berchoff said, a number that will certainly grow as UAS become a bigger percentage of that economy. “When you start commoditizing this industry and start flying millions of drones a day, that [cost] starts adding up. We can get 40 percent of that back right now without even increasing the accuracy of weather [reporting],” he said. Berchoff pointed to an example of this from his 24-year tenure in the Air Force with manned aircraft: After a new weather risk-management framework was implemented, aerial tanker refueling mission weather delays dropped by nearly two-thirds in one year and saved the Air Force $200 million.

Simply applying weather data into Unmanned Traffic Management (UTM) systems will help, and to that end TrueWeather is working with Airbus, Thales, AirMap, OneSky, and others to incorporate better data sets and decision tools into those systems, ideally with weather data displayed as part of those companies’ system analytics to determine routes and airspace boundaries. “A single-stop shop, that is where we need to go,” Berchoff said. “It gets us not just the micro weather but the translation and integration into the analytic, and that’s how we get 40 percent more flight time.”

While decision tools can optimize current weather data, the data itself needs to be better. “There are many gaps out there. Airports are well-instrumented, and that allows manned aviation to fly either in cylindrical areas around airports or fly above the weather,” he said, adding that UAV operations need denser and more local data. “I worry about things you cannot see: wind, turbulence, thermals, and icing. With UAVs, 15 or 20 knots of wind can ruin your day. And once you start going into cities and flying around [building] corners, it’s bar the door. We need better capabilities in the cities.” He also pointed out that nearly 20 percent of the time large areas of the U.S. are experiencing temperature inversion, a circumstance that can easily send drones out of control at altitudes as low as 100 feet agl.

To Berchoff’s mind, better data means higher-resolution satellite imagery, down to 1,000 meters resolution, and gleaning local weather data from X-band radars, traffic camera analytics, cell towers, and the telemetry from the drones themselves. This data then needs to be crowd-sourced with commercial services that can then calibrate it and incorporate it into customer systems.

Having the right weather data and analytics gives operators the ability to better plan operations, especially for time-sensitive missions such as aerial application, Berchoff said, giving the example of one of his company’s customers, an apple orchard that needed to be pollinated by a quadcopter within a four-day window during a period of marginal weather. Using micro weather data and analytics, Berchoff’s firm was able to give the customer a solid three-hour window for a successful application. The effective application of micro-weather data will allow an individual commercial operator to save “tens of thousands of dollars,” Berchoff said.
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Extraordinary together
GAMA sees good start to 2019

by Curt Epstein

General aviation airplane deliveries got off to a good start in 2019, according to statistics compiled by the General Aviation Manufacturers Association (GAMA). All sectors, including business jet, turboprop, and piston-powered airplanes, showed an increase in deliveries year-over-year for the first three months of the year, while industry billings rose by 10.5 percent, to $4.43 billion. “Our airplane segment remains strong,” said GAMA president and CEO Pete Bure. “Statements by our member companies point to solid order intakes during the first quarter, laying down a positive marker for later in 2019.”

For business jets, the first quarter of 2019 saw 141 deliveries, an increase of nine aircraft from the same period in 2018. Gulfstream led the way, with an additional eight of its large-cabin jets in the first three months of this year, while its super-midsize G280 deliveries remained static at seven. Cessna saw a 32 percent increase from the same period last year, showing increases for the first three months of 2018 to 44 this year. The Wichita airframer increased its output of the Citation Longitude to 44 this year. The Wich- ita airframer increased its output of the Ma, Sovereign+, and Longitude by two each. Pilatus added three additional examples of its PC-24 light jet year-over-year.

Embraer remained even with 11 deliveries in the first three months of 2019, down from the same period last year with the delivery of an additional Legacy 500 and a Legacy 650E this year.

Canadian OEM Bombardier noted a nearly 25 percent decrease in deliveries for the quarter, moving from 31 in the first three months of 2018 to 24. All models saw a decline with the exception of its flagship Global 7500, which received certification late last year.

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

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

In the bizliner category, Airbus handed over a pair of ACJ320neos in the first quarter of 2019, after posting no deliveries in the same period last year. Boeing, which had four deliveries early in 2018, had none through March of this year. Embraer did not deliver any of its Lineage 1000es during the first quarter of either year.

While the overall turboprop segment saw a 7 percent rise year-over-year, the higher-end pressurized models remained flat with 50 deliveries in the first quarter of both years. Textron handed over five additional Beechcraft King Air 350s in the first quarter of 2019, contributing to a 35 percent overall increase for the manufacturer, as Daher and Pilatus remained steady on their single-engine turboprops, delivering eight and 12 both years, respectively. Piper handed over seven M500s during the first quarter of 2019, down from the same period last year when it delivered three M500s and seven M600s. Piaggio, which delivered three Avanti Evo twin pushers in the first three months last year, reported none in the same period this year.

Gulfstream deliveries increased by 30 percent in the first quarter of this year, driven in part by the large-cabin models, such as the G650.

Embraer Bizjet Deliveries Hold Steady in Q1

Embraer delivered 11 executive jets in the first quarter, remaining on par with 2018 shipments. As in the first quarter of 2018, the Brazilian manufacturer handed over eight “light” jets (Phenoms) and three “large” jets (Legacys/Lineages) in the first three months of the year. Embraer, which delivered six executive jets last year, has projected shipments to fall between 90 and 110 executive jets this year.

FAA To Airports: File Paperwork Before Defeating Drones

Defeating drones that threaten airports will be allowed only once the paperwork is done. The FAA’s Office of Airports Safety and Standards issued new guidance with regard to the deployment of counter-unmanned aircraft systems (C-UAS) at airports. The FAA said it could not “confirm the legality of any UAS detection system” and urged installing airports to seek “site-specific guidance” from private legal counsel and law enforcement. The FAA reminded airports of their notification requirements regarding the construction and alteration of existing structures, the need to comply with airport operating certificates including the need to update airport certification manuals, and the obligation to comply with applicable grant assurance obligations and the mandate to maintain an up-to-date airport layout plan.

Bizav Activity Strengthens in April in North America

Business aviation traffic in the U.S., Canada, and the Caribbean ticked up 1.8 percent year-over-year in April, driven by a strong increase in fractional activity and improvements in Part 91 flights, according to the latest Argus TraqPak monthly report. At the same time though, Part 135 operations saw the 11th consecutive month of decline. Fractional operations improved 77 percent overall during the month when compared with April 2018, led by an 81.3 percent jump in light-jet flights. Part 91 flights strengthened by 2.6 percent in April with all aircraft categories showing increased activity.

Della Posta To Succeed Saabas as President of P&WC

Maria Della Posta is taking the helm of Pratt & Whitney Canada (P&WC) as president, effective June 1. Della Posta succeeds John Saabas, who is retiring after leading the Canadian engine maker since 2009 and serving with P&WC since 1985. In her new role, she will report directly to Bob Leduc, president of the parent Pratt & Whitney organization. A 34-year P&WC veteran, Della Posta most recently was senior v-p. She joined P&WC in 1985 and held roles of increasing responsibility in supply chain, finance, and customer service. She became v-p of customer support in 2001 and senior v-p of sales and marketing in 2010 before taking the role of senior v-p.
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New study sees competitive SAFJ prices
by Curt Epstein

While the aviation industry is showing increasing interest in sustainable alternative jet fuel (SAJF), price and meager supply remain key issues. But according to a recent study by the U.S. Department of Energy’s (DoE) Lawrence Berkeley National Laboratory, sustainable, plant-based jet biofuels could provide a competitive alternative to conventional jet fuels if currently planned development and scale-up initiatives continue to progress.

The study, “Techno-economic analysis and life-cycle greenhouse gas mitigation cost of five routes to bio-jet fuel blendstocks,” published in the journal Energy & Environmental Science, provided evidence that optimizing the biofuel production pipeline is well worth the effort. Researchers at the DoE’s Joint BioEnergy Institute are concentrating efforts on each stage of the production process, from engineering highly compatible source plants—those with a high proportion of carbohydrates, to isolating carbohydrates in non-food biomass that can be broken down into sugar molecules which are then digested by bacteria, on their way to becoming jet fuel. Scientists are also examining the bacteria themselves to determine what genetic and environmental factors could make them even more efficient.

Worldwide aircraft consumption of jet fuel is approximately 87 billion gallons, according to Steve Dryzmailla, World Fuel Services’ senior vice president for business aviation bulk fuel, and for the past several years, SAJF total production has been at an order of magnitude less, 4 to 5 million gallons, a proverbial drop in the bucket.

While the production cost of renewable jet fuel is currently estimated to be around $16 a gallon at the refinery gate, compared to $2.50 for conventional jet fuel, the researchers demonstrated that all five current SAJF production pathways could create fuel products that could bridge that price gap, providing the leftover biomass material from the process could be developed into and sold as a profitable byproduct. “Our hope is that early in the research stages, we can at least simulate what we think it would look like if you develop these fuel production routes to the point of maturity,” said Corinne Scown, lead author and research scientist.

SAJF holds inherent advantages over conventional jet fuel such as higher energy density and better freeze point qualities, which lead some to speculate that airlines and operators could be inclined to pay a slight premium, over the cost of standard fuel.

ACJ319neo completes first flight

Airbus Corporate Jets successfully flew its first ACJ319neo for an hour and 55 minutes on April 24, marking the launch of the aircraft’s short flight-test program to verify differences with its airline transport sibling, the ACJ319neo, such as extra fuel tanks in its cargo hold that will give it intercontinental range, the European airframer announced last month. The aircraft is destined for K5 Aviation in Germany, which firmly up the order in January 2016.

Outfitted with five additional center fuel tanks and either CFM Leap-1A or Pratt & Whitney PW1100G engines (K5 Aviation opted for the latter powerplant choice), the ACJ319neo has a maximum range of 6,749 nm (12,500 km) with eight passengers. Compared with the A319neo, the ACJ version also has a lower average cabin altitude of 1,951 m. The flight-test program is expected to last no longer than a few weeks, an Airbus spokesman told AIN, at which point this first ACJ319neo will be delivered to K5 and outfitted with a VVIP cabin by Fokker Techniek in the Netherlands. The first flight comes a little more than three months after Airbus Corporate Jets delivered its first ACJ320neo to UK-based Acropolis Aviation. That bizliner is currently undergoing completions at AMAC’s facility in Basel, Switzerland, with a VVIP cabin designed by Alberto Pinto. Airbus had nine orders in hand for the ACJ319neo as of late last year.

Brazil’s ANAC OKs Embraer Praetor 600

Embraer received Brazilian ANAC approval for its Praetor 600, six months after the manufacturer unveiled its latest super-midsize model during last fall’s NBAA convention, Embraer announced on April 18. A variant of the Embraer Legacy 500, the 600 exceeded its design goals of a mtow takeoff field length of less than 4,860 feet, a 3,900-nm range at the 466-knot long-range cruise speed, and a range of 3,605 m at Mach 0.80, Embraer said. The Praetor 600 improves the capabilities of the Legacy 500 with new winglets, additional fuel capacity, and more powerful Honeywell HTF7500E engines.

Magellan Jets Rolls Out New Membership Offering

Elevate, a new private jet membership offering from Magellan Jets, will include a 30-day refund to members who aren’t satisfied with the program, the Boston-based jet membership and on-demand charter broker announced. The new program allows members to purchase hours in 10 aircraft types—including the Phenom 300 and aircraft in Magellan’s Sikorsky Helicopter Service—96 days a year with no blackout days or peak surcharges.

FlightSafety Adds Cabin to Master Tech Program

FlightSafety is expanding its Master Technician program to include cabin systems, it said will equip technicians to service and maintain at a high level the cabins of aircraft they support, the aviation training company announced yesterday. Master Technician Cabin Systems designation requires the completion of five courses: avionics standard practices, aerofit, cabin connectivity, integrated cabin management systems, and cabin systems operational maintenance program.

The Master Technician program designation requires the completion of five courses: avionics standard practices, aerofit, cabin connectivity, integrated cabin management systems, and cabin systems operational maintenance program. Offering a combination of in-depth instruction and practical training, the program was developed in collaboration with aircraft, component, and systems manufacturers. Other FlightSafety Master Technician programs include airframe, avionics, composites, engine-specific courses, and management.

U.S. Bizav Fleet Passes 70 Percent ADS-B Equipage

With the ADS-B equipage mandate deadline seven months away, 71 percent of the U.S.-registered turbine-powered business aircraft fleet has been equipped, according to the latest statistics by industry data provider FlightAware. Of the 17,759 currently registered aircraft, 5,039 or 29 percent have not yet been upgraded. Among the models with the highest rate of compliance are the Cirrus Vision, HondaJet, Dassault Falcon 7X, Cessna Citation C.44 and Latitude, Beechcraft King Air 350, Bombardier Global Express, Embraer Legacy 450, Gulfstream V-series and G550, and Mitsubishi MU-2.
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Bombardier moves to streamline activities

by Cathy Buyck

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

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

As part of the wider shakeup of its aviation business, Bombardier already sold a controlling stake in its most ambitious project ever—the C Series narrowbody airliner—to Airbus in July 2018 and the Q400 turboprop program to Canadian aircraft maker Viking Air for $200 million in November. The C Series—now renamed Airbus A220—and Q Series transactions leave the CRJ regional jet as the sole remaining commercial aircraft program for Bombardier Aerospace. Bombardier also sold its business aircraft training unit to CAE for $645 million last year. Conversely, Bombardier Aerospace climbed nearly 31 percent year-over-year in the first quarter, largely due to $200 million in new business wins, parent company General Dynamics reported in late April.

“Bombardier’s Belfast business has a tremendous workforce and capabilities that are an important part of a successful aerospace sector in Northern Ireland and the wider UK,” he said. “It plays a critical role in supplying components for major aircraft models, including wings for Airbus’ technologically advanced A220 and structures for the successful A320neo.”

Bombardier snags deal for five Learjet 75s

Bombardier’s Learjet program received a boost with the sale to an undisclosed customer of five Learjet 75s valued at $143 million. Announced on May 7, the sale came as Bombardier recently released a comprehensive Garmin G5000 avionics upgrade that the manufacturer said will enable operators to optimize routes and manufacturing operation of its Global 7500—Bombardier’s flagship business jet—from U.S.-based Triumph Group in January. The newly acquired Global 7500 wing operations in Texas, along with the facilities in Montreal and Mexico, will provide Bombardier “all the skills, technologies and capabilities to design, produce and service the current and next generation of aircraft,” Bellemare said. While no longer part of its global manufacturing footprint, Bombardier called the Belfast and Morocco aerostructures units “great businesses with tremendous capabilities.”

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

In addition to Bombardier programs, customers of these sites include Airbus, General Electric, International Aero Engines, Irkut, Pratt & Whitney, and Rolls-Royce. The Canadian OEM bought the Belfast business, at the time called Bombarder, in 1988. It ranks as the largest manufacturing company in Northern Ireland and produces around 10 percent of Northern Ireland’s total manufacturing exports.

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

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

“Bombardier’s Belfast business has full growth potential.” Both Belfast and Morocco sites have seen a “significant increase” in work from other global customers in recent years. “We are recognized as a global leader in aerostructures, with unique end-to-end capabilities—through design and development, testing and manufacture to after-market support,” it claimed.

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Bombardier’s Belfast business has a tremendous workforce and capabilities that are an important part of a successful aerospace sector in Northern Ireland and the wider UK,” he said. “It plays a critical role in supplying components for major aircraft models, including wings for Airbus’ technologically advanced A220 and structures for the successful A320neo.”

Bombardier’s sale of five Learjet 75s comes as the company has recently invested in avionics upgrades and in lengthened maintenance intervals for the light jet.

News Briefs

PrivateFly Rolls Out Summer Pricing for Nextant Flights

International charter-booking platform PrivateFly is rolling out a new fixed and discounted pricing structure this summer for key city pairs in Europe involving flights on the Nextant 400XTi. Available through the end of summer, the rates include flights to and from London, Paris, Nice, Palma, Ibiza, Milan, Geneva, and Rome. Prices begin at $4,500 (€5,024) one-way between London and Paris and range up to $9,000 for Paris Le Bourget and Geneva for charter groups up to six passengers. These city-pair prices are 30 percent lower than average year-round prices, PrivateFly said.

Gulfstream Deliveries, Sales Soar in Q1

Business jet deliveries at Gulfstream Aerospace climbed nearly 31 percent year-over-year in the first quarter, largely due to $200 million in new business wins, parent company General Dynamics reported in late April. The 34 deliveries in the quarter included 27 large-cabin and seven midsize jets, compared with 26 (9 large-cabin, seven midsize) in the same period a year ago.

General Dynamics chairman and CEO Phebe Novakovic said order intake for Gulfstreams was “very strong” during the quarter and even outpaced deliveries, resulting in a nearly 1.51-book-to-bill ratio.

Collins Teams on Electric Airlander Project

A program to fit the airship to heliometric flight with electric propulsion has won a $1.29 million grant from the UK Aerospace Research and Technology program. Partners for the electric airship, named E-HAV, include its builder, Hybrid Air Vehicles (HAV), Collins Aerospace, and the University of Nottingham (UoN). The E-HAV program’s initial objective will be to deliver a prototype 500 kW electric propulsion system, with the ultimate goal of using it to replace its forward fuel-burning engines and eventually building an all-electric version of the airship.

Bizjets Contribute to Honeywell’s Q1 Organic Growth

Despite a 15 percent drop in total sales at Honeywell, organic sales in its aerospace unit grew 10 percent in the first quarter, helped by a combination of business and commercial aviation demand, the New Jersey-based company announced. It marked the third consecutive quarter of double-digit organic growth for the segment that supplies engines, avionics, APUs, and airborne connectivity to commercial and business aircraft manufacturers, noted CEO Greg Lewis on an earnings call with analysts. Honeywell Aerospace recorded rising shipment volumes across its Gulfstream jet platforms, higher avionics deliveries on the Dassault Falcon 900 and 2000, and increased shipments of its HTT-7700L engines for Textron Aviation’s Cessna Citation Longitude.
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DOT IG auditing FAA cybersecurity efforts

by Gordon Gilbert

In response to a request from the chairman of the U.S. House Committee on Transportation and Infrastructure, the DOT inspector general (IG) last month launched an audit of the FAA’s role and responsibilities as a member of the Aviation Cybersecurity Initiative (ACI). The ACI is an interagency task force made up of the Departments of Homeland Security and Defense, in addition to the FAA. The three agencies work together to identify and mitigate cybersecurity vulnerabilities affecting the aviation industry and the public.

“Cyber-based threats from both internal and external sources are rapidly evolving...”

The act set timelines for the FAA to identify and address the cybersecurity risks associated with: the modernization of the National Airspace System; the automation of aircraft, equipment, and technology; and cyber protection for entertainment equipment to be isolated and separated from other electronics.

Furthermore, the audit letter also referenced the FAA’s responsibilities under Section 2111 of the agency’s reauthorization act of 2016. That legislation directed the agency to develop a “comprehensive and strategic framework of principles and policies to reduce cybersecurity risks to the ATC system.”

“Electronic-based systems have been advancing at a rapid rate resulting in aircraft systems and parts being increasingly connected, and those interconnections are susceptible to security threats.”

The set act timelines for the FAA to identify and address the cybersecurity risks associated with: the modernization of the National Airspace System; the automation of aircraft, equipment, and technology; and cyber protection for entertainment equipment to be isolated and separated from other electronics.

Also, the agency was asked to review the extent to which existing rulemaking, policy, and guidance to promote safety also promote aircraft systems information security protection.

Guidelines are to be established for the voluntary exchange of information between and among aviation stakeholders pertaining to aviation-related cybersecurity incidents, threats, and vulnerabilities; identifying short- and long-term objectives and actions that can be taken in response to cybersecurity risks to the National Airspace System; and identify research and development activities to respond to cybersecurity risks.

FAA: Meeting Mandate

As recently as last March, the DOT IG reported that the FAA had not completed all the cybersecurity tasks laid out in Section 2111. For example, “The agency has not established target dates to complete implementation of recommendations from its working group established to recommend cybersecurity rulemaking and policies for aircraft systems.” Furthermore, while the FAA is applying its cyber-threat model across the National Airspace System, mission support, and research and development areas, “the FAA has not established target dates for full model implementation.”

However, the agency told AIN. “The FAA has not only completed the reporting requested by Congress but also has made significant accomplishments in implementing the frameworks and plans developed under Section 2111.” The agency told AIN. “The FAA met deadlines established within Section 2111 of the FAA Extension, Safety, and Security Act of 2016” and has “transmitted a number of reports and briefings to Congress in accordance with the provisions of the Act and the timelines provided in the Act.”

Although the legislation requests that the FAA coordinate its cybersecurity program with aviation stakeholders, general aviation per se is not singled out. Instead, the language of the act directs the agency to “coordinate with representatives of industry, airlines, manufacturers, airports, and unions, as well as with relevant agencies and international regulatory authorities.”

EASA to codify and expand aircraft cybersecurity regs

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

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

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

In addition to incorporating requirements into the CS of both large and small aircraft to reflect the state-of-the-art protection of products and equipment against cybersecurity threats, the amendments also are expected to improve harmonization with FAA regulations.

Why Amend Regulations Now?

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

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

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

EASA participated in the ARAC for regulatory harmonization purposes. Via EASA guidance materials and acceptable means of compliance (AMC), aircraft owners and operators would be responsible for maintaining procedures to ensure the continued cybersecurity of targeted equipment.

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

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

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

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

Comments on the NPA were due by May 22. A decision is expected in the third quarter on whether to drop the proposals, revise them based on the submitted comments, or enact them as originally proposed. G.B.
B-29 Superfortress ‘Doc’ settles in at Wichita hangar

by Jerry Siebenmark

After 18 years in Wichita, the restored Boeing B-29 Superfortress named “Doc” has settled in to a permanent home in the city where the sleek, World War II-era bomber was built 75 years earlier. The B-29, powered by four Wright Cyclone R-3350-26WD air-cooled, twin-row radial engines, is now being readied for its third season of touring airshows across the country. On March 9, the $6.5 million B-29 Doc Hangar, Education and Visitors Center at Wichita Eisenhower National Airport opened to the public, seeing an average of between 200 and 250 visitors a week, Doc’s Friends general manager and executive director Josh Wells told AIN on April 26.

Doc’s Friends is the nonprofit group that owns the airplane, which ironically spent much of its life as a bombing target at Naval Air Weapons Station China Lake until a group in California led by Tony Mazzolini plucked Doc from its Mojave Desert resting place. Mazzolini later brought the airplane to the former Boeing Wichita, where over nearly two decades, a group of 300 volunteers—some of whom worked on the original B-29 production line—restored the bomber, best known as the type that dropped the atomic bomb on the Japanese cities of Hiroshima and Nagasaki.

Completed in December 2018 after 10 months of construction, the 39,000-sq-ft facility comprises a 24,000-sq-ft hangar and maintenance bay framed by glass panels on the front of the building that frame Doc’s 141-ft wingspan. The panels allow for a complete frontal view of the B-29 from the street. A mezzanine floor offers visitors an overhead view of the 99-ft-long airplane as well as interactive exhibits—including a bomb bay tube for children to climb through—that tell the history of Doc, its nearly 16-year restoration, and more broadly, the B-29. Doc, which originally hailed from a squadron named Snow White and the Seven Dwarfs, is one of only two airworthy B-29s in the world.

“Our facility allows us to do what we set out to do, which is to operate the airplane in a way that the public can see it,” Wells said. “We can continue, for generations to come, to carry on the legacy not only of those men and women who built, designed and flew the aircraft during World War II and in Korea, but also our team, our volunteers, our heroes in California and Wichita, who have spent their lives putting the airplane back together.”

The building is open to the public three days a week: 9 a.m. to 2 p.m on Tuesdays and Thursdays, and 9 a.m. to 1 p.m. on Saturdays, when Doc isn’t on tour. And Doc’s tour schedule is about to ramp up. A partial schedule shows that Doc’s first stop of the season will be from May 25 to 26 at the Tulsa Air and Space Museum & Planetarium in Oklahoma. Other scheduled stops in 2019 include June 15 to 16 at Whiteman Air Force Base’s “Wings Over Whiteman” airshow in Missouri; Heavy Bombers Weekend July 19-21 in Madison, Wisconsin; EAA Air Venture July 22-28 in Oshkosh; and Sheppard AFB Open House October 26-27 in Wichita Falls, Texas. Additional shows and dates will be announced.

Since coming out of winter maintenance in March, Doc has accumulated about 15 flight hours, Wells noted.
Those of you familiar with safety management systems know that one of the four so-called pillars of SMS is safety promotion. (For those not familiar with SMS, the other three pillars are safety policy, safety risk management, and safety assurance.) As one of the critical components of any SMS program, safety promotion includes communicating to relevant employees information necessary for them to do their jobs safely.

While the FAA’s SMS rule currently applies only to Part 121 air carriers at this time, many aviation companies—especially Part 135 air carriers that fly to Europe—have adopted SMS programs because of the safety benefits and because such programs frequently result in cost-savings by reducing or eliminating the costs of incidents and accidents, including injuries to employees and damage to property. The FAA’s rule—Federal Aviation Regulation Part 5 (14 CFR 117)—includes “safety communication” as a component of its safety promotion requirement. The rule includes the following requirement, among others: “The [air carrier] must develop and maintain means for communicating safety information that, at a minimum...conveys hazard information relevant to the employee’s responsibilities.”

The rule does not define the word “conveys,” so we can assume its ordinary dictionary definition, one synonym being “communicate.”

But is it really enough to just “communicate”? Or should we be including important safety messages getting through to your employees?

Are your safety messages getting through to your employees?

Here’s a short recap of the Equifax breach from the government document GAO-18-559: “In March 2017, unidentified individuals discovered the presence of a known vulnerability in software running on Equifax’s online dispute portal that could be used to obtain access to the system. In May of that year, attackers exploited the vulnerability and began to extract data containing PII [personally identifiable information] from Equifax’s information systems.” The breach “resulted in the compromise of records containing the PII of at least 145.5 million consumers in the U.S. and nearly 1 million consumers outside of the U.S.”

I highlight the words “known vulnerability” because Equifax had been informed by a little-known agency within the Department of Homeland Security—U.S. Computer Emergency Readiness Team (US-CERT)—that a vulnerability in certain software had been discovered. The mission of US-CERT is to catalog vulnerabilities and disseminate them to government agencies and the public so they can be addressed. Of course, disseminating them to the public means hackers also become aware of the vulnerabilities so companies have to act fast when they’re notified of a problem.

According to the GAO, Equifax did act quickly on the information it received and sent out an email to some 430 employees with information on the software vulnerability and the patch to be applied. “According to Equifax officials, the [software] vulnerability was not properly identified as being present on the online dispute portal when patches for the vulnerability were being installed throughout the company. After receiving a notice of the vulnerability from the United States Computer Emergency Readiness Team in March 2017, Equifax officials stated that they circulated the notice among their systems administrators. However, the recipient list for the notice was out-of-date and, as a result, the notice was not received by the individuals who would have been responsible for installing the necessary patch.”

So, basically, 145.5 million people had their identities put at risk of being stolen because an Equifax email list of system administrators had not been updated! In addition, it appears that Equifax did not have a system for ensuring that mandatory patches were actually applied—in other words, ensuring that an email sent to hundreds of people responsible for protecting the private information of hundreds of millions of people had been properly acted upon.

So, the moral of the story here is, if it can happen to Equifax it can happen to any one of us who sends important safety messages out into the ether and expects them to be read, understood, and acted upon. This is true whether the message goes to one person or to hundreds or even thousands.

Of course, I’m not suggesting that we stop using electronic means of communication. And I’m certainly not suggesting resorting to word of mouth—the game of telephone comes to mind. But I am suggesting that for every critical safety email or other electronic message sent, there be a system for verifying that it was received by the correct people and properly acted upon.

it’s easy to give employees information, but harder to ensure that they receive and act appropriately on it.”

The number of business aircraft accidents in Canada increased considerably in 2018 compared to 2017, according to year-end statistics published by the country’s Transportation Safety Board (TSB). The TSB accident statistics are released on a monthly basis and include both Canada- and non-Canada-registered airplanes and helicopters.

Canada-registered business airplanes, generally defined as those flown primarily by their owners or non-paid pilots, suffered eight accidents resulting in one fatality last year versus just one accident and no fatalities in 2017. The TSB study shows the average number of business airplane accidents between 2013 and 2017 was three. Canada-registered business helicopter accidents climbed from zero in 2017 to two last year, but they averaged zero accidents from 2013 to 2017.

There were no accidents over the last two years by corporate airplanes or corporate helicopters, defined as those aircraft flown by a paid crew or career pilots. However, this segment did average one accident of a corporate airplane between 2013 and 2017. The number of accidents involving piston and turboprop air-taxi airplanes combined declined from 28 in 2017 (two of which incurred fatalities) to 23 last year, including one fatality. The TSB statistics did not break down accidents by engine type, other than that the aircraft were prop-driven. Accident statistics for air-taxi helicopters were not shown. Accidents involving airplane ambulance flights remained at one mishap each for 2017 and 2018. Helicopter ambulance flights experienced no accidents last year compared to one in 2017.

From these figures it is impossible to obtain accident statistics strictly involving private or on-demand corporate jets. In Canada, jets cannot be operated as an air taxi, the rules of which come under CFAR 703. Commuter airline and corporate jets used for hire operate under CFAR 704. Privately operated business aircraft used by company employees or guests are operated under Subpart 604.

The top three most serious incidents reported in 2018 by Canada- and non-Canada-registered aircraft were associated with smoke or fire (99); risk of collision or loss of separation (141); and emergencies declared for various reasons not given in the statistics.

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The soft aviation insurance market that operates have enjoyed for nearly a decade appears to be coming to an end. That was the takeaway from statistics provided at the 2019 Aviation Insurance Association (AIA) conference held May 3-6 in Asheville, North Carolina. According to Benjamin Weber, head of aviation and space for Partner Re/Aviation Europe in Zurich, Switzerland, airline per-aircraft insurance premiums flattened out in 2017 and ticked upward in 2018 for the first time since 2009.

The main driver for the adoption of technology has been pressure to reduce cost in an environment with very thin margins.”

“The aviation insurance market is headed into ‘controlled flight into terrain.”

Weber produced aggregate data from Partner Re, FlightGlobal, and the General Aviation Manufacturers Association (GAMA) that predicts airline growth of 4 to 5 percent per year and 40,000 new aircraft deliveries over the next 20 years, which should result in an increase in the aviation insurance premium base. Total premium revenues rose in 2017 and 2018, with total premium income at $4.43 billion in 2018, but so did losses and expenses. The past five-year average total airline claims have exceeded total aviation premiums by approximately $400 million per year, according to figures provided by Weber from JLT (Jardine Lloyd Thompson Group).

“The aviation insurance market is headed into ‘controlled flight into terrain,” said Weber. “We still maintain an unsustainable rating level while providing increased limits and excessive acquisition costs. The challenging reinsurance market, including increasing costs of repairs and increasing level of liability awards—particularly in the U.S.—has resulted in reinsurers and underwriters exiting the aviation market.”

Consolidation in the aviation market has reduced capacity, further toughening the market and driving up rates. Weber noted several major acquisitions that occurred in the aviation underwriting and reinsurance markets in 2018, including AIG’s acquisition of Validus for $5.6 billion in January, AXA’s purchase of XL Group for $5 billion in March, and RenRe’s acquisition of Tokio MillenniumRe for $3.2 billion in October. Large reinsurance brokerage firms were not immune as Marsh acquired JLT for $5.7 billion in September, resulting in JLT Re being fully integrated into Marsh’s Guy Carpenter firm and the JLT brokerage arm sold off to AJ Gallagher in March 2019.

Weber remarked that while global reinsurance capital fell 3 percent in 2018 to $858 billion, there is still plenty of reinsurance capacity. Several key insurers and underwriters pulled out of the aviation insurance market in 2018, however, including Hiscox, Berkley, Aspen, and Brit.

“For 2019 we have only one choice: we have to work on a product—be it an insurance or reinsurance product—and make that product sustainably profitable,” Weber said. “Underwriting needs to go back to basics: price not only experience but exposure.”

The Future of Aviation Insurance

A panel of aviation insurance professionals discussed the future of aviation insurance, including integrating Millennials into the workforce, the rise of using social media to keep tabs on insureds’ activities, and innovations in providing and securing coverage.

“Silicon Valley is developing blockchain products for the insurance industry,” said Brendan Mullan of Crowell & Moring during the panel discussion. “Blockchain is a distributed ledger that records transactions in a way that can’t be retroactively altered. It provides a transparent and a reliable way to transmit data.”

Mullan cited Nationwide’s use of the RiskBlock blockchain platform rolled out in late 2017 to provide real-time verification of auto insurance. “I would suspect that we’ll start to see more blockchain usage in the insurance industry,” said Mullan. “It’s a great way to securely send and receive data, and if there’s anything that the insurance industry has a lot of, it’s data.”

The main driver for the adoption of technology has been pressure to reduce cost in an environment with very thin margins.”

“The main driver for the adoption of technology has been pressure to reduce cost in an environment with very thin margins,” said Walter Voight von Forster, director of Reinsurance Division from Munich Re when you get away from pure cost savings and get to product innovation, offering new types of products and different ways to access products.”

One example of product innovation is the relatively recent introduction of on-demand insurance. For example, Starr Insurance Companies recently expanded its drone insurance program in partnership with SkyWatch to include both a smartphone app and SkyWatch.ai online platform that allow drone operators to purchase on-demand insurance. Launched in 2016, SkyWatch provides pay-by-the-hour liability coverage and monthly liability and hull plans with discounts for operators based on experience and a safety score obtained through flight data sharing. The online program introduced in May 2019 provides a link on select aviation brokers’ websites to SkyWatch.ai on-demand purchasing portal. This allows drone operators to continue working with their existing brokers while also taking advantage of SkyWatch’s instantaneous access to coverage. For example, a fixed-wing or helicopter operator that also adds drone operations may keep their yearly aviation operation policy through a particular broker but add the SkyWatch on-demand drone insurance just before each occasional drone flight.

“SkyWatch’s solution is revolutionary in our industry, making it easier for drone operators to access quality insurance at a moment’s notice,” said Jim Anderson, senior vice president of Starr Aviation in Scottsdale, Arizona, who was not on the panel but attended the conference. “This new platform allows qualifying commercial operators to obtain coverage within minutes 24/7.”

Technology such as social media is also making an impact on the aviation industry as insureds increasingly post details and videos of their flight activities online, sometimes resulting in receiving cancellation notices of their insurance.

“Our whole lives are on social media, and sharing this kind of information obviously has some cons when it comes to insurance,” said Luke Uithoven, vice president of Kimmel Aviation Insurance. “Our customers are putting everything on Instagram, YouTube, Facebook, and underwriters are seeing them flying under power lines or landing where they aren’t supposed to. We’re going to see more cancellations and higher premiums based on what the underwriters can see on social media. Our customers need to understand that.”

Insurance Worker Shortage

While there was talk of the looming pilot shortage during the conference, John Brogan, president and CEO of USAIG, discussed the shrinking talent pool in the aviation insurance market, noting that both generational differences and the increasing need for talent at airlines and other aviation posts has severely decreased the availability of personnel to fill needed insurance roles.

According to Brogan, aviation’s expansive growth in the 1970s and 80s led to hiring booms of the then-young Baby Boomer generation, who were not due to retire until this decade. That meant retirement rates in the 1990s and 2000s were low and relatively little hiring occurred of Generation X into the aviation insurance field.

From 2006 to 2013 the number of insurance companies expanded and hiring ramped up. The new hires, generally from the Millennial generation, began their careers in a steep and long soft insurance market. Brogan noted that unlike Boomers and Gen Xers who lived through various aviation cycles, Millennials may have only seen the soft market through their entire working careers.

“Pensions must be greater than losses plus expenses; this is the primary equation of our industry,” said Brogan. “If the equation does not work, business does not work and that is visible to the
Now more than ever, business jet brokers should take the time to develop relationships with their clients and find the right aircraft solution for them.

Back in the late 1960s and throughout the 1970s—before the term "business jet" came into common use—those tasked with selling personal jet aircraft took the time to develop close relationships with their often-famous clients, including stars of film, television, and radio. Those esteemed passengers espoused the speed, efficiency, and other benefits of flying on a jet, and businesspeople took notice.

As the saying goes, that was then, and this is now. Today's business jet market is markedly different from that of a half-century ago, with a staggering variety of aircraft choices and with sales, charter, and leasing agents tasked with handling far greater numbers of aircraft transactions.

The scope of that incredibly competitive market often leaves little time for brokers to build rapport with their customers and fully determine their needs. Instead, aircraft sales sometimes become faceless deals in which brokers push clients towards airplanes that offer the highest commissions.

However, there are still at least a few companies that believe in taking the time to find the right business aviation solution for their customers’ needs. One of them is Leading Edge Aviation Solutions (LEAS), which has been working in the aviation marketplace and building relationships with clients for more than half a century.
A History of Personalized Service

LEAS chairman emeritus Joseph Carfagna, Sr. began his aviation career with Bendix in 1966, initially working in electrical engineering and avionics. The company soon formed a separate division for general aviation and commercial aircraft, including the nascent personal jet market.

"Around the same time, Bill Lear started Learjet, and [Bendix] was a launch customer for our flight director and autopilot," Carfagna recalls. "I was a technical rep on the project and watched planes moving down the line in Wichita. I also saw the big-name companies like Citibank, Chase, and Mack Truck buying these aircraft, and I recognized that people were needed to buy, sell, fly, and maintain them. In 1968 I had a conversation with Bill Lear and became a salesperson for Learjet with the New York area as a territory."

As a salesperson for Learjet, Carfagna built a client list that soon grew to include such notables as golfer Jack Nicklaus and entertainer Arthur Godfrey. He moved to the first management company in the Northeast, Executive Air Fleet, as a founding member in 1971 and acted as COO and managed the aircraft sales function of the firm until the mid 1980s. He later formed Wings Associates in the late 1980s, which ultimately evolved into LEAS. "From the beginning, it was my goal with the clients we handled that, if we did it right, the referral business would be there for us," he says. "Aviation is very much a referral business and the customer's experience drives the referrals."

Such experience, attention to detail, and personalized care have become even more important as the business jet market has evolved over the years. "Today's clients demand an emphasis on analytical expertise," says Joe Carfagna Jr. who became the president of LEAS in 2010. "We were a pioneer in offering those services, and our clients responded very well to it as the market matured and company executives began to take a larger role in determining aircraft selection.

Joe Sr's wife Kay joined the firm in 1990, son Joe, Jr, in 1994 and son Craig in 1996.

"Often, a buyer or seller simply doesn't know what they don't know," he continues. "We've seen the good, the bad, and the ugly, and we're better able to stay focused on the methodical process of buying and selling aircraft for them to determine the right airplane at the right price, even if it's not necessarily the cheapest."

"LEAS' success for many years has resulted from superior expertise, placing the client's interests first and applying the hands-on touch of a family-owned business."

Exploring Alternatives to Best Suit the Client

Frank Janik, vice president of transactions at LEAS, joined the company in 2006 at the height of a booming global market for business jets. "That was a once-in-a-lifetime market phenomenon before the downturn two years later," he explains. "Everyone in the world was buying corporate jets, and the euphoria made it seem like the high times would last forever. Of course, it wasn't really a normal market."

While the global recession of 2008–09 hit the business jet market hard, it also highlighted the competitive advantage of offering business-focused consulting efforts, in which LEAS helps clients to find the right solution for their needs. Janik notes that customers who've worked with other agents are surprised by the level of service provided by LEAS.

"The market is now far more transactional," he explains. "There's so much information available out there, but a lot of it's more noise than activity. We focus on consulting with our clients to help them with their full package of needs and taking them through the entire process of selecting an aircraft. There's a lot more to that than just trying to sell a plane."

LEAS works exclusively with prospective aircraft buyers, taking them through the entire process and representing their interests. "We conduct a feasibility study with every client to find the right product for each of them, and that may not mean buying an aircraft," Janik says. "Block-charter, jet cards, memberships, or fractional ownership may be far better suited to the buyer's needs than purchasing an entire new or used aircraft."

"It's about offering the solution that best fits their needs," he continues. "We'd love to sell a $50 million jet, but realistically the client may be best
served at this time with a jet card. The client’s needs will likely evolve over time, and our goal is to make every client a lifetime client. I’m very proud of the number of clients who’ve bought their third, fourth, or fifth aircraft from us.”

**Continuing to Support the Customer With Unique Offerings in Addition to Brokerage and Acquisition**

The high level of service from LEAS continues after the sale, thanks to the company’s The Client’s Edge program. That’s a comprehensive suite of value-added services to assist clients with the ownership experience through partnerships with ARGUS, FlightSafety International, Marsh Insurance, and MedAire in a benefits program exclusively for LEAS clients.

The ARGUS program is an exclusive offering that provides clients who purchase an aircraft with LEAS deep discounts on a custom-tailored package that examines their operating costs and procedures (whether the aircraft is managed or not) for a three year period after the purchase. So not only is a large amount of due diligence done well before the purchase, the due diligence continues for three years afterward. Janik said, “We take the position with clients from the onset of an acquisition that the total cost of an aircraft is really only measured when you quantify the purchase, the cost to operate it, the tax benefit taken if any, and what you sell it for.

Janik notes that The Client’s Edge is a particularly useful resource for first-time buyers. “They’re now fully responsible for the costs and responsibilities of that operation,” he explains. “We’ll match the client with a management company, as well as provide membership with ARGUS to ensure that the management company is the best fit for the customer and that maintenance and operating costs are in line with the fleet. That gives our client the added sense of stability and assurance that things are being done the right way.”

Another value-added LEAS service is overseeing quality control of aircraft completions. “We have a highly experienced airframe & powerplant (A&P) technician on staff with 50 years of experience who’s involved with the technical aspects of the sale,” says Joe Carfagna, Jr. “With him on the shop floor representing the client’s interests, it saves the client time and brings more expertise to the table.”

Joe Carfagna, Jr. also points to the company’s Inside Edge web portal, which is accessible 24/7 by clients. “The Inside Edge contains all legal and procurement documents pertaining to their transactions, as well as aircraft valuations and market intelligence,” he adds. “This transparent portal may be used to disseminate information at any time, and it’s the kind of innovative idea that makes doing business with Leading Edge Aviation Solutions even easier.”

Such client education goes hand in hand with providing superior customer service—and clients should expect nothing less from their aircraft broker. “Bigger is not always better,” concludes Carfagna, Jr. “Better is better, and I’d put the experience of our team and quality of our services as well as the client experience we provide up against anyone in this industry.”

“We’ve been around for a long time, with a 50-year history in the industry. We offer a unique mix of terrific experience, communication, customer service and innovation. We may be an ‘old dog’ in this business, but one with a lot of new tricks.”

To learn more about Leading Edge Aviation Solutions, including the company’s complete history, and to review an impressive list of testimonials from clients, please visit the company’s website at [www.leas.com](http://www.leas.com).
We are not reinventing the wheel here every day.

We are celebrating over 50 years of involvement in business aviation. It all started in the 1960s selling the newly designed Lear 23s and 24s and progressed into the largest aircraft management company in the northeast in the 1970s and 80s. The addition of financial acumen, analytical and technical services to aircraft brokerage in the 2000s resulted in strong capabilities in every facet of planning for, owning, operating and disposing of a corporate airplane. Today, with 840+ transactions completed, we have seen it all. Let us act not only as your broker, but a trusted advisor.
employees. Whether you are a broker, claims person, or an underwriter, watch- ing income diminish year after year is demoralizing and doesn’t support a posi- tive environment. It’s hard to see a future in an industry when the financials don’t support your hopes for your career.”

In addition to the soft-market woes, Bro- gan said that the aviation insurance industry has two “uphill battles” in trying to attract Millennials to its ranks: a large generational gap between Baby Boomers and Millennials, and the fact that many parts of the industry are still behind technologically.

“Across the board, the insurance indus- try is generally not very tech savvy, but we’re trying to get there,” said Brogan. “So there’s a generational divide. Everybody talks about it and rolls their eyes. You’ve got the Millennials who come in super edu- cated and very motivated, but they’ve been only a year of experience. On the other side, Baby Boomers are also super edu- cated and very motivated, but they’ve been working all of their careers to get where they are. They’ve earned their spot and are very sales savvy; but they think apps are buffalo wings and mozzarella sticks.”

Brogan says the solution to bringing more Millennials and Generation Z (those born after 1995) onboard is to show young professionals interested in insurance that aviation is “obviously more interesting to talk about than insuring parking lots, buildings, or workers’ comp.” An under- standing of the differences between the generations’ attitude toward technology, communication preferences, and decision-making tendencies can then help bridge the generation gap in the workplace.

“Baby boomers prefer face-to-face con- versation, but will use telephone or email if required,” said Brogan. “GenX prefers text messaging or email, and Millennials prefer online and mobile. There’s a strong preference for each group to communi- cate the way they want to.”

Brogan noted that the various gener- ations also have their own prefer- ences in how they make decisions. Baby Boomers tend to collaborate amongst their peers, GenXers who grew up as latchkey kids like to gather information but make their own decisions, and Mil- lennials tend to collaborate with elders. So a GenX boss who is used to figuring out solutions himself or herself may be perplexed by a Millennial who wants to constantly converse and collaborate.

While these are natural tendencies and present real conflicts in the workplace, Brogan said generational differences can also present natural fits that can work to everyone’s advantage.

“The key is to know how employees will respond to different types of training, management styles, work environments, and technology being used,” Brogan said. “Training that existed and worked in the past may not work going forward with changing needs, expectations, and resources.”

AIA awards and recognitions

The AIA annually recognizes several mem- bers for their recent or lifelong contribu- tions to the aviation insurance industry. The 2019 Pinnacle Award went to John S. Hoff, founder and partner of Chicago- based Hoff Law Group, which specializes in aviation law, insurance defense, and lit- igation. An AIA past president, Hoff began his legal career after leaving active duty in the U.S. Air Force in 1975 and joining the FAA as a staff and trial attorney. He entered private practice in late 1976 and concurrently continued his military service in the USAF Active Reserves, rising to the rank of colonel.

Eleven members were inducted into the AIA’s Eagle Society. Nominated by the current AIA president with concur- rence by the board of directors, Eagle Society nominees must have 10 years of consecutive AIA membership and have made substantial contributions to the aviation industry or demonstrated achievement in their aviation career. The 2018 Eagle Society inductees are: Jim Anderson, Ernest DeSpain, Ted Dunlap, Alan Farkas, Randy Hardy, Mike Myers, and Mark Pennington. The association also recognized six members who earned the Certified Avi- ation Insurance Professional (CAIP) des- ignation: Timothy Bonnell, Jr.; Matthew Feltner; Bennett Goldblum; Chris Howard; Andrew Johnson; and Casey Smith.

As is often the case, especially with human suffering, there’s a real pull to take immediate action.”

“Training that existed and worked in the past may not work going forward with changing needs, expectations, and resources.”

FAA Administrator Addresses Aircraft Groundings

FAA acting administrator Dan Elwell began his AIA keynote presentation by addressing the FAA’s groundings of the Boeing 737 Max and Cirrus SF50 Vision Jet fleets, which were grounded within weeks of each other in March and April 2019 respectively, due to similar but unre- lated continuous system-commanded nose-down inputs.

“As is often the case, especially with human suffering, there’s a real pull to take immediate action,” said Elwell. “But as we know, that’s not always the best way to address the real cause of the problem. On the 737 Max, the FAA waited until we had the data that linked the Lion Air and Ethiopian Airlines accidents before we grounded the U.S. fleet. And when we had that data, we acted within a few hours.”

Elwell noted that during the five-year certification effort completed in March 2017, FAA safety engineers and test pilots put in 110,000 hours of work and flew or supported 297 test flights on the 737 Max program. “That said, the 737 Max will not fly again in the U.S. until our safety analy- sis says that it’s safe to do so.”

The FAA grounded the Cirrus SF50 Vision Jet on April 18 due to faulty angle of attack (AoA) sensors providing incor- rect readings to Cirrus’s stall warning and protection or Electronic Stability & Protection systems. During three flights between November 2018 and April 2019 onboard systems responded to these faulty inputs by commanding nose-down inputs even when sufficient airspeed and proper actual AoA existed for normal flight. In all three of these incidents, the pilot was able to disconnect the system and land the aircraft safely.

Cirrus had identified the issue and published its own service bulletin on April 16, calling for mandatory replace- ment of the sensor.

“When we issued the emergency AD [grounding the SF50], it was prompted by reports of a systemic problem with the AoA sensors. These are not the same AoA sensor units on the 737 Max and the situations are unrelated, but this is about taking the correct action at the appro- priate time because we have only one agenda. Safety has to be the top priority. The recent groundings of the Boeing 737 Max and the Cirrus [SF50] have brought safety to the forefront.”

Elwell noted that Cirrus had already developed an FAA-approved corrective action that includes installing new sen- sors, and also revised the emergency pro- cedures in the flight manual. On April 23, less than a week after the FAA grounding of the SF50 fleet, Cirrus announced that shipments of replacement sensors were already being sent to operators.

“When we need someone to step up, GA [general aviation] always does,” said Elwell. “General aviation aircraft com- prise the majority of the U.S. civil aviation fleet, and the data tells us that GA safety is actually on the upswing. Work- ing with the GA community, we set the goal of reducing the accident rate to no more than one fatal accident in 100,000 flight hours by Fiscal Year 2018. The preliminary data show that we exceeded that goal and that 2018 is going to be closer to 0.8 fatal accidents per 100,000 flight hours.”

FAA and GAMA Work Together for Innovation

Michael Romanowski, director of policy and innovation for the FAA’s Aircraft Certification Service, followed Elwell’s comments with information on certi- fication efforts on new types of aerial vehicles, including electric propulsion aircraft that are already available for the general aviation market and new designs proposed for the urban air mobility mar- ket (UAM).

“I believe that we can safely integrate these highly automated aircraft into our system when they can be shown to meet the FAA’s and the public’s expectations for safety,” said Romanowski. “While our regulatory framework was not developed with UAM vehicles in mind, the FAA has a long successful history of bringing new technology into aviation. As we’ve been working with the unmanned market, we’re seeing technologies that we can leverage. As regulators, it’s incumbent on us to come up with policy for these new vehicles, especially as they introduce new technologies with remarkable potential for improving safety.”

Romanowski mentioned the recent FAR Part 23 rewrite as a catalyst for inno- vation as it consists of performance-based regulations where the FAA sets a standard and allows manufacturers to demonstrate
Insurance market set to tighten

how they will meet (or in many cases, exceed) the standard.

“The Part 23 performance-based regulations set loose an environment for wholesale innovation in the small airplane market,” said Romanowski. “We also implemented another policy change that further fuels innovation: non-required safety-enhancing equipment. This is where we’ve found ways to streamline the certification qualification for those systems that bring safety enhancements to aircraft to provide additional advisory and situation awareness.”

Romanowski mentioned the work being done by the FAA and Embry-Riddle Aeronautical University to develop a simplified vehicle operations (SVO) aircraft with the aim of making flying an airplane as easy as driving a car. While the rudderless Ercoupe was designed with exactly the same intentions in 1939, the 21st century EZ Fly demonstrator uses automation to remove or lessen pilot tasks such as responding to weather, air and ground threats, and air traffic control.

“We’ve been talking about the pilot shortage and the challenges in recruiting young people into the pilot profession,” said Romanowski. “We’ve shown that we can bring the video game generation into the cockpit and have them fully fly the aircraft in a short amount of time in a safely protected environment that brings enthusiasm for flying instead of fear when they’re asked to pilot these vehicles conventionally.”

GAMA president and CEO Pete Bunce also discussed SVO during his address, noting that GAMA is working with the FAA on new pilot certification strategies based on the level of aircraft automation. New pilots in autonomous or optionally piloted aircraft (OPA) might receive a restricted license, and then add endorsements as they train in aircraft with decreasing levels of automation. Instead of starting a student pilot in a Cessna 172 (or similar trainer), students might learn to fly an OPA and would need to gain piloting skills and experience to move “up” to a “more complex” Cessna.

“If you start to break down all of the components of being a pilot, there are quite a few tasks that computers do much better than we humans do,” said Bunce. “If you’re flying an aircraft that essentially consists of programming computers, do you need the same skills as flying a Cirrus SR22 in today’s world? Or do we train to a basic level for flying an autonomous vehicle—because people initially want somebody up front—and then provide endorsements to fly more complex older technology?”

Medication use in aviation

Dr. Mitch Garber, M.D., a former U.S. Air Force flight surgeon who served as the NTSB’s first medical officer from 1996 to 2011, discussed medication use in the aviation environment. He noted that of U.S. adults aged 45-64 years, approximately 70 percent are on at least one prescription medication, and 20 percent take five or more prescription drugs, according to figures released by the National Center for Health Statistics in 2016. Pilots are not immune; according to a 2014 NTSB study, the percentage of fatally injured pilots with at least one drug in their system rose from about 10 percent in 1990 to 40 percent in 2011, with about 20 percent having two drugs and 10 percent having more than two drugs.

Garber remarked that in both prescription and over the counter (OTC) drugs, the accompanying informational inserts and other labeling can be hard to read, confusing, and even misleading at times. As an example, he noted that both Benadryl allergy medication and ZzzQuil sleep aid contain the same active ingredient—25 mg of diphenhydramine HCl—but while ZzzQuil is marketed as a sleep aid, Benedryl’s packaging merely includes the fine print: “marked drowsiness may occur.”

“I was at a full-motion driving simulator where one of the studies they did compared the effects of Zzzquill compared to alcohol,” Garber said. “What they found was very surprising [by ZzzQuil] was equivalent to a blood alcohol content of 30 percent. But there was no correlation with whether the driver felt sleepy. The drivers who felt the drowsiness weren’t necessarily the most impaired, and the ones who felt the least drowsy weren’t necessarily the least impaired. So feeling drowsy doesn’t tell you anything.”

Garber noted that the FAA does not make its list of unapproved drugs readily available to pilots, although some information can be found in the FAA’s Guide for Aviation Medical Examiners under Pharmaceuticals. This guide, which can be found online at FAA.gov, is not a comprehensive list of “do not fly” drugs, but it does provide guidance on some of the most common concerns such as allergy and pain medications. It also provides general guidance on the amount of time to wait after taking the last dose of certain medications before flying, generally five times the maximum-hour dose interval (e.g. 30-hour wait time for a medication taken every six hours). However, it calls out a wait time of 60 hours after the last dose of diphenhydramine.

GAMA president and CEO Pete Bunce

Bunce’s talk also included emerging technologies in general aviation including transformational manufacturing techniques, head-up displays, and hybrid and electric aircraft.

“The [GA industry] has some good programs that are looking at distributed propulsion on both conventional-looking aircraft and exotic designs,” said Bunce, who showed videos of various prototype hybrid and electric aircraft already flying in various parts of the world. His examples included the Equator electric amphibious aircraft from Norway, Lilium, and Volocopter from Germany, Pipistrel’s Alpha Electro from Slovenia, Liaoning electric aircraft from China, and the Airbus Vahana and Kitty Hawk Cora from the U.S.

“Those of us who are old enough to remember the Jetsons are asking if [UAM] is real?” Bunce said. “I’m here to tell you this is real, and it’s happening and there’s more money chasing it than you can imagine.”

Study reveals economic impact of Mass. airports

Massachusetts’s 39 public-use airports in 2017 generated economic activity of $24.7 billion and supported more than 199,000 jobs with an approximately $7.2 billion payroll, according to a new study from the Massachusetts DOT (MassDOT). The study says these figures represent an increase of 49 percent, 23 percent, and 19 percent, respectively, over the results reported for 2014.

The report shows Boston Logan International Airport as having the greatest economic impact, employing more than 162,000 people with a payroll of nearly $6 billion, and providing in excess of $16.3 billion in economic output. Hanscom, the busiest general aviation airport in New England, is also the second busiest overall with more than 100,000 operations annually. Including its military presence, Hanscom employs some 19,500 people with a payroll exceeding $527 million and an economic output of nearly $7 billion.

As a group, the 30 other GA airports in the state produced a total economic output of nearly $631 million and reported a total payroll of more than $270 million for 5,166 employees.

“We are pleased to release the latest update to our Statewide Airport Economic Impact Study, which highlights how airports throughout Massachusetts are continuing to support jobs and economic opportunity,” said Transportation Secretary and CEO Stephanie Pollack. “This study underscores the importance of investments in airport infrastructure because our airports are vital to the state’s economy, creating jobs, moving people and goods, and in many cases, serving as important community gathering areas in less populated areas of the Commonwealth.”

“The study shows how public-use airports promote economic growth in cities and towns across Massachusetts while ensuring that people have more options for reaching the places they need to go,” added MassDOT Aeronautics Administrator Jeffrey DeCarlo. “Aviation is continuing to be a strong economic catalyst, and MassDOT is proud to continue supporting public-use airports.”

G.G.
The KC-390 incorporates 50 years of Embraer’s heritage and experience in developing, certifying and delivering reliable aircraft. The aircraft is equipped with the V2500 high bypass turbofan engine which has accumulated more than 100 million flight hours. Combined with proven avionics, which complies with exacting standards for cockpit display systems, and full fly-by-wire flight control systems, the KC-390 is ready to accomplish any mission. Furthermore, the KC-390 has accumulated more than 2,000 hours of flight testing and achieved civil certification. In support, is a world-wide sustainment alliance of reputable suppliers contributing toward making the KC-390 the most reliable, easy to operate and efficient choice there is.
In the normal day-to-day flow of business jet traffic around the world, one rarely takes note of the regular passage of flocks of jets safely and routinely completing their missions. Yet for these missions to succeed, it takes a massive behind-the-scenes organization to make it all happen so that passengers arrive at their destination on time for that important meeting or family event. And then, for companies like fractional-share provider NetJets, the process starts all over again and the vast pool of experts that make it all work continue their labors, and on it goes.

During a recent tour of NetJets headquarters in Columbus, Ohio, the company gave a group of reporters an opportunity to see how the company works, from treating us like regular NetJets owners to using the NetJets-developed IntelliJet software program. The team is not only responsible for each flight but must also know owners and their preferences, according to Richard Wrona, vice president service experience. “It’s all in the communication,” he said, “and understanding what they’re striving to do. We take care of them to the best of our ability.”

This means more than just arranging a trip for a shareowner. For example, on the day of our visit, team members were warning some customers about the possibility of delays due to snow events. The team also tries to help the owner make the best decision for a planned trip, asking why they are traveling via NetJets and helping them determine the best airport to use at the destination. Sometimes Teterboro, for example, isn’t the best choice for certain areas near New York City. Or the requested airplane might not be the best for the trip, and a smaller or larger one may make more sense. Another example is at Aspen, where some days the winds are too strong and because takeoffs are in just one direction, could exceed the airplane’s tailwind limitations. In this case, the team would recommend an earlier departure if the customer is able, thus avoiding possible delays because of the strong winds.

Each owner gets a personal representative, reachable by a dedicated toll-free 866 number assigned to that particular owner. The owner can call the personal rep to help with travel or any other questions or work directly with the owner-service team.

Inside the flight center and near the owner-service team are other NetJets staffers critical to the efficient operation of such a large fleet of business jets. Five full-time meteorologists work from 5 a.m. to 10 p.m., aiding dispatchers and pilots and often speaking with customers who want more detailed information about upcoming weather. Some passengers want to know, for example, what time to depart to avoid turbulence or if the weather for an upcoming vacation weekend will be optimal. If the meteorologists spot a hurricane approaching, they are the front-line defense in making sure the NetJets airplanes are nowhere near when it makes landfall.

The dispatchers are FAA-licensed and do all flight planning and flight releases, which reduces the burden on pilots and leaves them free to focus on flying safely.

Another group in the flight center are aircraft maintenance technicians who monitor the condition of the jets and facilitate repairs at sometimes far-flung locations.

Another team specializes in the airport experience, constantly vetting FBOs, ground transportation, and other non-flying activities for safety, security, and passenger comfort issues.

NetJets: Behind the fractional-share curtain
by Matt Thurber

In a hangar at NetJets headquarters, Michele Marder, manager of fleet configuration and analysis, showed off a new Latitude that was being prepared for customer flying. NetJets customizes its interiors to some extent, based on customer preferences. In the Latitude, for example, the galley, which is larger than typical, is equipped with a Keurig coffeemaker, and there are under-seat snack drawers, along with NetJets-specifed materials and furnishings.

Generally, NetJets keeps light and midsize jets from 10 to 12 years and large-cabin jets as much as 15 years, she said. A refurbishing team constantly evaluates cabin condition and makes sure repairs and upgrades are done.

When it comes time to move an airplane out of the fleet, an owner’s share is moved to another plane, either if their normal five-year contract is due, they will be offered the opportunity to sign a new contract, or they may choose to exit.

All NetJets flights are catered, and core team manager Michelle Musselman runs the company’s catering logistics support department, which employs 16 people. To
Jets has 29 locations with food lockers and three warehouses. During a typical year, NetJets will serve 26,000 cheese trays, 40,000 fruit trays, 17,000 orders of chips and salsa, 1.2 million bottles of Fiji water, and a 4,300 peanut-butter-and-jelly sandwiches.

Customers can select catering, including wine and other adult beverages, for their flight online in their owner portal, including “always stock items” that they prefer. Pilots are also well-fed by NetJets, which enhances safety and the all-important flight crew quality-of-life.

The catering experts at NetJets also consider the “science of taste” when creating menus, according to Musselman. “We taste with all our senses,” she said, but taste buds are affected by noise, altitude, and low humidity. The latter two reduce the perception of sweet and salty but don’t impact spicy, while noise can affect salty and spicy. Some breads—bagels for example—aren’t very pleasant in low-humidity environments. The taste of wine is affected, too, and this has to be taken into account.

Pilot Rankings
NetJets employs more than 2,500 pilots, and chief pilot Don Wittke is well aware of the competition for pilots that airlines offer and how important it is for an operation like NetJets to retain its flight crews. “We offer the best of both worlds for pilots,” he said. NetJets gives most pilots a seven-day-on, seven-off schedule, and they know their schedule a month in advance. Other schedules are available. Airline flying, he said, “is so routine and boring. It’s basically driving a bus.” NetJets pilots get to fly to many different destinations—over 4,000 airports—and they interact with customers on a much more intimate basis. “The scope of what we do is so much more exciting,” he said. “Our mission is much more challenging than any airline.”

The pilot shortage hasn’t affected NetJets as much as some operators, but the company nevertheless has worked to improve pilot quality of life. Pilots have more options now for where they can live, and NetJets now has 200 bases in the U.S. And compensation has been enhanced, paying pilots more when they work extra hours, which wasn’t the case in the past. “When they are working hard, they deserve to be rewarded,” he said.

Last year NetJets hired 185 pilots, and it expects to hire between 25 and 75 this year, according to vice president of operations Alan Bobo. “I think we’re in a good spot with low attrition, and folks want to work here.”

Although NetJets went through a pilot layoff of about 500 people during the 2008 recession, there have been management changes since then. “Currently there have never been better relations between pilots and management,” Wittke said.

Safety Solutions
Vice president of safety Richard Meikle wrapped up the visit by describing the NetJets safety program, which includes a robust safety management system. He pointed out that there is no regulatory requirement for a fractional-share operator like NetJets to even have a safety program. “It’s second to none,” he said. “I’ve never seen anything like it.”

Our trip back to Teterboro was in a new Citation Longitude, which shares interior features of the Latitude, including design touches specified by NetJets. NetJets expects to take delivery of seven Longitudes this year and has already begun selling shares in the new jet. The company announced in late 2018 options to purchase up to 175 Longitudes and 150 Citation Hemispheres.

“‘It’s all in the communication, and understanding what [customers are] striving to do. We take care of them to the best of our ability.’”

-- Richard Winona, vice president service experience
A common theme throughout the 2019 NBAA Maintenance Conference May 7-9 in Fort Worth, Texas was the development of a future maintenance workforce in business aviation. It was top of mind for NBAA chief executive Ed Bolen in his speech on the second day of the conference when he suggested to attendees that excitement in the aerospace industry around developments in commercial space travel with companies such as SpaceX and progress by Aeron in developing the first supersonic business jet could be just the thing to attract young people to business aviation. “We’re going to be part of things that can give us a hook as we try to bring in new talent,” he explained.

The second day of the Maintenance Conference also was the first day for the Flight Attendants/Flight Technicians Conference, held jointly for the first time.

Business aviation workforce recruitment and development has been a consistent theme of Bolen’s speeches at NBAA events in recent months. But this time around, Bolen told attendees the industry has many qualities that appeal to younger generations: technology, such as working with avionics and cabin connectivity; experiences, such as travel; a career that offers purpose by way of using airplanes to assist people affected by disasters and through programs such as the Corporate Angel Network; professional growth opportunities; the industry’s focus on sustainability through efforts such as renewable aircraft, avionics, and engine OEMs as well as connectivity providers.

A popular session, “Worker Fatigue and Procedural Non-Compliance: FAA Solutions to On-Going Challenges,” looked at why AMTs may not always follow procedure. FAA chief scientific and technical adviser Bill Johnson spent most of the session focusing on failure to follow procedure (FFP) and suggested that it’s not just an AMT issue, but an organizational one. “I was going to call this, ‘Wake Up And Follow Procedures,’” but the problem with that is I would be suggesting that it’s fatigue causing the procedure issue,” Johnson said. “Our culture, whether it’s with respect to following procedure or fatigue, is the enemy.”

Johnson explained that FFP by an AMT can involve every person in the maintenance chain, including managers who pressure AMTs to complete their work quickly, inspectors who overlook potential mistakes, the writers of the procedures, the lawyers who added cautionary notes and language to the written procedures as well as the regulator whose guidelines necessitated the lawyer’s involvement.

“Everyone is the problem” when it comes to FFP, Johnson said, but they can also be the ones to change that. It starts with the individual becoming a “safety champion.” Last fall, the FAA launched a self-directed training program, “Follow Procedures: The Buck Stops Here,” aimed at reducing FFPs in aviation maintenance organizations. So far, Johnson noted, 4,000 people have accessed the program’s website www.followprocedures.com, and 80 percent of those taking the voluntary training have completed it. “Following procedures 100 percent of the time, that’s a pretty good idea.”

A second session, “Next Gen Investigation and Root Cause Analysis,” attendees learned investigative techniques from Kent Stauffer, head of Constant Aviation’s safety, quality, training, and technical programs. “It’s an important industry,” he explained. “The concepts are the same for every negative event you have.” Stauffer told attendees to follow the five same steps each time: identify the problem, gather the data (including interviews of all personnel involved), analyze the data, develop a corrective action, and communicate it. He suggested making a checklist to make the process repeatable and when interviewing witnesses to make them feel comfortable and don’t ask leading questions.

A combination of photography, drawings, and mapping are best for telling the story of what happened, he said, and recommended photographing the site of the incident by drawing an imaginary box around it and working in from each corner of the box, being careful to photograph everything including debris, skid marks as well as the position of flight controls and switches.

Other notable events at the conference included NBAA scholarship committee vice-chairs Jim Huntoon, founder of Satcom Direct, and Scott White, regional sales manager at StandardAero, announcing the awarding of 42 scholarships to students and recent AMT graduates and the establishment of the John F. Rahilly Memorial Scholarship for Future A&P Technicians, which was awarded to W. Christopher Stanford, an AMT student at Tulsa Technology Center.

The second day of the maintenance conference also marked a first for the event: a joint-session with the NBAA Flight Attendants/Flight Technicians (FAFT) Conference. NBAA senior VIP of strategy and innovation Mike Nichols told the organization chose to co-locate the conferences because both of them were developing and offering content relevant to the role of the flight technician. “Attendees could pick and choose the educational content most relevant to their professional development goals,” Nichols added.

There were other benefits to companies by holding the conferences jointly, he said, including reducing travel for experts speaking at both conferences as well as companies sending their personnel to both events. Both conferences will be held jointly again next year in Hartford, Connecticut. Air Force Lt. Gen. Leslie Kenne (Ret.) was the keynote speaker for the joint session. She spoke on the qualities of an effective leader, which include being approachable and enthusiastic and having a sense of humor and a desire to take care of others.

Attendance numbers were the highest they’ve been in the maintenance conference’s 33 years, Nichols said. Approximately 1,500 people attended. This year’s conference also recorded an increase in companies exhibiting as well as booth spaces. There were more than 180 exhibitors in 200 booth spaces compared with 140 companies exhibiting in 180 booth spaces at the 2018 conference held in Albuquerque, New Mexico.

Nichols attributed the increases in attendance and exhibitors to several factors, not the least of which was a healthy economy that’s encouraged companies to loosen their purse strings for professional development. Fort Worth’s central location and proximity to a large commercial airport likely contributed to the increase as well as a larger than typical exhibit hall for the conference, Nichols added.

Also, FAPT attracted nearly 200 attendees. With the addition of exhibitors specific to the FAPT, total exhibitors at the combined Fort Worth events were more than 190, occupying more than 250 booth spaces, according to NBAA.
A PREMIER AVFUEL-BRANDED FBO

Whether Northern Ireland is a tech-stop or your final destination, Woodgate Aviation’s luxe facility and comprehensive services are sure to impress. Travelers en route to golf’s oldest international tournament enjoy special offers July 12-21, 2019, including complimentary business jet handling with Jet A-1 uplift, as well as helicopter charter to and from the course.

- Customs and Immigration
- Spacious Rampside Passenger Lounge
- Accommodates up to a G650
- Open 24 Hours
- GPU and Air Start
- Maintenance
- Complimentary Wi-Fi
- Full Bar, Coffee and Tea
- Gourmet Catering

WoodAir.com | Avfuel Contract Fuel and AVTRIP available | Avfuel Training System (ATS) Certified

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Risk management and shared responsibility took center stage at the Flight Safety Foundation’s 62nd annual Business Aviation Safety Summit (BASS), co-sponsored by NBAA, in Denver in May.

In his keynote address, John Duncan, FAA deputy associate administrator, Office of Aviation Safety, urged cooperation between his agency and the business aviation community, telling attendees, “We are all on the same team,” citing the agency’s new Compliance Program, which aims to fix safety problems rather than affix blame, as an example. Duncan acknowledged the FAA’s own commitment to safety and procedures have come under question in the wake of the Lion Air and Ethiopian Airlines 737 Max losses, and that it now faces multiple investigations. “We welcome them,” he said of the inquiries. “Part of the challenge that you can probably see in the press is a lack of understanding of exactly how we manage risks.”

The score of presentations and panel discussions led by more than two dozen aviation safety, training, medical, and operational experts over the two-day conference pointed to ample causes for concern and action. FOQA (flight operational quality assurance) data reveals business aircraft are using progressively more and more available runway—all other variables factored out—over time, according to data cited by the GE Aviation corporate FOQA program’s Shelby Balogh, a data and analytics scientist. Concomitantly, runway excursions—one of NBAA’s Top Ten areas of safety focus for 2019—remain the most common type of business aviation accident. Ten business aircraft went off the runway from December 2018 to March 2019, including one carrying 300— in one week.

Loss management and shared responsibility are “a constant state of uneasiness,” he urged taking personal responsibility for avoiding complacency and improving beyond expected standards or norms. Ask, “What’s different about this task today?” and “What have I become complacent with recently?” For clues, identify and examine “close calls/near misses” in your personal life—lost or misplaced cell phone or car keys; a forgotten appointment or task that slipped your mind. The challenge of gaining corporate buy-in for investments in safety is an ongoing challenge, and in “Resilience and Crisis Management in Aviation, a Strategic Risk Management Perspective,” Ellen Shew Holland, president of Strategic Risk Frameworks, a risk management consultancy, suggested using strategic risk scorecards used in mainstream industries as templates. She presented examples of scorecards for market competition, natural disasters, and plans to combine corporate operations. Each template rates probability; level of impact; velocity, or speed of impact; and the total risk value each represents under both mitigated and mitigated circumstances. Choose a couple of initiatives providing the best mitigation reward to get C-suite endorsement as a start, she advised.

In an industry facing a labor shortage, employers must adopt their processes to the styles of the incoming class, one presenter acknowledged. Despite changes, some challenges, such as runway excursions, remain the same and require constant vigilance.

**Landing overrun causal factors business operations**

Training, a linchpin in maintaining safety, must be adapted to millennials, who have different priorities, attitudes, behaviors, and expectations, said Martin Egerth, Lufthansa Aviation Training senior product manager, of young pilots. “The 16-year average for such insurance claims put at $134,564.37. A shortage of qualified ground handlers is behind many of these statistics, and Yoemans recommended operators choose FBOs based on their training of ground personnel rather than the customer service and fuel prices that surveys show currently drive FBO choice.

**Challenges Remain Unchanged**

Fatigue is now universally recognized as a critical safety factor affecting wide segments of business aviation and is becoming easier to identify and address. In “Quantifying the Impact of Fatigue on SPIs [Safety Performance Indicators] in Flight Operations and Maintenance,” Dr. Daniel Mollicone, CEO of fatigue management consultancy Pulsar Informatics, included data from a recent fatigue management project for Alaska Airlines. A review of schedules of its 1,500 pilots found more than one-quarter (28 percent) of flights impinged on the window of circadian low (WOC), when alertness and performance ebb. The airline used a Pulsar fatigue risk tool to help pilots construct less-fattiguing schedules, reducing fatigue reports 30 percent and fatigue calls—pilots unable to complete a scheduled duty period—29 percent. Should operators or crews seek benchmarks, Pul- sar found once the pilot’s easily computed fatigue score exceeded 17, there was a 44 percent probability he would make a fatigue call. The probability dropped to 17 percent at a fatigue score of 14, and 11 percent at 13.

Improving the safety of single-pilot operations is another NBAA Top Ten item, as the organization’s senior manager, Safety and Flight Operations Mark Larsen, reminded attendees. Single-pilot accident rates are times higher than crew rates, and their fatal accident rates are times higher. Information overload, or not having the right information at the right time in the right format despite a glut of data, are blamed for some of the safety mismatch.

In “Research and Development of Digital Copilot,” John Helleberg, Mitre Corporation’s group lead, Human-Centered Flight Deck Research and Engineering, reported on development of an artificial intelligence tool that can help serve as non-flying pilot. Digital Copilot incorporates speech recognition; a cognitive-assistance processor that monitors weather, airport information, and traffic pattern conformance; and an inference processor, which infers pilot intentions regarding phase of flight, destination airport, and pattern leg. The device, which provides aural and/or visual alerts and responses, has been used in simulators, pilot workshops, and in flight, and in tests of simple checklist completions proved significantly faster than EFBs. Helleberg said Digital Copilot could sift through Notams for key information and accident data to advise pilots about any hazards associated with a particular approach, departure, or other airport environment issue. Mitre, a government-funded think tank, creates the technology for public use, and it is not currently in commercial development.

But as old safety threats are mitigated new ones emerge, as illustrated by the proliferation of lithium-ion batteries, explained by Capt. Boomer Bombardi, a cockpit smoke and fire specialist, member of the FAA’s High Energy Fire Training Enhancement group, and of the Airline Pilots Association, International. An estimated 2.3 billion lithium battery-powered devices are brought into aircraft cabins in the U.S. annually, along with their inherent fire danger. While the FAA has issued guidance, “it’s really up to you to understand how you’re going to use them in your operations, and what your procedures are going to be,” Bombardi said.
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**IT’S TIME FOR A BETTER APPROACH.**
Safety & education efforts take center stage at RACCA

by Kim Rosenlof

Officials from the FAA, NTSB, and Cargo Airline Association all provided key insights into government policy, regulations, and safety protocols for the airline and cargo industries at the 17th annual Regional Air Cargo Carriers Association (RACCA) Spring Conference held in Scottsdale, Arizona in April. The three-day conference featured more than 60 exhibitors, 15 general and breakout sessions, static displays at Scottsdale Airport, and a silent auction that raised $20,000 for RACCA’s scholarship program with matching grants from members.

NTSB vice chairman Bruce Landsburg kicked off the general sessions by citing a 2017 incident where an Air Canada Airbus A320 on final approach to San Francisco International Airport at night mistakenly lined up to land on a taxiway and missed colliding with other airliners by an estimated 14 to 29 feet upon go-around. The near-miss involving up to 1,000 people prompted the NTSB to launch a full investigation.

“There is no question the [Air Canada] crew was badly fatigued,” Landsburg said. “The captain had been up for 19 hours. It was in the morning according to their circadian rhythm time. A lot of cargo runs are at night, and there are ways to cope with this, but it is something we have to be cognizant of.”

Landsburg said that as part of that incident, the NTSB made a recommendation to Transport Canada to revise flight crew fatigue regulations, which were “not as restrictive as those in the U.S.” The new regulations were issued in December 2018.

Citing the May 2014 crash on takeoff of a Gulfstream G-IV at Hanscom Field, Massachusetts, where the crew failed to turn off the gust locks and the throttle interlock failed, Landsburg advocated the use of cameras in cockpits to ensure checklists are being followed, noting that human behavior changes when people know they are being observed.

“As a general rule of thumb, we’re not monitoring cockpits because we trust our people to do the right thing,” Landsburg said. He then referred to an NBAA survey conducted after the Hanscom accident. “The NBAA survey measured whether the crews on business aircraft were checking the flight controls before takeoff. About a quarter of those crews did not check to make sure the flight controls were free. This is not a recipe for success.”

1,500-hour Requirement

Following Landsburg, Jerome Randolph “Randy” Babbitt, FAA Administrator from March 2009 to December 2011, spoke about the 1,500-hour flight officer requirement established after the Colgan Air Flight 3407 accident in February 2009 as “first on the list of mandates [from the accident] that are proving to be not very helpful.” A former Eastern Airlines captain, Babbitt began his FAA tenure just weeks after the accident and testified against the 1,500-hour requirement, emphasizing that hours in the air do not necessarily equate to greater experience.

“If you take a pilot who has just graduated with an accredited [aviation] degree with 500 flight hours and test them, they are going to do really well,” Babbitt said. “At this level, they have a lot more training background, especially in the academic side. Then you make them go fly for another thousand hours dusting crops, flying banners, instructing, and test them two to three years later, they test worse. They haven’t practiced anything, haven’t received any guidance or instruction.”

Babbitt noted that ICAO currently caps simulator time toward the ATP at 100 hours compared with the FAA’s 25-hour allowance, and that ICAO is considering increasing simulator allowance up to 200 hours toward the ATP.

“Allowing someone to get into a situation that they can’t get out of in the simulator, that’s a learning experience,” Babbitt said. “The simulator techniques that we have today and the quality of the simulation is unparalleled. The old joke used to be that the simulator flies like the airplane. Now pilots go on the line and they say the airplane flies just like the simulator.”

James Viola, director of the FAA’s Office of General Aviation Safety Assurance, discussed NTSB recommendations concerning Part 135, including safety management systems (SMS), controlled flight into terrain (CFIT) training and technology, and adopting flight operational quality assurance (FOQA) systems. Viola stressed that despite the NTSB’s recommendations, the FAA is not planning to “take the Part 121 standard and apply it across all of general aviation.”

“The FAA is still in the process of developing our response to the NTSB’s 2019-2020 ‘want’ list,” said Viola. “While obviously we find any unnecessary injury, loss of life, or damage to aircraft unacceptable, we take a tiered approach in which requirements for Part 135 are more stringent than requirements for Part 121.”

Viola said that while the FAA intends to evaluate its current guidance, regulations, and policy for Part 135 operators to determine potential options to satisfy the NTSB’s recommendations, the FAA’s resources for additional SMS, CFIT, or FOQA changes are limited. “We have been advocating and approving voluntary programs and providing information such as CFIT avoidance recommendations to operators regardless of whether their operation requires this equipage.”

Viola also mentioned a new aviation rulemaking committee (ARC) directed by the 2018 Reauthorization Bill to review Part 117 Flight and Duty Limitations and Rest Requirements for application to Part 135 operators. Viola said the ARC will include up to 20 members from the air carrier community to include operators of various size and representatives from organizations such as RACCA.

Educating Legislators

Stephen Alterman, president of the Cargo Airline Association and chair of the Management Advisory Council to the FAA, discussed politics from a Washington, D.C. perspective. He opened with the impact of the five-week FAA shutdown that occurred earlier this year, advocating support of H.R. 1108, the Aviation Funding Stability Act introduced in February to use the aviation trust fund surplus to keep the FAA open during future funding gaps.

“The FAA can’t really make long-term capital investment decisions when they must be funded from Congress every year,” said Alterman. “But the [aviation] taxes are enough to fund the FAA and there is currently a $7 billion surplus in the trust fund that the FAA cannot spend because the money hasn’t been appropriated.”

Alterman noted with amusement that a portion of the recent FAA reauthorization bill—Section 744—that was removed due to “extensive lobbying by the pilot community” would have authorized an FAA research and development program in support of single-pilot all-cargo operations.

“We thought it was a cool idea, but it doesn’t matter whether there’s a study because we’re going to get down to one pilot, and down to none eventually. That’s just the way the world is heading,” Alterman said. “Private industry is moving at a faster pace than any government agency can respond. We need to trust each other and work together on safety and security because the government can’t be expected to do it alone.”

Alterman said one way the air cargo industry is working with Congress is by holding caucuses to help inform Congressional members about the day-to-day workings of the industry outside of specific issues.

“The aviation industry is good about conveying concerns to Congress, but doesn’t do well at educating Congressional members about aviation when there isn’t a specific concern,” Alterman said. He described the first air cargo caucus held in March, which attracted about 40 Congressional representatives mainly from districts that “touch” air freight. “We’re not the largest caucus, but we now have a body of people who say they are interested in air cargo within the U.S. Congress.”

Left to right: RACCA president Stan Bernstein, NTSB vice chairman Bruce Landsburg, and RACCA board chairman Tim Komberec were among the speakers at the event.
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The FAA’s decision to ground the Cirrus SF50 Vision Jet with an emergency Airworthiness Directive (AD) in April came as something of a surprise, although owners say Cirrus had already told them of potential issues with their aircraft’s angle-of-attack (AoA) sensors and had established a plan to remedy the problem.

The April 18 emergency AD immediately grounded all SF50 Vision Jets in the U.S.—approximately 100 in-service aircraft, and another 10-12 yet to be delivered—except for approved ferry flights to a Cirrus-authorized service center for replacement of the aircraft’s AoA sensor assembly.

The AD states that erroneous AoA data could engage the SF50’s Garmin-sourced Electronic Stability and Protection (ESP) system that acts upon the elevator pitch servo to lower the jet’s nose if AoA input increases to the point where the aircraft’s stall warning and protection systems (SWPS) activate. The situation may arise while either hand-flying at lower altitudes or higher altitudes with the autopilot engaged.

According to a Cirrus spokesperson, a company pilot first encountered an inadvertent SWPS activation “at altitude” in early April. Subsequent research by Cirrus linked that issue to a customer-reported occurrence in November 2018, which led the company to issue two service advisories to customers, on April 8 and April 12, followed by a mandatory service bulletin (MSB) SB5X-34-03 on April 16 calling for replacement of the AoA sensor assembly within five flight hours.

Three SF50 pilots told AIN the plane-maker informed them when the issue first surfaced through direct communications and posts to the company’s Vision Jet owners and operators web portal.

“They described the problem as an issue with the retaining collar behind the mounting plate that holds the [AoA] vane within the bearing,” explained Jay Jolley, who took delivery of SF50 S/N 29 in December 2017. “The service advisory included a video demonstrating how to check the vane during preflight by using your thumb and index finger to gently pull it on, similar to removing a key from a lock. Any movement [of the vane] meant a failure condition.”

The advisories also detailed the emergency procedure should pilots encounter a stall warning crew alert system (CAS) message and activation of the SF50’s stick shaker and/or stick pusher in otherwise normal flight. “It was a matter of pushing the autopilot disconnect button on the side stick, followed by pulling the autopilot servo circuit breaker,” Jolley said. “If you’re wearing a watch on your left arm, that C/B would be right next to the dial when holding the stick.”

Owners Say Cirrus Working Quickly To Fix Their Jets

Despite Cirrus’s actions to address the AoA sensor issue, the FAA opted soon after to publish the emergency AD stating “the unsafe condition described previously [in the MSB] is likely to exist or develop in other products of the same type design.” The agency added the condition “presents an immediate danger to pilots and passengers.”

The FAA’s quick issuance of the emergency AD may have been driven by the apparent similarity to the current grounding of Boeing’s 737 Max commercial airliner, in which erroneous AoA sensor inputs also appear to have triggered that aircraft’s maneuvering characteristics augmentation system (MCAS), leading to two fatal accidents in Indonesia and Ethiopia. No accidents or injuries have been linked to the SF50 AoA sensor issue.

The SF50 AD identified the probable cause as “a quality escape” by air data probe manufacturer Aerosonic, in which “[t]wo set screws that secure the potentiometer shaft to the AoA vane shaft may have improper torquing and no application of thread locker (Loctite) to secure the two set screws.”

Owners state the repair involves removing the original AoA vane assembly and returning it to Aerosonic for modification, with corrected replacement parts returned for installation by Cirrus personnel. Another SF50 pilot, who flies for the aircraft’s owner, stated operators were concerned initially that replacement parts would be in short supply following release of the MSB.

“However, it soon became clear that things were happening really fast and Cirrus told us we would likely see an AD,” she continued. “That followed a few hours later.” That pilot added Cirrus contacted her the following Monday, April 22, to arrange repairs.

“They said they could be at [our] hangar that day to remove the AoA and send it out, but by that time I’d already lined up a ferry permit to take the aircraft to Colorado for its previously-scheduled annual [inspection],” she continued. “They pulled the AoA assembly as soon as I arrived.”

The replacement process also unfolded at a fairly swift pace for Jolley, whose aircraft was already at a Cirrus service facility to address an unrelated service bulletin while he traveled out of the country. “Cirrus delivered the replacement part yesterday, it was installed today [April 25] and should be test flown tomorrow,” he said.

Jolley later flew his plane home the evening of April 26.

Dane Jasper, owner of SF50 S/N 18, said his aircraft had its AoA sensor replaced April 30 by a California service center. “I just got a call 30 minutes ago stating they were heading out for the test flight,” he added.

“The [vane] removal and replacement must be performed by Cirrus personnel.

“I’ve heard from owners whose planes aren’t already at a maintenance facility that Cirrus is coming to them to handle repairs,” Jasper continued. “All companies go through crises, and Cirrus has moved quickly and mobilized a lot of resources to get this dealt with. They’ve been very helpful in making it an easy process.”

Jolley also gave Cirrus a “thumbs up” for its response to the AD. “No one signs up for this, but they’ve done a good job communicating a very difficult message,” he concluded.

Cirrus addressing SF50 AD to return Vision to service

by Rob Finfrock

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

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

Power comes from four battery banks wired to eight Siemens SP200D 100 kW motors that drive eight propellers in four ducted assemblies. Estimated cruising speed is 65 knots with an endurance of 15 minutes.

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TO SERVE YOU BETTER, WE’VE JOINED TOGETHER.
Krimson CEO engages youth
by Ian Sheppard

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

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

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

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

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

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

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

Visits have also been arranged for the students, the most recent of which was to see the headquarters of Ethiopian Airlines.
Gender parity in aviation means more than numbers

by Kimberly Perkins

By now, all facets of the aviation industry have been warned about the current—and forecasted to worsen—pilot shortage. Most of us are also aware of the seemingly unbudgeable, and abysmal, statistic of women in aviation. But, there has been little coverage on how the industry can resolve both problems with an overarching solution—gender parity.

Many people think that gender parity is comparing the ratio of women to men; it is more than that. A gender parity lens looks at this ratio while also delving deeper in order to understand what it is like for those women. For example, why do female pilots, on average, make 16 percent less than their male counterparts? Why do many senior female first officers bypass captain upgrades at major airlines? Gender parity takes a data-driven, holistic approach to understanding where our industry can do better.

Federal Aviation Administration data shows that there are 160,000 pilots in the United States holding the industry's highest license, the Airline Transport Pilot certificate. Roughly 7,000 of those pilots are women; not quite 5 percent. That means, conversely, more than 95 percent of them are men. For context, in a room of 20 pilots, there is one woman.

Boeing estimates that nearly 42 percent of airline pilots will reach mandatory retirement age within the next 10 years. This mass wave of retirement, coupled with the increased demand on air travel, leaves the industry unsustainable in its current structure. Simply put, the status quo is no longer working.

In the 1970s, a wave of deadly accidents caused the industry to pivot. It was discovered that these accidents occurred mainly due to crew error, as opposed to mechanical failure. This birthed the concept of Crew Resource Management, which was introduced to help reduce human error. At first, staunch supporters of the status-quo fought this new, progressive, “touchy-feely” training. Decades later, Crew Resource Management training is now an integral part of all training, even single-pilot operations. It has been so successful that other industries, such as medicine and fire services, have adopted similar training techniques. With the pilot shortage looming, and the dismal 5 percent statistic stagnating, it's time for our industry to pivot yet again.

In 2017, the International Civil Aviation Organization (ICAO) formed a Global Gender Summit “aimed to motivate states and the global aviation industry to demonstrate leadership and commitment to gender equality in aviation...” This is a great step, but we can make more immediate changes now. We can start in small ways that, collectively, will make a big impact. For example, unconscious-bias training should be a mandatory part of Human Factors and Crew Resource Management training. Airlines should find ways to create family-friendly schedules, such as offering more day-trip-only lines. Companies should encourage their employees to join and advocate for the minority. When the people in the majority (white, straight, men) advocate for those in the minority (women, persons of color, the LGBT community, etc.), change can happen more rapidly. Industry Leaders and department heads should embolden their employees to be mentors and activists for the organizations representing these minority groups. We need to stop calling gender parity a “passion-project.” It is our professional responsibility.

If you have a job in the aviation industry, you are already a leader. You can be a mentor. There is a generation behind us deciding whether or not to join our industry. We owe it to ourselves, to them, and to aviation as a whole to improve our industry. Let us leave it better than how we found it. It is time for our industry to pivot; it is time we all become allies for gender parity.
Cardiff City joins BACA’s call for gray charter action

by Ian Sheppard

Cardiff City Football Club, whose new signing Emiliano Sala was killed in a crash into the English Channel north of Guernsey on the night of January 21, has joined with BACA—The Air Charter Association in calling for “urgent action on illegal flights.” This follows considerable media attention surrounding the accident and publication of the preliminary accident report (“Special Bulletin”) by the Air Accidents Investigation Branch (AAIB) on February 25.

According to the report, David Ibbotson, who was flying the Piper PA-46 Malibu from Nantes, France, to Cardiff, Wales, was not licensed to fly fee-paying passengers and the airplane itself was not registered to undertake commercial flights. Since then it has also emerged that Ibbotson was not licensed to fly at night.

The flight was paid for by former football agent Willie McKay. “This has prompted widespread calls for action by the air charter and football industries, with the backing of senior MPs,” said BACA.

Cardiff City Football Club stated, “We wholeheartedly back BACA...in their efforts to secure a review of illegal flights. Our club has been shocked by the sheer scale of the problem...the club has a robust flight policy, but we are putting in place additional processes to protect players and staff.

“We will be insisting that intermediaries book only commercial licensed air carriers when handling player transfers. We are hopeful that other clubs will take similar positions.”

BACA said it is “calling on the [UK] government to review the level of criminal liability and enforcement options available to authorities, including larger fines and prison time for pilots and individuals who arrange and undertake illegal flights.”

“The must be a watershed moment,” said Dave Edwards, CEO of BACA. “We have long argued that illegal flights are harming the legal air charter industry and putting lives of the travelling public at risk. It has become so prevalent that there is circumstantial evidence to suggest illegal flights are routinely happening frequently throughout the country.

“In the case of the circumstances surrounding the Piper PA-46 Malibu crash, we believe there is enough evidence available to authorities to take strong action against those involved in this flight and to propose significant recommendations for reform.”

“There is an urgent need to review just how prevalent an issue ‘gray charterers’ is,” said Stephen Doughty, member of the UK Parliament for Cardiff South. “It seems on the surface to be a Wild West industry that is putting lives at risk every single day.”

Oversight of Air Operators Certificates includes the UK CAA and other regulators, depending on where aircraft are registered. Meanwhile, there are other oversight mechanisms under EASA regulation in Europe (which includes the CAA at present) such as Part NCC (Non-Complex Commercial), but the aircraft in the Sala crash fell below the required level, being piston powered. At the same time, EASA cost-sharing rules have come under fire from BACA and others as being too liberal, and too open to abuse. EASA has yet to comment on whether the whole area needs a thorough regulatory review. The AAIB is expected to release its final report into the accident later this year.

Avinode Takeoff Ready ensures charter availability

by Jerry Siebenmark

Avinode, a Swedish provider of online charter aircraft sourcing and booking software for operators and brokers, has unveiled a new product aimed at helping its customers find and sell more short-notice charter flights. Called Takeoff Ready, the product ensures that not only is an aircraft available for charter in the next few days but that there is a crew to fly it. Avinode introduced Takeoff Ready at the EBACE show in Geneva last month.

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

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

Motivation to manually input information into the system will come from operators and aircraft management companies eager to put their airplanes and crews to work, Martinsson believes. It enhances their exposure to the market and generates revenue for an asset that would otherwise be sitting on the ground, he said. “We are not relying only on computer availability, but we are having users coming in saying, ‘This is what I want to sell, this is what my owner wants to sell,’ and be able to promote that to a community of 7,000 users around the world.”

Jet Linx expands to Boston area

Omaha, Nebraska-based private aviation services provider Jet Linx has opened its latest base terminal—the company’s 88th location in the U.S.—at Boston-area Laurence G. Hanscom Field in Bedford, Massachusetts.

The renovated 2,200-sq-ft facility on the southeast corner of the airfield, formerly occupied by Jet Aviation, offers the company’s jet card and aircraft management clients FBO-level amenities such as a private conference room, executive lounge, and kitchenette fully stocked with snacks and beverages, as well as exclusive ramp access and parking. The location will make its official debut in mid-June with a grand opening event.

“The growing Jet Linx team in Boston is thrilled to share our completed facility at Hanscom Field,” said Brad Rosse, the company’s president for the location, adding the local team has more than 50 years of combined experience in corporate aviation. “The base is unlike anything else in the area—a private high-tech experience for our jet card members and aircraft owners. The people and the dramatic location introduce a new paradigm for corporate aviation at Hanscom Field.”
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WHERE AEROSPACE LEADERS GET DOWN TO BUSINESS
Falcon 8X sets speed record on cross-country flight

by Matt Thubet

While it used to be normal to see Falcon jets landing and taking off from Santa Monica Airport in Southern California, the April 24 arrival and departure of a Falcon 8X was somewhat unique. The flight, which originated in Portland, Oregon, was part of a successful effort to break the record for the Santa Monica to Teterboro leg.

The big trijet landed on Santa Monica’s shortened 3,500-foot runway early on the morning of April 24 after flying from Portland, using less than 2,000 feet for landing. After a rapid fueling and turnaround at FBO Atlantic Aviation, the 8X needed a balanced field length of just 3,200 feet for the flight to Teterboro, carrying four passengers, 13,640 pounds of fuel, 200 pounds of payload, and two pilots. The 8X didn’t exceed the limits of the airport’s sensitive noise monitors during takeoff and departure, registering “significantly below the 95 dBA SEL sound limit,” according to Dassault.

The flight from Santa Monica to Teterboro took 4 hours, 28 minutes, with tailwinds averaging just 5 knots, besting the previous record by 24 minutes. That record was set when the airport’s runway was nearly 5,000 feet long.

Before attempting the landing and takeoff at Santa Monica, Dassault chief pilot and director of operations Franco Nese and captain Ryan Duveneck had practiced the day before short field takeoffs and landings at McVary Field in Salem, Oregon. They also practiced the precise timing of the noise-abatement power reduction needed shortly after takeoff to minimize the noise footprint over the city of Santa Monica. “Ryan makes the command for the power reduction; it’s critical,” Nese explained. “We had to be right on cue with the power reduction and still make a safe climbout from the airport and keep it quiet for everyone there in Santa Monica.” For the record flight, Nese flew left seat and Duveneck right seat.

"It felt like we were coming hot into Teterboro," Whelan reported. "It was turbulent; there were some definite zero-g sensations and it felt like a roller coaster ride." The crew landed at Teterboro at 3:36 pm EDT. Dassault has applied for official ratification of the record flight by the National Aeronautic Association.

The winds weren’t as good as expected,” Nese said after landing at Teterboro, “but we actually made up the last eight to ten minutes on approach here, thanks to ATC, they helped us out quite a bit. They delayed our descent so we had higher speeds and that’s where we saved a good five minutes. That made the speed record that much better. It was a challenging day. Short runway, landing, refueling, taking on a fairly hefty load of fuel, passengers, bags, still taking off out of a 3,500-foot runway, flying Mach .87 all the way to New York, and landing here with a decent fuel reserve. No other aircraft could do that.”

“Business aviation is about flying precisely where you need to be,” said Eric Trappier, chairman and CEO of Dassault Aviation. “Today’s flight on the Falcon 8X embodies everything that Dassault Aviation embodies that advanced design can accomplish: unparalleled airport performance, a quiet noise footprint, and extended capability, all in a large-cabin business jet. This is not possible in any other business jet in the ultra-long-range class.”
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PrivatAir Saudi Arabia eyes regional growth in activity

by Peter Shaw-Smith

Saudi charter operator and FBO landlord PrivatAir Saudi Arabia (PASA) is banking on growth in business and general aviation in the kingdom in the next decade to drive its business model, managing director Mansour Alsharif told AIN at the Saudi Airshow in Riyadh in March.

“PASA is a Saudi organization,” he said. “It was established in 2011 and in 2012 got its [Part 135] AOC [air operator certificate]. The group has investments in the entire aviation supply chain, from air charter to training, maintenance, logistics, spare parts, and fuel. This helped drive synergies, and familiarity with regulation helped PASA become a reliable, mature VIP charter operator. We got our Part 121 special unscheduled AOC [in 2016] and that allows us to charter [large] aircraft in Saudi Arabia. Only a handful of entities in the Kingdom have such a certificate. That’s how we grew over the years and gained more experience.”

Alsharif said running parallel business in charter and FBO services made sense. “Because we fly, we understand the operators’ needs,” he said. “I would like to see a 50-50 split for diversification, but the two industries are different. The air charter side is more volatile, while the airport and FBO side is [steadier] because it’s based on leases and traffic. [PASA’s] business is skewed towards airports.”

PASA’s other role is managing and overseeing private aviation terminal infrastructure at airports in Riyadh, Jeddah, and Damman. “The private and general aviation markets are very promising,” he said. “Our model is to be the landlord. Our job is to help increase private aviation traffic. We view their interest as our interest, but we don’t do any ground handling at all. And as landlord, we take care of the building in terms of maintenance and of debotlenecking. Our job is to enlarge the pie.”

Alsharif said business aviation in Saudi Arabia had been through a tough three years, culminating in the anti-corruption drive that saw leading businessmen held in detention at a major Riyadh hotel. “There was a drop in general [and] private aviation. It’s not only because of the [anti-corruption drive]. Before that, there was a cut in government allowances. The restructuring program came in 2016, and it continued until mid-2017; spending decreased. When income decreases, private and general aviation is impacted quickly. In 2017, certain events took place that will never be repaired. This is now [behind] us, and in 2018 and 2019, the industry is growing. We think that growth will continue based on studies we did.”

**Riyadh Growth**

The studies project annual passenger growth of 5.9 percent at Riyadh through 2030. Today, the incumbent FBOs are Sky Prime, SPA, Jet Aviation, and Naslat-Executel. PASA plans to add one more.

“This is partly due to the Kingdom’s Vision 2030 allowing business to come to Saudi Arabia,” he said. “Many events, including investment, entertainment, and tourism, are taking place. In December we had a Formula One event. Air traffic movements are forecast to grow. That’s driven by industry change and also by the facilities that we are offering.”

PASA has a number of maintenance hangars at Riyadh. “One of them involves investment starting out with C check, [with] provision for D check. We’re talking to three international technical partners to move this project forward. We also plan a number of aircraft hangar areas to provide shading due to the hot weather. This long-awaited service will be introduced in 2019.

“We are also offering an improved and enlarged private aviation terminal. The expansion aims to increase its size to 11,200 square meters [120,556 square feet]. We have finished phase one, the government processing area. One of the most important projects there is to increase apron size from 90,000 to 220,000 square meters and from 24 aircraft stands to 83. We have witnessed a huge increase in business jet movements, with about 15,000 ATMs in Riyadh. We think it could take one more FBO.

“The entire [project] will finish in June 2020. This includes enlargement of a brand-new terminal with six lounges. One will be for mass movements, basically for commercial use, but it’s actually private aviation, or VIP for commercial use. The service was needed because, as you know, when it’s a question of VIP service, a VIP lounge is required. We’ll have six state-of-the-art lounges, to serve the five FBOs.”

**Jeddah FBOs**

Jeddah, the cradle of aviation in the kingdom, houses two existing FBOs, with two more planned. “In Jeddah, we increased the government processing area by a factor of six,” he said. “Today, many trips that are general aviation are not channeled through the private aviation terminal; they land on the apron and then the authorities direct passengers to the commercial terminals. That’s not a good experience for the passengers, and it’s a revenue loss on the FBO side as well.”

By freeing up the apron and government processing areas, PASA has increased the entire capacity of the system. “We think 2019 will be the first year in Jeddah we start receiving VIP Hajj and Umrah charter. The same number of VIP passengers will come to Jeddah, but we cannot process them in our terminals. So they will go to the commercial terminal. That’s never been the case in the past at the private aviation terminal in Jeddah. This year could be a benchmark.”

Jeddah FBO operators today are Jet Aviation and Saudia Private Aviation. PASA plans to add two more FBOs, but Alsharif would not specify. “We have two important new names who will enter the Jeddah FBO market in 2019,” he said. “For reasons of confidentiality, I cannot disclose them.”

“We did the pre-qualification. We reviewed a number of FBO players, up to I would say nine FBOs, over the last year, some of them international. Some were interested in flight support, but not ground handling, while others insisted on ground handling. We finished with two very large brand names that are serious and we think we will introduce them in 2019. We support them by offering dedicated areas in the terminals because the flight support people need to be close to the action.”

He hinted that new players would soon enter the kingdom. “We allocated areas for flight support. Also in Jeddah, there is an area today that wasn’t there before. We will definitely give them support and allow them to work [there]. Our job is to create opportunity and give provision for other parties to be qualified. We are more than happy to welcome them and bring them to Saudi Arabia.”

**Medina Charter**

Medina is regarded as Saudi Arabia’s fourth international airport. “Next to Riyadh, Medina is definitely driven by charter, because of the Holy Mosque there, and Hajj and Umrah,” he said. AIN understands that PASA could eventually look beyond its concession, which applies to facilities in Riyadh, Jeddah, and Damman alone. “That could change,” Alsharif said. “Today there is general aviation going to Medina. We do not have the honor of servicing that. It is serviced by the airport operator of Medina.”

**New Projects**

Alsharif said Saudi Arabia’s Vision 2030 was tailored for growth, infrastructure, investment, and job creation. There are three key new mega-projects on the west coast: Amaala, a medical resort project; luxury living scheme Neom; and the Red Sea Project, an offshore-island tourism development.

“We think all three will probably need airports with international access,” Alsharif said. “This could create a huge market. That has never happened in Saudi Arabia: people who want to fly directly to a medical resort or to enjoy the Red Sea, diving, and all of that. This will drive internal traffic between these three airports and Jeddah and Riyadh. We think these three airports [could] have huge prospects for private and general aviation. Other Saudi airports among the 27 officially listed have good prospects in commercial aviation, but from a general and private aviation perspective, we think these three, today, are well-positioned for growth.”

He said the Saudi Airshow in March was a boon to Saudi business aviation. “We supported it, by bringing our fleet. We engaged our clients and FBOs in formal and informal meetings. We discussed everything in the industry. We also talked to the operators themselves. The message that they want to convey is that the aviation industry in Saudi Arabia is strong, especially private aviation. It is strong, and it’s flourishing. It’s supported by scientific studies. We are committed to do our bit for the 2030 Vision. “And you will see the numbers at the end of 2019, and how much traffic exceeded [that of] 2018.”

PrivatAir renovated this private aviation terminal in Riyadh.
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Dassault strategy expands MRO footprint

by Rick Adams

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

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

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

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

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

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

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

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

Nearly 300 Falcon customer representatives attended the Paris M&O two-day event, 138 with “flight ops” profiles and 154 with “maintenance profiles.” There were also more than 200 sponsors, including engine, avionics, communications, training, and other Dassault vendors. Nearly 2,000 attendees were expected across the eight M&O events globally.

Program Specificity

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

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

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

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

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

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

EASA proposes SMS for Part 145 maintenance orgs

by Gordon Gilbert

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

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

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

EASA said application of SMS principles would enhance safety for maintenance facilities and parts providers by establishing safety policies and objectives that are associated with sufficient resources; the systematic identification of hazards; encourage a risk management system; and give consideration to safety performance and safety promotion. The proposed amendments also aim to streamline the procedures for oversight, and introduce a set of new, common management system requirements for [state] authorities to increase their efficiency.”
The proposed changes also introduce flexibility provisions regarding an SMS that would be commensurate with the size of the organization and complexity of the operations, so it will limit the impact on small Part 145 facilities and Part 21 manufacturers with a limited scope of work.

**Part 21 SMS Multifaceted**

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

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

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

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

The proposed changes, which essentially implement ICAO Annex 19 through the introduction of SMS principles, safety risk management, and continuous improvement programs, will “foster an organizational safety culture for effective safety management and effective occurrence reporting, whether it is mandatory or voluntary,” EASA said.

The proposal will also serve to streamline as much as possible” the oversight requirements for Part 145 and Part 21 organizations, due to an approach that is common throughout all the European Union states.

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

The negative impact is likely to be greater on smaller organizations that have fewer staff and less financial capabilities, as well as Part 21 facilities in general compared to Part 145 companies.

To mitigate this negative impact, the NPA includes so-called “proportionality provisions” that it says can “contribute to a significant reduction of the costs, notably for small organizations or when the risks associated with the business are limited.” Nevertheless, EASA concludes, “Considering there are both significant positive and negative economic impacts, an overall neutral effect is expected.”

Comments on the notice of proposed amendment are due by July 17.

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**ABAG opens space sales for LABACE in August**

by Richard Pedicini

Space for the 2019 LABACE, to take place August 13 to 15 in São Paulo, was opened for exhibitors last Friday, with a lottery for static display locations to take place on May 31. “Our objective here is to hold the largest business aviation event in Latin America,” ABAG (Brazilian Association for General Aviation) CEO Flávio Pires told AIN after the launch at fair organizer MCI’s São Paulo offices.

MCI’s Rodrigo Cordeiro told representatives of the country’s major business aviation firms that efforts to bring purchasers and exhibitors from elsewhere in Latin America, begun last year with success, will continue in 2019. AIN will publish three print editions of LABACE Convention News in the event.

Brazil’s economy is making a slow recovery from the country’s longest modern recession, and the optimism that came with the election of a new president has resulted in a surge of interest in business aviation, but purchasers are awaiting firm evidence that the new administration can implement its policies in such areas as the long-needed public pension reform.

“There’s no one in a dead end. The conference area will again use headphones, allowing speakers to share the stage simultaneously. A large tent will be set up for rotating-wing exhibits. An innovation is conference rooms that exhibitors can rent by the hour. Informal areas such as an “outdoor living room” will be added, though the landmark hangar that hosts the booths will have the roof inspected, and Pires confirmed that he has 600 umbrellas in stock.

Cordeiro announced more extensive online registration requirements to reduce lines at the fair entrance, and the design by MCI of a single contractor for booth construction, because delays by some contractors last year almost resulted in having to push back the fair opening ceremony. Volume discounts should yield lower costs, he assured. The carefully choreographed insertion of aircraft into the cramped ramp area will be even more complex than at past fairs, as the ramp on both sides of the landmark hangar will be used.

Pires said that this year’s fair will likely be a farewell to Congonhas Airport, as the area traditionally used for the fair has been leased for a home-construction superstore, with groundbreaking scheduled before LABACE 2020. Rumor indicates the replacement will be Campo de Marte, Brazil’s leading business airport, with a broad ramp of smooth concrete rather than the cobblestone at Congonhas, and a runway with an expected upgrading of the Pavement Classification Number to 32.
Era CEO: offshore helicopter industry ‘not sustainable’

by Mark Huber

The CEO of helicopter services company Era Group said that the helicopter offshore oil-and-gas business is “not sustainable” and “in dire need of consolidation.” Chris Bradshaw made the remarks in written comments contained in the company’s annual report issued April 24.

“Consolidation will not only address the excess capacity in the industry, but will also facilitate better absorption of the significant fixed costs required to run an air carrier,” Bradshaw said, adding that the bankruptcies of Era’s competitors and helicopter leasing companies are likely to become a revolving door. “A simple, standalone equitization of these distressed balance sheets is unlikely to address the fundamental issues at play and may only lead to subsequent rounds of restructuring. In our view, the offshore helicopter industry is in dire need of consolidation, among both the operators and the lessors.”

Bradshaw said consolidation of any two of the three deepwater operators in the Gulf of Mexico would create cost savings sufficient to “create significant value” for the surviving companies’ stakeholders.

While competitors Bristow and PHI both lost money on their offshore operations in 2018, Era managed to post a modest net income of $13.9 million for the year on $222 million in revenues while operating 108 helicopters. However, that result included a $42 million settlement from Airbus Helicopters related to the grounding of H225 heavy helicopters in Era’s fleet. (Era had nine H225s at the time of the fleet’s worldwide grounding in 2016, but only one remained at the end of 2018.) The 2018 results contrast with revenues of $231 million and a net loss of $288 million in 2017.

Bradshaw credits Era’s comparatively better results, as opposed to its peer group, to an aggressive cost-cutting campaign begun in 2014 that slashed corporate debt by $695 million and raised cash from asset disposal, including $170 million via the sale of underutilized helicopters, $46 million from asset sales in Alaska, and $38 million by selling its equity in Dart Holdings earlier this year. From 2014 to 2018, the company also reduced its U.S. employee headcount by 45 percent and reduced costs via examination of all line items, “from helicopter maintenance expenses to coffee and office supplies.”

“Our early and proactive efforts to right-size Era’s cost structure for the new reality in the offshore oil-and-gas industry allowed us to continue to generate positive operating cash flow throughout the downturn,” Bradshaw noted. That included what he called Era’s “differentiated strategy.”

“Rather than approaching the business simply as an operator of helicopters, we view the company as managing a pool of assets from which we are trying to generate the greatest cash return. This results in a differentiated strategy whereby we operate, lease, and actively sell helicopters, depending on the relative value proposition of the three alternatives,” Bradshaw said. Era’s current fleet consists of nine heavy, 46 medium, 23 light twin, and 30 single-engine helicopters.

Nearly $2 billion in debt, Bristow files bankruptcy

In a move widely anticipated for months, if not years, helicopter services company Bristow Group announced on May 11 that it entered Chapter 11 bankruptcy proceedings in the Southern District of Texas, claiming debts of $1.885 billion against assets of $2.86 billion and citing “previously disclosed financial challenges” and “constrained liquidity.”

Bristow CEO L. Don Miller called bankruptcy, “the best path forward for Bristow and its stakeholders.” The company said it was seeking bankruptcy protection to “restructure and strengthen its balance sheet and achieve a more sustainable debt profile” and that it would continue normal operations during its restructuring.

The bankruptcy filings pertain to Bristow entities in the United States and the Cayman Islands and not its other non-U.S. entities. The entities covered under the filings include Bristow Group, BHNIA Holdings, Bristow Alaska, Bristow Helicopters, Bristow U.S., BriLog Leasing, and Bristow Equipment Leasing.

Primary creditors listed include the company’s senior note holders, which are owed $892.5 million, various banks and financial institutions owed $580 million, and the GECAS helicopter leasing unit Milestone Aviation Group, owed $210 million.

Bristow said it will continue normal operations with the assistance of a $75 million loan from unnamed senior secure noteholders plus another $75 million in debtor-in-possession (DIP) financing from those noteholders upon court approval. As of last year Bristow operated 318 helicopters and 78 fixed-wing aircraft and had 4,000 employees worldwide. Bristow has not filed any official financial results in calendar 2019 nor in the fourth quarter of calendar 2018. The company derives more than 70 percent of its revenues from the offshore oil-and-gas market and joins a growing list of helicopter-related companies serving it that have filed bankruptcy in recent times including CHC, PHI, and leasing company Waypoint.

News Update

Bell Vows To Build 407GXs for U.S. Navy in Alabama

Bell will build U.S. Navy variants of its 407GX single in Ozark, Alabama, should it be selected for the service’s Advanced Helicopter Trainer program, the company announced in April. The Navy is seeking to acquire 150 aircraft, and Bell submitted its proposal to the Navy on April 2. Bell’s Ozark facility already delivers unmanned 407s to the Navy through the Fire Scout program. Bell is the legacy provider of training aircraft for the Navy with the TH-73, a derivative of the Model 206. The 407 is currently assembled at Bell’s Mirabel, Canada plant. Bell is competing in the trainer replacement competition with the Airbus Helicopters H135 and the Leonardo AW169/169X.

China Gets First Airbus H215

China’s State Grid General Aviation Company (SGGAC) has accepted the first Airbus H215 delivered in China. SGGAC performs aerial construction and maintenance work along China’s network of high and very high voltage power lines. The addition of the Airbus heavy twin will enable SGGAC to perform new missions such as cable repair, cable laying, cargo transportation, and power line pylon constructions in difficult-to-reach areas. The H215 will join the company’s existing fleet of 15 Airbus helicopters, which comprises H125, H130, and H125 models. Introduction of this H215 increases China’s Super Puma family fleet to nearly 40 aircraft that perform missions from oil and gas to aerial work to VIP transportation. Its fleet is supported by Airbus Helicopters’ approved helicopter MRO center in Shenzhen, and an H225 full-flight simulator is located in Beijing.

Leonardo Delivers First Italian Fire Corps AW139s

Leonardo has delivered the first two of three AW139 intermediate twin-engine helicopters to the Italian National Fire Corps that were ordered in 2018. The $30.6 million deal includes training and support and options for 12 additional helicopters. The new AW139s are planned to progressively replace the Italian National Fire Corps AW109s. The first two ships will be based at Rome Ciampino for National Fire Corps personnel training. The National Fire Corps’ AW139s feature mission equipment that includes an external rescue hoist, cargo hook with Bambi Bucket provision, weather radar, multi-band and satellite communication systems, high-definition forward-looking infrared/tow light TV (TLIR/LTV) system, Leonardo’s high-definition mission console with digital recorder, high-definition downlink, Leonardo’s optical proximity LIDAR system (OPLS), night vision goggle (NVG) capability, new-generation Trakka searchlight, emergency floatation system and external life rafts, external loudspeaker, medical rack, and bubble windows.
U.S. Army selects first competitors for FARA

by Mark Huber

The U.S. Army demonstrated the urgency it is attaching to the Future Attack Reconnaissance Aircraft (FARA) program, announcing its initial development industry partners April 23, nearly two months ahead of schedule. The five industry partners are AVX Aircraft (Fort Worth Texas) partnered with L-3 Communications Integrated Systems (Waco, Texas); Bell Helicopter Textron (Fort Worth, Texas); The Boeing Company (Lake Forest, California) and Sikorsky (Stratford, Connecticut). Each partner will receive approximately $15 million in FY2019 and FY2020.

“...in just over a one-year period, the Army moved from the FARA ‘kick-off’ to now awarding prototype contracts—a process that traditionally takes three to five years to achieve,” said the head of the Army’s Futures Command, Gen. John M. Murray. Murray said fast-tracking FARA is the result of the combined efforts of the U.S. Army Combat Capabilities Development Command Aviation & Missile Center, Army Contracting Command, and the Future Vertical Lift Cross-Functional Team. The Futures Command is leading Army’s modernization efforts.

“This is not procurement as usual. The OTA [other transaction authority] capability gives us flexibility, allowing us to be more responsive to the timelines in order to meet specific requirements,” said Joseph Giunta, executive director for U.S. Army Contracting Command-Rockstone.

The Army plans to select two finalists from the five to build prototype aircraft early next year, to have the two prototypes flying by 2023, and to have the winning design in production no later than 2028. Each finalist would receive approximately $735 million between fiscal years 2020 and 2023.

Some details of the design proposals already have been revealed by some FARA competitors. Sikorsky has long maintained that its FARA entry would be based on the S-97 Raider demonstration compound helicopter technology, and details for both the AVX/L-3 and Bell entries were revealed earlier this month. The AVX/L-3 concept uses a coaxial main rotor system with aft ducted thrusters, while Bell parent company Textron CEO Scott Donnelly said Bell’s entry would be based on a downsized version of its super-medium twin Model 525, currently completing flight testing. Karem has done extensive work on a variable speed tiltrotor design. Boeing is wind-tunnel testing a 30 percent scale AH-64 Apache with an aft propulsor added.

Bell banking on FVL for future military sales

Textron’s Bell unit is counting on aftermarket military aircraft support revenues and the success of its Future Vertical Lift (FVL) offerings to bridge the gap in military revenues when the Bell-Boeing V-22 tiltrotor program winds down in 2024, said CEO Scott Donnelly. The V-22 program comprises nearly half of Bell’s military revenues. Military customers accounted for nearly two-thirds of Bell’s 2018 total revenues of $3.18 billion. Bell currently has contracts for 63 more V-22s through 2024. V-22s have flyaway prices of between $76 million and $86.8 million each depending on configuration. Donnelly held out the possibility that the V-22 order book would grow with the addition of foreign military sales (FMS), which he also said was a possibility for the H-1 program that produces modernized versions of the Cobra gunship and twin-Huey.

In a conference call with stock analysts in April, Donnelly noted that the Army is picking up the tempo of the FVL program and that Bell “can support doing that.” Donnelly said that Bell’s main FVL offering to date, the V-280 demonstration aircraft, has demonstrated low-level agility “superior to the helicopters that are out there today.” He credited the V-280 flight test program to date with persuading the Army to request more money for FVL in terms of the FARA (future attack and reconnaissance aircraft) and FLRAA (future long-range attack aircraft) programs. “You have to remember, though, when they [the Army] put all those budgets together, that was really before the V-280 was very far into its flight test program. So I would say that it has influenced things pretty significantly.”

While Bell has drawn considerable media attention with a mock-up of its Nexus hybrid eVTOL air taxi, Donnelly characterized research and development spending on the enabling technologies as “relatively small,” adding that “we need to see how the market really plays out. I think there is a lot of uncertainty. I think if it is going to happen, clearly, our team at Bell can design and build aircraft that would fit that marketplace. But right now, it’s something that’s a relatively low level of funding compared to where we allocate the things that are more important here in the nearer term, which is primarily around FVL.” He said Bell’s APT (autonomous pod transport) unmanned cargo drones would likely have a faster future to market due to “interest in the military for that kind of technology.”

*AIN Online*
Marines reactivating unmanned K-Max

by Mark Huber

The U.S. Marine Corps (USMC) is reactivating unmanned K-Max helicopters (CQ-24As) that were used in Afghanistan during Operation Enduring Freedom from 2011-2013. The helicopters are currently in Yuma, Arizona, but will be transported to Kaman’s Bloomfield, Connecticut facility for retrofit with the latest generation of unmanned systems and returned to flight status. After that, Kaman said it will continue to collaborate with the USMC to develop and integrate next-generation autonomous technology.

During its 33-month Afghanistan deployment, the unmanned K-Max moved 4.5 million pounds of cargo or the equivalent of 900 ground supply convoys, eliminating 46,000 hours of exposure to improvised explosive devices, direct fire, and other threats. The aircraft flew exclusively at night between forward operating bases and remote outposts.

The K-Max was first certified in 1994 by the FAA. It features a counter-rotating, intermeshing rotor system and is designed to fly external loads up to 6,000 pounds and is powered by a single Honeywell T55-17 turboshort flat rated to 1,400 shp (takeoff). Civilian production was shuttered in 2003 after an initial production run of 38 aircraft but restarted in 2015 based on renewed customer demand.

Kaman said it is continuing to improve the design of optionally piloted vehicles for future commercial applications, including aerial firefighting and humanitarian relief for new and existing aircraft.

Drone delivers kidney for successful human transplant

On April 19, GE Aviation unit Airxos participated in the world’s first drone flight that delivered a donor kidney for actual human transplant. The flight was a collaboration between transplant physicians and researchers at the University of Maryland School of Medicine in Baltimore, aviation and engineering experts at the University of Maryland, and collaborators at the Living Legacy Foundation of Maryland.

At approximately 12:30 a.m. on April 19, a human donor kidney was loaded onto the University of Maryland Medical Center (UMMC) drone. The flight, led by the University of Maryland UAS Test Site at St. Mary’s County, commenced at 1 a.m. The vehicle traveled 2.6 miles and flew for approximately 10 minutes. The kidney was successfully delivered to UMMC for a 5 a.m. transplant surgery. The drone’s flight was monitored by Airxos’ Air Mobility platform that enables unmanned traffic management applications, operations, and services. Air Mobility manages the volume, density, and variety of unmanned traffic data and coordinates and integrates it within a secure, FAA-compliant, gated cloud environment.

Organ transport by drone had been previously tested with success between medical facilities by the University of Maryland UAS Test Site in St. Mary’s County, but this was the first time the flight operation was used to deliver an organ for transplant. The flight employed a specially designed apparatus for maintaining and monitoring the kidney; a custom-built eight-rotor drone with multiple powertrains to ensure redundancy, a mesh network of radios to control the drone, monitor its status, and provide communications for the ground crew at multiple locations; and aircraft operating systems that combined best practices from both UAS and organ transport standards.

“This flight demonstrated how air mobility can transform the delivery of medical care in ways that can have significant impact on lives. It lays the foundation for future advanced drone operations,” said Airxos CEO Ken Stewart.

FlightSafety reveals new training technology

FlightSafety International has announced several new training capabilities, including a significant expansion of the training programs for the Sikorsky S-70, a new Vital 1150 image-generation visual system, and new technology that integrates its mixed reality and Vital 1100 visual systems into cockpit procedures trainers.

It now offers FAA-approved IFR training in a Sikorsky S-70 level-D qualified simulator, including unrestricted S-70 type rating, ATP courses, FAR 61.58 pilot in command proficiency checks, and a new FAA-approved S-70A VFR variant course. The S-70 and S-70A simulators are capable of replicating scenarios such as major systems failures, heavy icing, and power loss under hot- and high conditions.

They are also configured for firefighting operations, including belly tank/snorkel and Bambi Bucket external loads with emergency jettison. The Vital 1100 visual system in the S-70 simulator presents scenes that accurately depict firefighting scenarios tailored to the specific area of operations. In addition, the simulators are equipped for night vision goggle (NVG) training and NVG goggles and helmets are provided during simulator training.

Military pilots with Sikorsky UH-60 Black Hawk experience can now earn an S-70 FAA type rating and ATP through an abbreviated course. Course funding may be available through the U.S. Department of Veterans Affairs. FlightSafety has been a factory-authorized Sikorsky training provider for almost 25 years and provides S-70 pilot, maintenance manager, and maintenance technician training with full flight simulators, production aircraft maintenance trainers and the Matrix integrated training system.

The company has also introduced its new Vital 1150 image-generation system. Vital 1150 can render normal rates of 120Hz with up to 8K resolution, providing accurate representations of real-world visual environments and can process and display scenes at high speeds and resolutions. The system incorporates advanced rendering techniques for enhanced weather scenarios including new cloud simulations.

It is also designed to directly connect and interact with network protocols used in distributed mission operations, including live virtual and constructive training exercises. Vital 1150 can be used with FlightSafety’s immersive mixed-reality system, unmanned systems, and NVG training. It can adjust projector features in real time in conjunction with image adjustments within the image generator to provide realistic night and NVG environments. The system supports multiple classes of NVG equipment and drives dedicated infrared channels when paired with compatible projectors.

New FlightSafety technology now integrates its mixed-reality and Vital 1110 visual systems into cockpit procedures trainers (CPTs). Pilots will see and interact with the actual instrumentation and controls of the CPT while viewing FlightSafety’s Vital 1100 real-time imagery on a display. This is accomplished through an integrated visual system and equipped with a 3 Megapixel pass-thru camera.

Mixed-reality equipped CPTs can be used for basic cockpit system and feature familiarization, checklist orientation, engine start procedures, and simulation, malfunction identification and corrective procedures, taxi maneuvers in a fixed-wing aircraft and hover in rotary wing aircraft, local area orientation and navigation, traffic patterns, and pitch and power settings.

“Integrating FlightSafety’s immersive mixed-reality capability and Vital 1100 visual system will significantly increase the effectiveness and efficiency of cockpit procedures trainers,” said Jim Wheeler, general manager for visual systems. “This integration can be easily performed on the majority of existing CPTs. It will enable flight crews to complete a wide variety of training objectives that would typically be done in higher-level training devices such as operational flight trainers and full flight simulators.”

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The U.S. Army demonstrated the urgency it is attaching to the Future Attack Reconnaissance Aircraft (FARA) program, announcing its initial development industry partners April 23, nearly two months ahead of schedule. The five industry partners are AVX Aircraft (Fort Worth Texas) partnered with L-3 Communications Integrated Systems (Waco, Texas); Bell Helicopter Textron (Fort Worth, Texas); The Boeing Company (Lake Forest, California) and Sikorsky (Stratford, Connecticut). Each partner will receive approximately $15 million in FY2019 and FY2020.

“In just over a one-year period, the Army moved from the FARA ‘kick-off’ to now awarding prototype contracts—a process that traditionally takes three to five years to achieve,” said the head of the Army’s Futures Command, Gen. John M. Murray. Murray said fast-tracking FARA is the result of the combined efforts of the U.S. Army’s modernization efforts.

“This is not procurement as usual. The OTA [other transaction authority] capability gives us flexibility, allowing us to be more responsive to the timelines in order to meet specific requirements,” said Joseph Giunta, executive director for U.S. Army Contracting Command-Redstone.

The Army plans to select two finalists from the five to build prototype aircraft early next year, to have the two prototypes flying by 2023, and to have the winning design in production no later than 2028. Each finalist would receive approximately $735 million between fiscal years 2020 and 2023.

Some details of the design proposals already have been revealed by some FARA competitors. Sikorsky has long maintained that its FARA entry would be based on the S-97 Raider demonstration compound helicopter technology, and details for both the AVX/L-3 and Bell entries were revealed earlier this month. The AVX/L-3 concept uses a coaxial main rotor system with aft ducted thrusters, while Bell parent company Textron CEO Scott Donnelly said that Bell’s entry would be based on a downsized version of its super-medium twin Model 525, currently completing flight testing. Kareem has done extensive work on a variable speed tiltrotor design. Boeing is wind-tunnel testing a 30 percent scale AH-64 Apache with an aft propulsor added.

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AVX has partnered with L3 Technologies to offer its coaxial rotor/ducted fan compound helicopter design, which was revealed on April 15.

As production of the Bell-Boeing V-22 tiltrotor winds down in 2024, Bell intends to fill the gap with support contracts and its Future Vertical Lift offerings.
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Swiss Rega develops autonomous SAR drone

by Mark Huber

Swiss Air rescue service Rega has developed a drone that can scan large areas autonomously with onboard sensors and cameras.

The autonomous drone can scan large areas with onboard sensors and cameras. The drone has a rotor disk of just over six feet and is built to fly at altitudes up to 320 feet agl. It is equipped with satellite navigation, a flight computer loaded with digital terrain and obstacle data, and an emergency parachute. It can independently detect and avoid other aircraft and obstacles. The drone is designed to fly in a variety of conditions including limited visibility that would ground manned SAR helicopters.

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UAM could create $1 trillion market

Apart from the safety considerations, Dyment said infrastructure investment to make UAM a reality is “needed everywhere” and will likely come mainly from the private sector, a market dynamic that could make landing fees of from $20 to $30 per flight necessary to repay investors. “We know clearly that the FAA is not going to foot any bill for UTM [unmanned traffic management] buildout for any cities in America,” he said, a view echoed later in the week by the DOT’s Zakel, who said, “Aircraft controllers are going to start managing UAS [unmanned aircraft systems] and when that happens someone on the Hill is going to say to UAS operators that they have to help defray the costs of integrating UAS into the National Airspace System (NAS).”

Investment Opportunities Abound

Dyment laid out six rules required to attract the amount of investment required to build viable UAM infrastructure, anywhere from $50 million to $2 billion per city. Those rules include defining the most viable metropolitan areas for service; defining the public benefit in a way that is accepted and understood, such as the potential for UAMs to enable better first responder performance; build a trustworthy coalition of partners; bring in institutional funds quickly; invest early in existing infrastructure such as airport

FBOs—Dyment sees early popular UAM missions including flight durations of several hours with full beyond visual line of sight (BVLOS) capabilities in a small, flexible package. “As a result, we took the initiative and decided to develop a Rega drone ourselves in collaboration with suitable partners,” said Sascha Hardeg -

Dyment noted that there are currently 400 little- or never-used private heliports in Tokyo that could be incorporated into UAM infrastructure for that city.

Both Dyment and Van Espahbodi, co-founder of the Starburst (business) Accelerator, believe there is sufficient private capital available to fund a viable UAM system in the United States and elsewhere, but the math needs to work. “The [UAM] infrastructure needs to be able to repay the bondholders for that investment,” Dyment cautioned, noting that the annual debt service per $100 million would run somewhere between $5 and $8 million. Espahbodi noted that already “a lot of underused money is going into this industry” and that the “economics of risk are being flipped on its head.” He pointed out that already 10 of the more than 100 companies in the UAM race are each worth more than $100 million, including those funded by billionaire “tech tycoons.” More money is flowing into the sector from Fortune 100 companies seeking venture partners.

Experts at Xponential seemed to agree with the pressing need for robust systems design with failure-mode detection and analysis” and smart heuristics and artificial intelligence, he added.

While some first-generation UAM passenger vehicles such as the VTOls proposed by Bell and Airbus are provisioned to be optionally piloted, in part to assuage the fears of regulators and the public about flying as passengers in aircraft without pilots, several speakers suggested this is unnecessary. NASA’s Hackenberg said he thinks public acceptance of autonomy “doesn’t seem to be a problem” based on survey data he had seen. “Putting a pilot in the vehicle will delay certification.” Speaking strictly for himself and not for NASA, he said, “I don’t think pilots are the way to start. The goal for this industry needs to be significant automation early on.”

Scott Drennan, Bell vice president of engineering innovation, echoed those sentiments. “I want it to be [full] autonomy right away and I think the technology is there to do that.” Drennan cited the need for 10,000 additional vehicle pilots just for UAM’s early stage deployment and how the addition of those pilots would inflate direct operating costs. However, Drennan and Nexa’s Dyment were skeptical that the public would accept flying pilotless—at first. “When the safety case is made, you will see boards of directors allowing their executives to get on these vehicles without a pilot, but it will be a while,” Dyment said.

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Garmin adds new features to King Air G1000 NXi deck

King air models 200 through 350 equipped with the Garmin G1000 NXi flight deck can now be upgraded with new features and optional hardware under a supplemental type certificate recently issued to Garmin.

Many of the new features are a free upgrade, available from Garmin dealers, and include a split-screen view on the multifunction display and decoded TAFs on both the multifunction and primary flight displays.

Owners and operators of G1000 NXi-equipped King Airs can purchase a new Bluetooth-enabled audio panel, which is a slide-in replacement for earlier models (or an option for new G1000 NXi installations).

Features of the new audio panel include “home theater-like music effects” such as selectable bass boost levels and equalizer effects. The audio panel includes auto-squelch, a six-place stereo intercom, and up to three music inputs. Two pilots can use split-comm mode so each can independently transmit and receive using two separate frequencies. Recording complex clearances is made easier with a built-in digital clearance recorder, which stores up to 60 seconds of audio.

The system also provides automatic protections, according to IS&S, “regardless of autopilot engagement state in an attempt to keep airspeed, torque, and temperature from exceeding pre-defined targets.”

Autothrottles help lower pilot work-load during arrivals and help pilots fly stabilized approaches by controlling speed during descents, while also preventing over-torque and over-temp of the engines.

Installation of the ThrustSense Autothrottle system takes about four days, the company said, with no structural modifications to the existing throttle quadrant. The installation includes the controller for the autothrottle and its interface, in an Autothrottle Control Panel.

IS&S plans to offer a software upgrade this year for King Air Vmca (minimum controllable airspeed) mitigation. According to IS&S, “ThrustSense will continually monitor multiple engine parameters and will detect the loss of an engine, then computes the amount of rudder-authority loss due to the reduction of airflow over the rudder. It uses this to calculate the reduction in thrust from the remaining engine to prevent hazardous yaw. Real-time monitoring of yaw provides additional safety in engine-out conditions.”

The ThrustSense Autothrottle retails for $68,000 for Pro Line 21-equipped King Airs. The price includes the complete installation kit.

Garmin now has a Bluetooth-enabled audio panel for G1000 NXi-equipped King Airs. The feature-rich audio panel is a slide-in replacement for earlier models.

The audio panel also incorporates Garmin’s 3D audio, which spatially separates incoming audio on stereo headsets. The Bluetooth connectivity allows connection of a smartphone or tablet for phone calls, streaming audio, or controlling certain Garmin action cameras.

Garmin’s GWX 75 Doppler-based, solid-state radar is compatible with the latest King Air G1000 NXi upgrade. M.T.
LHT puts a Rocchet in avionics techs’ pocket

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

This new test procedure, which Lufthansa Technik calls Robot Controlled Cockpit Electronics Testing, or Rocchet, was the culmination of two years of in-house development, the company said.

In the implementation phase, Rocchet will be able to check all LED light and switch functionality similar to a human, as well as perform defined functional tests.

In fact, Lufthansa Technik said, the system takes the “subjective feel” of the mechanic out of the testing equation, helping to improve the quality of the results. It takes an objective view of when bright has become too bright or a switch is worn, the company adds.

The robot is embedded with sensors that can measure forces that occur when switches are activated. In addition, the robot is equipped with industrial cameras to provide a picture of display instruments and search for outer damage. Another camera can measure the brightness of displays from different angles.

“This fully automated procedure allows us to ease the burden on our colleagues in the workshops and reduce the testing effort by one to two hours per component,” said Florian Sell, senior engineer for automated test equipment systems at the Aircraft Component Services division and manager of the Rocchet project. “At the same time, the new procedure provides concrete measurement data in accordance with uniform standards. For example, we now have physical threshold values for the brightness of LEDs. And with the help of data mining, we can determine exactly when an LED has to be replaced.”

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

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

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

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

Universal Avionics to STC wearable HUD in A320

Universal Avionics and AerSale have partnered on a supplemental type certificate (STC) program to install the SkyLens Head-Wearable Display on the Airbus A320.

The SkyLens wearable head-up display (HUD) was developed by Universal Avionics’ parent company Elbit Systems, which purchased Universal Avionics a year ago.

Installing the SkyLens HUD takes much less time than a traditional HUD, according to Universal Avionics—just a few days versus a few weeks—and requires far less disassembly of the flight deck. “Once the STC has been issued by the FAA, we’ll start the ClearVision in a fraction of the time required for current systems, maximizing flight time for our customers,” said Iso Nezaj, chief technical officer at AerSale.

Development of the SkyLens HUD coincides with China’s mandate for Chinese airlines to upgrade their fleets with HUDs by 2025. The first SkyLens HUD approval in a fixed-wing aircraft will be in an ATR 72 this year, and Leonardo is also working on SkyLens approvals for its helicopters. The A320 fleet, particularly in China, would open a significant new market for the SkyLens HUD.

What makes SkyLens unique compared with traditional fixed-in-place HUDS is that SkyLens has an unlimited field of view because pilots can look in any direction and see high-resolution HUD symbology, as well as enhanced vision system (EVS), synthetic vision system (SVS), and combined vision system (CVS) imagery. The EVS, SVS, and CVS capability is part of the SkyLens HUD’s ClearVision enhanced flight vision system (EFVS) solution, which combines SkyLens with Elbit’s multi-spectral camera system.

“This STC will allow A320 operators to install EFVS breakthrough technology, for the first time, in a commercially affordable way,” said Universal Avionics CEO Dror Yayah.

The Universal Avionics ClearVision EPVS will allow operators to take advantage of lower instrument approach minimums, improved dispatch reliability, and the new FAR 91.176 regulations that allow operators to seek approval for touchdown and rollout with no natural vision in visibility as low as 1,000-foot RVR.

According to Universal Avionics, the A320 STC should receive FAA certification by the end of the first quarter of 2020, followed by Chinese CAAC and EASA STC validation.
Boeing welcomed a measure of positive news on May 8 after weeks of negative publicity over the second crash of a 737 Max when the U.S. Senate confirmed three nominees of President Donald Trump as members of the board of directors of the Export-Import Bank of the United States (Ex-Im). The bipartisan vote restores the export credit agency to its full capacity and what Boeing executive vice president of government operations Tim Keating called “an important tool” in the company’s set of available financing instruments.

“Congress took a key step today to help American companies compete and win in the international market,” said Keating.

“Now the Ex-Im Bank is fully operational and can begin approving the billions in deals stuck in the pipeline that 240,000 American manufacturing workers are counting on.”

The Senate’s action re-establishes the quorum of three members on Ex-Im’s board of directors the bank needs to authorize transactions greater than $10 million. During the more than three years the board operated without a quorum, the Ex-Im bank couldn’t approve such larger transactions, effectively preventing it from authorizing long-term financing.

“This is a great day for U.S. exporters, their workers, and their suppliers across the country,” said Ex-Im chairman and acting president Jeffrey Gerrish. “Ex-Im has nearly $40 billion worth of export deals in the pipeline that can move forward in support of hundreds of thousands of American jobs. The Senate’s bipartisan votes today renew opportunities for U.S. exporters to compete on a level playing field in markets and industries where China and other nations are aggressively supporting their exporters. With Ex-Im restored to full functionality, our exporters again have a fighting chance to win export sales on the fair basis of quality and price instead of on the availability of government-backed financing.”

The new Ex-Im board members include former U.S. Treasury official Kimberly Reed, who will serve as president and board chairman; former U.S. Congressman Spencer Bachus III; and former Overseas Private Investment Corporation vice president of external affairs Judith DelZoppo Prior. Two other nominees await Senate approval.

China’s ‘big three’ get set to do battle at Daxing

by Jennifer Meszaros

Competition among China’s big three state-owned airlines—China Southern, China Eastern, and Air China—appears set to further intensify with the September launch of Beijing’s highly anticipated Daxing International Airport. According to the Civil Aviation Authority of China (CAAC), China Southern will take the largest share of traffic after the agency granted it 40 percent of Daxing’s air traffic resources. China Eastern saw its share drop from 40 percent to 30 percent after it opted to maintain its Beijing Capital International Airport; its 10 percent share will go to Air China and its subsidiary.

The latest announcement is a marked departure from CAAC’s previous plan, which called for Star Alliance airlines Air China, United Airlines, and Air Canada to remain at Capital International. Chinese regulators had previously stated it would not allow domestic carriers to operate at both airports concurrently.

Under the new agreement, Air China will gain a foothold at both Beijing airports as it looks to add new routes and increase the frequency of flights across its network. The flag carrier also will benefit from China’s easing of its “one route, one airline” policy, after receiving approvals from regulators in April to launch new flights between Shanghai and London.

Air China will compete against China Eastern on the route, putting an end to a decades-old rule of allowing only one Chinese operator on each long-haul flight. The opening of Daxing also appears likely to boost China Eastern and China Southern, which have largely operated from their respective bases, Shanghai and Guangzhou. Both carriers harbor ambitious plans to eventually base a fleet of 200 aircraft at the new mega-hub as they pursue rapid international expansion and compete against Air China on lucrative routes to and from Beijing.

Plans call for China Southern to open a Beijing-London direct route from Daxing, with seven round-trip flights per week. China Eastern will keep Beijing Capital as an auxiliary hub and use Daxing to expand to Paris and London as well to international destinations participating in China’s Belt and Road Initiative (BRI). Over the long-term, the Chinese carrier wants to develop an extensive air network connecting all major BRI countries from Beijing’s new airport, its existing Shanghai hub, Xi’an Xianyang International Airport in Shaanxi province, and Kunming Changshui International Airport in Yunnan province.

Meanwhile, all three airlines participated in an hour-long flight test at Daxing International on May 13; a fourth airline, Xiamen Airlines, also took part, using its Boeing 787. Plans called for the airplanes to take off from Runways 01L/19R, 17R/35L, and 17L/35R. The new airport’s four runways and taxiways passed their inspection on April 28 to 30, ahead of its planned opening in September.

News Update

Kazakh LLC Launches A320s

Kazakhstan’s first budget carrier—Air Astana subsidiary FlyAstana—on May 1 launched services from its Almaty base to the Kazakh capital Nur-Sultan with one of its two Airbus A320s. FlyAstana will initially operate six domestic routes, with journey times from one to three hours to Turan, Shymkent, Pavlodar, Uralsk, Nur-Sultan (Astana), and Karaganda, most of which lie on the periphery of the country. Aimed at mid-market travelers, the Kazakh budget model resembles that of successful Indian budget carrier IndiGo, Air Astana president and CEO Peter Foster told AIR.

By mid-October to November, when two more A320s join the fleet, FlyAstana will start to fly regional international routes to neighboring CIS nations and Russia, said Foster. Plans call for the fleet to grow to 15 airplanes by 2022. Foster revealed the airline would establish bases through joint ventures in neighboring countries “much like Malaysia’s Air Asia,” he added.

SWA, AA Detail Max Effect

Southwest Airlines and American Airlines have confirmed the March 13 worldwide Boeing 737 Max grounding affected their profitability in 2019’s first quarter and both say they will experience a continuing financial impact while it remains in force.

In American’s first-quarter earnings conference call on April 26, CFO Derek Kerr said the airline’s $1.4 billion flight cancellations reduced pre-tax income by $80 million and that the 737 Max flight ban, which forced American to ground 24 aircraft, accounted for about $50 million of that total.

In Southwest’s first-quarter earnings call on April 25, CEO Gary Kelly cited a reduction of first-quarter net income by some $150 million due to operational issues, including a $60 million impact from leisure-travel booking softness throughout the first quarter arising from the U.S. government shutdown.

Southwest has revised downward to 2% to 3 percent its 2019 capacity-growth guidance because the Max grounding has forced it to cancel 180 flights a day until August 5.

Asiana To Drop Routes Pre Sale

Asiana Airlines’ revised recovery plan by its nine creditors, led by Korea Development Bank (KDB), will involve the restructuring of its network and eliminating unprofitable routes before the airline’s planned sale in December.

The sale, expected to reduce liquidity risks, will include Asiana’s two subsidiary low-cost carriers (LCCs), Air Busan and Air Seoul. Asiana holds a 44.2 percent stake in Air Busan and owns the latter outright.

According to an official at Kumho Asiana Group (KAG), creditors will carry out an analysis of the airline’s network before rendering a decision on what routes Asiana will cut.

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Mitsubishi Aircraft (Mitac) expects to show as part of an effort to better satisfy scope clause-restrained airlines in the U.S. Mitsubishi’s chief development officer Alex Bellamy explained the airplane formerly known as the MRJ70—what the company now calls “the concept”—will need to carry 76 seats in a three-class configuration.

“Seating configuration is) possibly one change, but we have a refresh and a restatement over all of the product to bring it up to the latest technology,” explained Bellamy, who added that the project would involve “fundamentally” no change to the airplane.

Mitsubishi considers the U.S. by far the biggest market for the MRJ, and when development began more than a decade ago most company executives expected scope clauses at the major airlines to relax enough to allow operation of the MRJ90 at their regional affiliates. Market conditions and the appetite by airline executives to confront their pilots over the issues have changed, however, and Mitsubishi’s customers have indicated they don’t plan to push for further concessions in the next round of collective bargaining, soon after the turn of the decade.

“We’ve been working on is I think fundamentally improved over what the MRJ70 was,” said Bellamy. “The MRJ70 was a product in a market which was different years before. And where we sit today is a market where scope isn’t going to change, not for the foreseeable future.”

Of course, the MRJ’s main competitors for U.S. sales—Embraer and Bombardier—face the same constraints. For Embraer, that means its E175-E2, whose mtow also exceeds the 86,000-pound limit, cannot fly with the regional affiliates of the major U.S. airlines either. Bombardier, meanwhile, signaled its intention to exit the airliner business altogether following its announcement in early May that it would sell its aerostructures businesses in Belfast and Morocco.

While or not another company eventually takes control of Bombardier’s CRI program, Mitsubishi sees the development as one sign of the market’s lack of appetite for anything less than a new-generation future.

“Each year, Boeing and the FAA during the certification of the model,” said Faury.

Speaking on April 30 during a first-quarter Airbus earnings presentation with analysts, Guillaume Faury conceded that the Max events have created “a lot of tensions, questions, and we see growing concerns on many topics.”

“We see more scrutiny coming from all over the place. That is a fact of life we have to face,” he said. Any “de-alignment” of the FAA and the European Union Aviation Safety Agency (EASA) represents a particular concern, he added. “The alignment of the FAA and EASA is a strong basis of our industry,” noted Faury. “And we hope that these events will not create a mid-term or long-term dealignment between two main [certification] authorities in this industry.”

Asked whether customers have spoken with Airbus about potential switching over from the Max to the A320, Faury quipped “the A320 is the A320 and the Max is the Max.” The Toulouse-based company, he noted, is talking with its customers based on their current fleets, their backlogs, and the delivery of the A320s. “We are limited by [our] production [capacity] for the next years and therefore there is not much more I can say,” he explained.

The demand environment for narrow-body jets remains “pretty active,” he said, though Faury described the overall market situation in the first quarter as “volatile and competitive” as several airlines face financial trouble and changing fleet plans. “We had to record cancellations, he conceded. In the first three months of the year, Airbus inked orders for 62 aircraft but it registered 120 cancellations, leaving it with negative net order tally of 58 aircraft for the period.

Airbus won’t accelerate A320 production rates beyond the 60 aircraft per month by the middle of this year and 63 in 2021 as planned because it continues to recover from last year’s supply chain and production problems. “2019 still is a backloaded year,” said Faury. “We want to use 2019, 2020, and 2021 to significantly rebalance the year” and better distribute deliveries and cash flow execution over the quarters. Airbus hasn’t decided rates for beyond 2021, as much will depend on in-house ability and appetite to accelerate production and the capacity of the supply chain. In fact, the OEM plans to run a supply chain assessment later this year, he added. “Now, we want to focus on on-time and quality delivery to our customers,” said Faury.

Regarding the threat of Boeing’s proposed NMA, Faury emphasized Airbus does have the right product to address the middle of the market. “We are moving forward with what we think is appropriate for the A320/A321 product, trying to anticipate and answer the customers’ expectations and the market needs,” he said. “We have as well the A330neo, with the -8 in its certification phase and -9 on the market. We think that on the Airbus side we have the right product to address the middle of the market. I do not see changes on that.” Airbus plans to release details of further versions of the A321LR later this year.

“We think the space for Boeing to launch an NMA is rather small,” said Faury. “And it’s on them to decide if and when the product [is unveiled] and what it will look like. We are moving on with two strong products.”

**SkyWest invests in Southern Airways**

U.S. commuter-airline operator Southern Airways now counts the world’s biggest regional-airline holding company, SkyWest, among its five largest shareholders. SkyWest has taken what Southern Airways CEO Stan Little described to AIN as a “small minority investment, but still [a] substantial” strategic stake in the Pompano Beach, Florida-based company. St. George, Utah-based SkyWest has done so to open a career pathway for the pilots Southern Airways hires for its cadet training program.

Under the “mutually supportive” program, Southern Airways will provide cadets with 1,200 hours of flying second-in-command on the 35 Cessna Caravans and Grand Caravans operated by its commuter carriers—Southern Airways Express and recently acquired Mokulele Airlines—and then 600 hours more as pilot-in-command, said Little. After accumulating 1,800 hours of experience, all of it on scheduled, two-pilot passenger services, each pilot cadet will transfer to SkyWest Airines to become a first officer on regional jets.

Southern Airways will benefit from the program through its ability to offer a means for cadets to move quickly from the 250 hours of experience they formerly needed to qualify as air transport pilots in the U.S. to the 1,500 hours of piloting time the FAA now requires, said Little. Southern Airways gives each pilot 100 hours a month of flight time, offering an alternative to flying as instructors for as long as four years to build experience to 1,500 hours.

The program allows pilots to graduate to SkyWest after only 18 months. SkyWest will benefit both from a guaranteed flow of qualified pilots from Southern Airways and from the fact that all their experience will involve two-crew commercial aircraft. C.K.

**Airbus worries Max crisis could affect FAA-EASA ties**

While cautioning that it remains too early to draw conclusions and characterizing Airbus as an observer more than anything else, Airbus’s new CEO expressed concern about the possible effect of the Boeing Max grounding and the ongoing investigation into the relationship between Boeing and the FAA during the certification of the model.

> “We have more scrutiny coming from all over the place. That is a fact of life we have to face,” he said. “We can’t be aligned” of the FAA and the European Union Aviation Safety Agency (EASA) represents a particular concern, he added. “The alignment of the FAA and EASA is a strong basis of our industry,” noted Faury.

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Among the numerous information sessions offered at the event was one exploring the “digital transformation of major manufacturers in the era of artificial intelligence.” A number of major OEMs are headquartered or have facilities in Montreal.

Aéro Montréal showcases region’s aerospace ability

by James Wynbrandt

Montreal’s vibrant aerospace and digital business sectors and their latest innovations were showcased at the annual Global Aerospace Symposium (GAS) in April, held in conjunction with the fifth Aéro Montréal (AM), a public/private partnership, Science, and Economic Development亥民间。FZ Engineering, in one of a series of the event’s “elevator pitch” presentations, showed additive manufacturing technology it claims can reduce surface roughness of such parts by a magnitude of 35.

The convergence of aerospace and artificial intelligence was a consistent theme, seen as a combination that “will enable us to bring our industrial capabilities to another level,” Quebec Minister of Innovation, Science, and Economic Development Navdeep Bains told attendees. Fittingly, AM and the Institute for Data Valorisation signed at GAS an agreement to promote AI in the aerospace sector, “to support SMEs in transitioning to Industry 4.0,” said AM president Suzanne Benoit. Established in 2006, AM consists of Quebec aerospace cluster companies and is supported by membership dues and to a lesser degree, government funding.

Public-private Partnerships

Indeed, GAS also served to highlight the role of public-private partnerships, government assistance, collaborative research projects, and other initiatives continue to play in the area’s success story. The umbrella organization promoting this regional activity, Montréal International (MI), a non-profit public-private partnership, was created in 1996 to attract foreign investment in the city’s high tech sector. To date, it has generated some $15.5 billion in investment projects and 65,000 jobs. MI provides single-point access to long-term strategic support, government contacts, immigration assistance, and other services.

“Europeans come here because they have access to 500 million consumers, and to free trade with the United States, Mexico, and Canada,” MI president and CEO Hubert Bolduc told attendees. “The other big reason companies choose to set up in Montreal,” he added, “is access to talent.” But if a local can’t fill the job, Canada’s immigration policies allow qualified foreign high-tech workers to get a work visa within 14 days.

Making aerospace SMEs more globally competitive is a top priority of the 2016-2026 Quebec Aerospace Strategy (“Redefining the Horizon”). AM’s MACH FAB 4.0, the newest of its MACH initiatives, helps SMEs incorporate digital technologies and advanced manufacturing processes in their operations, with (U.S.) $4.1 million in grants and other assistance available. Quebec Minister of Economy and Innovation Pierre Fitzgibbon, in a meeting with journalists at GAS, said a number of these firms “have not invested enough in 4.0 innovative manufacturing or digitalization of their businesses,” and declared, “I’m going to be very aggressive to support these companies that are in need of capital.”

Investment Quebec (IQ), another support agency, provides financing for qualified foreign companies seeking to establish operations in the province. The government-created entity also sponsors trade delegations and provides extensive support to companies considering opening shop in the region. IQ’s charter mandates the organization make a profit, solely to fund its operations, derived entirely from its investments in foreign businesses. In the past, the majority of employment opportunities created by such investments were low-wage positions, and IQ is looking for higher quality of life as part of its ROI, said IQ executive vp Paul Buron. “It’s not about job creation—it’s about wealth creation.”

Current application of digital technologies was showcased at site visits to a trio of major aerospace companies: Stella Aerospace, Bell, and CAE. Aerostructure specialist Stella Aerospace, an Airbus subsidiary, assembles the main fuselage section for Bombardier’s Global 7500 at its purpose-built production facility at Mirabel Airport. Robot laser cameras scan the fuselage and generate more than 1,200 data sets, ensuring the geometry of the section is within tolerance. Some 65 employees perform precision manual labor on the assembly line, but automation is coming in 2020, and most employees will be replaced by robots.

Bell’s Mirabel plant manufactures the new Bell 505 Jet Ranger X (more than 100 per year) and the Bell 407, 412, and 429. Airframes grow in traditional orderly progression on side-by-side assembly lines. But the facility also houses a research center responsible for next-gen products. Bell’s manager for innovation, Michel Dion, showed off an eight-foot-diameter ducted lift fan for the recently unveiled Nexus eVTOL and the Hydra flying ring, both developed at the facility with local expertise.

The headquarters facility at Montreal-based CAE, a global training provider and simulator manufacturer, has a modern and lively front end backed by a jumble of large, interconnected assembly and test areas, the industrial age facilities contrasting with the state-of-the-art next-gen simulators under construction. In an Airbus A350 XWB sim, an engineer guided a handful of media through take-offs and landings at Hong Kong International Airport, demonstrating the machine’s ability to mimic any condition imaginable onboard the airliner or in the air outside.

CAE’s history of innovation includes working with the FAA to certify the first Level D flight simulator, a spokesperson noted, and added that some 270,000 airline pilots and 50,000 corporate pilots would be needed by 2028. But one area CAE is not innovating: asked if any technology under development involves a one-person crew for operating a commercial aircraft, Terry Constantinakis, CAE’s director, training solutions, answered emphatically: “No.”
Fai Technik Receives FAA Mx Approval
Nuremberg-based Fai Technik, part of Germany’s Fai Aviation Group, has received FAA approval for its EASA Part 145 repair center at Albrecht Durer International Airport, giving it authorization to perform maintenance, repair, and overhaul (MRO) on U.S.-registered business aircraft. This latest license follows similar approvals from aviation authorities in Nigeria, the Cayman Islands, and Bermuda.

The company provides MRO services for Bombardier business jets, including Fai’s own charter and aeromedical fleet, the largest in the country, that includes seven Globals, five Challenger 604s, one Challenger 850, and 11 Learjet 60s.

Jet Aviation, Gulfstream Begin Expansion of PBI Complex
Jet Aviation has begun an expansion of its FBO at Palm Beach International Airport in Florida. The addition, on the northwest side of the airfield, consists of a new 40,000-sq ft hangar and 10,000 sq ft of tenant office space, plus a new 25,000-gallon-capacity fuel farm.

The construction is part of a joint project with sister company Gulfstream, which is adding a new service center at the location, including a 115,000-sq ft hangar. At the new facility, the two companies will also share an additional 21,000 sq ft of office space and a customer lounge.

The FBO’s primary services will remain at its existing location on the southeast side of the airport, which consists of 160,000 sq ft of hangar space and a 6,000-sq-ft terminal.

Both facilities are expected to be operational in the first quarter of 2020.

European Mx Providers Form Partnership
German MRO provider airplus Maintenance has formed a partnership with EASA-approved design organization Q.C.M. Design that will enable the engineering teams from the two companies to support each other on large projects. Both companies have developed supplemental type certificates (STCs) on airplanes and rotorcraft, and their capabilities range from interior refurbishment to avionics upgrades to structural work.

“Our customers will benefit from game-changing STC solutions and optimized turnaround times,” said airplus COO Florian Kindrorra.

Based at Friedrichshafen Airport, airplus, has a maintenance hangar for midsize aircraft and a larger structure for aircraft up to a Boeing 737/ Airbus A320. It holds Part 145, Part 21F, ADOA, and CAMO approval. Q.C.M. is based in Berne, Switzerland, with an office in Vienna.

StandardAero Focuses on PW/GE T-prop Work in Europe
StandardAero’s engine MRO facility in Gonesse, France, has had its designated overhaul facility (DOF) licenses renewed by Pratt & Whitney Canada for the PW100 and PT6A turboprop engine families. The facility has approvals for 23 models of the engine, including the PW127M version, which powers the latest ATR-600 turboprop. It also has extensive authorizations for the PT6A, such as the widely used PT6A-41/42 model and the PT6A-64 that powers the Daher TBM 700. It will soon be delivering its 1,500th completed PT6A.

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

Blackhawk Expands, Unifies Branding
Blackhawk Modifications is doubling its facility space and undertaking a branding alignment that will bring it and two other mutually owned aviation firms under the umbrella of Blackhawk Aerospace, the Waco, Texas-based company announced in April. The expansion and branding campaign is concurrent with the company’s 20th anniversary.

Its location at Waco Regional Airport (ACT) has added 10,000 sq ft of hangar and office space for its growing sales and marketing teams, as well as showcase aircraft for sale that are refurbished under its Phoenix by Blackhawk program.

Combined, the company’s offerings include turboprop engine performance enhancements and aircraft upgrades and modifications. Blackhawk Aerospace comprises Blackhawk Modifications and Blackhawk Aircraft Sales; Blackhawk Aerospace Solutions—formerly Vector-Hawk Aerospace—in Huntsville, Alabama; and Blackhawk Aerospace Composites in Morgantown, Kentucky.

Baker Aviation Tapped as Raisbeck Authorized Dealer
Texas-based aircraft maintenance, management, and charter provider Baker Aviation has increased its focus on the Beechcraft King Air series with its appointment by Raisbeck Engineering as an authorized dealer for its line of aftermarket products. Raisbeck specializes in performance improvements for the twin-turboprop family.

“As our King Air business continues to grow here in Fort Worth, we believe this new dealership is the right direction for our company,” explained Baker president Stan Baker III. Last month Baker was selected as a dealer for BLR Aerospace’s King Air performance upgrades.

It is working to both centralize and expand its operations through the construction of two new hangars at Fort Worth Meacham International Airport.

Av8 Group Expanding Parts Inventories
Av8 Group’s AOG parts unit has acquired what it says are extensive parts inventories for the Hawker 800A and Bombardier Challenger 604/605. Active expansion of the unit’s inventories continues through the acquisition of part-out aircraft and flight department inventories, it said.

Av8 Group CEO Yoel Arnoni told AIN “These two inventories are really just the beginning of our efforts to expand the depth and support that our Av8 AOG parts unit can provide. We are actively expanding to include other models of the Hawker and Challenger aircraft, as well as several Gulfstream models.”

West Star Rebrands MSP Aero
West Star Aviation has rebranded MSP Aero as a West Star satellite location. West Star acquired the FAA Part 145 repair station in November 2017, and it has operated the shop since then as a stand-alone facility under its original name.

The shop will join the existing five West Star satellite locations where technicians aid in troubleshooting problems to get customers back in the air as quickly as possible. The satellites serve as bases for the company’s AOG mobile repair team services.

Transport Canada, FAA OK Learjet 45 NextGen Upgrade
Toronto-based Skyservice Business Aviation has received STC approval from Transport Canada and the FAA for its Bombardier Learjet 45 “Next-Gen and Beyond” avionics upgrade package. These certifications cover installation of a Universal Avionics UniLink UL-801 communications management unit (CMU) and CVR-120R cockpit voice recorder to the already installed Inmarsat SATCOM flight management system (FMS).

The upgrade adds capabilities for current and future mandated technologies, including Controller-Pilot Data Link Communications (CPDLC), CPDLC departure clearances, en route data communications, FANS 1/A, Aeronautical Telecommunications Network (ATN) 1/A, and localizer performance with vertical navigation/ performance-based navigation.
Oklahoma Airport To Receive Third FBO

Wiley Post Airport in Oklahoma City will receive another service provider as work has begun on a complex to be called JetSet. Founded by Happy Wells, whose charter company has had a presence at the airport since 1997, the FBO’s terminal will offer 12,000 sq ft of customer and office space. JetSet will have a passenger lounge, conference room, pilot lounge with snooze rooms and shower facilities, and a refreshment bar. The adjoining hangar will offer 28,000 sq ft of aircraft storage, capable of sheltering the latest big business jets.

A second phase of construction consisting of an additional 30,000-sq-ft hangar is also planned. More than 300 aircraft are based at the airport including 66 business jets, but of the more than 65,000 operations there in 2017, more than half were from aircraft not based there.

“Wiley Post is a popular location for charter flights traveling across the country to refuel because of its central location and proximity to major cities in the region,” said Wells. When the $6 million, World Fuel Services-branded facility opens early next year, it will be the third FBO on the field, joining Atlantic Aviation and ValAir Aviation.

Jet Aviation To Expand to Arizona

Jet Aviation has acquired a share of the Scottsdale Jet Center, which is under development at Arizona’s Scottsdale Airport. The airport is currently served by two FBOs. Planning is underway on the new complex, which will be branded under the Jet Aviation name. The initial phase of construction will include an 8,500-sq-ft terminal along with a 30,000-sq-ft hangar, with additional phases as required to support customer demand.

“Scottsdale is a highly attractive location to business jet owners and operators and is regularly ranked in the top 15 U.S. airports,” said David Paddock, president of the Jet Aviation group. “Having a presence in Scottsdale will enable our customers to have greater connectivity across the Jet network.” The new $24 million FBO is expected to open in late 2020 and will bring the company’s global network to 35 locations.

Costa Rican Airport To Add Genav Terminal

Universal Aviation Costa Rica is part of a consortium known as GAT SJO that has been chosen to manage a new general aviation terminal (GAT) at the country’s Juan Santamaria International Airport (SJO). The first facility of its kind in Costa Rica, the future GAT, part of the airport’s domestic terminal, will be available exclusively for international private operations. GAT SJO also includes local handlers and was selected after a public RFP process by Aeris Holdings, which operates the airport under agreement with the Costa Rican government. Renovation for the GAT area in the terminal will begin this summer and is expected to be completed by September.

Currently, private passengers and their baggage have to mix with commercial passengers in the international airline terminal for customs and immigration services upon arrival and departure. With the new process, after landing, private passengers and their luggage will be shuttled from the parking area to the GAT where they will have a dedicated customs, immigration, and quarantine (CIQ) area.

“We are thrilled that the Costa Rican government, airport authorities, and Aeris recognized the need for a dedicated GAT to improve the privacy, experience, safety, and security of private operators at MROC/SJO,” said Adolfo Aragon, Universal’s senior vice president for Latin America and the Caribbean. “The new GAT will drastically reduce private operators’ time on the ground.”

California Dreaming for Private Hangar Complex

California’s Camarillo Airport is slated to receive what is hoped to be the first of several CloudNine private hangar complexes around the country. The idea of real estate developer Ron Rasak, the project, which will break ground in December on a seven-acre campus at the Los Angeles-area airport, will include a private airport entrance and four 25,000-sq-ft hangars, each with up to 5,000 sq ft of attached office space. Designed for the private aircraft owner, each hangar will feature attached garages, commercial-grade kitchen, executive office, and lounge with en suite bathroom and walk-in closets. An entry lobby and lounge area, flight department offices, and fitness rooms are also standard.

“Our theory is that owners of larger jet aircraft, if given the option, value higher levels of privacy, security, and luxury than are found in community hangar storage options at most FBOs today,” said Rasak, adding that one of the hangars is already under negotiation.

“We’re honored to bring such a significant development project to Ventura County’s Camarillo Airport, and to the greater business aviation community.”

C AA Adds Four Locations to FBO Network

The Corporate Aircraft Association (CAA) welcomed four new service providers to its preferred FBO network: Sheltair at Denver-area Rocky Mountain Metropolitan Airport; Boedeker Flying Service at Texas’ Children’s Memorial Hospital; Perry-Houston County Airport Authority at Georgia’s Perry-Houston County Airport; and SkyPark Airport in Bountiful, Utah.

In addition, five FBOs have renewed their contract with the 250-location-strong association for an additional three years: Rectrix at Boston-area Lawrence G. Hanscom Field; Hartford Jet Center at Connecticut’s Hartford-Bradley Airport; Wildcatter Aviation in Odessa, Texas; Fontainebleau Aviation at Miami-Opa-Locka Executive Airport; and Stein’s Aircraft services at Waukegan County Airport in Wisconsin. CAA was founded in 1995 to negotiate discounted fuel prices for its Part 91 membership, by combining purchasing power and working with respected members.

Universal Aviation Increases South American Footprint

Universal Weather and Aviation has expanded its ground-handling capabilities in South America with the opening of a new Universal Aviation office in Argentina. Located at Ezeiza International Airport in Buenos Aires, the 24-hour location can support all airports in the area, including El Palomar Airport (SADP), San Fernando Airport (SADF), and Jorge Newbery Airfield (SABE), with everything from ground support to customs and immigration clearance, flight plan filing, landing permits, helping arrange maintenance services, hangarage, and baggage handling. The office can also dispatch staff to provide support at more than 35 additional airports in the country, according to the company.

Sky Valet To ‘Connect’ Italian Airport

As it continues to expand its FBO network across Europe, France-based aviation services provider Sky Valet has strengthened its presence in Italy by announcing an exclusive partnership with the business aviation terminal at Trieste Airport, under the Sky Valet Connect affiliate program. The FBO operator believes the agreement will help the airport in Northeastern Italy develop its business aviation traffic.

“The Sky Valet Connect brand will provide immediate access to the commercial power and the reputation of the brand and its network, and to heightened international visibility, while remaining independent,” said Michel Tohane, executive director of Sky Valet and director of parent company Aéroports de la Côte d’Azur’s general aviation business unit.
In October, Sky Valet launched its branded affiliate program with the announcement of its first locations: one in Italy, at Cuneo International Airport, and three Omega Aviation locations in Bulgaria—at capital city Sofia, Burgas, and Gorna Oryahovitsa, the country’s only privately-owned international airport. Late last year, the company signed an agreement with the operator of Avignon-Provence Airport, making its IS-BAH-registered business aviation terminal the first in France to be branded under the Sky Valet Connect label.

Arizona Airport Joins World Fuel Network
Gateway Aviation Services, the airport-owned service provider at Arizona’s Phoenix-Mesa Gateway Airport, is now a member of the World Fuel Network. The recently remodeled FBO has an upgraded flight planning room and pilot lounge, along with an expanded airside entryway and enlarged CSR area that increases staff visibility to the ramp area. Other amenities include conference rooms, on-site car rental, and crew vehicles. While the FBO is open 24/7, U.S. Customs and Border Protection services are available on weekdays between 11 a.m. and 7 p.m. and after hours with prior notification.

The airport, located 30 miles from downtown Phoenix, offers three runways, rental space, and office space. An existing terminal, which will be converted entirely into tenant offices, represents the first phase of a $16 million development project. A new 40,000-sq-ft hangar, which can shelter an approximately 15 large-cabin business jets. "We are continuing our partnership with L.I. MacArthur Airport and the town of Islip by expanding our footprint," said company president and CEO Bryan Burbage. "Since we acquired this location six years ago, we have outgrown our space and need to expand to be able to accommodate all of our customers." The facility offers a 110,000-sq-ft terminal and is home to ExcelAire, the company’s aircraft charter/management division.

Dallas Metroplex Airport Adds New Community Hangar
Dallas-area McKinney National Airport has completed a new 40,000-sq-ft hangar, the largest on the field, which brings it to approximately 140,000 sq ft of aircraft storage space, capable of sheltering the latest ultra-long-range business jets. The new structure, developed in partnership with Western LLC, features a 300-foot clearspan with 28-foot-high doors. It can store four Gulfstream G500 and also has available office space and eight enclosed garage spaces. The airport is home to approximately 30 turbine aircraft, ranging from a Bombardier Global Express to a Daher TBM turboprop single, and the new hangar, which airport director Ken Carley expects will soon be fully occupied, represents the first phase of a $12 million development project. A new 17,000-sq-ft terminal is currently under construction, with a targeted completion this October. It will replace the existing terminal, which will be converted entirely into tenant offices.

Long Island FBO To Add New Hangar
Hawthorne Global Aviation Services, one of three service providers at New York’s Long Island MacArthur Airport, has broken ground on an expansion of its FBO. The project, which is expected to be completed by the end of this year, consists of nearly 30,000 sq ft of hangar space and 2,000 sq ft of tenant offices. That will bring the facility to 125,000 sq ft of aircraft storage space, capable of sheltering jets up to the size of a Gulfstream G500. The location, which has an on-site Part 145 repair station and U.S. Customs facilities, is currently home to approximately 15 large-cabin business jets.

“We are continuing our partnership with L.I. MacArthur Airport and the town of Islip by expanding our footprint,” said company president and CEO Bryan Burbage. “Since we acquired this location six years ago, we have outgrown our space and need to expand to be able to accommodate all of our customers.” The facility offers a 110,000-sq-ft terminal and is home to ExcelAire, the company’s aircraft charter/management division.

FBO PROFILE: North Atlantic Air

North Atlantic Air, the lone service provider at Boston-area Beverly Regional Airport, has seen a resurgence of late thanks to new ownership and new investment.

A Boston-area alternative
When John Messenger acquired North Atlantic Air, the lone FBO at Boston-area Beverly Regional Airport, he realized he had his work cut out for him. The facility, and indeed the airport, in general, had not been kept up, with tasks such as grass mowing performed at infrequent intervals, but with the injection of new energy on the airport administration side and investment at the FBO, things have changed.

“When I took over three years ago, I had a mission: to take the pig and put some really nice expensive lipstick on it,” he told AIN. “The only thing I had to do was just get in here and get knee deep in rebuilding.” That entailed gutting the interior of the 45-year-old terminal and replacing it with a new lobby, kitchenette, pilot lounge, and bathrooms, at an expenditure of nearly $1.5 million. The small terminal is now a cozy haven with a sky-painted ceiling (one of the cloud formations is said to resemble a lobster, and has visitors gazing upwards to locate it), an eclectically-decorated waiting area with heavy leather-clad Amish furniture and fresh flowers at all times, a pilots lounge, onsite car rental, and a coffee and refreshment bar. Trail mix has proven to be an especially popular snack with the FBO’s clientele.

Also available in the terminal is U.S. Customs and Immigration service with a day’s advance notice, and there is an outdoor seating area with Adirondack chairs. Yet, Messenger noted, approximately 60 percent of his business consists of Part 135 flights, whose customers generally bypass the terminal altogether. “What’s good about Beverly is the airplane lands, the gate opens, the car is right there at the airport, the passengers get off and get the hell out of here,” he said, adding that the airport has seen a 144 percent increase in air taxi usage since 2012, and 30 percent since he took over the FBO. Last year it rose another 8 percent.

Messenger also upgraded the Shell Aviation Fuels-branded location’s fueling fleet with a trio of new trucks, including a pair of 3,000 gallon jet tankers and a 1,000 gallon avgas refueler, all equipped with wireless TCS meters to transmit volumes and prices directly to the customer service desk, the FBO’s management software, and Messenger’s smartphone. They also serve the location’s 27,500-gallon fuel farm, which is tended by its NATA Safety 1st-trained line staff and pumps an average of 750,000 gallons a year.

While the facility, which is open from 6 a.m. until 8:30 with after-hours call-out available, sees its seasonal peak during the warmer months, once Type I and Type IV deicing capability was added, winter has become a busy season as well. “The north shore of Boston is a population of very wealthy people, they’re going to the islands in the winter, they’re going to Florida, they are going out west for skiing,” Messenger explained. With the airport’s proximity to Salem, October attracts visitors to the area on jets for the town’s annual month-long Haunted Happenings festival.

The city-owned airport offers a 5,000-foot main runway and is located just 21 miles from downtown Beantown, providing an alternative to Boston Logan and Hanscom Field in Bedford. Currently, the FBO has 35,000 sq ft of hangar space that can accommodate the latest big business jets. It is home to six turbine-powered aircraft ranging from a Gulfstream G550 and Bombardier Global to a Daher TBM 900. In the airport’s private hangars are a Cessna CJ2 and a handful of turboprops. The company expects to break ground next year on a new 17,000-sq-ft hangar, which can shelter a G650 along with several other aircraft.

As far as his customer service views, Messenger believes in starting from the ground up. “My philosophy is to keep my employees happy...and take really good care of them because they are ones that go out there, smile, and treat the customers like they are gold.” Messenger developed a bias against rental uniforms when he worked for his father’s company in his youth. “I vowed I would never do that when I bought my own company,” he said. “You just dress them up and make them feel like a million dollars; that’s what pays with customer service.” To maintain that presentation, there is a dedicated washer and dryer for employee use in the FBO, and a wardrobe of spare clothing to immediately change into should garments become dirty or damaged.

C.E.
A helicopter flown under contract to the Hawaiian Department of Land and Natural Resources' Division of Forestry and Wildlife made an emergency autorotation at about that time, the crew reported. The wreckage was oriented along a heading of 095 degrees and began a right turn that went down in sub-Antarctic ocean waters two minutes short of its intended landing site on remote Enderby Island. The accident occurred in darkness at about 7:37 p.m. local time. Water temperatures were reported as 11 degrees Celsius (54 Fahrenheit).

According to press reports, the winchman in the rear of the helicopter was knocked unconscious. The pilot and medic in the front seats were able to extricate him and swim to the shore of Yule Island for a forced landing to Gillam's Runway 23 but decided not to attempt to retrieve the wreckage, reported to be about 65 feet underwater.

**Fuel Exhaustion Suspected in Downings of Air Ambulance**

**BEECHCRAFT KING AIR 8200, APRIL 24, 2019, GILLIAM, MANITOBA, CANADA**

A King Air on a positioning flight lost power in both engines and came up short of the runway after declaring an emergency and diverting to the Gillam airport. The two pilots and two flight nurses on board were not injured. Both engines flamed out during descent and the pilots attempted a forced landing to Gillam’s Runway 23 but instead landed gear-down on the frozen surface of Stevens Lake underneath the final approach course. The airplane continued until it hit the rock berm at the foot of the runway, causing “substantial damage to the landing gear, fuselage, wings, and a propeller.” Photographs of the accident site show both sets of main landing gear wheels detached from the wreckage.

The flight was en route from Winnipeg to Churchill when the crew reported a fuel issue, declared an emergency, and requested a diversion to Gillam. Reports later came that the King Air departed without sufficient fuel for the flight have not been confirmed by the Transportation Safety Board, which had not issued an initial statement by press time.

**Preliminary Reports**

**Three Die in Mississippi Sabreliner Crash**

**ROCKWELL INTERNATIONAL NA-265-65, APRIL 13, 2019, NEW ALBANY, MISSISSIPPI**

Two commercial pilots and their sole passenger were killed when the 1980-model corporate jet disappeared from radar less than two minutes after the crew advised air traffic control of electrical problems. The airplane was operating in an area of moderate to heavy precipitation and presumed to be in instrument meteorological conditions on an IFR flight from Mississippi’s University-Oxford airport to the Marion County-Rankin Fite Airport in Georgia.

Initial voice and radar contact were made at 3:06 p.m. as the jet climbed through 1,300 feet. Two minutes later, its transponder stopped transmitting altitude data, so radar track data for the remainder of the flight includes airspeeds and headings but no altitude information. At about that time, the crew reported climbing through 9,000 feet to their intended altitude maneuvering to avoid hazardous weather. They responded that they were deviating for weather. They responded that they were deviating for weather. They responded that they were deviating for weather. They responded that they were deviating for weather. They responded that they were deviating for weather. The engines were credited with saving the lives of the three crewmen on a medevac helicopter that went down in sub-Antarctic ocean waters two minutes short of its intended landing site on remote Enderby Island. The accident occurred in darkness at about 7:37 p.m. local time. Water temperatures were reported as 11 degrees Celsius (54 Fahrenheit).

According to press reports, the winchman in the rear of the helicopter was knocked unconscious. The pilot and medic in the front seats were able to extricate him and swim to the shore of Yule Island in near-total darkness. The aircraft was reported overdue at 8:15 p.m. and search-and-rescue efforts initiated immediately. The men were located at 11:45 the next morning, some 16 hours after the ditching. The crew was positioning the helicopter to evacuate a crewman from a fishing trawler the following morning. At press time, New Zealand’s Transport Accident Investigation Commission had not yet announced a decision as to whether or not to attempt to retrieve the wreckage, reported to be about 65 feet underwater.

**Three Survive Night Ditching Off New Zealand**

**EUROCOPTER BK 117, APRIL 22, 2019, OFF YULE ISLAND, NEW ZEALAND**

Thorough training and appropriate equipment, including survival suits, life vests, and helicopter emergency egress devices, are credited with saving the lives of the three crewmen on a medevac helicopter that went down in sub-Antarctic ocean waters two minutes short of its intended landing site on remote Enderby Island. The accident occurred in darkness at about 7:37 p.m. local time. Water temperatures were reported as 11 degrees Celsius (54 Fahrenheit).

According to press reports, the winchman in the rear of the helicopter was knocked unconscious. The pilot and medic in the front seats were able to extricate him and swim to the shore of Yule Island in near-total darkness. The aircraft was reported overdue at 8:15 p.m. and search-and-rescue efforts initiated immediately. The men were located at 11:45 the next morning, some 16 hours after the ditching. The crew was positioning the helicopter to evacuate a crewman from a fishing trawler the following morning. At press time, New Zealand’s Transport Accident Investigation Commission had not yet announced a decision as to whether or not to attempt to retrieve the wreckage, reported to be about 65 feet underwater.

**Final Reports**

**Pilot Decision-making Faulted in Brazil Crash**

**HAWKER BEECHCRAFT KING AIR C90GTi, JAN. 3, 2016, PARATY, RIO DE JANEIRO, BRAZIL**

Brazil’s Aeronautical Accident Investigation and Prevention Center (CENIPA) has attributed the fatal crash of a King Air C90GTi to the pilot’s decision to make repeated attempts to land at the VFR-only Paraty Airport in unstable, rainy weather with ceilings as low as 400 feet. Overconfidence and a competitive attitude toward landing in unfavorable conditions were cited as contributing factors. The twin-engine turboprop crashed into Corumbé Hill attempting a second go-around. The 8:52-hour pilot and 139-hour copilot were killed.

The positioning flight departed from Campo de Marte at 4:24 p.m. local time. Both pilots held commercial licenses with multiengine and instrument ratings and current medical certificates, but the copilot did not hold a BE 90 type rating and had no documented make-and-model experience. The pilot, however, was type-rated, and the airplane was certified for single-pilot operation. The cockpit voice recorder captured the copilot’s voice reading checklists and handling en route communications with air traffic control; the pilot explained details of aircraft operation and described the approach into Paraty. He had substantial experience flying into that airport, located in a region of Rio de Janeiro state known for its unstable weather.

The pilot departed VFR on a mixed VFR/IFR flight plan, then obtained an IFR clearance during climb. He resumed VFR crossing the DOBLU fix and turned east to descend over Paraty Bay to attempt an unobstructed overwater approach to Runway 28. After his first attempt ended in a go-around, the pilot transmitted that he would hold over the bay at 900 feet while waiting for conditions to improve. The second attempt began after another pilot reported having landed, albeit in poor visibility under ceilings estimated at 400 to 500 feet. Conditions deteriorated during the approach and the pilot initiated a second go-around but crashed into a hillside 3.9 nautical miles north of the runway threshold at an elevation of 1,800 feet.

The accident site show both sets of main landing gear wheels detached from the wreckage. The flight was en route from Winnipeg to Churchill when the crew reported a fuel issue, declared an emergency, and requested a diversion to Gillam. Reports later came that the King Air departed without sufficient fuel for the flight have not been confirmed by the Transportation Safety Board, which had not issued an initial statement by press time.

**Loose Clipboard Foul Antitorque Pedals**

**BELL 206B, JUNE 26, 2017, ENTIAT, WASHINGTON**

A loss of power during a long-line flight was caused by the combination of minimum fuel and a nose-high attitude that allowed the engine’s fuel pickup to become unseated, according to the NTSB’s finding of probable cause. The pilot made an emergency autorotation and escaped unjured, but the helicopter’s main rotor severed its tailboom during the landing.

Inspectors found about seven gallons in each of the two interconnected fuel tanks. The engine was test-run with the fuselage in a level attitude, but the low fuel warning light illuminated when the nose was raised with only the remaining fuel on board. The two tanks are interconnected with internal baffles. The only fuel pickup is located in the right front area of the left tank.

Following the accident, the operator revised its procedures to require the same fuel load for long-line as for side-pull operations: full tanks (64 gallons) with a maximum of one hour of flight time before refueling, leaving a 37-gallon reserve. Procedures in effect at the time required only a 100-pound reserve (14.7 gallons) upon landing for all operations other than side pulls.

**Spatial Disorientation in Fatal Nebraska Crash**

**MITSUBISHI MU 2B-40, SEPT. 23, 2017, AINSWORTH, NEBRASKA**

The NTSB has formally attributed the fatal accident to spatial disorientation, without further comment on possible causes. The Board’s factual report noted that the pilot filed an IFR flight plan but never picked up his clearance before taking off into a 500-foot overcast. He had told his airplane partner and their avionics shop about a “transient flag” on the Chelton air data attitude and heading reference system, but the extent of impact damage to that system precluded functional testing.
The 10th Annual Fund an Angel Cocktail Reception, held on the second day of the NBAA Business Aviation Convention & Exhibition (NBAA-BACE), is an invaluable networking event for business aviation leaders and influencers. The reception will feature an auction to benefit Corporate Angel Network (CAN) who organizes critical flights for cancer patients to treatment centers throughout the country.

"Corporate Angel Network has helped to open up trials and treatment for Ava that we otherwise could not afford. They help to ensure she gets the medical care that she needs."

– Ava’s Parents

Learn More and Reserve Tickets: fundanangel.org
Pentastar Completes Gulfstream and Bombardier Refurbishes

Michigan’s Pentastar Aviation has completed cabin refurbishments on two Gulfstreams (a G450 and G550) and a Bombardier Global Express, all “very large in scale,” said Pentastar director of interiors Gordon Ross, adding, “That’s our specialty.” Both Gulfstreams were recently purchased and the new owners “wanted to personalize” and update the cabins, he said. Work included soft goods replacement, refinished veneers, LED lighting, and new airborne connectivity solutions.

Ross also reported Pentastar, after researching fabrics, is now using hand-woven textiles and carpets rather than mass-produced materials for covering divans and floors in large-cabin refubs. Hand-woven fabrics have a “thicker type of consistency, provide a lot of comfort,” and also allow more personalization. Upgraded sound insulation packages and wood refurb are also getting more attention. “We spend a lot of time doing R&D on wood finishes and techniques,” Ross said of the latter. “We like to hone those skills and our knowledge base.”

Ross also said Pentastar has performed in a Gulfstream its first install of the SmartSky air-to-ground system, the new 4G LTE connectivity system that will compete with Gogo for domestic U.S. airborne Wi-Fi service.

Global 7500 Lighting System Caters to Body’s Rythm

Bombardier introduced a circadian rhythm-based cabin lighting system for the Global 7500, designed to combat the effects of jet lag. The Soleil (French for sun) Dynamic Lighting System uses changing combinations of red and blue light wavelengths shown to stimulate or suppress melatonin—a hormone that helps regulate sleep—helping adjust travelers’ body clocks to their destinations. Such adaptive light strategies become useful on flights exceeding seven hours, said Bombardier Business Aircraft manager, industrial design, Tim Fagan, adding, “I think we’re just scratching the surface on how we can better take care of our passengers onboard the aircraft in terms of wellness.”

Fully integrated with the aircraft’s flight management system through the Global 7500’s Lufthansa Technik nice Touch CMS, Soleil uses proprietary algorithms and flight plan data to calculate the enroute lighting changes. The system can also recommend optimum times for meal service accordingly.

Duncan, Elliott Upgrade Flight Decks

Midwest-based MRO powerhouses Duncan Aviation and Elliott Aviation are each busy with panel upgrade programs, with customers usually taking advantage of the installation downtime to bring their interiors and cabin systems up to date. Duncan’s Collins Aerospace Citation CJ3 Pro Line Fusion Flight Deck retrofit swaps the legacy portrait displays for 14.1-inch landscape touchscreen PFDs. SVS with terrain, obstacles, and airport highlighting, and lower landing minimums with WAAS and LPV approaches are included. Graphical weather via data link or SiriusXM; and wireless data loading are optional. Duncan expects to perform about 16 of the upgrades this year, said avionics modification sales rep Jeff Simmons. Most customers don’t get much opportunity to enjoy the cabin upgrades performed in conjunction with the Fusion mod; 95 percent of the converted CJ3s are owner-flown, and customers are sitting up front enjoying their new flight decks.

Elliott Aviation is poised to start Garmin G5000 flight deck retrofits for the Citation Excel/XLS, replacing the Honeywell Primus II system. Integrated with the GFC 700 autopilot, the integrated avionics suite will substantially lower cost of operation and eliminate ongoing maintenance challenges facing the legacy Primus, said Elliott director of avionics sales Conrad Thiesen. The switch is also expected to provide enough weight savings to allow additional baggage, passenger, and/or fuel load flexibility. At press time Garmin anticipated certification for the installation in early June. Elliott has more than a dozen customers signed up, and all told has notched 50 sales for Garmin G5000 retrofits in light jets.

Clemens Updates Beechjet 400A

The G5000 also plays a lead role Clemens Aviation’s signature Beechjet 400A refurbishments. The Kansas-based full-service charter/management and FBO provider has recently delivered its 14th conversion. The package features a Garmin G5000 flight deck, along with winglets, refurbished interior, and new paint. For light jet customers, “There’s really nothing out there with its speed, size of cabin, and range” said company founder Dwayne Clemens. The G5000, installed by Wichita-based Bevan Aviation, yields a 300-pound weight savings, and combined with the winglets—installed by Textron Aviation technicians—Clemens estimates about a 15 percent improvement in the 400As 1,500 nm maximum range. Interior refurbishment is done at Clemens’s 12-person shop, and Ballard Aviation, in Winfield, Kansas handles paint work. Turnaround time on the package is about 90 days. Clemens operates about a dozen of the Beechjets for owners as well as two of its own. The company also operates King Airs, a Beech Baron, Hawker 800XP, and a Bombardier Challenger 601 from its base at Lloyd Stearman Field Airport, and has announced plans to open a facility at Wichita’s Colonel James Jabara Airport.
Within 6 Months
June 17, 2019 NEW
FAA: Maintenance Schools Proposal

Some three and a half years after the FAA published a notice of proposed rulemaking (NPRM) to amend the regulations governing the curriculum and operations of certified aviation maintenance technician schools, the agency has issued a supplemental NPRM that would expand the scope of that proposal to allow competency-based training and satellite training locations, and eliminate the national passing norms specified in the quality of instruction requirements. Comments are due June 17, 2019.

July 1, 2019
Australia: Drone Registration

A staged implementation process is planned whereby registration and accreditation are progressively introduced for remotely piloted aircraft operators in Australia. Initial registration-only requirements are scheduled to start on July 1. The mandate will apply to commercial operators of drones of any size and to recreational users of drones weighing more than 250 grams.

July 17, 2019 NEW
EASA: SMS for Parts and Maintenance

A notice of proposed amendment from the European Union Aviation Safety Agency (EASA) would require that safety management systems (SMSs) be applied to EASA Part 145 maintenance organizations for non-general aviation aircraft and to EASA Part 21 aircraft parts and component manufacturers. Currently, SMS programs are required for commercial flight operators in Europe. Comments are due by July 17, 2019.

Within 12 Months
Jan. 1, 2020 7 Months to Deadline
U.S./Taiwan: ADS-B Out Mandate

ADS-B Out equipment must be operational starting Jan. 1, 2020, in aircraft that fly in the U.S. under IFR and where transponders are currently required, and in Taiwan IFR airspace above FL290.

Jan. 1, 2020
Aircraft CO₂ Emissions

The first international standards for carbon dioxide (CO₂) aircraft emissions have been enacted by ICAO and initially apply to large subsonic jets, including business jets, for which the application for a type certificate was submitted on or after Jan. 1, 2020.

June 7, 2020 12 Months to Deadline
Europe: ADS-B Out Mandate

The ADS-B Out retrofit requirement in Europe takes effect June 7, 2020. This mandate applies only to aircraft with a mtow exceeding 5,700 kg (12,566 pounds) or having a maximum cruising speed greater than 250 knots, and received its individual certificate of airworthiness on or after June 8, 2016.

Jan. 30, 2020
Datalink Com in North Atlantic

Phase 2 of the North Atlantic datalink mandate began in February 2015, at which time flights within the North Atlantic Tracks between FL350 and FL390 were required to be equipped with FANS-1/A controller-pilot datalink communications and ADS-C. The program expanded to these altitudes in the entire ICAO NAT region on Dec. 7, 2017, and will apply to all flights in this region above FL390 on Jan. 30, 2020.

Feb. 18, 2020
EASA: Halon Banned

Under new EASA rules, operators of large airplanes and large helicopters for which the first individual certificate of airworthiness is issued on or after May 18, 2019, shall ensure that built-in lavatory extinguishers on aircraft newly certified on or after Feb. 18, 2020 do not use Halon as the extinguishing agent. The goal is to gradually mitigate the environmental impact that Halon extinguishing agents in firefighting equipment have on the ozone and climate. The requirement applied to portable extinguishers starting last May.

Beyond 12 Months
Aug. 14, 2020
EU: Pilot Mental Fitness

The European Union has published revised air operations safety rules to incorporate provisions to better identify, assess, and treat the psychological fitness of air crew. The rules, applicable to commercial air transport operators, go into effect Aug. 14, 2020. The requirements include mandatory alcohol testing of flight crews during ramp checks.

Jan. 1, 2021
U.S.: Stage 5 Noise Rules

Effective Jan. 1, 2021 more stringent noise certification rules apply for new type certificates for airplanes less than 121,254 pounds. The new rule, known as Stage 5, is intended only for newly designed airplanes and is not aimed at phasing out existing noise standards that apply to the production or operation of current models.
John Peery was promoted to president and COO of Mercury Air Cargo. Peery has more than 30 years of air cargo experience, including serving as general manager for the North-West U.S. and regional v-p for Aeroground.

Maccarone Capital named Timothy Alden managing director, co-leading the firm’s aerospace, defense, and government services coverage alongside Jeremy Parker. Alden has more than 20 years of experience in the aerospace, defense, and government services sector, formerly leading aerospace and defense coverage for Jefferies and also holding senior investment banking roles at Goldman Sachs.

Renee Spann, manager of Teterboro Airport, retired after 30 years of service with the Port Authority of New York and New Jersey. Spann, who joined the Port Authority in 1983 as a summer intern, has worked at four of the five airports under the jurisdiction of the authority—Teterboro, La Guardia, Newark, and JFK International—and became manager at Teterboro in 2011. Scott Marsh is stepping in as interim manager. He has 30 years of aviation experience and has held numerous roles with the Port Authority since joining in 2004, including his most recent position of manager of operations and security at Teterboro.

Aerion appointed Matthew Cram deputy general counsel. Cram previously was a shareholder at the Aero Law Group and also has held a variety of contractual and finance positions with Boeing.

Terrell Ford has become general manager of TAC Air’s Little Rock, Arkansas base. He succeeds Kip Simanek, who earlier this year moved over to lead the company’s new FBO at Dallas Love Field. Ford, who is a 10-year military veteran, has spent 19 years with TAC Air, most recently as general manager in Shreveport, Louisiana. Succeeding Ford in Shreveport is Steven Ryberg. He has served with TAC Air since 2005 as line manager in Omaha, Nebraska.

Jet Aviation appointed Jeremy Caillet v-p of VIP completion programs. He succeeds Neil Boyle, senior v-p of global completions, who retired at the end of May. Caillet joined Jet Aviation in 2008 as an engineering team leader and before that was with Dassault Falcon Jet.

William Skinner joined Heritage Capital Group as a principal. Skinner has more than 33 years of financial management and leadership experience both in public accounting and the aerospace industry, most recently as v-p of financial planning and treasurer of Gulfstream Aerospace.

TAG Aviation (UK) Ltd promoted Stuart Stevenson to head of compliance and safety based in Farnborough. Stevenson, who joined TAG Aviation in 2018 as deputy head of compliance and safety, previously held engineering roles with British Airways.

Airline named Jonathan Astill v-p and general manager of its new Air Traffic Flow Management Services business. Astill previously spent 30 years with the UK’s NATS, most recently as director of alliances, airline, and international affairs.

FlightSafety International promoted Clinton Strong to manager of the company’s Unmanned Systems Training Centers in Wichita and Las Vegas. Strong joined the training specialist in 2008 as a Citation Excel instructor and has held positions with increasing responsibility, most recently assistant center manager of the Wichita East facility.

American Aero FTW appointed Angela Thurmond as general manager. Thurmond, who joined American Aero in June 2017, most recently was assistant general manager for the Meacham International Airport-based FBO.

Cutter Aviation named James Boswell manager of charter sales for its charter and flight management department in Phoenix.

Duncan Aviation appointed Mark Kahle manager of its avionics install/service department in Battle Creek, Michigan. Kahle most recently was certification coordinator and team leader at Duncan’s Lincoln, Nebraska facility. In addition, Jose Costas joined Duncan Aviation’s aircraft sales and acquisitions team with responsibility for the EMEA and Asia-Pacific regions. The company also named Joshua Chisnall-Keyonnie manager of its Scottsdale, Arizona satellite avionics shop in Arizona. Further, Tim Kelly is moving to the position of regional sales manager for the Great Lakes region. Finally, Duncan named Ryan Blake as the new Gulfstream airframe sales and services representative in Provo, Utah.

West Star Aviation appointed Mark Crotty program manager for Embraer at its East Alton facility. Crotty previously was director of operations for Constant Aviation and also has served at Hawker Beechcraft Services.

Don Milum joined Universal Avionics as regional sales manager for the Midwestern U.S. Based in Kansas City, Milum has more than 20 years of aviation experience, holding positions with Honeywell, Textron, StandardAero, and Spirit Aeronautics.

Charlie Carroll was appointed avionics sales manager for C&L Aviation Group. Carroll has more than 35 years of experience, previously holding roles as director of sales for Precision Aircraft Services and as marketing manager for Universal Avionics.

JetBrokers hired Jen Amundsen as the company’s King Air specialist. Amundsen brings more than a decade of King Air experience, including with Commuter Air Technology. GlobalJet Services named Chris Phillips Learjet program manager. Phillips has previously held the roles of director of maintenance, repair station manager, and maintenance instructor.

Coptersafety hired Gerardo Donatelli as a full-time flight instructor.

FlightSafety International promoted David Dyche to assistant manager in the Tucson, Arizona center. Dyche joined FlightSafety in 2005 as an instructor for the Bombardier Learjet 45 in Tucson and most recently was director of training.

The International Business Aviation Council (IBAC) named Katherine Hilist operations manager for the International Standard for Business Aircraft Operations (IS-BAO) program. The Aircraft Owners and Pilots Association hired Pamela Cooksey as senior account executive. Cooksey most recently was with Scope Aircraft Finance in Columbus, Ohio.

The Citation Jet Pilots Owner Pilot Association (CJP) named four recipients for the 2019 Bob Hoover Presidential Scholarships: Brandon Baber, a junior at Embry-Riddle Aeronautical University (ERAU) Daytona; Jacob Cook, a junior at ERAU Daytona; Matthew Galley, a junior at ERAU Prescott; and Otto Maytag, a sophomore at ERAU Prescott. The scholarship, which provides $25,000 toward the winners’ aviation-related studies at ERAU as well as networking opportunities, is presented in partnership between the CJP Safety and Education Foundation and the Bob Hoover Legacy Foundation.

Warren Kroepel, chief operating officer for FBO chain Sheltair, was presented with the William F. Shea Award by the New York State Aviation Management Association, in recognition of his leadership and significant contributions to the state’s aviation community. Before joining the aviation services provider in 2012, he spent 35 years in commercial aviation and airport management, including stints as deputy general manager of John F. Kennedy International Airport, and general manager of LaGuardia Airport.

Compiled by Kerry Lynch

AWARDS and HONORS

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Peter cutter Aviation

FINAL FLIGHTS

William “Bill” R. Weaver, a more than 40-year aviation industry veteran and former co-owner of Million Air White Plains in New York, died on April 12. He was 66.

A commercial pilot and former Air National Guard mechanic, Weaver and Mike Mason grew up around the FBO and flew on the board of the Westchester Aviation Association and as a member of the Patient Air Lift Services (PALS) charity.

Dorothy “Dar” White, whose business aviation career spanned more than 30 years and involved roles at a number of established charter and management businesses, died on April 15. She was 63.

White most recently had run her own business, Global Charter Solutions, which provided air charter services for a range of clients. She also had become deeply involved in the St. Louis-area business aviation community, holding several roles with the Greater St. Louis Business Aviation Association, including serving on the board of its educational foundation.

Originally from New Jersey, White began her aviation career as a dispatcher for an air cargo company based in St. Louis. From there, she held positions ranging from charter sales representative, regional sales director, and vice president for companies that included The Air Charter Group, Jet Aviation Business Jets, Priester Aviation, Sentient Jet, Signature Flight Support, and Pentastar, among others.
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HIGHLIGHTS FROM SINGAPORE AIRSHOW 2018

1,062 participating companies from 50 countries

287 VIP delegations from 91 countries and regions

54,151 trade attendees from 147 countries and regions

1,464 meetings conducted during the exhibition
JUNE

JETNET IQ SUMMIT...June 4-5, Ritz-Carlton-Westchester, NY. Info: jetnet.com/summit.


JULY

ASA ANNUAL CONFERENCE...July 14-16, Hotel Omni Mont-Royal, Montreal, Quebec. Info: www.aviationsuppliers.org/annual-conference.


AUGUST


SEPTEMBER

CITATION JET PILOTS CONVENTION...September 4-8, Colorado Springs, CO. Info: www.citationjetpilots.com.

NBAE-BACE 2018


MEBA Show Morocco...September 25-26, Marrakech Menara Airport, Morocco. Info: www.mebamorocco.aero.

OCTOBER


NOVEMBER

BOMBARDIER SAFETY STANDDOWN...November 12-14, Omni Fort Worth Hotel, Fort Worth, Texas. Info: www.safetystanddown.com.


AFRICAN AIR EXPO...November 27-29, King Shaka International Airport, Durban, South Africa. Info: http://africanairexpo.com/.

DECEMBER


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