CRIMEA A NEW CENTER FOR BUSINESS AVIATION

From the Atlantic to the Ural
Business Aviation Migrates to Moscow for RUBAE 2019

FUELING THE FUTURE OF BUSINESS AVIATION P54
The Gulfstream G650ERTM recently achieved the fastest longest-range business jet flight in history—flying from Singapore to Tucson, Arizona, 44 minutes quicker than the previous record. With an industry-leading 90-plus world speed records for the Gulfstream G650TM and G650ER, you simply can’t go farther faster.
UNLESS YOU ARE SOMEHOW STILL living in the Stone Age, you have by now noticed that robots are starting to overrun our way of life. Mowing a lawn located in Europe by means of a robot that is following the instructions I send it from a cell phone in the USA is something that I would not have thought possible some years ago. But alas, the grass is cut. Meanwhile, the hi-tech gurus at Amazon, Google...etc. have sent the robots directly into our homes, under the guise of such ladylike names as Alexa, Cortana, Siri and Calliope. “Don’t forget to call Kathy in five minutes,” Siri told me yesterday from inside my pocket, saving me a domestic quarrel! Can you believe that you and I have the good fortune to live in the first generation of virtual personal assistants? Clearly, we are moving into a new technological age, the one of artificial brain power. While this will be a great challenge for the majority of existing jobs, it should not influence the engagement of the pilot, for whom awareness has to be a primary duty. Yes, the aviation industry is relentlessly working on new technological momentum. Piston power has given way to turbine dominance, and the future could very well be electric.

Even if experiments are conducted on pilot-less airplanes, the pilot will always be the essential element of safe air travel. That’s because a secure flight will always depend on the awareness of the pilot. Their interpretation of a situation and way of regarding and understanding a problem is the best guarantee to finding the solution. Facing a drawback, un-prepared pilots will panic and lose time trying to comprehend an issue! Imagine the consequences if US Airways Flight 1549, taking off from LaGuardia Airport on January 15, 2009 with 150 passengers and five crew members on board, would have been pilotless when it hit that flock of migrating Canadian geese, shutting down both engines! Tragedy was only avoided by a daring experimented pilot just minutes after his Charlotte-bound plane took off from New York. And it was because of Capt. Chesley “Sully” Sullenberger, who efficaciously glided the plane to rest on the surface of the Hudson River, that all passengers survived with no serious injuries. Autopilots have been around for a long time, but categorically it is not an alternative for awareness. Be aware, don’t be a statistic in the next ICAO Safety Report!

*Will robots inherit the earth? Yes, but they will be our children.*
Marvin Minsky
OUR COVER
11-13 September 2019, the RUBAE trade show at Moscow Vnukovo Airport attracts not only exhibitors and attendees from the CIS countries, but also from Europe and North America.

Sustainable alternative jet fuel to take Business Aviation farther for less.

HOME GROWN
VQ-BFA Canadair CRJ-200 operated by the Russian regional airline Rus Line based at Vnukovo International Airport since March 2013. The company operates 10 CRJ 200 mainly for regional and charter flights.
When operating to London, keep in mind regulatory considerations such as UK APD Air Passenger Duty.

If you are an operator traveling to the UK, you must register with HMRC Her Majesty's Revenue and Customs (unless you qualify for the occasional operator's scheme, in which case registration is not necessary) and you will need to account for and pay Airport Duty for each passenger departing the UK. Operators are financially liable for payment of APD to the HMRC. Other options for payment are still unknown at this time, and updates will be made as more information is released.

Other Issues

Vaccinations - Not applicable

Language issues - Not applicable

Onboard pets - Temporary importation of personal pets into the UK is possible, but only for certain types of pets at certain airports. GA operations may bring in a dog, cat or ferret but only at three airports in the London area - at Stansted (EGSS), Biggin Hill (EGKB) and Farnborough (EGLF). Be aware that there are strict procedural and health requirements in place and your aircraft must be on an approved operator list. In addition to having up-to-date vaccination and health records, the pet must have had a rabies inoculation within the past six months and treatment for tapeworm 48 hours prior to arrival. Pet health details need to be forwarded to your handler, at least 24 hours in advance, so that they can coordinate the pet clearance process with a local pet processing company. On arrival at EGSS, EGKB or EGLF a ‘pet representative’ will come on board to scan the animal’s microchip and ensure all the records match up.

Potential issues with pet importation: While the process of importing a pet into the UK is very doable with proper research and pre-planning, it's important to follow all the rules. If you land with a pet at a non-approved London area airport you'll likely encounter issues. Authorities may allow you to be permitted or immediately depart but you run the risk of having the pet taken into quarantine for months.

Weapons onboard: It's allowable to land your GA aircraft in the UK with weapons onboard so long as they've been properly declared and approvals have been obtained. If you're flying to the UK for shooting season, which normally begins in September, you'll need to have all paperwork in place for your guns along with a hunting license organized by the landowner for the shooting location. If you're just stopping in the UK with weapons onboard, these can usually be stored at the airport with recommended 24-48 hours advance notification. Some FBOs have contracts in place with local gun dealers who are licensed to transport and store weapons during your extended stay in the UK.

Conclusion

London is one of the premier Business Aviation destinations in the world. Operators have abundant quality options both in providers and airports. Consider your destination within the London area to create a plan that meets your specific needs.

Got a question? Contact Jason Hayward
General Manager Universal Aviation UK

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Your Proficiency
Go beyond the basics. Advanced training courses empower you to face challenging situations and make swift, accurate decisions.

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Your Achievement
Earn the recognition. Complete our exclusive, broad-ranged Master Aviator program to obtain safety’s highest standard.

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Bombardier unveils the Learjet 75 Liberty, offering more light jet operators than ever before the opportunity to step up into the iconic platform that launched Business Aviation in America. Passengers who step into the six-seat Learjet 75 Liberty will have the freedom to stretch out in the only Executive Suite in the light jet category, aboard a stunning cabin that delivers the quietest and smoothest ride. The Learjet 75 Liberty will be offered at a list price of $9.9 million US, with first deliveries expected in 2020. This exceptional value proposition represents a new frontier for the Learjet brand.

The National Aeronautic Association (NAA) has established the Bruce Whitman Trophy in honor of the late aerospace executive and philanthropist who passed away in October 2018. Whitman has been named as the first recipient of the trophy created as a tribute to his significant contributions to the aerospace industry over the past 60 years as well as his dedication to educating millions about the legacy of our military. The Bruce Whitman Trophy will be awarded to “… outstanding individuals who have made significant contributions to aviation or aerospace in the United States, and who by working with museums and other institutions have promoted an appreciation by students and the broader public of the sacrifices and legacy of members of the military service.”

Global mission management provider, Universal Weather and Aviation, Inc., has signed a definitive agreement to sell its UVair Fueling Division to World Fuel Services. “We didn’t achieve our 60-year track record of success and remain the industry leader in international mission support by standing pat and being satisfied with the status quo,” said Universal Chairman Greg Evans. “We’ve always been nimble, and not afraid to make bold decisions that will allow us to adapt to changing market and better develop solutions to our customers’ future challenges. Until the official close, there will be no changes in how Universal and the UVair Fueling Program conducts business. Upon the official closing of the sale, as part of this agreement, Universal will continue to service its trip support customers as it always has, and World Fuel Services will become the exclusive fuel provider for all missions through Universal.

Shannon Airport, a Shannon Group company, celebrated 80 years as the center piece and driver of the regional economy as it marks the landing of its first passenger aircraft way back on July 11th, 1939. Some 80 years ago to the day a Belgian airliner – tri-motor Sabena Davoia Marchetti S-73 – landed on the newly opened and then named Rineanna airfield and gave lift-off to what would soon after become known as Shannon Airport and an economic transformation of a region. Fast forward the 80 years and Shannon Airport is today Ireland’s second-largest long-haul airport, the only one outside the capital offering direct flights to all key Irish markets – the UK, European mainland and US.
INNOVATION AND COLLABORATION WERE REQUIRED TO CRAFT UNIQUE DESIGN FEATURES, LIKE THE BULKHEAD STARBURST AND PERFORATED LEATHER SEATS, FOR THIS GLOBAL.
**SD SUPPORTS NEW ONE MORE ORBIT RECORD IN HONOR OF APOLLO 11 LANDING**

Executives from Satcom Direct, the Business Aviation solutions provider, welcomed the One More Orbit team's Gulfstream G650ER as it landed at the Space Florida Launch and Landing Facility, formerly known as the Shuttle Landing Facility, to complete its record-breaking attempt to complete the fastest aerial circumnavigation of the earth via both geographical poles. The flight, which took 46 hours 39 minutes and 38 seconds, (to be officially confirmed) knocked some eight hours off the existing record and was followed online around the world by aviation enthusiasts logging into the live stream broadcasting the voyage. The live stream, as well as connectivity and flight deck communications support, were supplied by SD combining its powerful connectivity and security infrastructure with the Global Xpress network from satellite partner Inmarsat.

**WEST STAR AVIATION AUTHORIZED TO SERVICE MEGGITT SECURAPLANE BATTERIES**

West Star Aviation is now authorized to service and repair Meggitt Securaplane Technologies Main Ship 9750W Pure Lead batteries at their full-service Alton, IL (ALN) location. The 9750 Battery is available for most Citation models. Additionally, they are authorized to perform “reblocking” of the XL245 XL246, XL249, XL2410 and 2411 series emergency battery. “We are happy to continue to grow our capabilities and include this service to Hawker and other aircraft operators in need of repairs or maintenance to their batteries,” said John Hardy, Director of Accessory Shop, West Star Aviation.

**TEXTRON CELEBRATES LIGHT JET LEADERSHIP WITH DELIVERY OF 300TH CITATION CJ4**

Textron Aviation Inc. celebrated its leadership of the light jet segment with the delivery of the 300th Cessna Citation CJ4, the industry’s top performing aircraft in this segment. The milestone aircraft was delivered to McNeilus Steel, based in Dodge Center, Minnesota. “The Citation CJ4 continues to be a standout in the light jet segment due to its combination of high performance, low operating costs and class-leading cabin amenities,” said Rob Scholl, Textron Aviation senior vice president, Sales and Marketing. “Our light jet product range, led by the Citation CJ4, continues to pace this segment globally in terms of deliveries, primarily because customers appreciate what they get in terms of productivity and value.”

**GARMIN TO CERTIFY GFC 600H FLIGHT CONTROL SYSTEM ON BELL 505**

Garmin International, Inc. will certify the GFC 600H flight control system for the Bell 505 Jet Ranger X helicopter. The attitude-based (AHRS-derived) flight control system boasts a number of helicopter-tailored features, including attitude hold, Garmin Helicopter Electronic Stability and Protection (H-ESP™), dedicated return-to-level (LVL) mode, hover assist, as well as overspeed and low speed protection. Certification of the GFC 600H for the Bell 505 is expected to be complete in the first-half of 2020 and available at that time through select Garmin dealers as a retrofit installation.
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**AVFUEL WELCOMES ADVANCED AIR TO BRANDED FBO NETWORK**

Avfuel Corporation announced its new partnership with Advanced Air (KCBF) of Council Bluffs, Iowa, as the FBO joins the fuel supplier’s branded network. Just 15 minutes from Omaha, Nebraska, operators traveling to this no-fee FBO enjoy easy access to the city while avoiding high prices and airport congestion. As a hidden-gem, Advanced Air provides guests with the modern facilities, services and amenities found in metro areas, but with the accessibility and privacy afforded by a rural airport. Also recently, Avfuel announced two new partnerships with full-service FBOs in central Washington as it welcomed Pangborn Flight Center (KEAT) and McCormick Air Center (KYKM) to its branded network.

**DUNCAN AVIATION OFFERS NONDESTRUCTIVE TESTING MOBILE SERVICES**

Duncan Aviation is now offering NDT (nondestructive testing) mobile services for aircraft operators. Duncan Aviation has one of the highest-skilled, in-house NDT teams (Level 2 or higher in all four methods) in the industry providing eddy current, fluorescent penetrant, ultrasonics and magnetic particle inspections on all makes and model aircraft, including helicopters. On-the-road NDT services are vital to operators who perform smaller in-house inspections in their hangars. Duncan Aviation’s capabilities include Authorized Dassault NDT in the Western Hemisphere.

**FLIGHTSAFETY NOW OFFERS ADVANCED REJECTED TAKEOFF GO/NO-GO RECURRENT**

FlightSafety International now offers an Advanced Rejected Takeoff Go/No-Go Recurrent course for pilots who fly the Gulfstream G550 aircraft. “Our new Advanced Rejected Takeoff Go/No-Go Recurrent course is designed to review and reinforce the skills and lessons learned during the Initial course,” said Dann Runik, senior vice president, Operations. Pilots will face up to 13 new scenarios during the four hour simulator session. Each scenario will require a decision by the flight crew to either continue or abort the takeoff. The course will also help to validate the operator’s specific takeoff briefings by testing them against various airports, environmental conditions and weights.

**COMLUX ACHIEVES IS-BAO STAGE 3 AIRCRAFT MANAGEMENT OPS**

Comlux’ VIP operations division in Europe Comlux Malta Ltd has been awarded the Certificate of Registration to the International Standard for Business Aircraft Operations (IS-BAO) Stage 3 by the International Business Aviation Council (IBAC). The approval confirms that the Safety Management System (SMS) is fully integrated into Comlux Aviation’s aircraft management operations and that the company consistently maintains the highest standards of safety and security in the aviation industry.
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BLACKHAWK AEROSPACE RECEIVES FAA APPROVAL OF NEW ENGINE UPGRADE PROGRAM FOR KING AIR 300

Blackhawk Aerospace announced that the Federal Aviation Administration (FAA) has issued a Supplemental Type Certificate (STC) for the XP67A Engine+ Upgrade for both the 14,000 and 12,500 lb. gross weight versions of the King Air 300. This upgrade removes the standard 1050 shaft horsepower (SHP) PT6A-60A engines and Hartzell 4-blade metal propellers and replaces them with factory-new 1200 SHP PT6A-67A engines and Hartzell 5-blade composite propellers. The advantages are more available power from the PT6A-67A engines and more available thrust from the advanced shape and aerodynamics of the Hartzell 5-blade composite propeller for superior performance, noise abatement and weight reduction.

EMBRY-RIDDLE SELECTS THE ULTIMATE TRAINING AIRCRAFT, THE CESSNA SKYHAWK

Textron Aviation Inc. announced a Memorandum of Understanding to supply Cessna Skyhawk aircraft to Embry-Riddle Aeronautical University. Embry-Riddle has agreed to an initial purchase of at least 60 aircraft between 2019 and 2022, with options for additional units. Embry-Riddle and Textron Aviation held a signing ceremony yesterday during the Experimental Aircraft Association (EAA) AirVenture at Wittman Regional Airport in Oshkosh, Wis. “Having a customer like Embry-Riddle commit to long-term selection of the Skyhawk as their preferred trainer of choice is a continued testament to its status as the most popular single-engine aircraft ever built,” said Ron Draper, president and CEO of Textron Aviation.

AVIAA ADDS GLOBAL TREK AVIATION TO ITS SUPPLIER NETWORK

AVIAA, the world’s only independent global group purchasing organization specializing in Business Aviation, announced the addition of privately-owned Global Trek Aviation to its network. Global Trek Aviation, headquartered in Prestwick, Scotland, opened jet handling facilities on the south side of Cardiff Airport two months ago, investing in a brand new facility featuring a dedicated passenger lounge, private offices, crew briefing centre and flight operations facilities, plus an integrated security suite. The new FBO mirrors its award-winning handling facility at Belfast’s leading airport, Belfast International, which has been operational for five years.

ENSTROM OBTAINS CERTIFICATION OF GARMIN GTN 750

Enstrom announced that the Federal Aviation Administration has certified the Garmin GTN 750, a GPS/NAV/COMM multifunction display system in the Enstrom 480B. The GTN 750 features graphical flight planning, terrain mapping, air traffic viewing, detailed geo-referenced charting, satellite weather reporting and tons more. These features are all available on a tall touchscreen display that allows for easy access menu options, quick and effortless navigation, and high detailed graphics. “The GTN 750 is great alternative for customers who are looking for the functionality of a GTN650, but want a larger screen. The touchscreen is very intuitive and easy to use. We’ve already received a number of orders for GTN750 equipped helicopters, and we expect it to be a popular option going forward.”
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Expertise and Quality with a Personal Touch

One Jet Aviation. Many Advantages.
Maintenance, Refurbishment, Completions, FBO, Aircraft Management, Flight Support, Charter, Staffing
**LUFTHANSA AVIATION TRAINING TRAINS FLIGHT OPERATIONS OFFICERS**

Lufthansa Aviation Training and LH Group jointly develop a worldwide unique concept for the training of flight operations officers and for the first time standardize the training group-wide. Within 20 weeks the prospective Flight Operations Officers (FOO) are taught in subjects that are also part of the theoretical pilot training. These include meteorology, navigation, operational procedures and flight planning. “The profession of Flight Operations Officers has developed enormously and also changed over the past decades. With the new training, we now adequately cover this grown and very complex area of responsibility,” says Stephan Strobel, who is responsible for the development and implementation of the new training at LAT.

**CAE EXPANDS CADET TRAINING CAPABILITIES IN EUROPE**

CAE is expanding its training capability in Europe with a new flight training location based in Oslo, Norway. “This expansion of our global training network will support the impressive pilot demand of airlines and operators based in the region – we estimate that there will be a need for more than 90,000 new professional pilots in Europe, Middle East, and Africa over the next decade,” said Nick Leontidis, CAE’s group president, Civil Aviation Training Solutions. With this expansion, CAE will now be delivering pilot creation programs at CAE Oslo, adding to its existing cadet training capability in Brussels, Belgium; Madrid, Spain and Oxford, UK.

**GARMIN EXPANDS AVAILABILITY OF G1000 NXI INTEGRATED FLIGHT DECK**

Garmin International, Inc. announced the addition of five aircraft eligible for its G1000 NXi integrated flight deck upgrade. Aircraft currently equipped with a WAAS G1000 integrated flight deck that are now eligible for the G1000 NXi include the Cessna 172/182/206 and Beechcraft Bonanza and Baron. The G1000 NXi includes a wealth of features and capabilities such as wireless connectivity, SurfaceWatch, map overlay within the HSI and more. Aircraft owners and operators can easily upgrade from the G1000 to the modern, state-of-the-art G1000 NXi with minimal aircraft downtime and installation.

**UNIVERSAL AVIATION UK EARNS IS-BAH STAGE II REGISTRATION**

Universal Aviation UK, based at London-Stansted International Airport (EGSS) has earned Stage 2 registration under the International Standard for Business Aviation Handling (IS-BAH). Universal Aviation, the ground support division of Universal Weather and Aviation, Inc., has more than 40 locations in 20 countries. “We are honored to be the first Universal Aviation location to earn IS-BAH Stage 2 registration, as it demonstrates our never-ending commitment to safety and reducing our customers’ operating risk and stress,” said Sean Raftery, senior director of International Business – Northern Europe and Africa, Universal.
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RUAG REPORTS NEW, OPTIMIZED DASSAULT FALCON 900 C-CHECK PROJECT

RUAG MRO International announced a new contract for a 3C-check on a Dassault Falcon 900LX at its business jet support facilities at Geneva-Meyrin, Switzerland. The returning customer has chosen to optimize the heavy maintenance check to include an avionics upgrade to comply with the European Aviation Safety Agency (EASA) mandate on ADS-B Out, as well as a partial cabin refurbishment. In addition to the avionics upgrade for compliance with Mandate 2020, which is due on 7 June, the 3C-check project also includes a partial cabin refurbishment in the scope of work.

KOPTER GROUP ENTERS THE BRAZILIAN MARKET

Kopter Group is starting the active promotion in Brazil of its SH09, the next generation single engine helicopter, with the appointment of Gualter Helicopteros as sales representative & distributor. Christian Gras, Kopter Executive Vice President Customers, declared on this occasion: “With more than 30-year experience in the helicopter business and having introduced several helicopter models in the Brazilian market, Gualter Helicopteros is the right partner to ensure the success of the SH09 in Brazil.”

AIRFOIL REPAIR SPECIALIST ASSB EXPANDS FACILITY IN MALAYSIA

Airfoil Services Sdn Bhd (ASSB), a 50/50 joint venture between MTU Aero Engines AG and Lufthansa Technik AG, has broken ground on its facility extension. This expansion grows facility space by 5,200 square meters and will increase current repair capacity from 650,000 to 900,000 parts per year by 2020. The company is planning to add another 200 jobs over the next three years, increasing the workforce to around 700 employees. Through its internally developed apprentice program, ASSB took on 124 local apprentices in 2018.

QUICK LANE SWEDISH AIR AMBULANCE ORGANIZATION ACQUIRES SIX PILATUS PC-24S

After a long period of intensive and very professionally conducted negotiations, the “Kommunalförbundet Svenskt Ambulansflyg” (KSA) has opted for six Pilatus PC-24s in a fully equipped air ambulance configuration. These PC-24s will provide aeromedical care across Sweden from 2021. Oscar J. Schwenk, chairman of Pilatus, commented as follows: “I’m delighted to see the first air ambulance organization in Europe opt to buy the PC-24. The highly professional selection process confirmed that the PC-24 is indeed the perfect aircraft for medevac missions.”
When it comes to efficiency and flexibility, the Falcon 2000LXS is everything you want in a business jet. And then some. A range of 4,000 nm/7,410 km. Advanced aerodynamics and wing design for short-field capability. A spacious cabin with every amenity. High-speed connectivity. And to top it off, lower direct operating costs. The Falcon 2000LXS. Nothing less will do.
**AVFUEL TO DEMONSTRATE VIABILITY OF SUSTAINABLE FUEL**

In an effort to further Business Aviation’s carbon neutrality goals, Avfuel will make sustainable aviation fuel (SAF) available to operators fueling at Jackson Hole Aviation on September 3 and 4. For the event, Avfuel will supply 7,300 gallons of SAF to the FBO to fuel operators flying in and out of the airfield during the demonstration days. “We’re committed to raising awareness on the viability of sustainable aviation fuel,” said Keith Sawyer, manager of alternative fuels for Avfuel.

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**FIRST PC-24 SUPER VERSATILE JET FLIES IN SOUTH AMERICA**

In a ceremony at Pilatus Business Aircraft Ltd, the first PC-24 to enter service in South America was delivered to Chilean customer Ignacio del Río. The Super Versatile Jet flies under Chilean registry. It was the 40th PC-24 delivered since the new business jet was certified in December 2017. Ignacio del Río, already a Pilatus owner flying a PC-12 NG, will keep both aircraft and operate them out of his base in Santiago. The new PC-24 will be used in support of del Río’s agriculture and real estate businesses in Chile, Peru, and Colombia. The PC-24’s speed will allow him to reduce trip times relative to those in his PC-12 NG, yet utilize the same runways, some as short as 2,930 feet (893 meters).

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**PIAGGIO AEROSPACE AWARDED MAINTENANCE CONTRACT WORTH 12.6M €**

Piaggio Aerospace has been awarded a contract for the maintenance of the P.180s owned by ENAV, the company that manages civil air traffic in Italy. The agreement, with an estimated duration of approximately 7 years, is worth 12.6 million euro and will guarantee integrated logistic support for ENAV’s fleet of four P.180 Avanti II. “The agreement signed represents a further step forward in the turn-around process of Piaggio Aerospace”, commented Vincenzo Nicastro, Extraordinary Commissioner of Piaggio Aerospace.

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**HONDAJET APMG INSTALL COMPLETED AT BANYAN**

Banyan Air Service recently completed its first HondaJet Advanced Performance Modification Group (APMG) package, which was developed by Honda Aircraft to offer improved performance and avionics capabilities to owners of the HA-420 HondaJet. The APMG package modifies a HondaJet into a better performing HondaJet. It provides the aircraft with a take-off field length reduction of 443 feet to 3,491 feet, forward baggage capacity increased to 200 pounds, an increased maximum take-off weight of 10,700 lbs, resulting in more mission flexibility.
STANDARDAERO RELEASES NEW STC FOR GLOBAL 5000/6000/GEX

StandardAero has completed Supplemental Type Certificate (STC) approval for installing Viasat Ku, Ka or KuKa SATCOM systems on Bombardier Global 5000/6000/GEX model business jets. The system is the fastest Ka SATCOM solution currently available. The new STC product, including radome, was certified on August 22 with the first article being completed by StandardAero’s Organizational Delegation Authorization (ODA) team, located at the company’s Springfield, Illinois MRO facility. The Viasat product line is exclusive to StandardAero on the Global family of aircraft. Installations can be performed by any Viasat dealer.

SECOND FIVE-BLADED H145 PROTOTYPE PERFORMS MAIDEN FLIGHT

Early August, the second prototype of the new five-bladed H145 took off for its maiden flight at the Airbus Helicopters site in Donauwörth. The helicopter will be used for additional flight tests to achieve EASA certification of the new five-bladed H145 in early 2020. The first prototype is currently performing a high altitude test campaign in South America. The second prototype will be mainly used for autopilot testing, performance and airframe structural validation. The new H145 offers 150 kg of additional useful load, while also raising the bar for in-flight comfort, simplicity, and connectivity.

EDMISTON PARTNERS WITH THE LONDON HELIPORT

Edmiston, the world leading yacht company, has taken over the title sponsorship of The London Heliport. Coinciding with the heliport’s 60th Anniversary this summer, Edmiston has undertaken a major re-styling of both the interior and exterior terminal, including a complete repaint of the landing, take-off and apron areas. Effective 1st August, the Heliport will be known as The Edmiston London Heliport. Edmiston Chief Executive Jamie Edmiston commented: “Our aim is to bring the rigorous focus, attention to detail and teamwork that you would find on board a large yacht – to the operation of the heliport.”

UNIVERSAL AND DRIVANIA TO FORM NEW GROUND TRANSPORTATION JOINT VENTURE

Global mission management provider, Universal Weather and Aviation, Inc., and private transportation company, Drivania Chauffeurs, have formed a new joint-venture. Under this agreement, Universal’s ground transportation business, formally under Universal Private Transport, will combine with Drivania’s business aviation division, Drivania Bizav, to create a new ground transportation company focused on the business aviation industry. Universal Private Transport was launched by Universal in 2016 to address the unmet need to better integrate crew and VIP ground transportation into the overall planning and delivery logistics of a mission – reducing 4th party handoffs, reducing scheduling errors with ground transportation providers, and improving response times for changes.
The Av8 Group is expanding their sales team with the addition of Jeff Favati, sales manager. Favati will be responsible for sales and business development across all segments of Av8's markets. Favati has over 25 years of experience in the aviation industry.

FlightSafety International announced that Rick Madarasz has been promoted to treasurer and chief financial director. “Rick is highly experienced in finance, has an in-depth understanding of FlightSafety’s processes and systems, and is an effective leader,” said Trish Lampe, senior vice president and CFO.

Daniel Greenhill has joined FlightSafety Unmanned Systems Training as director of sales. Nora Ann Mishler, director, Unmanned Systems Training, Commercial and Government, commented: “Our customers and prospects will benefit from his experience in aviation training and his commitment to provide outstanding service and support.”

Meanwhile, Michael Burger has been promoted to manager of the company’s Learning Center in Teterboro, New Jersey.

Suren Meras has been promoted to executive director, Operations for the company’s global network of Business and Commercial Aviation Learning Centers. Meras’ responsibilities include pilot, maintenance, cabin safety, dispatch and instructor training as well as customer support, courseware development and simulator operations.

FlightSafety International also announced that Ed Koharik has been promoted to senior vice president, and Danny Robayo to vice president. They will lead Building Our Future, a company-wide transformation effort.

Avant Aerospace promoted John Hardy to director, based at their East Alton, IL (ALN) facility while overseeing all Avant locations. In this new position, Hardy will be responsible for Sales, Marketing and Inventory Sourcing.

Universal Avionics (UA) announced that Hervé Rousselle has been appointed to the position of regional sales manager for Europe. Based out of Lyon, France, Rousselle is responsible for UA’s product sales and overall market growth in France, Luxembourg, Italy, Belgium and French-speaking areas of Switzerland.

Mike Ward has joined DAS/Flite as the vice president of Sales, Parts and Component Repair. Eli DaSilva will assume a director of Business Development role and report to Ward, along with the sales team.

Jet Aviation announced that Grischa Schmidt has been appointed as the new senior director Design Studio. The company’s Design Studio is based in Basel, Switzerland, and includes a team of 16 designers that Schmidt will manage. In his new role, Schmidt reports to Dirk Sapatka, general manager, Basel.

Jet Support Services, Inc. (JSSI) has appointed Business Aviation industry veteran Gary Strapp to the role of senior vice president, global program management and technical services. He will guide the organizational efforts of the program management, pricing and technical services teams. In addition, Strapp will liaise and expand relationships with external strategic partners and vendors, including MRO providers and OEMs.

TAG Aviation has announced the appointment of Joanne Goodall as director of Customer Services for the UK. In this newly created role, Goodall will provide direction and training to the CRM (Client Relationship Management) and CSR (Customer Service Representative) teams throughout Europe and oversee strategic enhancements and opportunities for ongoing expansion in alignment with TAG’s future development.

Baker Aviation, a full-service aircraft maintenance, management and charter company at Fort Worth, Meacham International Airport (KFTW), has announced Ray Goyco, Jr. will be leading the newly formed entity Baker Aviation Services Group, LLC as chief executive officer.

South Africa’s Pegasus Universal Aerospace, pioneer of the Vertical Business Jet (VBJ) Pegasus One, has named Robbie Irons as its chief executive officer.

Meridian, the award-winning private aviation company, promoted Emil Iannone to COO of Meridian Air Charter. He will be responsible for managing and streamlining the charter business, including charter operations, charter sales, aircraft management and marketing. Jeremy Ojerholm has joined Meridian’s charter sales team as a charter sales executive. Ojerholm will be responsible for growing the overall retail charter business as well as focus on business development in the South Florida market.

Swissport has appointed Dr. Peter Waller as chief financial officer and member of Group Executive Management. He will succeed Dr. Christian Göseke, who notified Swissport of his desire to leave the company.
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CAE REPORTS
FIRST QUARTER FISCAL 2020 RESULTS

CAE reported revenue of $825.6 million for the first quarter of fiscal 2020, compared with $722.0 million in the first quarter last year. First quarter net income attributable to equity holders was $61.5 million ($0.23 per share) compared to $59.4 million ($0.26 per share) last year. Net income before specific items in the first quarter of fiscal 2020 was $63.2 million ($0.24 per share).

First quarter segment operating income was $110.9 million (13.4% of revenue) compared with $98.5 million (13.6% of revenue) in the first quarter of last year. Segment operating income before specific items in the first quarter of fiscal 2020 was $113.3 million (13.7% of revenue). All financial information is in Canadian dollars unless otherwise indicated.

“CAE had a good start to the fiscal year with 14 percent revenue growth, 15 percent higher operating income, and over $940 million of orders for a $9.4 billion backlog,” said Marc Parent, CAE’s president and CEO. “Performance was led by civil, which delivered 29 percent operating income growth and showed continued strong demand for CAE’s innovative training solutions. As we look to the remainder of the fiscal year, our outlook for CAE’s annual growth remains unchanged. In keeping with our capital allocation priorities, and underscoring our positive long-term view, I am pleased to announce that CAE’s Board of Directors has approved a one cent or 10% increase to CAE’s quarterly dividend, which becomes 11 cents per share, effective September 30, 2019. This represents CAE’s ninth consecutive dividend increase in as many years.”

Civil Aviation Training Solutions
First quarter civil revenue was $477.6 million, up 11% compared to the same quarter last year. Segment operating income was $98.6 million (20.6% of revenue) compared to $78.3 million (18.2% of revenue) in the first quarter last year. First quarter segment operating income before specific items was $101.0 million (21.1% of revenue), up 29% compared to the first quarter last year. First quarter civil training center utilization was 76%.

During the quarter, civil signed training solutions contracts valued at $693.8 million, including multi-year pilot training agreements with airlines including LATAM, SAS and Air Europa. Civil sold nine full-flight simulators (FFSs) during the quarter.

The civil book-to-sales ratio was 1.45x for the quarter and 1.54x for the last 12 months. The civil backlog at the end of the quarter was a $5.1 billion.

Growth and maintenance capital expenditures totaled $89.0 million this quarter. Net debt at the end of the quarter was $2,312.7 million for a net debt-to-capital ratio of 49.4%. This compares to net debt of $1,882.2 million and a net debt-to-capital ratio of 43.9% at the end of the preceding quarter. Excluding the impacts of the adoption of IFRS 16, net debt would have been $2,058.4 million this quarter for a net debt-to-capital ratio of 46.3%.

Return on capital employed (ROCE) was 11.9% this quarter compared to 12.6% in the first quarter last year, before specific items. Excluding the impacts of the adoption of IFRS 16, ROCE before specific items would have been 12.0% this quarter.

CAE will pay a dividend of 11 cents per share effective September 30, 2019 to shareholders of record at the close of business on September 13, 2019.

During the three months ended June 30, 2019, CAE repurchased and cancelled a total of 58,131 common shares under the Normal Course Issuer Bid, at a weighted average price of $34.41 per common share, for a total consideration of $2.0 million.

SUMMARY OF CIVIL AVIATION TRAINING SOLUTIONS RESULTS
(amounts in millions, except operating margins, SEU and FFSs deployed)

<table>
<thead>
<tr>
<th></th>
<th>Q1-2020</th>
<th>Q1-2019</th>
<th>Variance %</th>
</tr>
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<tbody>
<tr>
<td>Revenue</td>
<td>$477.6</td>
<td>$430.9</td>
<td>11%</td>
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<tr>
<td>Segment operating income</td>
<td>$98.6</td>
<td>$78.3</td>
<td>26%</td>
</tr>
<tr>
<td>Operating margins</td>
<td>20.6%</td>
<td>18.2%</td>
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<tr>
<td>SOI before specific items</td>
<td>$101.0</td>
<td>$78.3</td>
<td>29%</td>
</tr>
<tr>
<td>Operating margins before specific items</td>
<td>21.1%</td>
<td>18.2%</td>
<td></td>
</tr>
<tr>
<td>Total backlog</td>
<td>$5,090.3</td>
<td>$4,148.2</td>
<td>23%</td>
</tr>
<tr>
<td>Simulator equivalent unit (SEU)</td>
<td>242</td>
<td>213</td>
<td>14%</td>
</tr>
<tr>
<td>FFSs deployed</td>
<td>294</td>
<td>260</td>
<td>13%</td>
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JETNET RELEASES FIRST SIX MONTHS OF 2019 MARKET INFORMATION

JETNET LLC, the leading provider of aviation market information, has released the first six months of 2019 results for the pre-owned business jet, business turboprop, helicopter and commercial airliner markets. Except for piston helicopters, all aircraft sectors reported double-digit percentage increases in delivery activity.
decreases in full sale transactions in the first six months of 2019 versus 2018.
For the first six months of 2019, pre-owned business jets are showing a 21.5% decrease in pre-owned sale transactions, and are taking more time to sell (28 days) than last year. Business turboprops saw a 13.9% decrease in sale transactions, while taking 2 days more to sell than last year.
Interestingly, new business jet shipments as reported by GAMA increased by 12.5%, from 281 to 316, in the first six months of 2019 compared to 2018. However, new business turboprops declined by 11.2%, or 29, in the same comparative periods.
Comparing June 2019 to June 2018, turbine helicopters saw a double-digit decrease in YTD Sale Transactions, down 13.3%, while piston helicopters showed a decline of 2.6%. For the first six months of 2019 there were a total of 4,270 aircraft and helicopters sold, with business jets (1,122) and commercial jets (874) leading all types and accounting for 47% of the total. The number of retail sale transactions across all market sectors – at 4,270 – decreased by 874, or 17%, compared to the first six months of 2018.
The general trend has been that growth in business jets has out-paced turboprops in the last seven years. Since June 2012, 3,545 new business jets have joined the global fleet, as compared to 2,193 turboprops.
The number for sale and percentage for sale have declined since 2012. The split between USA vs. Non-USA for business jets in operation has remained at 60/40 levels, whereas the business turboprops split of in-operation USA vs. Non-USA is about 51/49. Interestingly, the number for sale in the USA vs. Non-USA is 61/39 for business jets and 58/42 for business turboprops. Currently, for sale business jets exceeded the 2,000 mark after a steady decline since 2016.
From December 2011, used business jet transactions steadily increased until June 2016 to a high point of 2,725. A falling-off occurred in the second half of 2016 to a low point of 2,522 in December 2016, and has since steadily increased to 2,892 transactions in December 2018. However, starting in January 2019, the 12-month moving average for full retail transactions for business jets has declined to 2,584, or 21.5%.
This decline is only slightly above the low point of 2,522 full sale transactions recorded in December 2016. Accordingly, 2019 is off to a bad start for the pre-owned business jet market.
ENVIRONMENTAL RESPONSIBILITY and sustainability are important areas of focus for companies and citizens around the world. The global Business Aviation community has also demonstrated its serious commitment to further reduce greenhouse gas (GHG) emissions from business aircraft, and these efforts will be in focus throughout the upcoming NBAA Business Aviation Convention & Exhibition (NBAA-BACE) coming to Las Vegas, NV from 22-24 October 2019.

Among the ways Business Aviation has confronted this issue is through increased use of sustainable aviation fuels (SAF) derived from renewable feed stocks and other sources that help today’s aircraft burn cleaner and more efficiently. Our industry is also looking toward future propulsion technologies that move away from fossil fuel entirely.

Business Aviation has always been an early adopter of technologies to reduce environmental impacts. One of our most significant milestones in this area came 10 years ago with publication of the Business Aviation Commitment on Climate Change (BACCC), a program outlining a continued effort in reducing the industry’s carbon footprint. SAF was soon identified as one of the most promising avenues toward achieving those goals with today’s business aircraft.

At the 2018 European Business Aviation Convention & Exhibition (EBACE2018) in Geneva, a coalition of international Business Aviation organizations joined government officials to redouble the focus and effort on advancing the development and adoption of SAF. At the center of this initiative was The Business Aviation Guide to SAF, focused on raising awareness and adoption of available and emerging sustainable aviation fuel options, and providing a road map for the education about, and use of, these fuels.
The next step in raising awareness and promoting education of SAF benefits came in January 2019 with the first-ever SAF demonstration day in the United States at California’s Van Nuys Airport (VNY) to prove the fuels’ viability and safety. That effort led to the first European SAF demonstration day in May 2019, held at Tag Farnborough London Airport in England ( EGLF) ahead of EBACE2019.

As I said before, SAF is just one aspect of our industry’s ongoing sustainability efforts. As we look ahead to the next five, 10 and even 20 years, we know that Business Aviation will continue to advance towards an increasingly small environmental footprint. That includes moving toward adoption of hybrid gas-electric and, ultimately, fully electric propulsion in urban air mobility (UAM) and business aircraft applications.

Earlier this year, EBACE2019 hosted its first-ever EBACE Innovation Pavilion showcasing three different electric powered vertical takeoff and landing (eVTOL) aircraft and concepts, while the EBACE Innovation Zone hosted a panel presentation on eVTOL and the UAM revolution. These events built upon a packed, standing room only session at last year’s NBAA-BACE that offered attendees several revelations about this emerging industry to the Business Aviation community.

These exciting and forward-looking efforts to promote sustainability will also be in focus at the 2019 edition of NBAA-BACE. Among the more than 60 educational opportunities available before, during and after the show will be an informative discussion regarding Business Aviation applications for eVTOL and artificial intelligence.

SAF will also be highlighted in Las Vegas, with an in-depth discussion of both the benefits and potential drawbacks of this exciting movement. A second education session will address the industry’s broader commitment to sustainability, including new technologies and procedures to improve efficiency and reduce carbon emissions. Additionally, many aircraft on static display will travel to NBAA-BACE fueled on SAF.

On behalf of NBAA, I invite readers of BART International to join the more than 23,000 Business Aviation professionals expected to attend NBAA-BACE and learn about these sustainability initiatives and other areas of focus for the global Business Aviation community. We hope to see you in Las Vegas!

NBAA LAUNCHES NEW COMMITTEE TO SUPPORT INNOVATIVE TECHNOLOGY

NBAA is soliciting members for its new Emerging Technologies Committee, which will focus on promising aviation technologies like unmanned aircraft systems, urban air mobility, unmanned traffic management, commercial space and other future technologies and infrastructures. “NBAA is excited to launch this new committee to support developing technologies that represent significant growth opportunities for its member companies,” said Heidi Williams, NBAA’s director of traffic services and infrastructure. “The aviation professionals who make up this committee will help drive the future of aviation safety and policy.”

The group also will consider autonomous operations, electric propulsion and other innovative technology and specifically, the integration of these new technologies into the National Airspace System.

The committee will provide insights that allow NBAA to better advocate on behalf of industry on rulemaking, standards setting and policy-related activities. It will also conduct educational and training sessions for NBAA members and represent the industry by liaising with industry organizations and regulators in the U.S. and globally.

NBAA is soliciting applications for committee membership and is looking for members with current experience in: integrating emerging technologies into the National Airspace System, developing emerging technologies, supporting emerging technology infrastructure and training of emerging technologies.

NBAA encourages representatives of manufacturers, software developers, operators and other interested organizations to apply for committee membership.

Committee members should be willing and able to participate in influential regional, state or national standards and regulatory bodies, commit resources from their member company or organization and actively participate on committee and relevant subcommittees.

“This committee is an opportunity for innovators in aviation to influence consensus standards and regulations that will allow for safe integration of new technology into the NAS,” added Brad Hayden, president and CEO of Robotic Skies and chair of the new committee.

INSPIRATIONAL PILOT IRVING TO RECEIVE AMERICAN SPIRIT AWARD

The National Business Aviation Association (NBAA) announced that Barrington Irving, who in 2007 became the youngest pilot to fly solo around the world in a single-engine airplane and who has continued to inspire young people to pursue careers in aviation and aerospace, will receive the association’s 2019 American Spirit Award at the NBAA Business Aviation Convention & Exhibition (NBAA-BACE).

Irving was born in Kingston, Jamaica and grew up in inner-city Miami, FL, believing that college football represented his only opportunity to receive a higher education. Although Irving received several scholarship offers out of high school, he instead opted to pursue a career in aviation under the guidance and mentoring of a Jamaican airline pilot.

Those experiences set Irving on a course that culminated in his 97-day solo flight around the globe in a single-engine piston aircraft – appropriately christened “Inspiration” – to demonstrate to young people worldwide that they could also achieve their dreams. He then founded Experience Aviation, based at Opa-Locka Executive Airport, and established the Experience Aviation Learning Center dedicated to empowering middle and high school students in the Miami area to pursue science, technology, engineering and math (STEM) careers, including within aviation and aerospace.

“After discovering his own future in aviation, Barrington Irving has dedicated his life in a tireless effort to promote STEM careers as accessible and attainable paths by which others may pursue and realize their own dreams,” said NBAA President and CEO Ed Bolen.

Irving has continued to encourage students from all walks of life with the Flying Classroom, combining air, land and sea expeditions with a digital curriculum. The NBAA American Spirit Award is presented in recognition of an individual within Business Aviation who exemplifies the courage, pursuit of excellence and service to others that characterize men and women who created and nurtured the American aviation community.
Late summer is the time, when the Business Aviation community migrates to Moscow for RUBAE. The trade show at Moscow’s Vnukovo airport attracts not only exhibitors and attendees from the CIS countries, but from Europe and North America as well. Volker K. Thomalla reports

RUBAE in Moscow is without a doubt the largest and most important Business Aviation event in the Commonwealth of Independent States (CIS). This year, it will take place from September 11 through September 13 at the Center of Business Aviation at Vnukovo Airport’s dedicated Business Aviation Terminal Vnukovo 3.

The official show directory lists over 50 companies and organizations that will exhibit at RUBAE. Besides aircraft manufacturers like Airbus Corporate Jets, Airbus Helicopters, Bombardier Aviation, Dassault Aviation, Embraer Executive Aircraft, Gulfstream Aerospace and Leonardo Helicopters, FBO’s like Domodedovo Business Aviation Center, Jetex, Italy FBO and others are offering their products and services. RUBAE expects more than 8,000 visitors during the three day event.

The organizers have already secured over 30 aircraft which will be on display at the show. RUBAE’s static display is conveniently located right outside the exhibition hall, easing access to aircraft and helicopters on display. Gulfstream Aerospace will once again send its range of aircraft to Moscow which expanded recently with the certification of the G500 and G600. While the G500 was shown at RUBAE 2018, attendees of RUBAE 2019 might see the G600 for the first time in Moscow this year. The aircraft was certified by the US Federal Aviation Administration (FAA) on June 28 this year. The first delivery to an unnamed customer from the US took place in early August. The long-range business jet is powered by two PW800 turbofans from Pratt & Whitney Canada and offers its operators a range of 6,500 nautical miles its long-range cruise speed of Mach 0.85.

The aircraft is one of the most tested business jet in Gulfstream’s history. The design and test program included no less than 100,000 hours in the company’s laboratories and more than 3,200 flight hours. The G600 even set ten city-pair speed records before certification.

Its smaller sibling, the G500, was certified a year earlier. One of G500’s largest customer, Qatar Executive, took delivery of its first two G500 in December last year. The Executive Aviation branch of Qatar Airways was the first international customer of this type. Qatar Executive will be exhibiting at RUBAE in September. The G500 is capable of flying 4,400 nauti-
There will be over 50 companies and organizations that exhibit at the show.

The French manufacturer Dassault Aviation has long lasting ties with Russia. The company has been an exhibitor at RUBAE and its predecessor JetExpo from the very beginning. Dassault Falcon Service (DFS), the service and maintenance arm of Dassault Aviation, operates a DFS Satellite Service Station at Vnukovo Moscow Airport to serve its customers in the region.

The manufacturer will have, once again, a significant presence at RUBAE, showing its flagship, the Dassault Falcon 8X as well as most probably a Falcon 900LX, which proves to be popular among operators in the CIS. The current flagship Falcon 8X was certified by the Russian Federal Air Transport Agency in spring of 2017. The first delivery to a Russian customer took place in summer that year. The Falcon 8X’s range of 6,450 nautical miles (11,945 kilometres) puts most of the world’s economic and political centers within nonstop reach from Moscow. The 8X is – as well as all other current members of the Dassault Falcon family capable and certified to operate in and out of demanding short-field and steep-approach airports like London City Airport.

Customers in the region will be eager to learn more about the new Falcon 6X, which replaced the Falcon 5X that was cancelled after engine manufacturer Safran Aircraft Engines had to repeatedly postpone the delivery of its Silvercrest turbofan it has in development. The Falcon 6X was launched in February 2018 and features the widest cabin of all purpose-built business jets. It will have a range of 5,500 nautical miles (10,186 kilometres) and a top speed of Mach 0.90. It is powered by two PW812D PurePower turbosfans from Pratt & Whitney Canada. From Moscow, the 6X can reach Singapore, Beijing, Tokyo, New York and Los Angeles nonstop.

After a critical design review, Dassault has frozen the design of the Falcon 6X right before EBACE in Geneva in May this year. The manufacturer has begun producing first parts for the aircraft right after design freeze. The parts and components include fuselage frames, skin panels and wings. At the Paris Air Show in June, the French manufacturer had a Falcon 6X fullsize cabin mock-up on display. The program is on track to assembly of the first aircraft in early 2020 and first flight in 2021. Dassault is planning to hand-over the first Falcon 6X to a customer in 2022.

The Canadian OEM Bombardier Aviation is a return-exhibitor in Moscow. Last year, the company had
two aircraft on display: a Challenger 350 and a Challenger 650. This year, the focus will be on the new flagship of the company, the Global 7500. The Russian market is well-known for its appetite for large cabin Business Aircraft. Therefore, the manufacturer will highlight its Global 7500, which is the largest and most spacious purpose-built business jet. Bombardier’s flagship entered into service at the end of last year. During the development and flight test phase of the program the aircraft proved to perform better than calculated. The aircraft range extended from the envisioned 7,400 nautical miles (13,704 km) to 7,700 nautical miles. Due to the long flight time of the 7500, Bombardier has put a special emphasis on comfort and productivity in the cabin. The manufacturer gas equipped the 16.59 meter long and 2.44 meter wide cabin with four different cabin sections. The aircraft can be completed with up to 19 passenger seats, but a more typical seating sees between 12 and 14 passengers. A large galley and a crew rest compartment are installed in the cabin, too. Optionally, even a steamer for the Galley is available. There’s also an option for a shower. Bombardier has designed a new seat whose name “Nuage” (French for cloud) already indicates that the users of this chair should feel as if they were bedded on clouds. Currently, the new passenger chair is available exclusively on Global family aircraft.

Embraer Executive Aircraft has launched two new midsize business jets, the Praetor 500 and Praetor 600 in October last year. While the Praetor 600 was certified in spring this year, the smaller Praetor 500 received its type certificate from Brazil’s ANAC on August 13. The manufacturer celebrates its 50th anniversary this year. Michael Amalfitano, president & CEO, Embraer Executive Jets, said: “The certification of the Praetor 500 is a welcome achievement for the celebration of our golden jubilee. This revolutionary aircraft is a testament to the commitment of our teams to excellence and a foretaste of the pioneering that Embraer will accomplish throughout the next 50 years.”

RUBAE is supported by the Russian United Business Aviation Association (RUBAA) which is about to expand significantly. Currently, RUBAA represents mainly Russian Business Aviation stakeholders, but at a board meeting in May this year, it was decided, that membership will be open to companies from all CIS countries. The board’s decision still has to be approved during RUBAA’s general assembly in September. “This is an important step in the development of the association,” says Yaroslav Odintsev, RUBAA’s president and chairman of the board. “It has been discussed for a long time and is well thought out and planned. Colleagues from CIS countries have shown solid interest as our markets have strong links and Business Aviation is rapidly developing. A joint organization representing our mutual interests is not just a brave idea but a necessity. Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia are members of the customs union of the Eurasian Economic Union. Joint efforts will definitely serve the development of the industry in this territory, first of all in benefiting from economic opportunities that the customs union provides.”

RUBAE is organizing the conference program for RUBAE 2019. During the first two days of the show, there will be presentations and discussions covering important topics for operators. “Conferences and workshops are an important part of all trade shows worldwide. And RUBAE is no exception. Last year, the program was organized and performed at the highest level. This enhanced the level of the show and attracted participants. Presentations will be no longer than one hour, meetings are optimal, and attendees and exhibitors can choose events of their interest without being distracted from meetings and negotiations. We hope that this year the level of the events will be just as high”, commented Igor Mudrik, CEO of Vipport, the venue host.
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**IT’S TIME FOR A BETTER APPROACH.**
What new requirements have been implemented in Russia recently?

March 2019 was remembered by the tense situation associated with the new rules for customs clearance of aircraft operating within the territory of Eurasian Economic Union (EAEU) and the requirements to coordinate the transportation of passengers and cargo with local carriers. However, these requirements and rules can only be conditionally called new, since the legislative framework was prepared in early 2010. Changes in regulatory documents, promptly adopted in late April and late June 2019, made it possible to slightly alleviate the situation.

How do operators comply with the new requirements?

It’s complex. Domestic, private flights (i.e. not for hire or commercial gain) on aircraft of less than 28 tons BOW or with 19 passenger seats or fewer must accomplish the customs procedure called IM53 (Import 53). Domestic flights itself are now defined as flights within the EAEU, which consists of Russia, Armenia, Belarus, Kazakhstan, and Kyrgyzstan. Implementing IM53 procedure for CIQ is quite complicated and, in most cases, requires a customs broker to be completed. The cost of procedure is approximately 1000 EUR. The process requires a number of documents to be prepared and submitted. Better have at least three working days before arrival.

I highly recommend that any business aviation operator planning on flying domestic legs within Russia, begin planning well in advance and work with an experienced trip support provider, as this situation has been fluid and is open to interpretation.

What other changes have their been?

Rules of transporting passengers, including cabotage issues, are now regulated by Government decree #527 and requires more coordination efforts and documents to get a permit. Starting June 21, 2019, to obtain permission for the carriage of passengers or cargo by internal or outward legs, coordination with local carriers is required. Previously, this was required only for aircraft with more than 20 seats, now it concerns everyone. Such coordination is not required in case the category and purpose of the flight is Private non-commercial, the flight is in the interest of owner and the contract of transportation was not concluded.

What are you recommending to your clients?

For now, the most safe option for our operators, who fall into the category of (greater than 28 tons BOW and/or more than 19 passenger seats) is to keep contact with a trip support teams to develop optimal route and consider available options before the flight thru EAEU.

Much uncertainty remains regarding sanctions. In order to not lose flights that might be legal based on hearsay and incorrect information, we’re recommending that operators reach out to us directly so that we can discuss the specific circumstances related to their flight.

Can you explain the decree for declarations of precious metals that went into effect late 2018?

Last November, a new Decree of the Government of the Russian Federation regarding declarations of precious metals went into effect requiring all departing and arriving passengers on international flights to/from Russian Federation or the countries of Customs Union to declare all precious metals and stones valued at greater than 100K RUR ($1,500 USD).

According to the decree, this includes precious metals and stones,
When operating to Russia, required visas should be obtained prior to arrival and precious stones valued at greater than 1,500 $ should be declared.

...
Commercial aircraft have priority at all three airports for airport slots, aircraft parking, fueling, and de-ice services.

UUWW is a 24-hour Airport of Entry (AOE) with a General Aviation Terminal (GAT) offering Customs, Immigration, and Quarantine (CIQ) clearance on-site. This airport does not have noise restrictions, and aircraft parking space is usually ample. Note that diplomatic flights normally use this airport, and airport authorities will shut down airport operations with little notice, for head-of-state or certain diplomatic flights. There’s an additional parking fee to park close to the GAT at Terminal 3.

Airport slots should be requested as soon as schedule is known. Slot deviation is +/- 15 minutes. Short-notice PPR requests may be possible depending on parking availability. If parking is not available at UUWW, the aircraft may drop off/pick up passengers and depart. While there is no limitation in terms of extended parking, fees do escalate on a per-hour basis. Note that hangar space may be available for GA, on a first-come, first-served basis, but this can be very expensive, particularly during winter months.

UUDD is a 24-hour AOE. GAT and GA CIQ clearance are at the AVCOM D terminal, and clearance takes approximately 15 minutes. No airport slots or PPRs are required for UUDD, and hangar space for up to the size of a Gulfstream V is available on a first-come, first-served basis. This airport has plenty of aircraft parking, and parking charges are based on metric tons on a per-hour basis.

UUEE is also a 24-hour AOE and currently has no noise restrictions. Note that UUEE has a strict airport slot allocation program in place with a slot deviation of +/- 15 minutes. It’s best to request airport slots as soon as schedule is known. In case of schedule changes or delays, please advise your ground handler ASAP.

GA clears CIQ at a GAT separate from the rest of the airport, and clearance time is approximately 20 minutes. Note that this airport has heavy commercial traffic, and aircraft parking can be an issue. The first three hours of parking are free.

While all three Moscow-area airports are good stops and have their unique advantages, UUWW is the preferred choice for most operators – followed by UUDD. UUEE, due to its high level of scheduled commercial traffic and strict adherence to slot times, may limit opportunities for schedule changes.
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2018 has shown quite inconsistent results in the Business Aviation market. On one hand, European market players are mentioning a decrease of “Russian” charters: German Consulting Agency WINGX Advance states that 13 out of 20 main European markets have shown a growth in 2018. However, amongst leading European countries, only Germany and Spain have been showing a stable increase of charter flights during the year. In the second half of 2018 UK, France and Italy experienced significantly lower activity, while Russia and Turkey showed the biggest activity decline. Russian brokers, on the contrary, have been pointing out a notable recovery on the charter market. It’s related to hosting of the Football World Cup, reflecting in more than 100% traffic spike and more than 1000 times increase of charter flights requests for some destinations. The exact statistics is still not being kept in Russia. However, market players converge in opinion that “flying less” is definitely not the case.

DEVELOPING NOT BECAUSE OF, BUT DESPITE

The enhanced monitoring of compliance with customs regulations, increased interest in charter flights and their cost growth, opening of the first business jet construction plant in Russia, attention to air taxi business model are so far the main trends and events of 2019. Russian Business Aviation market continues to develop not because of, but despite. At the same time restrictions and prohibitions extend to the point of absurdity.

Anna Nazarova writes
INTRODUCING...

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In general, 2018 was quite successful for the Business Aviation industry, and such a grandiose event of the last summer as Football World Cup, which took place in different Russian cities, played a role of a great asset in this success,” says Dmitriy Petrochenko, project manager of Bizavianews.ru, the biggest Business Aviation news website in Russia and CIS. Almost all Russian and the majority of foreign operators and aircrafts were involved, also to coincide with this event, Russian government allowed foreign operators to perform domestic flights within Russia (cable-tage), which increased the supply of charter jets.

The representative of the Russian broker company LLJets has the same opinion. “Indeed, there was a growth in 2018. It was different for different broker companies, but definitely unconditional and significant. On one hand, it was related to the World Cup, on the other hand to natural development of the market. The increase here in LLJets reached 22%,” says the co-owner of LLjets, Alisher Elmuradov. “Definitely the situation hasn’t become worse in 2019. The intensity of flights during spring months was even higher than usual.”

Russia still stays under the pressure of sanctions, nevertheless now they are perceived by the market as a chance to evolve further.

“Certainly, when it comes to the influence, the sanctions theme comes to the fore. However, paradoxically, we see here a significant perspective for our industry - the return of assets under the jurisdiction of Russian Federation. This also relates to the airplanes,” says Anna Serezhkina, the COO of Russian United Business Aviation Association (RUBAA). “We expect that aircraft management will move from foreign operators to Russian ones. An airplane is a generator of all kinds of business in the industry. It needs parking, handling, maintenance and fuel. Therefore, it provides a cloud of goods and services, which are essential for its successful and safe operation.”

The COO of RUBAA considers that the more airplanes will be in Russia, the more opportunities will be provided to the industry in general, including maintenance facilities, ground infrastructure, ground handling and service companies – from aircraft cleaning to catering and training of personnel.

But perhaps the most significant event was not even the imposition of sanctions, but rather the implementation of tighter control of customs regulations compliance. In March 2019, the Investigative Committee of Russian Federation accused the “Sfera Jet” company of customs fees evasion. Four business jets were seized and criminal proceedings were initiated against the CEO of the company. Investigation information states that from August till September 2018 managers and employees of the company, Domodedovo airport customs personnel, along with a group of unidentified persons, acting as an organized criminal group, have created conditions for implementation of illegal private flights within Russia. The management of the company leased four business jets to operate private domestic flights from Domodedovo Airport. “No customs duties were paid when importing the airplanes to Russian Federation,” says the Investigative Committee. This illegal activity has resulted in the loss of 600 million rubles (9,4 million US dollars).

Obviously, behind these formal expressions lies just an ordinary practice. The majority of business jets, operated on behalf of conditionally Russian owners, don’t have
In March 2019, a Russian investigative committee accused the “Sfera Jet” company of customs fees evasion.

In case the airplane with a foreign registration lands in Russian Federation, the document for temporary concessional import, called “Import 53”, has to be issued. The precedent with “Sfera Jet” shows that some companies complied with this regulation, others just turned a blind eye to it. After the case with confiscation of the jets no more flights to Russia without issuing the above pointed document were conducted, which immediately affected the market.

This notorious “Import 53” form allows only non-commercial operations within Russia, which means that only the owners of the jets can fly domestically. Strengthening measures are still progressively taking place. In the recent past any domestic flight on a non-Russian registered airplane needs to have an agreement from a certain list of Russian operators. This directly influences the amount of charter supply market leading to the cost increase of the charter flights. “Simple economics rule: The less is the supply, the more is the cost,” says Dmitriy Petrochenko.

In private discussions, Russian market players tell about upsurge charter flights demand, which occurred in the spring of 2019. Strengthening of customs control has led to the situation when from April till June 2019 the owners couldn’t use their jets for domestic flights in Russia. “Import 53” didn’t cover airplanes with a big take-off weight, so the form physically couldn’t be filled in, as it simply didn’t exist for such airplanes. But the necessity to fly was still there. Therefore, the owners of those jets had to rent charter airplanes. That period is characterized by a sharp spike in charter flights demand, which got back on track just by the beginning of June as the regulator issued a declaration for temporary import with a small import duty. Thus, now here in Russia we’ve got a legal way for temporary import of business jets for private operation.

Nevertheless, the situation with charter flights supply on the Russian market stays under pressure and tight control. Charter jets with non-Russian registration appeared to be literally cut off the market. It resulted in providing ideal conditions for Russian operators: The demand stayed the same, while the supply dropped down dramatically. At the same time, the cost naturally went up, and reached a 30% increase from the beginning of 2019. Even despite of the costs, the demand for charter flights within Russia stays very high. By the way, charter market supply crunch has triggered quite an absurd situation: Customs duties cover all countries of the Customs Union, which includes Russia, Belarus and Kazakhstan. Before the regulator has issued a declaration for temporary import, to fly with a business jet from Moscow to Minsk, a stop in Riga on the way had to be planned.

For the record, the fight of the regulator with non-Russian registered airplanes has one more branch. It became known in June that the non-Russian registered airplanes, being a part of Russian companies’ fleet, can stop operating. Russian CAA has started to ignore the agreement with Bermuda Island, where these airplanes are registered. Russian CAA received a letter from Russian Ministry of Foreign Affairs, stating that the agreement with Bermuda Islands is not considered to be international, which means it doesn’t have a priority over national legislation. We can only guess where these attempts to stimulate the companies to register their airplanes in Russia are leading to. At the moment, a possible ban on Bermuda’s registration can negatively affect not only Business Aviation, but a regular one as well, where the role of the biggest operator of “Bermudian” airplanes plays a national carrier “Aeroflot”. To sum up, we can say that lately the Business Aviation market is a market of a client. Operators and broker companies do their very best to meet their clients’ both cost and quality expectations.

“About 80% of clients carry out kind of tenders among the brokers, and brokers, in turn, among the operators, are searching for optimal value for money for the flight. This trend
will be only developing in 2019-2020,” says the representative of Bizavianews.ru. “It only benefits the clients. Operators and brokers rather lose. Operators are forced to cut costs where possible, primarily for catering and maintaining the cabin, which at the end affects the clients themselves.”

**VLJ. Made in Russia**

In the first half of 2019, for the first time in the history of contemporary Russia and USSR, the agreement on building business jets was signed. And all this is about a production of a very light jet Victory. It’s known as an experimental single-engine turbojet which was created by American manufacturer Epic Aircraft in 2007. S7 group, part of which is the second biggest Russian airline company S7 Airlines, will invest 14 billion rubles (more than 220 million US dollars) of its own funds in construction of the plant in Stupino, located in the south of Moscow region. It is noteworthy that the co-owner of S7 group, Natalia Fileva died in an Epic Aircraft plane crashed in March 2019. Nevertheless, it hasn’t stop the company, which apparently has a strong belief in a light jet development in Russia & CIS.

At the moment it’s hard to judge how successful this project will be in the future. A state project Sukhoi Super Jet 100 has production of 40-50 airplanes, while the private project is aiming for 20-25 followed by successful sales. Tremendous certification and marketing costs, world market competition, sanction risks related to delivery of engines, avionics, spare parts leave the question of success open.

As expected, the start of the works construction will take place in the 4th half of 2019 and the completion of construction is planned for the 3rd quarter of 2025.

An agreement between S7 Group and Moscow Region Government was signed during St. Petersburg International Economic Forum 2019 (SPIEF).

A word about SPIEF: This year a record number of business jet passengers arrived to the largest Russian economic platform. During three days of the Forum “Pulkovo-3” handled 1772 passengers which arrived with 552 business jets. For example, last year the figures were 1674 passengers and 647 flights, in 2017 – 1586 passengers and 544 flights, and in 2016 – 1475 passengers and 545 flights.

“The peak days this year were the 5th and the 7th of June. We are very pleased with the fact that we haven't received any claims and complaints during all Forum period of time,” comments the “Pulkovo-3” team.

**Taxi Aims into the Sky**

Popular in US and Europe, the air taxi trend has finally reached Russia. Almost simultaneously, several companies have started to research and develop the concept of air taxi.Apparently, Russian Business Aviation market has reached the development stage, when it’s ready to become more mass. Time will show exactly which concept of air taxi will be more appropriate and stable for Russian market, but at the moment we can observe the development of two concepts: Using helicopters and VLJs.

Following the popular aggregator Uber, which for some years has been including helicopter operators into their system in Europe and Dubai under the brand name UberCOPTER or UberCHOPPER, Russian market may introduce such a service as well. The biggest helicopter manufacturer in Russia, “Helicopters of Russia”, along with the government of Moscow, service aggregator “Yandex.Taxi” (Russian analogue of Google) and the provider of technical solutions for air traffic management are in talks regarding integration of helicopter operations into mobile online taxi service.

It’s also worth noting that the airspace within Moscow ring road is still closed for commercial flights, which impedes the project to gain the most attractive part of the market. Chairman of the Board of Helicopter Industry Association, Mikhail Kazachkov, notes that opening Moscow airspace for private flights is one of the most important streams of the business. He’s absolutely con-
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vinced that the airspace will be opened sooner or later, but it’s too early to speculate on specific dates yet.

In the Moscow region, the helicopter taxi service is provided by several operators. Heliport Moscow, the helicopter transportation supplier, mentions that ridership to the destinations in the Moscow region area is sufficient enough for developing such a business as air taxi. Contrary to the public opinion that the integration with the aggregator is harmful for the business, “Heliport” says that about three years ago it took the initiative of integration with “Yandex.Taxi”. Back then, a number of meetings with representatives of Yandex was implemented, but at that moment, the idea was evaluated to be too complicated and the project was suspended.

“I’m convinced that part of Yandex.Taxi clients could easily use the services of helicopter taxi. Just nobody has ever had a proper thought about it. In terms of practical use for customers it is a direct development of transport system, simplification of personal logistics, significant time and efforts saving,” says the representative of Heliport.

Republic of Dagestan can already boast of fully operating helicopter taxi. The Makhachkala Airport in cooperation with LIS Trading Group, a member of Aim of Emperor Group, has carried out the first project of Helicopter Taxi in the interests of Republic of Dagestan. The fleet consists of Airbus Helicopters with a base at the intensively developing Makhachkala International Airport.

Within the establishment of air taxi operator structure engaged experts have analyzed and determined the optimal type of the helicopter, provided flight crew recruitment, coordination of the fleet registration in the operator’s AOC. The airport of Makhachkala has completed a construction of a modern hangar and helipads and received two H130 helicopters. The airport management team says that it’s a pilot project of helicopter services, which hasn’t been presented in the region before.

“There is an existing demand for helicopter services, which includes both business and leisure trips. The tourist segment is rather small, yet in demand. For example, Dagestan had visitors from UAE, and they actively used helicopters. Therefore, we can say that helicopter services will be interesting for foreigners and local citizens,” the Director of Makhachkala International Airport Arsen Pirmagomedov said.

“Thanks to realization of the helicopter project, the region has received a unique service of safe and mobile air transfer,” commented Roman Malyushkin, a managing partner in LIS Trading Group. “Aviation start-ups is one of our business specializations, and we are always looking forward to assist regional enterprises in aviation projects implementation.”

But perhaps the title of the most ambitious project could go to the concept of air taxi, which is being developed by Aim of Emperor Group, using light jets HondaJet. For the first time in Russia, we will see a classic model of air taxi with turbojets. Its route network will be the main feature of the project, and will be aiming not only at the capitals, but at regional centers of the country. “Aim of Emperor” says that in the initial phase of the project 3 HondaJet will be based in Moscow, St. Petersburg and Krasnodar, one in each city. Each of them will cover the most economically strong located within 1900 km from the base of the jets.

Irakli Litanishvili, the owner of “Aim of Emperor” Group, claims that Russian market is ready to accept a new business model. On one hand, charter flights market is facing a trend of cost optimization. Some passengers of charter flights, have changed to flying with business class on airlines, the others have started to pay more thorough attention to flights cost structure. More and more clients are looking “empty leg” options, comparing offers from different operators and looking for more affordable flights. At the same time, the new trend of “business class blurring”, which is noticeable during the past 3-4 years in Russian airlines industry, has reached the segment of Business Aviation. Passengers are more psychologically ready to replace excessive luxury with reasonable practicability. Some of the passengers prefer travelling with unfamiliar companions using the affordable coach share model to hiring the jet. Another important point is the fleet structure and the age of jets, having Russian registration and operating domestically. Statistics shows that light jets and midsize jets have the average age of 35-40. Obsolete jets are not anymore able to meet comfort and safety requirements of today’s private aviation. Nowadays passengers have their subjective criterion of safety – having the choice of several jets of the same class for Russian domestic flights, they will choose newer and slightly more expensive one.

It’s interesting to note that besides the increased level of mobility of wealthy people, there will be a new social target to be achieved. For the first time in Russia, an environment for executive aviation pilot training will be created, and it will have a base at Ulyanovsk Flight School.
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The Russian government aims to turn Crimea, the disputed Ukrainian territory annexed by Russia, into a new center for Business Aviation. The move is part of an ongoing effort to improve the peninsula’s international image and to attract foreign investors. Eugene Gerden reports.

According to one government authority, the new Business Aviation airport will likely be established already this year and will be located at Sevastopol’s Belbek Airfield. Belbek Airport, built in Russia soon after the start of World War II, was initially used by the Soviet Air Forces. From 1970-1980 it was revamped to better deal with governmental aircraft. After the collapse of the USSR, further development of the airport was mostly suspended, only being resumed after Russia’s annexation of Crimea in 2014.

The idea of turning the Crimean Republic into a new Russian center for Business Aviation was initially approved by Russian President Vladimir Putin back in 2016. Putin instructed the Russian federal government, as well as the authorities of the Crimean Republic, to prepare a number of proposals for developing Business Aviation within the Crimean Peninsula. However, implementation of these plans was suspended shortly thereafter due to the imposition of economic sanctions against Russia by Western countries. Plans were only resumed last year thanks to a significant improvement in the Russian economy.

Evgeny Plaksin, general director of Simferopol International Airport LLC (the managing company of Belbek), says that after reconstruction is complete, Belbek Airport will primarily focus on serving the needs of Business Aviation and will be one of the largest bizav airports in all of southern Russia. Plaksin says that building of the main business terminal has already started and is expected to be completed by the end of the current year. He also notes the Russian Defense Ministry successfully completed reconstruction of the...
main runway last year. It currently has the length of 3.45 km and can deal with all types of business jets and even large commercial aircraft.

Belbek Airport will begin full-scale operations at the beginning of 2020. Although the volume of investments in the project has not been disclosed, according to some sources in the Crimean government, they are estimated between US $150 and $200 million. The majority of funds will be allocated from the Russian federal budget and the budget of the Crimean Republic.

Once operational, many Russian analysts believe Belbek Airport will be ideally suited to serve the region’s Business Aviation needs. For example, due to its location some distance from Sevastopol, its use by commercial airlines is economically unreason-able.

**Welcomed News**

As an official spokesman of the Russian Presidential Administration told *BART International*, the development of Business Aviation in the Crimean Republic is considered a strategic task by the Russian government, as successful implementation of these plans should provide an impetus for a further economic development of Crimea and will significantly improve its business climate. It will also stimulate large businesses, both domestic and foreign, to invest in the Crimean economy which, due to sanctions, is currently experiencing an acute shortage of direct investments.

For many leading Russian and foreign business jet operators, the new development is welcomed news. According to Denis Mazirka, head of TopAvia, one of Russia’s leading business jet operators, most market players support the idea of turning the Crimea into a Business Aviation hub. He notes that doing so will be particularly beneficial to foreign airlines, operators and the owners of private jets to Russia and the Crimea in particular.

**The Big Picture**

The renovation of Belbek Airport is just one component of a comprehensive strategy for building Crimea’s Business Aviation infrastructure. According to recent statements by an official spokesman of the Crimean Ministry of Transport, similar plans are now being considered for other regional airports, including Koktebel, Evpatoria and others. The only problem with moving these plans forward is a shortage of available land for building the necessary infrastructure – the Crimean Peninsula is a heavily mountainous area. Of the sites that would be suitable for airport infrastructure, most are already being used for agriculture, industry or military purposes.

The development of the Business Aviation sector in Crimea will also involve a massive training of airline pilots. For this purpose, the Russian federal government recently approved the opening of a branch of the Russian Ulyanovsk Institute of Civil Aviation, Russia’s most prestigious flying school, in Crimea. These plans have been confirmed by Sergey Aksenov, president of Crimea. In addition to common commercial pilots, the newly established branch will focus on the training pilots and staff specially for the needs of Business Aviation.

According to Aksenov, the development of Business Aviation has a strategic importance for the Crimean Republic – and Russia in general – especially in a view of the possible lifting at least part of the
sanctions against the country. He notes that doing so could result in an influx of potential investors to Crimea.

**Bring in the Billionaires**

As to funding, the Russian government is depending on state reserves and the financial support of domestic private businesses. As to the latter, the government hopes it will be able to convince large domestic business to provide funding for the development of Business Aviation in Crimea, as it did in the case of yachting.

Currently, the Crimean Peninsula is one of Russia’s leading yachting destination, a position it achieved thanks in large part to funding coming from Russian billionaires, such as Oleg Deripaska and Arkady Rottenberg. Some of these people may provide the funding needed to develop Business Aviation in the Crimean Republic. According to a spokesman of the Russian Presidential Administration, negotiations are already underway.

**A South Russia Hub**

According to some Russian analysts, the development of Business Aviation in Crimea could be part of an ambitious plan by the Russian government to establish a large-scale Business Aviation hub in the South of Russia. In addition to the Crimean Peninsula, it will also include the city of Sochi, which is Russia’s major Black Sea resort. If everything goes ahead, the Crimea/Sochi hub could become Russia’s second largest Business Aviation hub, both in terms of the annual number of performed flights and passenger traffic.

In regard to Sochi, the city already has the status of one of the most popular domestic destinations for business flights. The VIP terminal at Sochi International Airport was officially opened on December 2013 and has since served over 150,000 passengers and about 20,000 business flights. Its share in the overall structure of Business Aviation flights in Russia is estimated at about 8-9%.

Anna Serezhkina, executive director of the Russian United Business Aviation Association (RUBAA), confirms that Sochi’s status as one of the most popular destinations for Business Aviation flights in Russia. According to her, this is mainly due to the large number of sporting events and various business forums that take place in the city. Serezhkina also notes that, according to latest RUBAA data, the number of Business Aviation flights conducted by business jets owned by Russians to Crimea has also significantly increased in recent years and continues to grow.
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Despite ongoing problems and general economic uncertainty, Russia’s MRO industry for business jets is steadily developing. Eugene Gerden talks with some leading local MRO providers and industry analysts to learn more.

The financial crisis in Russia, caused in part by the sanctions implemented following Russia’s annexation of Crimea and ongoing meddling in Western elections, has led to a steep decline in the entire Russian Business Aviation market—including MRO sector. In fact, according to the latest data, provided by some leading Russian analytical agencies in the field of Business Aviation, between 2015 and 2016, the market saw an aggregate decline of nearly 40% compared to pre-crisis figures.

However, beginning in the second half of 2016, the situation has started to show signs of improvement which, in turn, has resulted in a growth in demand for MRO services. Although the current level of development in the Russian MRO industry for Business Aviation is lower than its commercial aviation counterpart, this is due to the fact that the number of business jets owned by Russians is still significantly smaller than the commercial fleet. (The Russian Business Aviation fleet is estimated at about 500 aircraft, of which only 10% are registered within the domestic jurisdiction.)

Currently, there are only a few MRO service providers in Russia, and range of their services is rather limited.
Although Russian MRO companies service nearly 80% of local business jets, this work tends to be limited to simple technical operations. In fact, according to some statistics, domestic MRO providers are practically non-existent when it comes to technically sophisticated MRO work, including upgrades and complex repairs.

“As a result, a significant number of Russian business jet owners have preferred to get their MRO work done overseas, particularly in the EU and US,” says Timofey Kravtsov, deputy general director of Russian business jet operator Tulpar Aero Group.

That being said, the implementation of economic sanctions has had a positive benefit for local MROs. Thanks to the resulting weak ruble, their services have become much more competitive compared to services provided by Western companies. Furthermore, the imposition of a ban on the import of certain technologies to Russia, including those used by domestic MROs, also provided an impetus for the development of the local MRO operators.

Big Opportunities and Big Challenges

According to most figures, the Russian MRO market for business jets is estimated at about US $650 million. But this lack of technical expertise results in an estimated annual loss of profits for Russian MRO companies in the tune of US $350 million or higher.

However, this skill gap also represents huge potential for a further near-term growth. “This environment means big opportunities for local MRO providers and is ripe for the launch of new companies,” says Kravtsov.

However, leveraging these opportunities does come with a number of challenges. For instance, the diversity of the Russian Business Aviation fleet means MRO providers must invest heavily in the training of personnel and the introduction of new technologies. Furthermore, the flight time of the average Russian business jet typically does not exceed 30 hours per year. This means the amount of MRO work is limited, making the launching of a new business risky.

There’s also the issue of a lack of infrastructure, including hangar areas, at the majority of Russian airports. And the low level of interest in integrated pay-by-hour support programs means MRO providers are more vulnerable to fluctuations in demand in the local market. Last but not least, there’s the complete lack of support from the Russian state, which poses a significant challenge to getting the investment needed to launch a new MRO business.
As a result of these many challenges, Russia’s MRO sector continues to struggle. “The sector is seeing a serious slowdown in growth, which is primarily caused by objective external factors and the lack of understanding of the industry’s problems at the state level,” says Andrey Akopov, general director of Vostok Technical Service Jets, LLC, one of Russia’s largest MRO service providers.

“The MRO sector for Business Aviation in Russia is still in the initial stage of development, and there are no conditions for any serious growth to happen in the near future,” adds Oleg Ivanov, corporate affairs director of A-Group Aero, a FBO operator and ground handler at Moscow Sheremetyevo and St. Petersburg’s Pulkovo airports.

To illustrate the current situation, Ivanov points to the A-Group’s experience in expansion. The Group recently considered organizing a full-fledged MRO center within its FBO at Vnukovo-3 airport. “However, after careful examination, we decided to postpone the launch of the project for an indefinite period of time,” says Ivanov. “This was mainly due to the lack of prospects and the need for huge investments to just get it off the ground.”

**Signs of Growth**

Unfortunately, there isn’t much local MROs can do to remedy the situation. After all, they are fully dependent on the country’s domestic fleet. That is why most analysts we talked to believe the demand for MRO services depend on the development of Business Aviation in Russia in general and, in particular, the expansion of the domestic fleet. As the fleet expands, new MRO centers will need to be established, and not just in the current hubs, but across the vast country.

Hints of this trend are already starting to be seen. For example, work on a new MRO center at Kazan International Airport has begun. Currently, Kazan Airport has the status of one of the largest in Russia and already operates its own Business Aviation terminal. The new MRO center will be located within a new air-service zone, to be called Aeropark, which will include several hangars for various aircraft types, an apron with taxiways and parking places, a flight test station, the production and auxiliary areas for repair shops and storage areas for materials and components.

The new air service zone is expected to be one of the largest in Russia in terms of the volume of conducted works and the range of provided services for business jets. As planned, Tulpar Technik will be the zone’s first resident, as the company plans to establish its own MRO center there. However, it is very likely that Tulpar won’t be alone for long, as the airport is currently in talks with other leading domestic and foreign MRO providers.

The first phase of the Kazan project is expected to be commissioned in the first half of 2020. The building of the new air service zone will be carried in cooperation with such foreign partners as Leipzig/Halle Airport.

**Remaining Optimistic**

Despite ongoing challenges, overall, the industry in Russia remains optimistic. “The current level of development of the MRO segment in Russia remains at a generally good level, as can be seen by the recent launch of some modern MRO centers around the country,” says Anna Serezhkina, executive director of the Russian United Business Aviation Association (RUBAA), “However, this is just the beginning of a long path, and local MRO providers most always think about how they can further improve their services.”

According to Serezhkina, the further development of Russia’s MRO segment will depend on the future dynamics in the Russian economy, the overall investment climate in the country, and the general situation of the Russian Business Aviation sector.
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Because the first Experimental Aircraft Association convention held at Oshkosh, Wisconsin took place in a year ending in “zero”, this year’s show, July 22-27, 2019, marked an even half-century of aviation pilgrimages to the central US. The AirVenture show, as it’s now known, is more than just a gathering of aviation enthusiasts. It embodies everything that attracts us to aviation as a vocation, as a calling and as a lifestyle.

The Oshkosh experience is like no other regularly-occurring affair. Those participating have a single unifying purpose; to amass as much knowledge and direct contact with aviation as possible, in close association with individuals of like mind.

That doesn’t mean the Oshkosh show is one big event on a single stage; EAA AirVenture is actually a dozen sub-sets of interest. Business Aviation is only one aspect of the show, albeit an important one, judging by the size of the chalets erected for the week. Makers of business aircraft, particularly those flown by owners and small companies, such as those from Daher, HondaJet, Pilatus, Piper and Embraer and Textron, display their wares because their customers will be there in huge numbers. Similarly, avionic, engine, modification and support companies seize the opportunity to reveal their latest products.

Thus, business airplanes and associated goods are prominently displayed at EAA AirVenture, along with restored military planes, aerobatic aircraft, preserved antique and classic airplanes, seaplanes, light-sport and microlight vehicles, and the foundational core of the Experimental Aircraft Association, homebuilt aircraft of every shape and size. AirVenture’s huge trade show creates its own field of interest, and even the aviation media has a special niche.

News from the 2019 Show

Approximate attendance for this year’s AirVenture show was 642,000, up 7%, with over 10,000 aircraft arriving, 2758 of them registered showplanes. Aircraft operations averaged 127 per hour during the event, 863 commercial exhibitors attended, and 2772 international visitors registered from 93 countries. Some 5500 volunteers contributed 250,000 hours of unpaid labor to help put on the show.

Among the Business Aviation revelations showing up around AirVenture 2019 was Textron Aviation’s announcement that its big-cabin Hemisphere business jet is currently on hold, a move necessitated because Safran’s Silvercrest engine is undergoing further development. After Dassault was forced to abandon the powerplant for its 5X jet in 2017, Textron hoped to gain market advantage with the cutting-edge advances of the Silvercrest engine, for which the Hemisphere was specifically designed.

Textron had fuselage mockups for the Cessna Denali and SkyCourier turboprops on display at AirVenture. The 19-seat configuration of the utility-twin SkyCourier showed excellent space for people and cargo. FedEx Express has signed an order for up to 100 of the SkyCouriers, which will be able to carry three LC3 cargo containers. Powered by twin 1100-shp PT6A-65B engines, the prototype SkyCourier’s construction is well underway.

The SETP Denali program had a total of six test articles under construction at AirVenture time; the prototype and two production aircraft will be used in the flight test program. The Denali’s first flight was expect to take place later in 2019, to eventually compete directly with the Pilatus PC-12NG.

While at Oshkosh, Textron marked the 50th Anniversary of the Beechcraft Baron 58’s first flight, which took place on July 23, 1969. Still in production as the Baron G58, it is one of the few piston twins still extant in the business aircraft marketplace, often used as an adjunct to its King Air turboprop siblings.

Embraer Executive Jets displayed a Phenom 300E and Phenom 100EV, offering press updates on the state of the business aircraft industry and Embraer’s continued success. Just prior to AirVenture, Embraer delivered its first Praetor 600 super-midsize business jet, to French-based AV’Rent. Certification of the Praetor 500 is expected by year’s end. As with a host of other firms, large and small, Embraer is investing heavily in exploration of Urban Mobility concepts,
specifically an eVTOL autonomously-piloted electric quadcopter designed to move taxi-cab size parties over traffic and congestion.

Piper Aircraft has reported robust deliveries of its M-class and Trainer-class airplanes, reaching the highest levels in ten years. At the AirVenture press conference, Piper president Simon Caldecott displayed a 3D-printed part from the turboprop M600’s environmental system, demonstrating cost-saving and ready-availability advantages for parts created by the company’s additive manufacturing center. Caldecott continues to guide Piper on a steady course of matching production rate to market demand, while adding upgrades to existing products.

Pilatus Aircraft has reopened the order book for the PC-24 versatile business jet, recently certified for unpaved runway operations, and at Oshkosh airshow time it had sold 40 of the 80 slots available. For AirVenture, Pilatus’ theme was “Gravel, Grass and Dirt”, in keeping with the versatile abilities of the PC-12NG turboprop and PC-24 jet, and the company’s display featured such surfaces beneath its airplanes.

Daehler Aircraft’s booth proudly showed its TBM 940 and 910 very fast turboprops, along with the Quest Aircraft Kodiak. Daher has announced plans to acquire Quest Aircraft by late 2019, which will expand its line into the utility aircraft market by incorporating Quest’s Kodiak 100 turboprop. Since the differing airplanes compliment, rather than compete with each other, the strength of the combined fleet is eagerly anticipated by the Daher sales team. The flagship TBM 940 was recently introduced with autotrottle capability and an automated ice detection system.

Blackhawk Modifications was celebrating the supplemental type certification of its XP-67A engine upgrade for the King Air 300, and company officials we spoke with were pleased with the reftiting business they had seen for turboprop business airplanes. With new avionics, interior, engine and paint, an older King Air can be placed into service for a fraction of the cost of a new airplane from the factory, with matching or exceeding capability.

Just prior to Oshkosh, Honda Aircraft Company added Transport Canada type certification to its list of certifications. Now delivering the Elite upgrade package on the HondaJet, the company is building an additional 82,000 square feet of space at its Greensboro, North Carolina plant, at a cost of US$15.5 million. Announced at AirVenture was a 15-plane order for HondaJet Elites by Hawaii’s Wing Spirit charter company; the aircraft will be used for inter-island charter and medical flights.

Epic Aircraft had its usual large display on the main entranceway at AirVenture, where owners of early kit-built experimental category Epic Aircraft would logically be in attendance. Continuing to pursue full FAA certification, Epic is anticipating receiving FAA type certification in the fall of 2019, with first deliveries following shortly thereafter. Six to eight airplanes are expected to be delivered in 2019, with double that amount in 2020; the eventual goal is to roll out one airplane per week. A big 8,000-pound single powered by a 1200-shp PT6A-67 turboprop, the Epic 1000 is to cruise at 339 knots, yet stall at only 68 knots.

Sights Seen at EAA AirVenture 2019

Many, many seminars and presentations about manned and UAV electric-powered vehicles took place at AirVenture, which is widely known as a hotbed of innovation. The BlackFly eVTOL first-generation prototype was donated to the EAA’s museum during the show. Dubbed a “personal aerial vehicle” by its developer Opener, it requires no license or special skills to operate.

Because the Oshkosh show is a public event, attendance is boosted by focusing on major aviation anniversaries and themes. For 2019, extra attention was paid to the 50th Anniversary of the Apollo 11 moon landing, June 20, 1969, when the world was riveted on two American astronauts walking on the lunar surface. Command module pilot Michael Collins took the stage at the show, remembering over the events that catapulted him into the limelight a half-century ago.

Boeing’s 747 jumbo-jet was introduced 50 years ago, and United Parcel Service brought one of the latest 747-8F freighter versions to the show to mark the occasion. Powered by GEnx2B-67 engines, the huge UPS cargo-plane towered over a queue of touring attendees.

Historically, this past summer marked the 75th Anniversary of the World War 2 invasion of Normandy, as the Allies began a long push on June 6, 1944 to drive Nazi domination from Europe. Some of the DC-3 airplanes that had participated in “Daks Over Normandy” a month earlier were in attendance at Oshkosh, having flown back across the North Atlantic via the “Blue Spruce” route used in World War 2. Oshkosh, of course, is home to Basler Turbo Conversions, where DC-3/C-47/Dakota aircraft are stretched and re-engined with PT-6A turboprops, continuing its long service.

One of the oft-heard remarks at AirVenture is “Only at Oshkosh.” That comment is uttered in conjunction with seeing and touching something that will not be seen in any other public venue. For instance, I talked with the copilot of a New Zealand-based Piper Comanche single-engine piston plane that was in the middle of a flight around the world, the trip of a lifetime. Flying in the daily airshow was the only flying XP-82 Twin Mustang, a painstakingly restored fighter plane that was developed late in World War 2, used in the UN’s Korean war for ground support. This being dubbed “the year of the fighter” by the show organizers, special attention was paid to military fighter planes, past and current; the thunder of F-22 Raptor and F-35 Lightning II jets accompanied P-51 Mustang fighters in “heritage flight” demonstrations.

The afternoon airshows at Oshkosh, provided pro-bono by the best performers in the industry, cannot be duplicated anywhere else. However, they are preceded by “showcase” flying by non-aerobatic presenters, where one can see new or newly-restored, often unique, airplanes in the air. Over the last 50 years, the Oshkosh public has seen the Beech Starship, the Williams V-Jet, a Howard 500, Learjets and HondaJets, cruising around the showcase pattern.

Enjoying excellent weather conditions and strong participation, the 50th Oshkosh airshow will go into the record books as memorable in most aspects. Business Aviation continues to be a strong presence at AirVenture.
Fuel – without it, Business Aviation wouldn’t even get off the ground. Not only is it one of the essential ingredients to flight, it’s also one of the most expensive. So it should come as no surprise that operators are always looking for fuel options that will take them farther for less. Hence the focus on sustainable alternative jet fuels (SAJFs). Nick Klenske reports

SAJF is a class of non-petroleum-based jet fuels or blended components. Flying on sustainable aviation fuel reduces crude oil consumption and produces lower lifecycle carbon emissions compared to conventional jet fuel. It is made by blending conventional, fossil-based kerosene with renewable hydrocarbons produced from, for example, recycled cooking oil. Certified as ‘Jet-A1’ fuel, it can then be used in aircraft without requiring any technical modifications.

“It possesses similar properties, qualities and characteristics as Jet A and Jet A-1 fuel, meaning aircraft perform the same under all conditions, operators don’t have to fly differently and no modifications to aircraft equipment are needed,” says Bombardier Senior Public Relations and Sustainability Advisor Dominique Cristall.

“SAJF is, quite simply, Jet-A in every way: a drop-in fuel that has undergone exhaustive testing and meets all specifications and requirements,” adds General Aviation Manufacturers Association (GAMA) President and CEO Pete Bunce.

“Alternative fuels can help the Business Aviation industry achieve such goals as carbon neutral growth by 2020, fuel efficiencies of 2% annually through 2050 and reduce carbon dioxide emissions by 50% by 2050,” adds Gulfstream Aerospace Corporate Sustainability Process Manager Roger Bowman.

Seeing alternative fuels as the future of Business Aviation, EBACE 2019 put them front and center. Under the banner of ‘Fueling the Future’, the event welcomed a record number of aircraft – 23 in all – who arrived in Geneva fueled by SAFJs.

“The record-setting EBACE SAJF Fly-In was a milestone in Business Aviation’s commitment to sustainability and reducing carbon emissions,” says EBAA Chairman of the Board of Governors Juergen Wiese.
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“Business Aviation has always led the way in promoting technologies that advance the sustainability of flight, and it is appropriate that we highlighted our focus in this area at EBACE through the fly-in,” adds NBAA President and CEO Ed Bolen.

Production and use of the alternate fuels are key to the industry’s Business Aviation Commitment on Climate Change (BACCC), which, among other aims, seeks to achieve carbon neutral growth from 2020 forward. In fact, 2019 marks the 10th anniversary of the BACCC, an initiative of GAMA and the International Business Aviation Council (IBAC). In addition to reducing carbon emissions and achieving carbon-neutral growth, the BACCC committed Business Aviation to improving fuel efficiency by 2% per year from 2010 through 2020. This is to be achieved via the use of new technologies, infrastructure and operational improvements, market-based measures and the development of alternative fuels.

“The fleet of 23 aircraft that flew into Geneva on sustainable aviation fuel represents the global commitment by Business Aviation to mitigate its carbon emissions and contribute to the goal of carbon-neutral growth from 2020,” says IBAC Director General Kurt Edwards.

“The fly-in also demonstrated the viability of these drop-in fuels and provides further proof to the industry that we can fly with SAJF now!”

Just over half of the jets that participated in the fly-in were supported by World Fuel, who has been a long-time supporter of the development of SAJFs. Since 2015, the company has delivered nearly 500,000 gallons of SAJF to Business Aviation customers, not to mention over 13 million gallons to commercial customers. “We were an early supporter of alternative fuel technology, and now are an industry leader in the promotion and distribution of SAJF,” says World Fuel’s Mike Szczechowski. “We invested early and continue our full support on SAJF to reduce CO2 emissions.”

Fuel Companies Are Onboard Too

But the drive towards SAJF isn’t just coming from industry associations and government agencies, the fuel companies are onboard too. "The development of sustainable aviation fuel is key to changing the face of the aviation industry," says Irene Lores, Global Sales and Marketing Director, General Aviation, Air BP. Air BP has been supplying sustainable aviation fuel in the Nordics since 2014, and globally has supplied around 15 different airports. At Oslo airport we were the first to supply the fuel through the existing airport fueling infrastructure and at Chicago O’Hare International as part of the Fly Green Day initiative.

In 2016, the company announced an initial investment of US$30 million in Fulcrum BioEnergy, who has developed and demonstrated a reliable and efficient process for producing low-cost, sustainable aviation fuel from municipal solid waste. As mentioned,
Climate change is becoming a priority for everyone.

We’re passionate about creating a greener future. Which is why we’re investing in lower carbon and biofuels initiatives. We’ve already supplied biofuel made from used non-palm cooking oil. These fuels can reduce the carbon footprint of aviation fuel by up to 80% over their full life cycle.

Our waste is quite literally fuelling a lower carbon future.
FOCUS FUEL

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minimum. One goal of this cooperation is complementary efforts to bring a co-branded sustainable aviation fuel to market at airports across Air BP’s global network. “We believe it is important to keep working with multiple suppliers, customers and partners, and using expertise from across the global BP organization to support the commercialization of sustainable aviation fuel,” says vanacker.

"Collaborating with Air BP, we can find the best ways of developing robust supply chains to ensure that sustainable aviation fuel is more widely accessible to aviation customers," adds Peter Vanacker, president and CEO, Neste.

Through this collaboration with Neste, in April 2019, Air BP was able to start offering customers in Sweden sustainable aviation fuel at a number of airports.

Air BP believes it is important to keep working with multiple suppliers, customers and partners, and using expertise from across BP’s global organization, to support the uptake of sustainable aviation fuel. This is why the company is a participant in the coalition between EBAA, NBAA, GAMA, IBAC and NATA that last year launched the ‘sustainable alternative jet fuel’ (SAJF) guide.

In May 2019, Air BP collaborated with Braathens Regional Airlines, aircraft manufacturer ATR and Neste to achieve the ‘Perfect Flight’ from Halmstad City airport to Stockholm Bromma airport in Sweden. Sustainable aviation fuel, produced by Neste and supplied by Air BP, was used to power the ATR 72-600 - the regional aircraft used on the flight and, according to ATR, the regional aircraft with the best environmental credentials. Every element of the flight management process was optimized to keep carbon emissions to a minimum.

BIZAV BEST PRACTICES: AVOIDING FUEL DELAYS

With Universal Weather & Aviation’s Grant Bradshaw

Get a fuel release/arrange fuel a week prior, whenever able

Notify your fuel provider in advance of your aircraft type, registration, dates and times of operation and volume requirements. This is doubly important if you operate larger GA equipment. It’s best to organize fuel releases about one week in advance to ensure receipt by the local supplier and a confirmation response. When planning quick-turn tech stops, it’s always good practice to follow up and re-confirm the uplift with the fuel provider a day prior to refueling. Having said this, we also do not recommend requesting fuel releases too far in advance as the local fuel provider may misplace the release, causing possible day-of-operation delays.

Choose airports and/or ground handlers that have their own fuel trucks

Since commercial airlines will almost always take priority over GA, one way to avoid this issue is to choose airports and ground handlers/FBOs with their own dedicated fuel trucks for GA. Certain international airports have fuel trucks dedicated to GA. This is most common in the US, Canada and certain locations in Europe, such as London-Stansted Airport. Some FBOs also have their own fuel trucks. For instance, we operate our own trucks at Universal Aviation Mexico – Toluca and Universal Aviation Ireland – Dublin. When making fuel arrangements, ask your contract fuel provider and/or your handler about your fuel truck options.

Avoid peak periods of commercial activity

An effective means of mitigating fuel delays is to schedule quick turns and destination stop uplifts away from peak periods of scheduled commercial activity. This tactic can be particularly beneficial at busy Mediterranean holiday destinations where scheduled commercial fuel requirements always take precedence over GA.

Fuel on arrival vs departure

Fueling on arrival rather than departure is a viable strategy at high-traffic airports or during peak periods. This is particularly important when attending high-traffic events where delays and shortages are common.

Use an alternate airport if that’s an option and consider quick-turn tech stops

Many destinations have multiple airport options. Do your research in advance to find out the advantages/disadvantages regarding fueling, depending on your final destination and schedule.

Lean on your contract fuel provider

When you are traveling to familiar destinations, making reservations through an app is easy and often the way to go. But at new destinations, or ones that can be challenging (due to lack of infrastructure, congestion, political unrest, frequent strikes, etc.) it’s worth a quick call or email to your contract fuel provider. For instance, here at the UVair Fuel Program, we have a whole team dedicated to staying on top of supply issues worldwide. Part of our program is to provide pre-trip fuel consultations whenever needed so that our clients can make the best fueling decisions for their missions. There is no cost for this – it’s just part of the service our clients get.
Looking ahead, Lores says the challenge will be to meet continuing passenger growth in a responsible and sustainable manner. "Emerging technologies are reshaping the industry with the push for hybrid and electric aircraft, unmanned aircraft systems, robotics and artificial intelligence all playing a role in aviation's future," she says. "But as engines and aircraft become lighter, quieter, faster and more efficient, Air BP’s role ultimately is to continue supplying the industry’s aviation fuel needs safely and reliably - and we’re ready to do just that."

On a Mission

With a focus on innovation, Avfuel is leading the mission to further industry advancements – and this includes sustainable aviation fuel. “Avfuel’s experts in alternative fuels are working diligently to bring SAJF to market and play an active role in our industry’s mission for carbon neutrality,” says Keith Sawyer, Manager of Alternative Fuels at Avfuel. “Our involvement includes ongoing demonstration days where SAJF is supplied in limited quantities as a means of promoting awareness and adoption of SAJF in Business Aviation.”

Avfuel regularly participates in technical panels at such industry events as EBACE and NBAA-BACE, along with various special SAJF-focused events. Additionally, the company developed an exclusive agreement with Gevo, Inc. to be the leading next-generation biofuels company’s exclusive Business Aviation fuel supplier in North America.

“We’re also busy securing commitments from customers interested in purchasing SAJF, which is essential to encouraging producers to increase outputs,” adds Sawyer.

Leading the Low Carbon Transition

As reported earlier this year, Shell Aviation and SkyNRG announced a long-term strategic collaboration to promote and develop the use of sustainable fuel in aviation supply chains. The collaboration combines Shell Aviation’s technical and commercial expertise, world-class supply chain and carbon management operations with SkyNRG’s proven track record of sup-

Air BP used the LABACE stage to announce the expansion of its pioneering carbon offset program for Business Aviation. The program will be extended to two of Voa São Paulo’s airports, a Brazilian private airport administration consortium, which are now part of Air BP’s supply network. Jundiaí and Amarais airports are the first to join the program, and there is the potential to expand the offer to more of Voa São Paulo’s locations in the future.

"We are very proud of this new collaboration with Voa São Paulo," says Ricardo Paganini, general manager, Air BP South America. "Our carbon offset program, which complements our existing focus on customer service and safety in operations, is a significant step towards making Brazilian Business Aviation more sustainable."

Air BP launched its carbon offsetting offer for Business Aviation in Brazil in 2018. Its first customer, business aircraft management company Avantto, offset more than 1,000 tons of carbon emissions from June 2018 to May 2019 - the equivalent of 1,588 trips from São Paulo (SP / HBR) to Angra dos Reis (RJ) or the carbon that could be captured by almost 73,000 adult trees. The agreement with Avantto has been renewed for another year, enabling customers to offset the emissions related to the fuel supplied to the company by Air BP.

This builds on initiatives by Air BP in other regions, such as their collaboration with on-demand jet charter marketplace Victor in a carbon-offset programme for private flying in Europe, as well as the ability for operators and pilots who use the RocketRoute MarketPlace app to offset the carbon associated with their fuel purchases.

The Air BP carbon offset programme is run via BP Target Neutral. Projects within the BP Target Neutral portfolio have been assessed on the basis of their contribution to reducing carbon emissions and their potential to support the UN’s sustainable development goals. They have been selected for their suitability in improving livelihoods for the communities they are located in, or through various educational, economic and social benefits.

Air BP’s carbon offset program for Business Aviation is part of BP’s commitment to achieving a lower carbon future, addressing the dual challenge of meeting the increasing energy the world demands, while at the same time working to reduce greenhouse gas emissions. It complements Air BP’s own carbon neutral plane fuelling operations at 250 locations around the world.
Among the leading fuel providers are Air BP, Avfuel, Shell Aviation, SkyNRG and EPIC Fuels. The agreement is a multi-year collaboration, with both companies acknowledging that the path to lower carbon emissions in aviation requires long-term commitment. The collaboration will focus on joint development and funding of new opportunities to extend the use of and build more resilient supply chains for sustainable aviation fuels. This will be coupled with the development of a range of comprehensive carbon management options that will provide support to Shell Aviation and SkyNRG customers.

“We want Shell to be a leader in the low carbon transition in aviation fuels,” says Shell Aviation Vice President Anne Anderson. “This agreement with industry pioneers SkyNRG demonstrates the type of progressive collaboration that can help move us towards a lower carbon emissions future. Working together, we believe we can advance sustainable solutions for the benefit of our entire industry.”

Improving Performance
Likewise, EPIC Fuels has also been playing an ever-increasing role in growing the acceptance of sustainable biofuels and biofuel blends used in jet aviation. Over the last several years, the company has provided both technical and logistic expertise in programs for sustainable fuel alternatives. Highlights include flights flown by Alaska Airlines in 2016 using a blend of biofuel produced from non-edible, sustainable corn and renewable biofuel made from residual wood and Singapore Airlines’ first-ever flight powered by a blend of sustainable biofuel made from used cooking oil and conventional jet fuel.

Most recently, the company provided expertise in fuel blending as well as technical and logistical support to Virgin Atlantic and LanzaTech to enable the first-ever commercial flight using a unique blend of petroleum-based jet fuel and alcohol-to-jet synthetic paraffinic kerosene (ATJ-SPK) fuel produced from waste gases. LanzaTech’s pioneering technology captures carbon-rich industrial waste gases such as those from steel mills and recycles them into ethanol. The ethanol, in turn, can be used for a variety of low carbon products, including being upgraded to ATJ-SPK, which can be blended into jet fuel.

“As a fuel provider, EPIC Fuels recognizes the need to find alternatives to petroleum-only based jet fuel,” says Kai Sorenson, Director of Commercial Sales for EPIC Fuels. “We’ve participated in multiple demonstration flights to identify and fast track technologies that can improve the environmental performance of aviation and gained unmatched experience with blending fuels.”

With industry associations, OEMs and fuel providers all fully embracing sustainable alternative jet fuels, it seems that the future is already here. Now all that is needed for SAJFs to truly fuel the future of Business Aviation is for operators to start filling their tanks!
CHALLENGES AND OPPORTUNITIES AHEAD

ONE-ON-ONE WITH AVFUEL

BART recently had the opportunity to sit down with Joel Hirst, Avfuel Vice President of Sales, and Marci Ammerman, Avfuel Vice President of Marketing, to get an inside look at their business and discuss the challenges and opportunities that face the Business Aviation fuel sector.

BART: When we talk market challenges, what immediately comes to mind?

Hirst: We continue to see challenges in fuel transportation. The US is experiencing an unprecedented truck driver shortage. This is compounded by new electronic data logs required in the US that closely monitor and restrict available duty and drive hours per day. Because aviation competes with all other fuel-using industries to use the same hauling companies, these challenges decrease flexibility for short-notice fuel orders. While Avfuel has always been able to reliably provide the fuel its customers require, to capitalize on flexibility in terms of time and cost, we always suggest that our customers pre-order as far in advance as possible, especially during peak travel months.

BART: Today, everything seems to be about technology. How does technology impact the fuel industry?

Ammerman: We see developing technologies being both a strength and a challenge. Of course, adopting new technologies can vastly improve safety and efficiencies in fueling operations, as we’ve seen over the years—FBOs can keep better detailed notes on customer preferences, and make transactions more efficient with better technologies. Operators also benefit from simpler flight planning and reservations for trips made easy. That being said, Avfuel strongly believes that technology cannot be a replacement for human interactions, and that’s a challenge we believe the industry will face. Wherein lies the balance between automation and personalization? At Avfuel, our collaborative relationships model continues to be our greatest differentiator. Our customers conduct business with us because of our people. We utilize modern technology to provide efficient solutions, but technology can never replace the value behind 24/7 access to experts that empathize with needs and provide support in a caring, dedicated and passionate way.

BART: Although we tend to focus on the fuel suppliers, the ‘action’ happens at the FBOs. What challenges are you hearing from Avfuel’s substantial network?

Hirst: FBOs are tremendously focused on safety and streamlined operations to best serve passengers, pilots and planes as efficiently as possible. To do so, we’re hearing that the challenge for many FBOs at the moment is to enhance offerings with upscale facilities and modernized services—which takes an extensive amount of resources in terms of staffing and capital—while facing the pressures of a competitive marketplace. It’s a market in which FBOs feel inclined to reduce the prices and fees that feed into the profit margins that are used to make enhancements and cover operating expenses (employee wages, leaseholds, insurance, training, etc.). It creates a challenge as they simultaneously increase their overhead while reducing their net profit per transaction in the hope of attracting more clientele.

Furthermore, we’re seeing a renewed effort in the FBO market for new hangar construction to accommodate larger business jets. This makes for more accommodating facilities for flight operators and greater business opportunities for FBOs.

BART: What’s Avfuel doing that’s new?

Ammerman: This summer, Avfuel launched a new knowledge-sharing tool for its branded FBO network: The Avfuel Network Discussion Board. Available through the FBO’s avfuel.com account, this tool enables FBOs to ask questions of one another by starting a discussion and respond to existing discussions to share their expertise. Furthermore, members can ‘follow’ discussions to stay updated on any additional postings.

It’s been a rewarding experience to watch the discussion board take life as our branded partners ask one another about payment processing, de-icing products and other operational and safety procedures. It validates the need and the desire for a knowledge-sharing outlet to connect network members. We strongly believe one of the best ways for companies to provide exceptional service is by learning from each other through knowledge-sharing best practices.

With 650-plus FBOs at our fingertips, as a network we can be each other’s most useful resource. We can help promote best practices and share experiences in a way that connects us unlike any other fuel-supplier branded network.

Furthermore, we’re always concerned with fuel handling and looking for ways to help make operations throughout the network safer. With that initiative top of mind, we’re pleased to share the addition of a secure, special training program on the online Avfuel Training System devoted to best practices for handling diesel exhaust fluid (DEF). This includes recommendations for storing and handling the product, mitigating contamination upon receipt of fuel, and steps to take should a fuel handler suspect DEF contamination. Our goal is to do whatever we can to help mitigate the risks involved with fueling mishaps, especially in light of the various events recently reported in the industry in regard to DEF.

Additionally, we continue to make enhancements to our card processing systems, particularly for transactions with the Avfuel Pro Card, which saves our branded network FBOs money on transactions (0% processing fees on contract fuel sales). We’ve also been focused on increasing usage of our cards. The Avfuel Pro Card is not just for contract fuel purchases, it also allows flight departments and pilots to put everything (fuel and non-fuel items with or without a fuel sale) on one transaction, saving them time and money (no annual fees or transaction fees on any purchases for the account holder) at the front counter.
More electric and all-electric aircraft are gaining momentum as more and more companies are investing in technologies that enable these types of power systems. With a huge number of projects on the drawing board, the question has changed from will we see electric aircraft to when will they take-off?

Volker K. Thomalla explores

Is electric flight the next big thing in aerospace? Considering the huge number of projects of electric-powered aircraft and unmanned aerial vehicles, electric flight should be a significant part of the future of aviation – including Business Aviation. But there is already skepticism about the maturity of technology and the availability of new materials for on-board storage of electric energy.

As of today, there is no project or concept capable of replacing existing business aircraft in terms of range or speed. The energy density of even the most sophisticated batteries are simply not able to power long-range flights of all-electric aircraft. Nevertheless, nearly all major aerospace companies, including Boeing, Airbus, Embraer, Rolls-Royce, Honeywell Aerospace, Safran and United Technologies, are working on concepts and projects to advance electric flight. And there is a huge number of start-ups, backed by venture capital, who are trying to get a foothold in the not-yet-existing market for electric powered aircraft.

Countries are also getting on board. For example, Norway launched an initiative to replace conventional, fossil fuel burning aircraft with electric-powered aircraft for all short-haul flights by 2040. “We aim to be the world’s first to switch to electric powered air transport,” says Dag Falk-Petersen, CEO of Avinor, Norway’s airport authority. “We believe that all flights lasting up to 1.5 hours can be operated by aircraft powered exclusively by electricity, and this flight time is sufficient for all flights within Norway and to neighboring countries.”

Avinor wants to publish a tender for a test operation with a 19-seat commuter aircraft. Its aim is to test an electric aircraft under real conditions from 2025 on in daily flight operations. “When we reach our goal, traveling by plane will no longer be a problem for the climate,” adds Falk-Petersen. “On the contrary, flight will be part of the solution.”
The Grid and P804

In April this year, Collins Aerospace Systems, a unit of United Technologies Corp. (UTC), revealed plans for The Grid, which is to become the industry’s most advanced electric power systems lab. It will be based in Rockford, Illinois, and should be operational in 2021.

To build The Grid, Collins Aerospace needs to invest about US$50 million in the building and supporting infrastructure. The company will use the high-power, high-voltage lab to design and test systems like high-power generators for the next generation of electric aircraft, including commercial, military, Business Aviation, UAV and urban air mobility platforms.

Collins Aerospace CEO Kelly Ortberg is convinced that electric power systems will shape the future of aviation. “In the not-too-distant future, hybrid-electric and fully electric aircraft will revolutionize air travel as we know it—opening up new markets like urban air mobility, while re-invigorating others like regional service to underutilized airports,” he says. “They will help support a greener planet by reducing carbon emissions and will help our airline customers by reducing operating costs and fuel consumption.”

The Grid will be used to help design and test a 1 megawatt motor, motor controller and battery system. The goal is to design and build the aviation industry’s most power-dense and efficient electric engine to date. The motor is needed for Project 804, which is being developed by UTC’s newly established subsidiary United Technologies Advanced Projects (UTAP). UTAP aims to innovate faster than the Group has previously been able to do. One of the first UTAP projects deals with the implementation of a hybrid electric power system for regional aircraft. The project, named Project 804 (P804), aims to fly an aircraft with such an engine within the next three years.

Despite its high number, Project 804 is the company’s first project. The number was chosen because it represents the distance in miles between the two corporate sites in Montreal, Canada, and Rockford, Illinois. In March this year, UTAP presented P804 to the public for the first time. As a test aircraft, the company has selected a used Bombardier Dash 8-100 turboprop aircraft with the turboprop engine on the right hand side being replaced by a hybrid electric drive.

The new drive alone should have the power of 1 Megawatt. It will be optimized for cruise and is supported by a battery-powered electric motor during take-off and climb. While the new drivetrain will increase the aircraft’s operating empty mass, in return, the tank capacity can be reduced by 50%.

According to UTAP scientists, the range of the aircraft will be around 600 nautical miles (1,111 kilometers). Although this is less than the range of the aircraft today (1,000 nautical miles / 1,852 kilometers), since most regional flights are on average shorter than 500 nautical miles (926 kilometers), the mixed cost makes sense, both from a technical and from a business point of view.

UTAP estimates that the experimental aircraft consumes approximately 30% less fuel than previous aircraft in a typical one-hour flight of a regional aircraft. The batteries and drive control of the new system must be housed in the aircraft cabin, while all other system components fit into a modified Dash 8 engine nacelle.

The Future of Flight will be Electric

Honeywell Aerospace is very much engaged in the development of electric power systems for aerospace applications, too. The company is convinced that the future of flight will be electric and that very soon aircraft will fly safely, quietly, efficiently and cleanly powered by electric and hybrid-electric engines.

With this philosophy, the company has assembled a dedicated Hybrid Propulsion Team and renowned global engineering staff who are driving the science of hybrid-electric propulsion forward, producing turbo-generators, generators, motor controllers and other essential powertrain ele-
Honeywell will develop UAM electric propulsion. Seattle-area airframe maker Zunum Aero (center). Eviation Alice all-electric commuter plane (below).

The future is electric ...

Honeywell offers a broad range of aircraft power generation solutions to deliver electric power, from 5 to 200 kVA, in different configurations. The Phoenix, Arizona, based company introduced the industry’s first 1 MW generator for aerospace applications.

Meet Alice

Another player in the field of electric aviation is the Israeli start-up company Eviation. Its co-founder and Chief Executive Officer Omer Bar-Yohay has presented a soon-to-fly prototype of Alice at the Paris Air Show in June. Alice is a battery-powered, electric aircraft about the size of a Beechcraft King Air. According to Eviation, Alice is capable of transporting up to nine passengers at a speed of 340 knots over a distance 540 nautical miles with a single charge of its lithium-ion batteries.

The futuristically shaped Alice is powered by three electric engines. One sits in the rear of the aircraft and drives a five-blade Hartzell propeller, while the remaining two (smaller) engines are installed in the wingtips and drive a five-bladed prop form Hartzell. Alice’s wingspan measures 16.12 meters, the maximum take-off weight is about 14,000 pounds (6,350 kilograms), of which the batteries alone use 8,160 pounds (3,700 kilograms). Avionics and the fly-by-wire system for Alice will be supplied by Honeywell Aerospace.

Alice is built entirely of carbon fiber composites. Eviation is planning to ship the prototype to the US where flight testing should take place. The company will use three aircraft for flight testing. It is targeting a two-year test and certification campaign, with entry-into-service in 2022.

At the Paris Air Show, Cape Air, was announced as the launch customer for the aircraft. The company currently operates a fleet of Cessna 402C business-liners and Britten-Norman BN-2 Islander, which need to be replaced in the foreseeable future.

Change of Plans

But not all high-flying projects will really take-off. Zunum Aerospace from Kirkland, Washington, has plans to develop aircraft with hybrid-electric engines. They had targeted an entry-into service of the first aircraft, a five to 12 seater, as early as 2022. The company even won support from companies like Boeing (via their innovation subsidiary Horizon X), JetBlue’s Technology Ventures and Safran Helicopter Engines (Safran was the chosen partner to supply the power system of the ZA10 aircraft). It was planned that the first tests with the power system based on the Ardiden helicopter engine should take place on board of a Rockwell Turbo Commander aircraft.

But sometimes plans don’t workout. Zunum Aerospace ran into financial troubles and had to lay off the majority of its staff in early summer. The company said it remains committed to the technology and the future of electric flight. “But unless new investors step forward, that fanciful dream is dead,” reported the Seattle Times in July this year.
CRITICAL AVIATION SAFETY INFORMATION AT YOUR FINGERTIPS

Take advantage of FSF’s comprehensive online resources.

As the only independent, impartial and international source for aviation safety, the Flight Safety Foundation takes keeping our skies safe seriously.

To ensure the aviation industry has the most up-to-date safety information, the FSF website is your go-to repository of comprehensive, trustworthy aviation safety information.

As safety continues to evolve from reactive to predictive to proactive, FSF members gain insight through expanded online offerings, including curated external content and our own AeroSafety World journal in a digital-only format for maximum flexibility. Moreover, you are able to interact via an exclusive online community designed to facilitate additional discussion of key safety initiatives.

Gain vital insight and help us keep the skies safe by becoming a member today.

www.flightsafety.org
EVOLUTION
With strong demand for in-flight connectivity now a given, providers are moving to the next stage of development.

INMARSAT GEARS UP FOR FUTURE CONNECTIVITY NEEDS

With strong demand for in-flight connectivity now a given, providers are moving to the next stage of development.

Inmarsat says it is gearing up for future inflight connectivity needs with more satellites and faster access over Jet ConneX (JX), its Ka-band solution for Business Aviation.

Jet ConneX has now been in commercial service for a little under three years. Using the Inmarsat GX Ka-band satellites, the service was originally launched with a maximum speed for 15Mbps. Honeywell Aerospace has been the hardware supplier throughout, and take-up was rapid.

Inmarsat announced last October that Jet ConneX had already been installed and activated on 400 business jets worldwide.

Kai Tang, senior vice president of Business and General Aviation at Inmarsat, said: “Jet ConneX has firmly established itself as the gold standard for Business Aviation inflight broadband. It is built on 40 years of Inmarsat’s experience in global, mobile connectivity, and we are proud of that leadership over the years, paving the way with our partners for what a reliable and trusted connectivity service looks like for the most demanding and important customers. “The response from the market has been incredible. To date, more than 500 Jet ConneX installations have now been completed across the world and take-up rates show no signs of slowing down.

Powered by Inmarsat’s Ka-band Global Xpress network, Jet ConneX offers the fastest global satellite data rates in Business Aviation.

Steve Nichols takes a close look at the next generation in connectivity.
“A business jet is a sizeable investment and it’s no surprise to anyone that connectivity is no longer just a luxury, but a must-have as part of that investment.”

It says that Jet ConneX is the preferred line-fit option by all of the market-leading business jet manufacturers including Gulfstream, Bombardier, Dassault and Embraer.

Gulfstream said recently that it had its 300th aircraft equipped with Jet ConneX.

“The office-in-the-sky experience is very much a reality with Gulfstream and Jet ConneX,” said Derek Zimmerman, president, Gulfstream Customer Support.

“Our customers value our ability to efficiently incorporate this technology on our aircraft and the consistent and reliable global coverage it provides. They are enjoying live TV programs, video streams and video connections, such as FaceTime, with their colleagues, family and friends.”

According to Inmarsat, Gulfstream has delivered more Jet ConneX-equipped aircraft than any other business-jet manufacturer. Deliveries, which began in May 2017, have included in-production large-cabin aircraft, the G650ER, G650, G550, the G500, which entered service in September 2018, and the all-new G600, which earned type and production certification on June 28 from the FAA. Nearly half the installations are retrofits.

But Inmarsat isn’t resting on its laurels. In May, it launched ‘JX-Pro’, a new top-end package for Jet ConneX, with unlimited data usage and 33% higher speeds – up to 20Mbps – compared with the service’s previous fastest plan.

The new package was unveiled at the European Business Aviation Convention and Exhibition (EBACE) in Geneva.

“It provides new and existing Jet ConneX customers with unrivalled performance and the fastest connectivity speeds available in the market. The market has responded very well to the launch and we look forward to rolling out the ground-breaking new capabilities of this package offering with our global network of partners,” said Tang.

“We strive to evolve the service in response to market feedback, as the launch of JX-Pro has shown. Demand is expected to be strong and we look forward to rolling out the groundbreaking new capabilities of this package offering with our global network of partners.”

But to stay ahead of the game you have to keep moving. Which is why the company announced in May that it had signed a contract with Airbus Defence & Space to develop a new generation of satellites for its Global Xpress (GX) network.

The satellites, named GX7, 8 and 9, will be optimized for real-time mobility and feature thousands of dynamically-formed beams that direct capacity with laser-like precision over high-demand areas.

With focused, ultra-high-power capacity layered over high demand flight routes and airport hubs during peak hours, the satellites will revolutionize aviation connectivity.

While the comments regarding capacity are obviously aimed at commercial users, Business Aviation should be able to take advantage of the new satellites as well.

Inmarsat says the network can rapidly grow capacity for customers through in-orbit repositioning or even launching a new satellite, making it perfectly suited to meet the aviation industry’s ever-changing needs.

Breaking from industry tradition to enable a faster response to growing customer demand, the next-generation GX satellites will be delivered significantly faster than traditional procurement lifecycles.

“GX is much more than just a satellite constellation, it’s a complete end-to-end solution and we have been equally ambitious in developing our ground stations, hardware, software and cybersecurity framework,” said Tang.

“Our partners layer on top even more value added capabilities and industry experience that are unmatched. This is unique to Inmarsat and positions us as a leader and innovator in this industry, allowing us to put our Business Aviation customer needs at the heart of our future investment decisions.”

The new satellites are scheduled to launch from 2023 and build upon the existing GX high-speed global network, which consists of four satellites already in operation and three more being launched over the next three years, starting with the GX5 satellite later this year.
One advantage that low-Earth orbiting satellite systems like Iridium have over Jet ConneX is their ability to work in the polar regions. Geostationary satellite systems like Inmarsat GX run out of steam at about 85 degrees North and South of the equator.

But an announcement in July hopes to put that right. Inmarsat announced a contract to introduce two new highly-elliptical payloads for its Global Xpress network in partnership with Space Norway and its subsidiary Space Norway HEOSAT.

Scheduled to launch in 2022, GX10A and 10B will be the first satellites in the GX network to be placed into Highly Elliptical Orbit (HEO), showcasing Inmarsat’s approach to providing customers with connectivity.

HEO or so-called Molniya orbits are a unique solution to the problem. As the name suggests they are highly elliptical with the satellite’s apogee, or furthest point from the Earth, meaning the satellite appears to stay in roughly the same point in the sky for long periods.

It then descends quickly to its perigee point (closest point to Earth) before the process repeats. This means that while at apogee it presents pretty much the same target as a geostationary satellite does at the equator, but over the Arctic region.

It then becomes a software issue to keep the terminal pointing at the satellite.

The new payloads, GX10A and 10B, will provide Inmarsat’s airline and Business Aviation customers with even more capacity to meet rapidly-growing demand for seamless, reliable, high-speed mobile inflight broadband.

But while this has all been good news for fixed-wing operators, owners of rotary wing craft may have been feeling a little left out. Jet ConneX has never really worked on helicopters due to the blade chopping up the data packets.

However, Inmarsat’s SwiftBroadband solution can be made to work, although throughput speeds are significantly lower that Jet ConneX – perhaps more like 1Mbps rather than 15Mps or higher.

A couple of years ago Inmarsat introduced new High Data Rate (HDR) capabilities for SwiftBroadband, the aircraft connectivity service provided through the Inmarsat-4 (I-4) satellites.

The new interleaving bearers can re-arrange information packets across a longer burst, making it more robust in tough conditions, including under helicopter rotors.

SwiftBroadband will work under a rotor without HDR, but an industry source told me that you are more likely to see just 150-200kbps.

But in March, Inmarsat announced its new SB-Helo X-Stream helicopter satcom solution for Cobham AVIATOR SP systems.

The new system is said to improve communications through rotor blades by reducing packet loss by up to 40%.

After extensive testing, Inmarsat and Cobham have developed a protocol in network Quality of Service (QoS) selection, as an enhancement of the SwiftBroadband X-Stream service – one of Inmarsat’s streaming services offering guaranteed on-demand high-streaming data rates over its L-band network.

This allows data from rotary wing aircraft to be transmitted to the Inmarsat satellite network, via dedicated modulation schemes. The increased resilience of the data pipeline passing through the rotors means that the transmission of high-intensity data, like video, will see an improvement in throughput of around 37%.

The free software update will allow a helicopter operating from a remote location to transmit a significantly improved video or data stream.

This capability is crucial for organizations operating rotary wing aircraft in specialized roles such as search and rescue, medical evacuation and military forces.

Todd McDonell, president of Global Government at Inmarsat, said: “Having worked with Cobham in the development of this new protocol, we are very pleased with the results we have seen from the trials and foresee that this cost-effective solution will be greatly sought after in the growing government helicopter market.”

Willem Kasselman, VP Sales, Marketing and Support at Cobham Aerospace Communications, said: “The launch of this new system represents a breakthrough for Cobham, solving a long-standing problem in helicopter satcom communications.

“The partnership between Cobham Aerospace Communications and Inmarsat is an important one for us and we look forward to building on this announcement and expanding and improving other related services over the coming months.”
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Now celebrating 100 years of combined aviation experience
The history of aviation and emergency evacuation traces its roots to 1925, when a medical section of the US Army Air Corps began using converted De Havilland fixed wing aircraft. Although nearly synonymous with medical evacuation (medevac), helicopters were not used for this purpose until 1944. For medium to long distance evacuations, most air ambulances are now specially equipped business jets capable of using more airports than commercial airlines. They are also to fly more direct routes, picking up a patient from the closest airport to the treating hospital and landing at the closest airport to the receiving hospital.

As more people move around the world seeking jobs, visiting family and traveling to far-away destinations, the need for medical evacuation services has become indispensable. To serve this need, the last 50 years has seen the launch of a number of medevac companies. Many of these companies are headquartered in developed countries so they can easily bring back sick or wounded expatriates or tourists to a hospital in their home countries or, for large countries like United States or Canada, to an adequate trauma center.

Concerning a continent like Australia, the situation is slightly different. For the many rural communities located across the isolated bush, medevac is a lifeline to a town hospital. The Royal Flying Doctor Service (RFDS) is one of the world’s largest aero-medical organizations, providing comprehensive basic medical assistance across Australia. The first civilian air medical transport was completed in 1928 when a De Havilland Fox Moth aircraft in the service of Australia’s Royal Flying Doctor Service took off on its first mission. At present, its fleet is 71 planes strong, and includes 31 Pilatus PC-12, 30 Beech King Air B200 and 200C, two King Air B300 and three Pilatus PC-24.

**OEM Medevac Options**

Most business aircraft manufacturers have a foot in the medevac door. One of the very first was the Learjet Company, taken over in 1990 by Bombardier. Due to their cabin length, Learjets, from the 25 to the 35/36, were for several years the only aircraft in their segment modified to accommodate tandem stretchers. The auxiliary power unit was also certified for unattended operation and could continuously supply power to key life support equipment.

For International SOS, a renowned specialist in medical evacuations, the best way to ensure that people abroad stay healthy is to establish robust preventive programs.

But for the rare instances when prevention is not possible, a safe and rapid evacuation is vital to saving lives.

Marc Grangier reports

Another good reason why Learjets have been very popular was their high cabin pressure differential limit, which allow sea level pressure to be maintained up to FL250 (25,000 feet pressure altitude), while a quite low cabin altitude could be maintained at higher levels. For normal commercial flights, this doesn’t matter too much, but when you are carrying patients with medical problems, the partial oxygen pressure can be vital – even a question of life or death.

A number of Learjet 35, 45, 55 and 60s are always used for medevac operations. For example, in Europe, European Air Ambulance, based in Luxembourg, coordinates a fleet of five LearJet 45XR, which replaced its Lear 35As in 2017.

Bombardier also offers specially outfitted Challengers. Its newest air ambulance is based on the new Challenger 650, which can be configured to transport up to four patients with incubator support for newborns or fly a mix of patients and seated passengers while still having room for core medical staff. Equipped with GE CF34-3B MTO engines, the Challenger 650 benefits from greater thrust, an increased payload capacity, the ability to take off from shorter runways (take-off distance of 5,640 ft...
The Falcon 2000LX medevac aircraft is equipped with an electrical patient loading system and a full medical suite, along with an electrical power supply sized for a complete medical module. The medical module includes a stretcher with dedicated lighting, a three-bottle oxygen supply, and monitoring and analysis equipment. It also accommodates special devices like defibrillators, electrocardiographs, echographs, a blood bank and an ECMO (extracorporeal membrane oxygenation).

Several other medevac companies around the world also operate Falcon aircraft. One of them is MedevacFlights. Based in Perth, it provides emergency evacuations throughout Australia, the Pacific and Asia, operating one Falcon 2000, two Falcon 50s, two Falcon 20s, a Learjet 60, and a number of other aircraft.

At the last AirShow China in Zhuhai, Gulfstream displayed a G550 medevac aircraft recently delivered to the Beijing Red Cross Emergency Medical Center. Powered by two Rolls-Royce BR 710 engines, each of which has a rated takeoff thrust of 15,385 lb/68.40 kN, the G550 has a cruise range of 6,750 nautical miles/12,501 kilometers. The aircraft, modified by Gulfstream, provides new in-flight medical capabilities, including 360-degree in-flight patient access, X-ray viewing, advanced life-support equipment (including ECMO), and a bed designed to accommodate an infant incubator.

“Demonstrating its demanding capability, the Beijing Red Cross Emergency Medical Center aircraft recently conducted two very complex rescue missions involving varied weather conditions and mountainous
Evacuation Aircraft for Epidemics

At the height of the Ebola epidemic, Lufthansa Technik was commissioned by Germany’s Federal Foreign Office to convert an Airbus A340 into an evacuation aircraft for transporting and treating highly contagious patients. As there was no existing solution for the conversion of such an airplane, Lufthansa Technik built and installed a special isolation unit in the cabin: the middle and rear section of the airplane, passenger seats, galleys and luggage bins were removed to make room for a patient transport isolation unit surrounded by an airtight tent with negative pressure. At the front of the cabin, there were seats for up to 19 passengers such as doctors, scientific staff and isolation tent technicians.

Mission

Lufthansa turns Airbus A340 into evacuation aircraft for epidemics (top). Plans of medevac options for the Citation CJ4 are underway (center). A PC-24 delivered to RFDS (below).

Terrain, with operations out of one of the world’s highest altitude airports, Lhasa Gonggar Airport in China,” says Gulfstream President Mark Burns.

Beijing Red Cross Emergency Medical Center is currently considering adding a longer range Gulfstream G650ER to its fleet for the same missions.

At EBACE 2019, Textron Aviation showcased the first air ambulance configuration of its Citation Latitude, highlighting the company’s strength in special mission capabilities across its wide range of Beechcraft and Cessna aircraft. The Latitude, purchased by Babcock Scandinavian Air Ambulance for aero-medical operations in Norway, delivers the first custom OEM interior solution for medevac missions on the platform. The production-certified interior configuration offers compatibility with a wide range of medical equipment.

Plans for interior certifications on other aircraft, including medevac options for the Citation CJ4 and Citation XLS+, are underway, without forgetting the popular Cessna Caravan. Future aircraft, notably the Denali and the SkyCourier, are progressing through design phases to incorporate medevac mission capabilities.

Beechcraft, which claims to have built more air ambulances than any other manufacturer, is also very active in this field. Last June, the Norwegian Luftambulansetjenesten ANS organization took delivery of the 10th King Air 250 it had ordered for its medevac missions.

Pilatus is also involved in medevac operations, thanks to its PC-12. Partly at the request of the Royal Flying Doctor Service of Australia Western Operations, the Swiss manufacturer developed a medevac version of its new PC-24 twinjet. The very first unit was handed over to the RFDS last November.

“The PC-24 will become the emergency ward in the sky and will nearly cut the time for long-haul critical patient scenarios in half,” says Pilatus Chairman Oscar J. Schwenk. “I am positive that the PC-24 will ideally supplement the existing fleet of PC-12s of the RFDS.”
The interior was installed under a supplemental type certificate procedure in partnership with Aerolite AG, a Swiss company specializing in aircraft medical interiors. The large cargo door and bespoke electric stretcher-loading device facilitate safe, ultra-easy loading and unloading of patients. For Schwenk, the PC-24 is the world’s first jet to offer this possibility, thanks to the cargo door, which comes as a standard fit from the factory.

Helicopter Emergency Medical Service (HEMS)

Over 2,500 helicopters are in service worldwide for HEMS missions.

Around half of them are in North America, where the air ambulance industry is booming due to medical advances, rural hospital closures and loose regulations. The most common models are the Airbus AS-350/EC130 and the Bell 206/407 for single-engine aircraft. For multi-engine, the industry utilizes the medium-sized Bell 222/230/412/429, Airbus BO-105/BK-117/EC-135/EC-145/AS-365, Agusta A-109/139 and the Sikorsky S-76.

Since the 1970s, the Airbus H125, H130, H135, and H145 have captured more than half of the global HEMS market, serving more than 300 customers. Earlier this year, Air Medical Group Holdings (AMGH), based in Lewisville, Texas, ordered a total of 21 Airbus helicopters, consisting of a mix of single-engine H125 and twin-engine H135 helicopters. AMGH is one of Airbus Helicopters’ largest customers, with a current Airbus fleet of nearly 85 helicopters, out of a fleet of over 300 medically equipped helicopters.

Established in 1980 to provide air medical transport, Air Methods is the largest provider of air medical transport services in the United States. Based at Centennial Airport in Englewood/Colorado, but operating from 306 bases of operations in 48 states, it has a fleet of 488 aircraft, of which 94% are helicopters, making them the largest helicopter operator in the world, transporting roughly 130,000 patients per year. Air Methods has been the first operator to fly first Airbus H125 (formally known as AS350) with FAA-certified crash resistant fuel systems (CRFS).

The Bell 206 is one of the oldest original designs used in HEMS today. A variant on the Bell 206, the Bell 206L LongRanger is commonly used by air ambulance services because of its ‘stretched’ cabin that provides more space to accommodate a patient, air medical crew, and needed equipment. Also, the Bell 429 was developed primarily for use in emergency air medical services. It has a flat floor and, in some variations, a set of rear clamshell doors underneath its tail boom to allow for easier loading of patients.
The Sukhoi Business Jet is hoped to revive the fortunes of the Russian civilian aircraft segment.

The year 2019 has been marked by a number of regulatory changes affecting the operation of business aircraft in Russia. The changes are twofold: There has been a drastic change in the application of temporary importation regulations as applied to business jets, and there have been changes to regulations affecting landing permits.

The changes to the regulation of the operation of business aircraft in Russia were initially very confusing to market participants as they encountered an unexplained cessation of business as usual in early 2019. Business as usual had been that foreign (non-Russian) commercial operators of aircraft had been able for decades to conduct domestic flights within Russia on foreign-registered aircraft, based on “one-time flight permits”. The Russian Federal Customs Service (the “Customs Service”) would look the other way and not inspect whether a flight that was declared to be a private flight was, in fact, a commercial flight. Then, suddenly, in the spring of 2019 the acquiescence of the Customs Service was...
discontinued, though flight permits could still be obtained. It was not clear why Russia had suddenly decided to commence enforcing its own laws that had long declared cabotage flights to be illegal, i.e., commercial flights within Russia on foreign-registered aircraft that are not customs-cleared and placed on to a Russian commercial operator’s certificate for commercial use.

The background to the changed regulatory environment in the spring of 2019 was that a lot of attention was being paid to the illegal operation of foreign-registered aircraft within Russia. There were two related criminal investigations, one directly concerning the illegal operation of aircraft that were not customs-cleared, and the other one concerning the issuance of flight permits in exchange for bribes.

With the commencement of the Sfera Jet case in March 2019, the Customs Service began an across the board halt on the issuance of customs clearances of foreign-registered aircraft for flights within Russia or the Eurasian Economic Union (the “Eurasian Union”). There was also a case which commenced on July 8, 2018 in the Meschansky district court in Moscow against a now-former employee of the Russian Agency for Air Transportation (“Rosaviatsia”) named Yury Malyshev who accepted a bribe for a flight permit. Filatov, general director of iFly, was arrested for giving a bribe and Malyshev (at the time, a deputy head of a department of Rosaviatsia) was arrested for accepting the bribe.

It had been known for years that there had been large scale, pervasive corruption in the issuance of flight permits and customs clearances for domestic flights within Russia of foreign-registered aircraft. Business Aviation industry leaders in Russia had previously openly advocated the making of false flight plans for domestic commercial flights, declaring such flights to be private when they were, in fact, commercial. There was a low probability of adverse consequences since regulators at Rosaviatsia and in the Customs Service were incentivized not to inspect flights for which a flight permit had been obtained through certain channels.

As of June 21, 2019, Rosaviatsia introduced new restrictions on the operation of foreign registered aircraft on flights to, from and within the Russian Federation, including that foreign operators must obtain the non-objection of a number of selected Russian commercial operators who may object to a foreign operator conducting a leg of a flight within Russia, even as part of an international roundtrip of a foreign registered aircraft. An exception is allowed for private flights operated in the interests of an aircraft owner, transit flights through the Russian Federation, flights for the purposes of rendering humanitarian assistance, medical evacuation, transportation of personnel and supplies during natural disasters or in cases of emergency, and certain other flights.

### Flight Permits

The issuance of flight permits by Rosaviatsia is governed by Russian Federation Government Decree No 527, dated April 28, 2018, as further amended by Government Decree No 652, dated May 24, 2019. Even though the practical application of some of the rules is not straightforward, since the commencement of the case involving iFly and Mr. Malyshev in July 2018, Rosaviatsia has not delayed issuances of flight permits without a stated formal reason. Decree No 652, in force since May 2019, created a new requirement that, for a foreign carrier to receive permission for a charter to, from, or within the Russian territory on a foreign-registered business aircraft, the foreign operator must obtain non-objections to the planned flight from Russian commercial operators. As of June 21, 2019, Rosaviatsia introduced new restrictions on the operation of foreign registered aircraft on flights to, from and within the Russian Federation, including that foreign operators must obtain the non-objection of a number of selected Russian commercial operators who may object to a foreign operator conducting a leg of a flight within Russia, even as part of an international roundtrip of a foreign registered aircraft. An exception is allowed for private flights operated in the interests of an aircraft owner, transit flights through the Russian Federation, flights for the purposes of rendering humanitarian assistance, medical evacuation, transportation of personnel and supplies during natural disasters or in cases of emergency, and certain other flights.
The Customs Code replaced Russia’s own prior national customs code. And, today, the import of aircraft and other goods into Russia is governed by the Customs Code and relevant decisions of the Commission of the Eurasian Union.

Under the Customs Code, the first step to temporarily import an aircraft into the Eurasian Union that foreign business-jet operators should consider is the procedure by which an aircraft is cleared as a “means of international transportation” that is carrying out an international flight. Under this procedure, upon the first landing of an aircraft at an airport within Russia or another country in the Eurasian Union, the operator is to provide to the Customs Service a Vehicle Declaration (as per Decision of the Commission of the Customs Union No. 422, dated October 14, 2010) and a General Declaration (as per the 1944 Chicago Convention on International Civil Aviation), declaring a route that begins and ends outside the Eurasian Union.

For the purposes of a Vehicle Declaration, an international flight is defined in Article 1 of the 1999 Montreal Convention for the Unification of Certain Rules for International Carriage by Air (the “Convention”). For the purposes of the Convention, the expression “international carriage” means any carriage in which, according to the agreement between the parties, the place of departure and the place of destination, whether or not there be a break in the carriage or a transshipment, are situated either within the territories of two States Parties, or within the territory of a single State Party if there is an agreed stopping place within the territory of another State, even if that State is not a State Party. Carriage between two points within the territory of a single State Party without an agreed stopping place within the territory of another State is not international carriage for the purposes of the Convention.

Article 1 of the Convention is interpreted to mean that an aircraft that is cleared for use in “international carriage” may not be used to carry passengers or goods within the territory of the Eurasian Union. This does not preclude the aircraft from making more than one landing inside the Union, a point that may be misinterpreted by Russian customs officials who would then refuse to clear an aircraft intending to make more than one stop within Russia or other countries within the Eurasian Union before ultimately departing the Eurasian Union.

For aircraft performing domestic flights, i.e. carrying passengers and goods within Russia or other countries within the Eurasian Union, there are two temporary importation procedures available, depending on whether the aircraft is used privately or commercially. The basis for them is Article 53 of the Customs Code, which sets out general rules for customs duties and taxes for goods imported into the territory of the Eurasian Union. There are different manners of importing goods, which are comparable to imports into the European Union, with the most important distinction being between an import for free circulation within the Eurasian Union and a “temporary import” of an item which is to be re-exported. In the case of a temporary import, foreign goods may be used for a specific period on the territory of the Eurasian Union, and may be partially or fully conditionally exempted from payment of import duties and taxes.

If an aircraft is imported into the Eurasian Union temporarily, and is to be used commercially, Section 3 of Article 223 of the Customs Code provides that import taxes and duties shall be imposed on such imported goods at the rate of 3% per month of the amount of customs duties and taxes which would be due if the
goods were imported for free circulation, to remain permanently in the Eurasian Union. Thus, if an aircraft were temporarily imported, and taxes and duties were paid at the rate of 3% per month of the cost of full customs clearance, plus interest on the deferred payments, then the aircraft may lawfully be used commercially within Russia.

If a temporarily imported aircraft is to be used privately by its owner, it may be fully exempted from payment of duties and taxes. Such regime is referred to as “Import 53”. Chapter 29 of the Customs Code is supplemented by three decisions of the Commission of the Eurasian Union affecting business aircraft, i.e. decisions numbered 331, 662, and 1388, discussed below. These three decisions provide that a complete exemption from import duties and taxes is provided for a civilian passenger aircraft having a number of passenger seats for not more than 19 people, if the aircraft is owned by a foreign person or legal entity, and is used within the customs territory of the Eurasian Union on regular (not commercially scheduled) flights, and provided further that such use is not intended to generate revenue. A foreign owned aircraft that is imported to Russia temporarily and without any payment of import duties may not be used commercially within Russia.

If a foreign, non-Russian-registered aircraft having no more than 19 seats, weighing no more than 28 tons empty weight and owned by a foreign entity or person is flown to Russia for use within Russia and other countries that are members of the Eurasian Union, and if the aircraft is not used on commercial flights while within Russia and the Eurasian Union, and the aircraft is flown out of the Eurasian Union by the date stated in the customs declaration filed with the Russian Customs Service upon arrival of the aircraft in Russia or another country in the Eurasian Union, then the aircraft may be used within Russia on private flights by its owner without payment of otherwise applicable taxes and duties.

Additional caution is required for any aircraft that are to be used commercially within Russia or another country in the Eurasian Union. If an aircraft is flown into Russia or another country in the Eurasian Union, and a customs declaration is filed claiming the exemption from customs duties that applies to tax-free temporary imports that are not to be used to generate revenue within the Eurasian Union, and the aircraft is then used to generate revenue while present in Russia or elsewhere in the Eurasian Union, then the rules governing a tax-free import will have been violated.

Further Developments
At the present time, there are consultative meetings being held between representatives of the Russian Business Aviation community and government officials representing the Ministry for Economic Development and Rosaviatsia. There are drafts of possible legislation concerning the creation of a new Russian registry for business jets to be used on private flights within Russia.

It is reported in conversations by participants in the consultative meetings that one aspect of the current draft proposals is that Russian owners of aircraft registered outside of Russia who desire to fly their aircraft within Russia will be required to customs-clear their aircraft in Russia and to place them on a Russian operator’s certificate. This, reportedly, will be required for aircraft that are to be operated privately or commercially in Russia. There are conflicting reports whether Ministry for Economic Development is considering an exemption from import VAT of 20% for aircraft imported to Russia to be operated privately. There are reports that the weight limit for the exemption from customs duties, as opposed to import VAT, of another 20%, will be increased to equal the weight of a Gulfstream G650. Accordingly, at the present time, August 2019, it is necessary to await the publication of the proposed new legislation governing the import of business jets.

Given the current unknowns about the pending new legislation governing the import of business jets, a foreign owner of a business jet who desires to operate the aircraft within Russia or another country in the Eurasian Union must analyze the cost of customs-clearing the aircraft and placing it on to a Russian operating certificate. The selected aircraft placed onto such a certificate may then be lawfully operated on charter flights within Russia and the other countries of the Eurasian Union.

It would be necessary to select an operator that is a Russian company that holds a Russian aircraft operating certificate (AOC). This is because Chapter 15 of the Russian Air Code requires that only a carrier that is an operator which holds a license to perform domestic air carriage where the point of departure, the point of arrival and all landing points are located on the territory of the Russian Federation may conduct such flights. Chapter 11 of the Russian Air Code deals with the arrival and departure of foreign aircraft.

Possibly, an aircraft owner may choose to shift the aircraft it desires to import and customs clear for operation in Russia to a Bermuda or Ireland registration. Such a change in aircraft registration would permit utilization of the 83-bis agreement between Bermuda and Ireland and Russia which allows Bermuda or Ireland-registered aircraft to be used commercially within Russia. All Sirius-Aero and Aeroflot aircraft are, for example, registered in Bermuda.

However, in this connection, Rosaviatsia issued a letter suggesting that Russia may no longer permit the registration of aircraft in countries such as Bermuda, and that aircraft maintenance and crew training obligations must be transferred to Russian commercial operators pursuant to Article 83-bis of the Convention on International Civil Aviation if there is any discrepancy between the actual condition of an aircraft and its Russian type certificate.

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SKybrary provides a description of the accident as follows: “On 30 March 2008, a privately operated Cessna Citation 500 which had just taken off from Biggin Hill UK for Pau, France in day VMC reported ‘engine vibration’. Whilst positioning for a return to land, the aircraft descended, and the pilots reported a major power problem just before it struck the side of a house killing all five occupants and destroying the house and adjacent property in the intense fire which followed.”

The Flight Crew
Pilot A was 57 years old. He held a UK Airline Transport Pilot’s License and had accumulated 18 hours on type and 8278 hours total flight time.

Pilot B was the older of the two pilots. He was 63 years old and had an experience of 4533 total flying hours, of which an unknown amount in excess of 70 hours was flown on the Cessna Citation on a FAA Commercial Pilot Certificate.

Both pilots had previous experience in multi-pilot operations on various aircraft types. However, both pilots had only received training and checking on operating the Cessna Citation in the single pilot role. Pilot A and Pilot B were thus properly licensed and qualified to operate the aircraft for single pilot operation only.

The Aircraft
The Cessna Citation 500 is a light twin-engine jet, thus a complex motor-powered aircraft. It is certified for single pilot private operation. For commercial operation, it must be crewed by two pilots. The aircraft had been maintained to the manufacturer’s standards, and no maintenance deficiencies were detected by the investigation.

The Flight
Pilot B had arrived at the Biggin Hill Airport (UK) at 11:00 UTC and began flight preparations. Pilot A joined him 45 minutes later, and both continued to prepare for the flight jointly. At 13:00 UTC, the three passengers arrived at the terminal, and they were brought to the aircraft.

The Technical Investigation
In order to find out which factors had contributed to the fatal outcome, the investigators conducted extensive

As the CE500 was not equipped with a voice or flight data recorder, we only have limited knowledge of what happened in the cockpit during that flight.

The BBC News reported on the outcome on the day after the accident: “Witnesses reported seeing the jet flying low over homes before crashing into the house in Romsey Close. Home owner Edwin Harman was away on holiday at the time of the crash, and his wife, Pat, who had returned early, was on her way to the house after spending the night at her daughter’s. Coroner Roy Palmer said it was ‘extremely fortuitous’ that no one was in the house at the time and through ‘great good fortune’ that no one was killed on the ground.”

The take-off from Runway 21 at 13:33 UTC was uneventful. One minute into the climb, Pilot B transmitted “And Victor Papa Bravo Golf Echo er we’re making an immediate turn to return to the airport immediate turn to the airport.” Two minutes later, Pilot B made the following final transmission: “And er Victor Golf Echo we have a major problem a major power problem it looks as though we’re er going in we’re going in.” Shortly after that call, the aircraft crashed.

When two pilots qualified to operate alone are flying together, do they add up to performing as a team of two?

Michael R. Grüninger and Capt. Andreas Grauer investigate
To determine the role of each pilot and the communication in the cockpit, we can analyze the event.

In corporate and private aviation, things are handled differently at times, although some of the operated aircraft are no less advanced nor less complex than airliners.

Often paid-by-the-day pilots are used to limit the crew expenditure to the times that the aircraft are actually in the air. Their record of accomplishment is difficult to trace. Owners and operators can hardly monitor their training standard if their crews are hired-in only occasionally. Individual crew member responsibilities and task sharing in the case of two freelance captains who are hired to operate a flight are often neither clear nor documented.

In the case of the Biggin Hill accident, the investigation report states: “Pilot A was employed to fly the aircraft on behalf of its owners and it is understood that he was acting as the commander and handling pilot for the flight. He had recently completed a type conversion onto the aircraft and it is believed that he had wished to fly with another pilot who had more hours on type, acting as mentor, until he gained more experience. He occupied the left seat during the flight.”

“Pilot B had operated this aircraft previously, both with and without Pilot A. His name appeared as the commander on the flight plan for the flight and he seems to have carried out much of the organization for the flight. However, as he held no instructor rating and occupied the right seat for the flight, it is believed he was fulfilling the role of mentor for Pilot A.”

Of course, we cannot jump to conclusions pointing at the pilots’ conduct because we simply do not know enough about the sequence of events and the communication in the cockpit. The whole investigation result is based on assumptions. Many factors may have contributed to the accident. Nevertheless, we have to take note that accident rate in private aviation where freelance crews with different backgrounds and training standards are used is higher than in operations that work under the rules of commercial aviation.

There is statistical evidence that applying commercial rules increases the level of safety of an operation. Owners and operators of private, complex motor-powered aircraft who have spent millions to acquire and maintain their high performance airplanes should therefore think twice before they consider saving on expenditure for standardized and comprehensive training programs for the pilots.

Any aircraft is only as good as the pilots flying it. 1+1 is not necessarily 2. To create a high performance team, it takes more than just flying together.

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Are you a proficient pilot, or are you a competent one? How can you determine which you are, and what’s the difference? Proficiency is defined as becoming an expert in a field of endeavor. Competency, on the other hand, is more simply stated as being capable, or fulfilling all requirements for the job. Thus, one can become competent, i.e. attaining a type rating, without gaining the complete proficiency that should always be our goal.

In my case, I’m a reasonably competent pilot, at least sufficiently so that I’m able to discern failings in others, but my skills are quite often eclipsed by truly proficient masters of the craft. I’m left in awe of their ability to repeat a procedure with exactness, while I remain consistently inconsistent. I work diligently to check off the boxes in order to pass a flight check; they fly through them as a matter of course.

Experience

What makes the difference? Experience certainly counts, but it has to be the right kind of experience, applicable to the task before us. For instance, I can draw upon a half-century of acquaintance with conventional-gear (tailwheel-equipped) airplanes, which gives me an advantage when I must fly an antique fitted with a tailwheel. By comparison, a 10,000-hour pilot who’s flown his entire career on nosewheel-fitted aircraft will have to work a bit to become competent with the taildragger, and his proficiency will be a long way off.

On the other hand, when it comes to flying a helicopter, my smattering of experience under rotor leaves me far short of competency, and proficiency would have to wait for some years of rotor-wing flying. I may know what it takes to achieve a stable hover, but it will elude me until I practice, and practice, and practice some more. Meanwhile, my friends with years of helicopter flying behind them can pick the machine up with unvarying ease.
Knowledge

So, it helps to have many hours in type to guide your efforts. But true understanding comes with knowledge of the aircraft’s systems and how they work. Otherwise, you are likely to be fending off surprises as you chop and hew your way into competency. By applying yourself to the study of the necessary procedures, you can get ahead of the machine much earlier. It still has to be flown, but it will be easier when you know how the aircraft works, so you’ll know what’s coming and how to prepare for it.

Skill, or the ability to operate a complex apparatus with a predictable, successful outcome, is more easily attained by some than others. We equate skill with proficiency, and I frequently observe so-called “natural” flying talent among students and peers. I see some individuals make distressingly rapid progress toward a defined goal, when the average applicant struggles to become competent. And yet, skill is attainable by almost all who diligently seek it; it just takes longer for some folks.

Thus, competency, and eventually proficiency, requires a blend of all the proper ingredients: experience, knowledge and skill. Experience in type, or multiple similar types, gives one an edge toward proficiency. A transference of skills from previously-flown airplanes is noticeable, particularly if the cockpit suite in the new aircraft is a familiar one, such as Collins ProLine 21 or Garmin G1000. If learning not only a unfamiliar array of aircraft systems but a new integrated flight deck, the time required to acclimate will necessary be longer. We will be frustratingly competent at first, getting the job done with an occasional stumble, but never fear; true proficiency will come. It’ll just take a bit.

The Source of Proficiency

Whence cometh proficiency? It originates in the desire to get better, by refusing to accept mere competency as an achievement, instead seeing it as an initial step on the way to true mastery. You may have passed the course, and you can congratulate yourself briefly, but by no means should you deem yourself finished. Consider that you’re being allowed to go on, self-guided, with the knowledge thus far attained. Skill will build, consistency will come, but full proficiency is yet to be achieved.

I am frequently called upon to administer Instrument Competency Checks, a review of skills and knowledge that will reestablish instrument flying privileges for pilots unable to meet the minimum recent-experience totals. The IPC will demonstrate that the pilot “has still got it”, by completing a regimen of approaches, holding, circling-to-land and missed-approach procedures. Most of the time, the candidate will be a non-professional pilot who flies under IFR on an infrequent basis. He or she can meet the standards set by regulation, but only to establish competency. The individual may ask, at the conclusion, “Am I safe?” To which I respond, “I can only guarantee legal authorization; safety is your responsibility.”

In Quest of Perfection

Professional pilots must go further, seeking proficiency so that safety is achieved as a by-product of being able to bring the aircraft along a route in compliance with cleared procedures, not just to meet minimum standards, but with consistent, predictable performance. One gains such proficiency by being dedicated to the task, seeing it not as a barrier to be surmounted but a challenge to be met, taking satisfaction in meeting and exceeding the parameters of excellence.

Will perfect results always be achieved? Of course not; most of the time we’ll fall somewhere in between mere competency and per-
A proficient pilot should constantly review his personal minimums and limitations.

The secret to advancement as a professional pilot is to use shortfalls as a learning experience. Rather than accept and ignore them, analyze each less-than-stellar performance to see why and where it went wrong, and use what you learn to do better next time.

Much of our “flying” in this day and age is not manual manipulation of the aircraft’s controls, but operating the automation. Getting it to play well can be an art, and much of the time we fail to understand why our autopilot didn’t couple as directed, or why it disconnected at a critical juncture. To avoid this hindrance to proficiency, you must study the system architecture and understand the automation’s logic.

Loading the FMS is equivalent to writing up an old-fashioned flight log; both are methods of staying ahead of the aircraft, knowing where it’s supposed to go next and how the flight is progressing—on, ahead of, or behind schedule. At each crossing point, the fuel remaining should be checked against targeted expectations, avoiding surprises if the destination weather fails.

**Always Be Ahead of the Plane**

Proficient flying is affirmed by one characteristic: Staying ahead of the airplane. On the other hand, mere competent piloting is demonstrated by a constant struggle to keep up with the plane, and incompetent operation is nothing more than being behind the aircraft. As an instructor once jokingly told a struggling transitioning type rating applicant, “You’ll never be in a crash in this aircraft. You’re so far behind it, the accident will take place long before you get there!”

Regrettably, the very automation that we depend upon to manage our flight can add to our workload, at the very time we’re trying to get ahead of the plane and keep building our skills toward proficiency. Make sure you’re backed up with fundamental flight management; know what the aircraft can do, how to get the most efficiency out of it, and where it’s supposed to be going next. If the convenient magenta line disappears from the MFD, where is your redundant information? Electronic Flight Bags are compact repositories of all wisdom, but their information must always be available in duplicate form, and there always needs to be fully-charged extra batteries on board.

Again, proficient flying means the pilot always brings the aircraft to a point in space, either hand-flown or by using the autopilot, with its energy state at the correct level. We must fly through a series of such points to complete the mission, staying ahead of the aircraft so its next turn or altitude change is anticipated, not hastily accommodated. A routing change is a true test of proficiency. Can you insert the requested re-route without losing your place in the big picture?

**Juggling All Three**

In professional flying, we’re actually expected to attain proficiency in three processes, simultaneously. The obvious first task is to be good at flying the airplane, whether in manual control or managing the automation. Second, it is critical to have a grasp of where we are, keeping ourselves oriented in the realm of the “big picture.” Third, we must interface with the air traffic control system, clearly understanding what is expected of us and how we’re achieving compliance with the instructions.

I see many individuals who can adequately perform one or two of these tasks, but fall short of proficiency, or even competency, in another one. Often, they will struggle with overcoming the deficiency in one area, to the detriment of one in which they’ve previously exhibited mastery, suddenly getting behind the airplane, losing orientation, or missing ATC’s expectations.

The goal is to never settle for mere competency as a pilot, but to always strive for the advancement that marks us as “proficient.” Always try to turn your competency into proficiency.
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