

# King Air

An aerial, top-down view of a white King Air 90 twin-engine turboprop aircraft. The aircraft is centered in the frame, flying over a lush green field. The propellers are blurred, indicating motion. The landing gear is visible, and the aircraft's wings extend horizontally to the left and right. The background shows a green field with some brown patches, possibly a runway or taxiway in the distance.

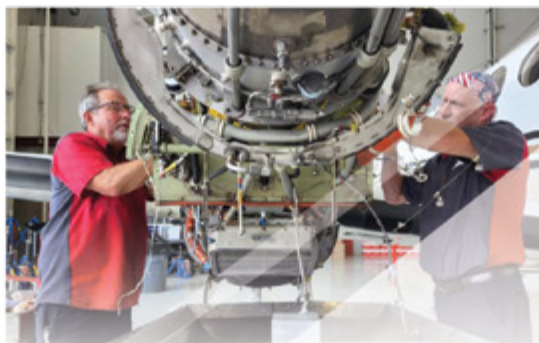
A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

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## Worth Another Look

Join our author as he rethinks the King Air 90 series





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### EDITOR

Kim Blonigen

### EDITORIAL OFFICE

2779 Aero Park Dr.,  
Traverse City MI 49686  
Phone: (316) 652-9495  
E-mail: editor@blonigen.net

### PUBLISHERS

Dave Moore  
Village Publications

### GRAPHIC DESIGN

Rachel Coon

### PRODUCTION MANAGER

Mike Revard

### PUBLICATIONS DIRECTOR

Jason Smith

### ADVERTISING DIRECTOR

Jenna Reid  
King Air Magazine  
2779 Aero Park Drive  
Traverse City, MI 49686  
Phone: 316-409-7033  
E-mail: jenna.reid@vpdcs.com

### ADVERTISING ADMINISTRATIVE COORDINATOR AND REPRINT SALES

Betsy Beaudoin  
Phone: 1-800-773-7798  
E-mail: betsybeaudoin@villagepress.com

### SUBSCRIBER SERVICES

Rhonda Kelly, Mgr.  
Kelly Adamson  
Jessica Meek  
Jamie Wilson  
P.O. Box 1810  
Traverse City, MI 49685  
1-800-447-7367

### ONLINE ADDRESS

www.kingairmagazine.com

### SUBSCRIPTIONS

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(Courtesy of Textron Aviation)

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# REVISITING THE KING AIR 90



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CREDIT: TEXTRON AVIATION



# SERIES

## ... from Old to New

by Joe Casey

I fly some version of a Piper PA-46, a Daher TBM or a Beechcraft King Air five to six days a week. I'm either instructing, examining or sometimes I get to fly those beauties all by my lonesome. Not a bad gig, eh? I love my job and would not choose to do anything else.

My company has four King Airs under management – two 350s, a Blackhawk 300 and a B100, and I fly those airplanes a lot. I am generally able to recite numbers accurately and plop myself in just about any variant of the 3XX/B100 and feel right at home within seconds.

Until recently, I hadn't flown the King Air 90 series often. But all of that changed during the past six months – a local owner purchased a 2019 King Air C90GTx, we helped a

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***“The iterations of the King Air model 90 are generally the lesser appreciated version of the beloved lineup ... Smallest and slowest doesn’t mean it is not the best for some.”***

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client purchase an F90-1, and we had another client in Spain purchase a C90GTx and ask us to sell his older C90 model.

Suddenly, I got to fly the various 90 models a lot and despite this series being the smallest and slowest of the King Air siblings, I enjoyed every minute. The iterations of the King Air model 90 are generally the lesser appreciated version of the beloved lineup, remaining in the shadows of the 200 and 300 series, but is that warranted? Smallest and slowest doesn’t mean it is not the best for some.

If you are new to the King Air world, your eye will certainly be lured by the big, sexy and powerful King Air 350/360. Everyone starts there. Everyone wants bigger, faster and stronger, right? Well, yes, assuming you can afford the cost and have a hangar big enough for the best turboprop that Beechcraft has to offer. Many don’t. It also is a lot of airplane and may not fit your mission.

Usually, practical owners begin the process of going through the King Air models. As you move through the models, you start to learn more and find that the King Air 90 models are also fabulous airplanes and perfect for some owners.

The 90 doesn’t get much love from those who don’t know it well, some even refer to it as an “overgrown Baron.” I fly with a lot of TBM and PA-46 clients, including some looking for an upgrade in useful load or range. They usually snub their nose (initially) at the King Air 90 when considering an upgrade. Only 230 knot cruise? Only 4.6 PSI? Only 1200fpm climb? What that prospective buyer forgets about is a potty, a great deal more room and a lot of range.

Speed sells and the King Air 90 performance numbers are not thrilling to most owners already in a high-performance, single-engine turboprop. But the 90 does possess an extra engine that those turboprops don’t have, and the King Air 90 versions are the least expensive King Air to acquire and operate. ➤



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Mauricio Bella Sanchez with his wife Alicia and dog, Jackie, standing with their new to them 2014 King Air C90GTx.

When the 2019 King Air C90GTx arrived at our ramp, I was excited to take it up for a flight. With only 300 hours on the airframe, it looked and smelled new and had the advanced Collins Pro Line Fusion avionics. It was fun for me to get into something that was clearly “cutting edge.” The futuristic-looking, electric rear shades can be controlled from the cockpit or the cabin, the interior appointments are exquisite and the seats can seemingly move in any direction. For passengers and pilots alike, the C90GTx is the epitome of comfort.

Our 2019 C90GTx was one of the last to roll off the assembly line. Textron Aviation has stopped production of the C90GTx, and I’m sad that is the case. There are rumors about slumping sales, but I like to think the C90GTx competed with the sales of the bigger King Airs, and there’s no sense competing with yourself. So, the newest of the 90 fleet will cost nearly \$4 million to purchase, but you’ll get an updated airplane that is incredible.

You may wonder if the C90GTx has much ramp presence. I can tell you that I think it is the sexiest King

Air in existence. With winglets, super-long wings and a great paint scheme, the C90GTx is ridiculously good looking. I parked the one we were flying next to our 350 and I think the C90GTx is sleeker and has a better ramp presence. It may be dwarfed in size by the model 350, but dang that C90GTx is sleek and sexy.

Just as I discovered my love affair with the 2019 C90GTx that was under our management, I got a phone call from one of my favorite people in the world, Antonio Elias. He is one of those really neat people in our aviation community – an immigrant from Europe who proves how America can be the land of opportunity. He came to the U.S. with a dream and empty pockets and ended up with a Ph.D. from MIT. He was a contributor to the design of NASA’s space shuttle, led the technical team that designed the first private space launch vehicle, the Pegasus rocket, and is a Piper M600 pilot/owner, which is how I got to know him.

Antonio introduced me telephonically to one of his good friends, Mauricio Bella Sanchez. Mauricio lives in Spain and was the owner of a 1978 King Air C90 that he was ready to upgrade to a C90GTx. A former airline pilot and now a business owner in Spain, Mauricio had an appreciation for the FMS-

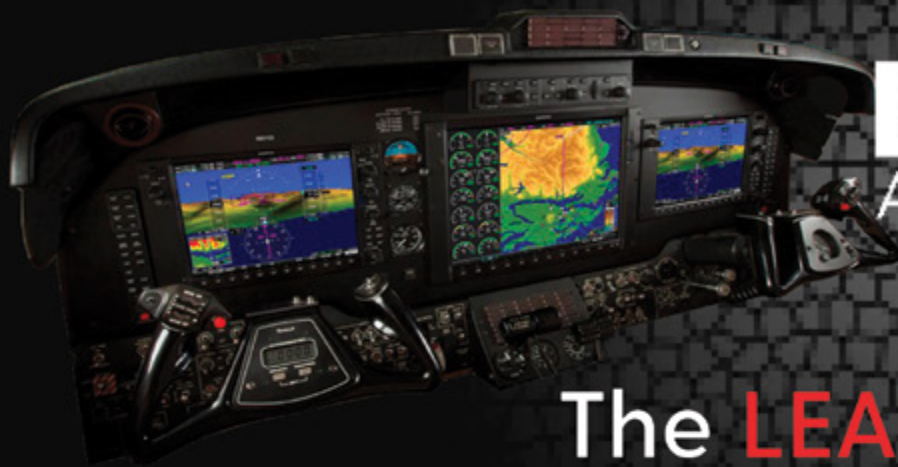


The Collins Pro Line Fusion avionics were certified for the new model C90GTx in 2016, and also as a modification in older King Air 90 models.





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style Pro Line 21 avionics suite and he wanted “newer and nicer.”

My team started searching for the best C90GTx we could find and soon discovered a really nice 2014 model in Florida. Negotiations went well, money changed hands, and I now had Mauricio’s new-to-him C90GTx to fly to Spain. It was on this trip across the North Atlantic that I really gained an appreciation for the best-of-breed version of the 90.

I averaged 264 KTAS for the entirety of the flight from the U.S. across the North Atlantic to Spain and burned an average of 548 pounds per hour at FL240. The C90GTx boasts two PT6A-135-A engines, offering more power and more margin during an inadvertent over-torque event than other 90 variants. Simply put, the -135-A has more of everything a King Air pilot wants; it is one huge factor that makes the GTx better than its other variants.

It could be argued that the F90-1, which generally has the same engines as the GTx, is also a great airplane. I’d agree. Those few\* F90-1s that Beechcraft made are highly sought-after variants that outright perform. But, they don’t come with upgraded avionics, a fancy interior and much lower airframe hours found in newer aircraft.

The Friemel family of Amarillo, Texas, used to own a King Air 200, so they knew the costs associated with a big-body King Air. They wanted all the good aspects of a King Air, but wanted to watch their expenses. We helped them find a King Air F90-1 to purchase and they are loving it. They promptly installed the latest and greatest Garmin avionics, and while they were at it, upgraded the interior and got the exterior painted.

The only difference between that F90-1 and the GTx is the winglets. The Friemels have a 30-year-old King Air 90 but, if you didn’t know better, you’d swear it just rolled off the production line at Textron Aviation. It is immaculate and they didn’t spend \$4 million to buy it. In fact, they’ve got far less invested



in their F90-1 and it costs less to operate than their previous King Air 200.

Then there’s Mauricio’s 1978 C90. Who would want an old C90? A lot of smart people. We had his C90 under contract before it ever hit American soil. There was a long line of possible buyers for this fine King Air C90 because it only had 4,000 hours of flight time and the engines were youthful. Plus, the panel was upgraded with dual Garmin G500s and dual Garmin 750s. The autopilot had been upgraded to the Genesys Aerosystems S-TEC 3100, a seriously upgraded autopilot with lots of safety features. Add the fact that the paint and interior were recently updated, and this was one of the nicest C90s on the planet. Even though his C90 is more than 44 years old, it was in

pristine condition and buyers knew it. We sold the C90 for less than \$1 million, which was above-retail pricing at the time.

While a C90 will cruise slower than a GTx, it sips the fuel comparatively. On the ferry flight to the U.S., Mauricio’s C90 averaged 440 pounds per hour in fuel burn and cruised at 235 KTAS at FL230. Experienced King Air pilots know that speed is sometimes an illusion, meaning that a 30-knot increase in airspeed does not usually translate into radically faster flight times. In block-to-block flight comparisons, the GTx will beat the C90 every time, but not by much, usually less than 30 minutes, even on the longer flights.

The C90 doesn’t have articulating seats, fancy window shades or USB ports. It is a bit louder and it





The Friemel family's 30-year-old F90-1 after getting a major overhaul with new avionics, interior and exterior paint looked like new again.







The C90B was one of the most popular models of the King Air and was manufactured from 1982 through 2005.



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certainly has an “older feel.” But, if you want to move seven people a long way in multi-engine safety and comfort but not break the bank, the C90 might be your best consideration.

When I open the hangar at KJSO (Cherokee County Airport in eastern Texas), ready to pull out an airplane for an adventure, you’d think that the 350 would be the airplane of choice. Sometimes it is, but not always. I really like flying the King Air 90s, as any of them are a joy to fly.

If you move down from a King Air 90 you move into an unpressurized and arguably underpowered Baron. If you move up from a 90, the footprint, costs and size also move up. With the King Air 90 you get the smallest King Air, but also a potty, plenty of room for the family or business associates and reasonable performance numbers.

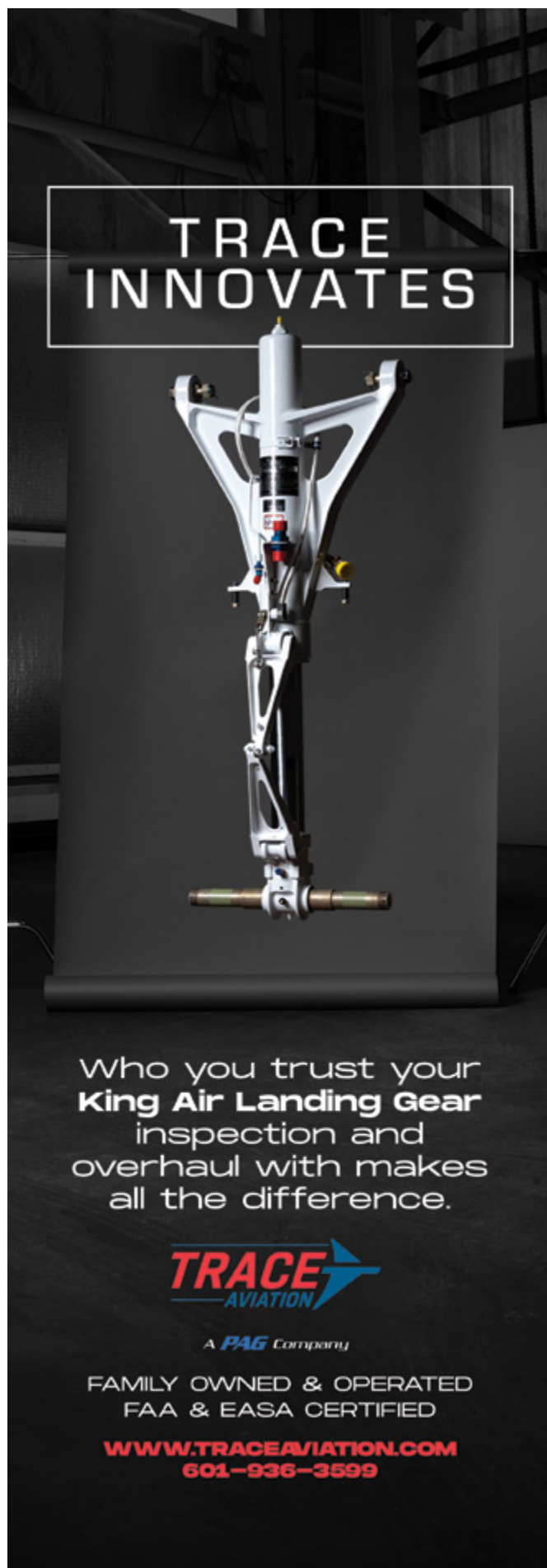
The various versions of the venerable King Air 90 are a really good consideration for the buyer who owns a smaller hangar, wants cheaper insurance premiums, doesn’t want to get a type rating or just wants to spend less money. Americans in general have a propensity to buy the biggest/fastest/strongest/sexiest, but those who are good money managers, those who know it costs more money to haul more aluminum through the sky and those who know how to fit an airplane to the actual mission they plan to perform might just choose a King Air 90.

Whether you go for the latest and greatest GTx, the F90-1 or a model 90 version built in the 1970s, know that the King Air 90 is one great airplane. I like them all. **KA**

\* Only 33 units of the F90-1 were produced when the decision was made, in 1985, to stop production.

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Joe Casey is the owner of Casey Aviation, Inc. based at KJSO in eastern Texas, which manages four King Air aircraft and provides flight training in many models of airplanes. He has 16,800 hours of total flight time, over 4,000 of which are in King Air airframes. He is a certified ATP-ME Commercial Pilot with ASEL/ASES, Rotorcraft-Helicopter/Instrument and Glider ratings. Casey is also a Designated Pilot Examiner (DPE) with BE-300 type rating issuing authority up to the ATP level, and also holds CFI, CFII, MEI, CFI-H, CFI-IH, CFI-G certificates. He has flown over 75 North Atlantic crossings in King Air aircraft.



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# Old Stories

by Tom Clements

I thought you might enjoy reading about some memories I have of a couple of events in my life ... tied to King Airs, of course!

I think it was 1974; I was in my third year as a ground and flight instructor at the Beechcraft Training Center in Wichita and the center's manager, Don Cary, received an unusual telephone call. It was an inquiry from Sam Baker, the aircraft sales manager for Stevens Beechcraft out of Greenville-Spartenburg, South Carolina, asking if we could provide "immediate" King Air initial ground and flight training for 15 pilots. As Don explored further, additional information came to light, helping to explain this unusual request.

It was found that IBM International, headquartered in Poughkeepsie, New York (yes, THE IBM!) had grounded their fleet of Rockwell Sabreliners. There had been a couple of unexplained fatal crashes involving Sabres and, until the cause was found and corrected, IBM was taking the conservative approach of not flying their Sabreliner fleet. The company had started making urgent inquiries about how and from whom they could get five replacement airplanes and get them into service without delay. Most of their inquiries resulted in dead ends, since few aircraft sales organizations had such an inventory in stock.

Ah, but good old Stevens Aviation was about to be their savior. Stevens, founded in 1947 by Ralph and Gaynelle Curthbertson, had become one of Beech's most successful distributorships. The Cuthbertson's had assembled a team of top-notch people who covered the entire FBO spectrum of line service, maintenance, flight training, charter and sales. I, personally, had come to know many of their experienced pilots as they came to Wichita to pick up their latest King Air ... some already sold and others to be used as demonstrators until a buyer

was found. Both of Ralph and Gaynelle's sons – Ralph Jr. and Herb – were also highly involved in the business and were experienced pilots in their own right.

When Sam Baker had received the call from IBM, he sensed a once-in-a-lifetime opportunity to sell a bunch of King Airs in one fell swoop! Between some aircraft currently in their charter operation and others coming on line as unsold demonstrators, Sam believed they could provide the five requested airplanes. But now the possible stumbling block was the immediate training of all of their pilots. They contacted Beech for a possible solution.

Back then, all ground training at Beech was done in the classroom with an instructor, a chalk board and an overhead projector. All flight training was done in the airplane ... usually a new one that was leaving the factory on its maiden delivery, either to a distributorship or to the end user/customer. In those years it was also not uncommon to send a ground and flight instructor (at Beech, all of the instructors were qualified in both the ground and flight environments) to perform on-site training at the location of a customer that had a rather large flight department. By doing so, the customer paid for only one person's travel expenses instead of the expenses incurred when perhaps 10 or more of their pilots had to travel to Wichita. Personally, I had spent time in Detroit, Michigan, and Findlay, Ohio, providing Beech-factory, on-site training for General Motors and Marathon Oil, respectively.

Sam explained to Don that he was in the process of finalizing the deal on the fifth King Air and that they





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The King Air A100 (Special Collections  
and University Archives, Wichita State  
University Libraries)



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The author while working at  
the Beech Training Center.



CARSON MASTERSON/UNSPLASH

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***“... the IBM flight department found that the King Airs actually worked very well for their use: reliable, comfortable, not a whole lot of additional time en route, and 50% or less fuel consumption.”***

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(Stevens) could provide at least two of the flight instructors needed, but that they needed the factory’s Training Center to travel on-site for the ground school. When can they get here? How about yesterday?

So it came to pass that yours truly was assigned to pack up the training material and proceed via airline to Poughkeepsie to begin the training the following week. “Wow, won’t this be an adventure?” I thought.

IBM had provided a large conference/training room to use that was actually a loft in their corporate hangar. It was spacious and comfortable with a large projection screen and chalkboard – better than the ones we used in Wichita! The “fleet” ended up consisting of three King Air A100 models, one E90 and one C90. (Keep in mind that at this time the A100 was the “King of the Fleet.” The much superior 200 model was just starting to be manufactured.)

My 15 students were all quite experienced pilots and they all had been flying the Sabres. Only one or two had previous King Air experience so the class was definitely geared for *initial* training, aimed at pilots who knew nothing about King Airs. Some good questions were asked and the class went rather well the first morning. However, I sensed an aura of unhappiness and frustration in the students. Then the reason dawned on me, and I was angry with myself that it took me so long to realize what I was facing. Usually, our new King Air students were transitioning into their first turbine, pressurized, airplane ... and they were very excited to be doing so, as you would expect. But at IBM, these pilots were already experienced in the ways of corporate aviation in general and pure jet equipment specifically. For them to step down from the Sabre to a “mere” King Air was a blow to their egos.



One of my most enjoyable memories from those days in Poughkeepsie was the dinner a bunch of us enjoyed at the CIA (not the spy organization, but the Culinary Institute of America). As you may know, the CIA is a premier school for high-end, chefs-to-be. In addition to the training the students receive, there is a dining room that is open to the public where they can hone their craft. Wow, is the food and service all 100% first class!

Although the memory is hazy, I think there were maybe eight of us who dined: Three of the Stevens instructor pilots and salesmen, four from the IBM flight department and me. Excellent food and drinks were enjoyed by all with lots of great flying stories shared around the table. Fun time!

After five full days of ground school, Monday through Friday, the flight training commenced. The three instructors were from Stevens and I was the fourth. All of the students did quite well and we were finished in another five days, if I recall correctly.

Now for “the rest of the story,” using Paul Harvey’s famous phrase. During lunch on the first or second day of ground school, after I had recognized the general discontent in the students due to their stepping down into the King Airls, I made a feeble attempt at making

them feel that I understood their malaise. “Yes, I bet your trips will consume a lot more time in a 230-knot King Air versus the 450-knot Sabres. That’s too bad!”

“Well, the trips won’t really be that different in time,” was the reply. “Our legs are typically only 300 miles or less.”

“What?!” I inquired. “I thought you went coast-to-coast and even to foreign destinations quite often!”

“Oh, those trips are for the Gulfstreams. The Sabres are for the shorter trips.” I was getting a glimpse of how the other half lives.

To finish this story, the IBM flight department found that the King Airls actually worked very well for their use: reliable, comfortable, not a whole lot of additional time en route, and 50% or less fuel consumption. What was not to like?! But, after a couple of months and with the Sabreliners being found to not have a universal problem, the King Airls went back to Stevens and the Sabres were again the airplane of choice for their “shorter” legs. Oh well ...

### **A different, but related story.**

Stevens’ chief pilot at the time was Tim Heflin, a World War II airman and a very experienced and capable pilot



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and leader. Tim had been one of the flight instructors for the IBM training.

All of the early King Airs, as you probably know, had their engine gauges arranged in two horizontal rows above the avionics panel and below the glareshield/annunciator panel. The “straight” model 100 King Air – the first stretched cabin King Air that came out in 1969, not to be confused with the A100 that appeared in 1971 – was the first King Air to put the engine instruments in a vertical stack of two columns between the avionics panel and the pilot’s flight instruments. This seemed to be a much better arrangement, making it more intuitive to differentiate left engine from right engine and putting more of the gauges closer to the left seat occupant’s line of sight.

However, for quite some time, the 100s and A100s ordered by Stevens for resale were specially built at Stevens’ insistence to retain the horizontal rows of engine instruments. You see, Mr. Heflin was used to flying in a two-pilot crew – as most of Stevens’ customers did in those days – and he felt that the advantage of the horizontal arrangement was that it put the oil pressure and temperature gauges close to the co-pilot’s line of sight. Hence, that pilot would be much more likely to notice an abnormality when it occurred. Maybe some of you readers are now saying, “So *that’s* why my panel doesn’t look like the one shown in the POH!”

The excellence and variety of the pilots I have had the pleasure of knowing through my association with Beechcraft is a blessing in my life. Thank you to all who taught me so much! 🙏

---

King Air expert Tom Clements has been flying and instructing in King Airs for over 50 years and is the author of “The King Air Book” and “The King Air Book II.” He is a Gold Seal CFI and has over 23,000 total hours with more than 15,000 in King Airs. For information on ordering his books, contact Tom direct at [twcaz@msn.com](mailto:twcaz@msn.com). Tom is actively mentoring the instructors at King Air Academy in Phoenix.

If you have a question you’d like Tom to answer, please send it to Editor Kim Blonigen at [editor@blonigen.net](mailto:editor@blonigen.net).



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# New Location for AD Databases, Canadian ADS-B Out Mandate Schedule & Northeast Corridor ACR

## New Location for AD Databases

The Federal Aviation Administration (FAA) has developed a new site for several of its Airworthiness Directives (AD) databases.

Effective Aug. 16, 2022, Emergency Airworthiness Directives (EAD), Airworthiness Directives (AD) and Airworthiness Directives: Biweekly (AD Biweekly) will only be available by going to the recently developed Dynamic Regulatory System (DRS) at <https://drs.faa.gov/browse>.

If you are already subscribed to receive notifications when ADS and EADs are posted or to receive a mailed copy of AD Biweekly, no further action is needed.

## Canada Pushes Back ADS-B Out Mandate Schedule

Nav Canada in coordination with Transport Canada recently announced the dates for the Automatic Dependent Surveillance – Broadcast (ADS-B) Out Performance Mandate have been rescheduled due to supply chain limitations and backlogs related to the COVID pandemic.

The new mandate start dates will allow operators adequate time to equip their aircraft and are:

- Class A Canadian airspace – August 10, 2023
- Class B Canadian airspace – May 16, 2024





- Class C, D and E to occur no sooner than 2026 and will be determined pending further assessment.

The ADS-B Out mandates were put into place to enhance aircraft operations in domestic airspace – requiring aircraft operators flying in certain domestic airspace to meet ADS-B Out Performance Requirements.

Nav Canada said the adoption of satellite-based surveillance technology ensures long-term alignment with the global aviation system.

## FAA Postpones Final Phase of Northeast Corridor ACR

The FAA has postponed the activation date for the final phase of its multi-year Northeast Corridor



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***"The main change of the ACR project is that 150 new or modified routes are replacing the existing high-altitude route structure."***

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Atlantic Coast Routes (ACR) project from the previously scheduled Nov. 3, 2022, to April 20, 2023.

The new procedures will still be published in September but won't be authorized for use until the new activation date. The changes will affect routes over 15 major airports along the Atlantic East Coast from Baltimore-Washington to Raleigh-Durham. The main change of the ACR project is that 150 new or modified routes are replacing the existing high-altitude route structure.

According to the FAA, the transition to performance-based navigation (PBN) decreases the reliance on ground-based nav aids. Updates started in 2019 but implementation was delayed due to the pandemic, resulting in the inability to conduct controller training.

### **VNY Runway 16L/34R Reconstruction Complete**

Van Nuys Airport (VNY), Southern California and the Los Angeles-area's general aviation hub has completed its reconstruction project on Runway 16L/34R. The \$13.1 million, six-month rebuild of the 4,000-foot runway used 100% recyclable materials for its base. Additional upgrades included the installation of 167 LED lights, enhanced signage and markings and the addition of an engine run-up area adjacent to the runway. The project which was funded by federal grants will continue by the rehabilitation of the airport's 8,000-foot Runway 16R/34L. **KA**





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# Bygone Beechcrafts – Part One

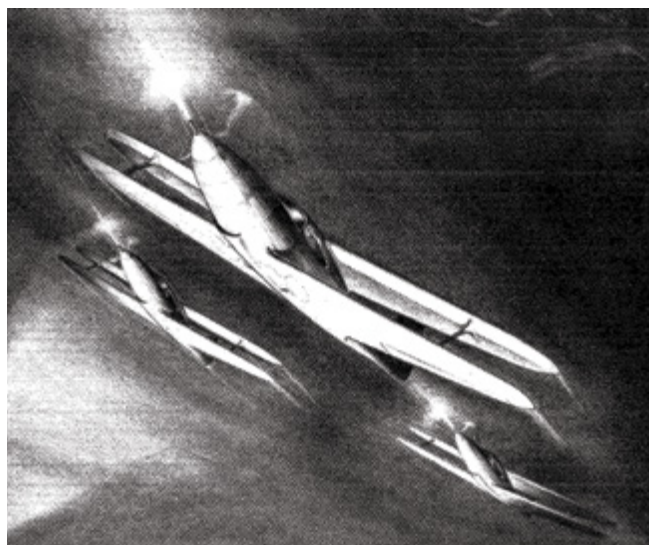
Throughout its 84-year history, Beech Aircraft Corporation designed and built a number of experimental airplanes intended to set the pace for competitors to follow. Some designs eventually took wing, but others never made it past the drawing board and faded into obscurity.

by Edward H. Phillips

In 1940, Walter Beech's chief engineer, Theodore "Ted" Wells, and his staff were busy creating military versions of the Model 18 Twin Beech for the United States Army and Navy. In addition, he allocated personnel and time to a special project based on the highly successful Model 17 Staggeewing. The idea behind that initiative centered on transforming the negative-stagger wing configuration of the Model 17 into a fast, well-armed fighter and ground attack aircraft.

Since the end of World War I, the Army brass had embraced the concept of a powerful, hard-hitting attack airplane that would blast the way open for ground troops to advance and capture enemy strongholds. During the 1930s, a number of promising designs had been proposed by airframe manufacturers, including (but not limited to) the single-engine Curtiss A-10 Shrike of 1930 and its successor, the twin-engine, all-metal A-18 Shrike of 1937.

Beech Aircraft's approach, however, would prove to be less than innovative, given that by 1940 biplanes were clearly obsolete and the all-metal monoplane ruled the sky. Preliminary plans for the new aircraft called for installation of a 12-cylinder, liquid-cooled Allison engine rated at 1,000 hp, housed in a highly streamlined nose



By 1940 when Beech Aircraft engineers conceived this fighter/ground attack airplane featuring the Model 17's negative-stagger wing configuration, biplanes were already obsolete worldwide as front-line combat aircraft. The U.S.'s entry into World War II promptly ended further development. (Special Collections and University Archives, Wichita State University Libraries)



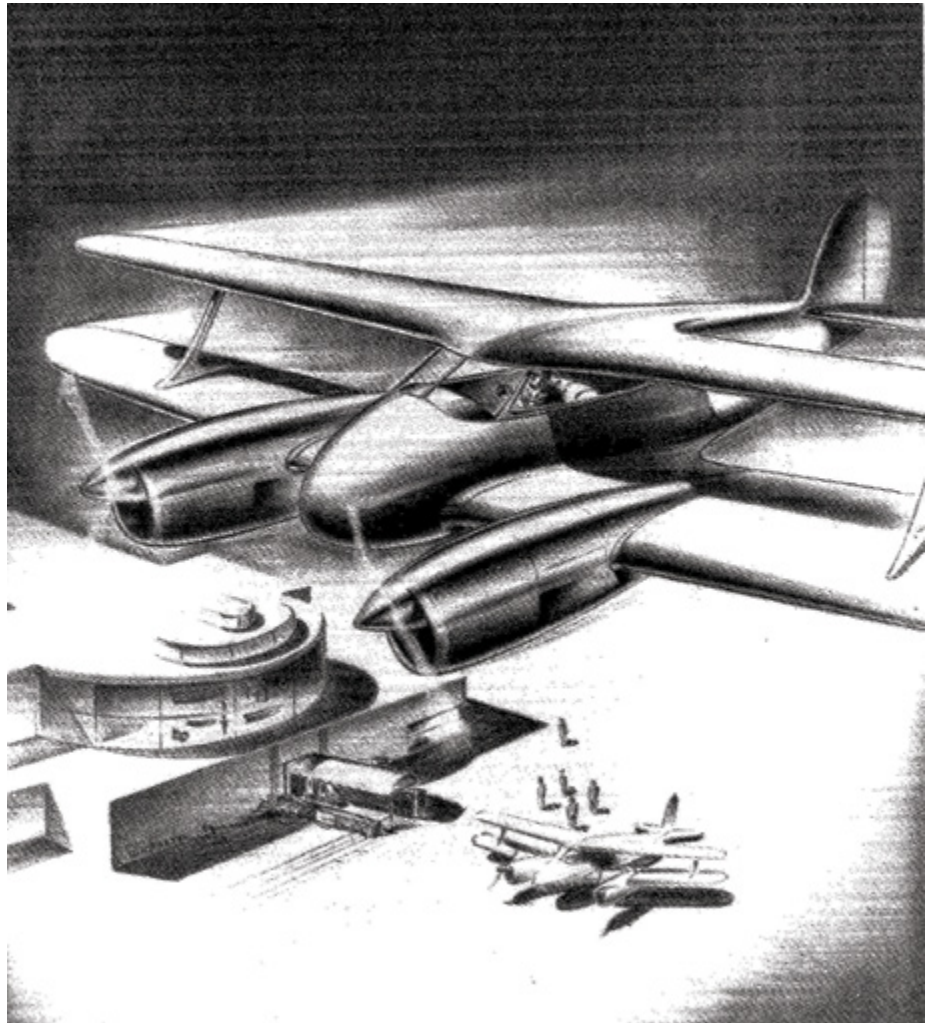
section. Taking a design page from Bell Aircraft's P-39 and Germany's Messerschmitt Bf-109 fighter, Ted Wells' engineers intended to install a powerful cannon that would fire through the propeller spinner.

The 37-mm weapon would have easily destroyed small vehicles, machine gun nests and buildings, and was supplemented by one 0.30-caliber and one 0.50-caliber machine gun firing through the propeller arc.

The pilot would have had excellent visibility downward, thanks to the upper wing being well aft of the bottom wing. Performance estimates included a maximum speed of 350 mph. As the company continued to prepare for wartime production, work on the cannon-firing Staggyerwing ceased and was never revived. Not only was the design woefully obsolete, by 1941 Beech Aircraft engineers were in the initial stages of developing World War II's ultimate ground attack airplane – the mighty Model 26 Grizzly, also known as the XA-38 Destroyer to the U.S. Army Air Force.

Another development that died on the drawing board was the Beechcraft Model 20M. Based on the general layout of the Staggyerwing, the new aircraft would boast two C6S4 "Super Buccaneer" engines built by Al Menasco. The C6S4 was a successful powerplant that featured an inverted, in-line, six-cylinder configuration. It was liquid-cooled using an ethylene glycol mix and was capable of producing 260 hp at 2,300 rpm.

Design work was well underway in mid-1937. Although it seemed a logical next-step for the company to offer a twin-engine Staggyerwing, the day of the steel-tube, fabric-covered biplane was fading fast. Despite its obvious obsolescence, the Model



Another fanciful but abortive Beechcraft to emerge during the late 1930s was the Model 20M biplane. Had the airplane been developed and produced, it would have been offered as a twin-engine version of the Model 17 with Menasco engines and a comfortable cabin. The all-metal monoplane Model 18, however, was the way of the future for Beech Aircraft Corporation and the Model 20M soon disappeared into history. (Special Collections and University Archives, Wichita State University Libraries)

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***“Instead of being overlooked as just another D18S, the D18CT deserves recognition as one of the rarest Beechcrafts ever produced.”***

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20M would have had a spacious cabin for up to five occupants, including the pilot, and was projected to have a maximum speed of 240 mph. Maximum takeoff weight was projected to be 4,850 pounds and at an economical cruise power setting, range would have been a respectable 600 statute miles. Wingspan was anticipated to be 32 feet and length 26 feet, 9 inches.

Development work was terminated in 1938 when it became obvious that the all-metal Model 18 Twin-Beech was what the marketplace wanted. Entering production

in 1937, Ted Wells' sleek monoplane was becoming increasingly popular with corporations, private pilots and bush operators. To Walter Beech's sales-driven mindset, there was no room in the company's product line for the handsome Model 20M and it quickly disappeared.

The postwar years witnessed a sharp increase in sales of Beechcraft airplanes, particularly the new Model D18S and the impressive Model 35 Bonanza that took the private pilot market by storm. Always in search of more sales, company executives and marketing officials were confident that the versatility of the Model D18S could be expanded beyond business aviation and applied to niche markets. One area of opportunity that appealed to those officials was the then infant commuter or "feeder" airline business. In the late 1940s, small airlines, often flying war-surplus aircraft, began popping up across the nation and offered scheduled air travel between rural towns and major airports. These operators were the forerunner of today's extensive regional airline system.

To compete in that tight market, Beech Aircraft developed the Model D18CT. Unfortunately, this very special Model 18 has been largely overlooked by some historians and Beechcraft enthusiasts. Instead of being overlooked as just another D18S, the D18CT deserves recognition as one of the rarest Beechcrafts ever produced. According to company records, only 16 were built.

The advertisement features a twin-engine turboprop aircraft in flight against a sunset background. The aircraft is shown from a low angle, emphasizing its wings and engines. The Ice Shield logo is in the top left, and the main headline is in the top right. The bottom section contains contact information.

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Although it was based on the D18S, the commuter version featured a number of major modifications to make it suitable for small airline operations. Foremost among these was a cabin that could accommodate up to nine passengers, installation of two Continental R-9A static, air-cooled radial engines (each developing 525 hp for takeoff) in place of the standard 450-hp Pratt & Whitney R-985 engines of the D18S. The R-9A powerplant was a new development in 1946 and Beech Aircraft received some of the earliest production units for use on its feeder airliner.

In addition to incorporating federally mandated emergency equipment in the cabin, the D18CT's airframe was built with increased structural integrity and was subjected to extensive and rigorous static, dynamic and flight testing in accordance with Civil Aeronautics Authority Section 04 airworthiness standards. Selling at \$64,887, the D18CT had a maximum gross weight of 9,000 pounds with 9,450 pounds offered as an option. At 75% power, the airplane cruised at 224 mph at 8,500 feet and could fly up to 900 statute miles with the optional tanks holding 253 gallons. Approved Type Certificate 770 was issued for the D18CT June 6, 1947.

When Beech Aircraft began production of the Model 35 Bonanza in 1947, its most distinctive feature was the V-type empennage that combined the rudder, elevator

and horizontal stabilizer into one compact assembly. The chief advantages of that configuration were lower weight and reduced drag compared with conventional empennage arrangements. In 1944 and 1945, extensive flight tests were conducted by Beech engineers as they probed every aspect of the design's performance in addition to wind tunnel experiments.

The aircraft selected for those tests was a Beechcraft Model 26 (military name AT-10 Wichita) fitted with the new tail, which was set at an angle of 30 degrees. In 1950, the angle of the V-tail was increased to 33 degrees and chord increased by 20%, beginning with the C35 version.

In 1961, the company built a special Bonanza known as the Model O35. Intended strictly for experimental purposes, the design's major departure from the production Model N35/P35 was installation of a laminar flow wing that also incorporated integral (wet) cell fuel tanks in the leading edge instead of rubber bladder-type cells installed in the wing structure.

In addition, Beech engineers replaced the standard main landing gear with a trailing-beam design that also required new gear doors. No changes were made to the nose landing gear and the airplane retained the six-cylinder Continental IO-470-N engine of the N35/P35, rated at 260 hp. Despite the aerodynamic superiority of an advanced wing for higher cruise speeds and a trailing-



  
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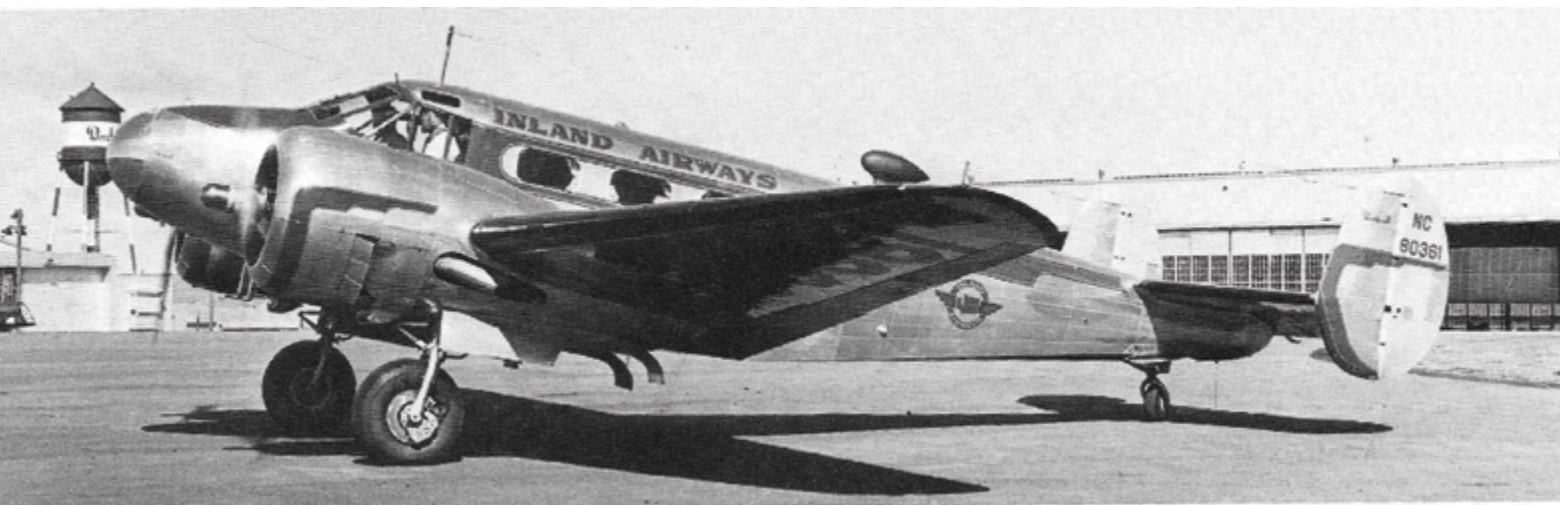
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The postwar Model D18CT, shown here in the livery of Inland Airways, was aimed specifically at small airlines serving rural communities. Certified to more stringent standards than its Model D18S siblings, the D18CT cost nearly \$65,000. According to Beech Aircraft Corporation records, only 16 airplanes were built in D18CT configuration for airline operations. (Special Collections and University Archives, Wichita State University Libraries)



The experimental Model O35 Bonanza of 1961 featured a laminar-flow airfoil and trailing beam main landing gear. The former promised higher cruise speeds and the latter ensured smooth landings. These advantages, however, were not sufficient to warrant further development and the project was terminated. The platform of the laminar-flow wing was radically different from that of a 1961 N35/P35 Bonanza. (Special Collections and University Archives, Wichita State University Libraries)

beam landing gear that would help smooth out landings, the experimental O35 project was abandoned and never revived. Key reasons may have included the cost and complexity of building a laminar-flow, wet-cell wing and the higher cost of the trailing-beam landing gear.

In yet another example of modifying a Beechcraft to perform a specific task, in 1965 the U.S. Air Force contracted with Beech Aircraft to modify an S35 Bonanza as a potential light attack aircraft. The S35's trademark V-tail was exchanged for a conventional empennage and the wings were capable of carrying a variety of ordnance including 250-pound napalm bombs, general purpose bombs and 2.75-inch-diameter unguided rockets and the infamous 7.62 mm "Minigun."

The Air Force, however, desired a more powerful version and Beechcraft engineers responded by making major modifications to the S35. Designated as the PD 249, the upgraded airplane featured a Continental GIO-520 (geared, fuel-injected and opposed) engine rated at 350 hp driving a three-blade propeller. Wing hardpoints remained unchanged. Flight tests were favorable but the Air Force decided against further development and the program was canceled early in the 1970s.

One of the more ambitious programs tackled by Beech Aircraft during the early 1950s was development of the Model 46 twin-engine, dual-purpose aircraft for the U.S. Air Force. The airplane was designed to meet the service's specifications for a fast, pressurized transport and pilot trainer to replace the aging Beechcraft C-45s ships that soldiered on years after the end of World War II. In July 1951, the Air Force selected Beech Aircraft to build the T-36A and the company began preparations to build two prototype airplanes.

Powered by two Pratt & Whitney R-2800-52W static, air-cooled radial engines, each developing 2,300 hp, the all-metal Beechcraft had a projected maximum speed of 300 mph, wingspan of 70 feet, a length of 52 feet and a maximum gross weight of 2,500 pounds. It



could accommodate three students and an instructor in trainer configuration or 12 passengers and two pilots when used as a transport. Plans called for production of 195 airplanes to begin in 1953, but June 10 of that year the Air Force abruptly canceled the program before the first prototype flew. It was a sudden, unexpected blow to company Chairman and CEO Olive Ann Beech and her executive team, but they accepted the government's decision and carried on in typical Beechcraft spirit. Both prototype T-36A airframes were eventually scrapped, bringing the program to an inglorious end.

By the early 1980s, Beech Aircraft Corporation embarked on a new era. In February 1980, it merged with The Raytheon Company and became a wholly owned subsidiary of the New England-based organization. Flush with cash and the support of Raytheon executives, Beech Aircraft engineers continued design work on the next-generation Beechcraft – the Starship I. Featuring an airframe built almost exclusively from carbon fiber composite materials instead of aluminum alloy, the Starship I was to be the first of an entire family of all composite Beechcrafts powered by both piston and turboprop engines.

Within that family were two cabin-class, twin-engine airplanes featuring the Starship's three-lifting-surface configuration of a forward wing (canard), main wing

and a T-tail empennage that was swept forward. The general arrangement had become popular in the 1970s for amateur-built, experimental airplanes such the Vari-EZ designed by Burt Rutan and his company, Scaled Composites, Inc., in Mojave, California.

Beech engineers planned to power the new airplanes with either Teledyne Continental Voyager 550 reciprocating engines rated at 340 hp at 2,700 rpm, two turboprop powerplants or dual Williams FJ-44 fanjet engines. The piston-engine version would have had a maximum cruise speed of 305 mph at 25,000 feet, while the turboprop and fanjet-powered versions would have provided much higher performance. Neither of these promising designs were built. The eventual failure of the Starship I in the highly competitive business aircraft marketplace, chiefly due to its high acquisition cost and mediocre performance, sounded the death knell for the anticipated family of all-composite Beechcrafts. **K**

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Ed Phillips, now retired and living in the South, has researched and written eight books on the unique and rich aviation history that belongs to Wichita, Kansas. His writings have focused on the evolution of the airplanes, companies and people that have made Wichita the "Air Capital of the World" for more than 80 years.

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### **New Garmin Pilot Features Include Graphical W&B and Enhancements for European Users**

Garmin International Inc. announced the addition of new features to the Garmin Pilot™ application for iPad® or iPhone® mobile devices. The new enhancements include the graphical weight & balance feature, support for the uAvionix Sky Echo 2 has been added and additional documents are now available within the document viewer for European users.

#### **Graphical weight & balance**

Garmin Pilot enhanced the weight & balance feature to include a new graphical layout of the aircraft which shows passenger seating, cargo and fuel stations. The graphical depiction allows the pilot to visualize where the weight is located, enabling easier adjustments to ensure they are within the limits of the aircraft. Frequent passengers and cargo can be saved as favorites within the



weight & balance feature, enabling the pilot to quickly add weight to the calculations.

Graphical weight & balance will support existing features, including:

- Pilots can sync active flight plan to weight & balance calculations and use the Quick Fuel Set to ensure fuel reserves are planned and accounted for
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#### Enhancements for European users

The uAvionix Sky Echo 2 is now compatible with Garmin Pilot and can display ADS-B traffic targets where available. Additionally, European users can access digital



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### Elliott Aviation Adds Fifth Location with Dallas-Based MRO

Elliott Aviation is expanding its nationwide footprint. The company recently announced the addition of its fifth MRO location with the recent acquisition of Four Points Aero on Love Field (DAL) in Dallas, Texas.

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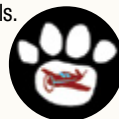
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