

King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

FEBRUARY 2026 VOLUME 20, NUMBER 2 • \$6.50



Don't Fence Him In

A Texas entrepreneur's ownership journey



15-Day Downtime on G1000 NXi

No One Else Comes Close

Elliott Aviation delivers a complete Garmin G1000 NXi upgrade for King Air operators with a guaranteed 15-day downtime, backed by more than 15 years as the worldwide leader in G1000/G1000 NXi retrofits. With over 425 G1000/G1000 NXi installations completed, no other provider matches Elliott Aviation's experience, speed, or proven results.

Reasons more operators choose Elliott Aviation for their install:

- Industry-leading experience - 15+ years running
- Industry-leading downtime - 15 days for G1000 NXi
- Three dedicated Garmin integrated flight deck teams at our Moline headquarters
- One-stop shop - full paint, interior, maintenance, and avionics capabilities



GARMIN.

ElliottAviation.com



EDITOR

MeLinda Schnyder
melinda@kingairmagazine.com

EDITORIAL OFFICE

2779 Aero Park Dr., Traverse City MI 49686
Phone: 231-946-3712

PUBLISHER

Dave Moore

PRESIDENT:

Matt Kenny

DIRECTOR OF OPERATIONS:

Kurt Bainbridge

PUBLICATIONS DIRECTOR

Jason Smith

GRAPHIC DESIGNER

Rachel Coon

ADVERTISING DIRECTOR

Jenna Reid

Phone: 816-699-8634
jenna.reid@vpdcs.com

ADVERTISING OPERATIONS AND ACCOUNT MANAGER

Betsy Beaudoin

Phone: 800-773-7798
betsybeaudoin@villagepress.com

SUBSCRIBER SERVICES

Rhonda Kelly, Mgr.

Jessica Meek, Leah Backus
P.O. Box 1810 Traverse City, MI 49685
800-447-7367

DIGITAL MAGAZINE & ARCHIVES

www.kingairmagazine.com

SUBSCRIPTIONS

King Air is distributed at no charge to all registered owners of King Air aircraft. The mailing list is updated bimonthly. All others may subscribe by writing to: King Air, P.O. Box 1810, Traverse City, MI 49685, or by calling 800-447-7367. Rates for 1 year/12 issues in U.S. funds: United States \$15, Canada \$24, all other foreign \$52. Single copies: United States \$6.50, Canada/Foreign \$9.

COVER PHOTO

King Air A90

Courtesy of Cuatro Strack

King Air is wholly owned by Village Press, Inc. and is in no way associated with or a product of Textron Aviation.

King Air (ISSN 1938-9361), USPS 16694 is published monthly by Village Press, Inc., 2779 Aero Park Drive, Traverse City, MI 49686. Periodicals Postage Paid at Traverse City, MI. POSTMASTER: Send address changes to King Air, Village Press Inc., P.O. Box 1810, Traverse City, MI 49685. Telephone 231-946-3712. Printed in the United States of America. All rights reserved. Copyright 2026, Village Publications.

ADVERTISING: Advertising in King Air does not necessarily imply endorsement. Queries, questions and requests for media kits should be directed to the Advertising Director, King Air, P.O. Box 1810, Traverse City, MI 49685. Telephone 800-773-7798.

MANUSCRIPTS: King Air assumes no responsibility for unsolicited manuscripts, photographs or artwork. It is best to query first and ask for our Writer's Guidelines. All unassigned submissions must be accompanied by return postage. Address queries and requests for Writer's Guidelines to the editor.



WHAT'S INSIDE

2

FEATURE

He Said, She Said

by Joe Casey & Deanna Casey

12

OPERATOR SPOTLIGHT

Don't Fence Him In

by Grant Boyd

18

TECH TIDBITS

The New (Old) Kid on the Block:

Keith Temperature Control

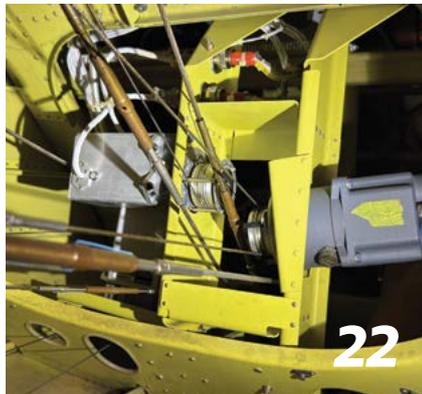
by Paul Sneden

22

DIRECT FROM THE DPE

Recognizing a Runaway

by Joe Casey



26

IN MEMORIAM

The Mind That Unleashed GPS: Remembering Gladys West's Remarkable Mathematical Skill

by Dennis K. Johnson

30

KING AIR GATHERING

Agenda Announced for 2026 Gathering

by King Air Gathering organizers

32

2026 GENERAL AVIATION INDUSTRY EVENTS

32

ADVERTISING INDEX

FEATURE



HE SAID, SHE SAID



PHOTO CREDIT: KATE MOTION AND STILL

Two opinions on the first real-world Garmin Autoland activation

by Joe Casey & Deanna Casey

In another installment of their He Said, She Said series (see the May 2025 issue of *King Air* magazine), Joe and Deanna Casey offer their reactions to and takeaways from the late December activation of Garmin's automated landing system in a Beechcraft King Air 200. Read their differing views below and weigh in by sending your opinion to melinda@kingairmagazine.com.



HE SAID

It finally happened. Garmin Autoland has landed an airplane in real-world conditions. The long-awaited "save" has occurred, and I'm sure Garmin is thrilled its automated landing system "saved the day." On Dec. 20, 2025, a Beechcraft King Air 200 (N479BR) automatically activated at FL230 as a result of the Autoland system sensing a high cabin altitude. The King Air B200 was piloted by two pilots and the pilots elected to allow Autoland to continue to the Rocky Mountain Metropolitan Airport (KBJC), with all functions of Autoland performing flawlessly.

But was this a real save?

I've been stating for years that Garmin Autoland is a "solution looking for a problem." Introduced in 2019 in a Piper M600/SLS, Autoland took the aviation market by storm. It was hailed as a real safety feature that would make flying safer. I agree it has. We are safer today because Autoland is available. But how much safer?

As of this writing (December 2025), there are over 1,700 airplanes that have Autoland installed, and there has not been one single confirmed deployment until

now. That is a bunch of airplanes! It's difficult to know how many flight hours that represents, and I doubt Garmin even knows the exact number of hours flown with Autoland installed. But we can make an educated assessment. By approximating 150 hours per airplane per year of flight time, and applying a sliding scale of production, a conservative, personally derived estimate would be about 250,000 hours of flight in aircraft with Autoland installed.

Yet we have only one record of actual real-world deployment. And, with this deployment nobody pushed the button. The Autoland deployment in N479BR was an automatic deployment after a rapid decompression when the Autoland system sensed a high cabin altitude. I've been telling clients no one has pushed the button (and that it is a solution looking for a problem), and I can still tell them no one has pushed the Autoland button. But, to Garmin's credit, Autoland is no longer a solution looking for a problem. It found a problem, and it did a fine job of solving the problem.

Armchair quarterbacking?

I hate to armchair quarterback a flight crew, but we rarely get to dissect a flight where no metal was bent and no one got hurt. Usually, metal-bending/fatal events get dissected by the FAA and NTSB and are fodder for consideration after years of time have passed. Fatal accidents are what we really want to avoid, and there's always (or should be) an appropriate grace period to allow friends and family to grieve.

In this emergency, there's probably not going to be an official NTSB or FAA investigation. The only trauma that could occur after careful dissection of this emergency would be the possible injury to the emotional health of the two pilots. I'm interested in the aviation community learning from this emergency, both how the Autoland activated and performed, and how the pilots handled the automation. This one is fair game for analysis; no grace period required!



KING AIR 90, 200, & 300 SERIES

GO FARTHER FLY LONGER



LONG BEACH - TAMPA (B350)

1916 NM

TAKEOFF FUEL 4884 LBS

FL290

FUEL BURN 3920 LBS

6H 16M ENROUTE

LANDING FUEL 554 LBS



Flight map courtesy of ForeFlight



IN GOD WE TRUST

CENTEx™

AEROSPACE INCORPORATED

"Making Aerospace Better"

WWW.CENTEX.AERO

254-752-4290



I've got to hand it to the pilots; they did a good job! The airplane landed without injury to the airplane or the occupants. All's well that ends well, right? Yes, well, maybe ... sort of ... possibly?

I train in aircraft with Autoland installed a lot, probably more than 250 hours of training each year. And I train in the aircraft in real-flight scenarios. I've administered thousands of rapid decompression training events and evaluated rapid decompression events during FAA check rides. There's one overriding, abundantly clear personal observation from my decades of training/evaluating: Those who handle the emergency the best are the ones who grab the flight controls and actually fly the airplane, and the worst handling comes from the ones who respond initially and primarily with button-pushing.

My usual training scenario is to have the client climb the airplane in VFR conditions when I've discreetly disabled the pressurization system. This is most easily accomplished by stopping the bleed air from entering

the cabin while the airplane is on the ground. The pilot will then climb the airplane unpressurized, usually blissfully ignorant of the pressurization problem. When the airplane gets to 10,000 msl, a CABIN ALT advisory light will illuminate, and this is usually enough of a signal to the pilot that something is not right. They usually look at me and say, "What'd you do?" To which I reply, "How would you handle this situation if we were at 20,000 feet instead of 10,000 feet?" The pilots who respond appropriately/best don the mask, grab the controls, pull the power back to idle, possibly lower the landing gear, notify ATC of the situation and then get the automation to help the situation.

The worst pilots don't don a mask and attempt to use the automation to fly the airplane. These pilots are button pushers as opposed to real pilots who are not scared to actually fly. I've seen this time and again: the worst pilots go directly to the automation, and most of the time they push buttons errantly. Most put the airplane in a worse situation than they were in prior; we



**YOUR KINGAIR
COULD USE SOME EXTRA LOVE**

Blackhawk Engine Upgrades · BLR Winglets, Props, LED Lighting
Raisbeck Performance Enhancements · Garmin Glass Panel Retrofits
Inspections · ADS-B Solutions · Acquisitions & Sales · Beechcraft Parts

Banyan Technical Sales | 954.492.4343 | Fort Lauderdale Executive Airport

don't push buttons well in an emergency. Yes, a pilot can push the level button or the ALT button to stop the climb. Yes, a pilot can put a suitable lower altitude in the altitude preselect and select a descent mode that is appropriate. All these button-pushing actions are good but they are only good after the pilot grabs the flight controls and initiates an appropriate response to the situation. Get the airplane moving in the most obvious way – move the flight controls!

My only argument to the conduct of the flight in N479BR after the depressurization event is that the crew allowed automation to save the day instead of grabbing the flight controls and flying the airplane. I'm less concerned with quarterbacking their specific conduct on this flight than I am with the negative message that the handling of this flight shouts to the pilot community. With the message "If you get into trouble, push the buttons," I fear we are migrating to a culture where button-pushing is hailed as an acceptable replacement for good hand-flying. It should be the other way around. Hand-flying the airplane is absolutely required!

Put down the rope ...

Let there be no mincing of my message. I'm not throwing the pilots of this flight under the bus! In my opinion, they elected to allow automation to do its job, and they then monitored. Based on the public statement from Buffalo River Aviation, the company that manages the aircraft in which this Part 91 flight occurred, neither pilot was incapacitated and the crew elected to monitor the flight with Autoland. There has been no public response from the pilots, and credible news sources have certainly requested interviews. My suspicion is that their silence is a function of a company-mandated muting and probably a self-created desire to avoid any sort of FAA-punitive action. Let me be the first to state that I hope the FAA drops any thought of probing these two pilots for any possible pilot deviation. We are in a strange new world now, with technology being far ahead of any rules. Simply put, I know of no rule that these pilots violated.

My problem is the message that has been shouted: "Technology saved the flight!" It just ain't so. These pilots elected to allow technology to help, and I sense neither they nor the flight needed saving. If this airplane had not had Autoland installed, I suspect this situation would have been handled just fine.

As much as Garmin would love for Autoland to get a true save in the books, to land an airplane where the pilot is incapacitated and there are no other rated pilots on board to save the flight, this flight is not a true save in my opinion. Will there eventually be a save? Yes! And, when that happens, I'll be one of the loudest cheerleaders for this awesome technology.

In the meantime, we need to focus on the real threats that befall us in aviation. The deadly stall/spin accident, runway incursions, midair accidents, loss of control on takeoff/landing are all serious threats to our beloved King Air aircraft, far greater threats than pilot incapacitation. All these accidents hinge upon the quality of the pilot in the left seat. All require a pilot who knows how to move the flight controls. Let's not major on a minor.

Let's call this flight what it really is: a real-world deployment of fabulous technology, a great validation of what we hoped would work in the real world, but not a save.



SELECT
airparts

Your trusted Beechcraft and
Hawker parts source

More than 210,000 Part Numbers Available!

New Overhauled Used

 Email: sales@selectairparts.com
Phone: 800-318-0010
www.selectairparts.com

f in G



SHE SAID

How does that armchair you're sitting in feel? Do you have a cup of coffee or an iced drink in hand as you're reading this article? I bet you're comfortable and the temperature and noise level are just right in the room where you're sitting (unless you're reading this in a pilot lounge, in which case you're probably uncomfortably familiar with the nasal noises made by the guy in the recliner next to you). My point is: as you're browsing this magazine, catching up on emailed news updates or reading through your favorite pro-pilot social media forums, you're in a comfortable environment, stationary and able to think clearly through all possible options and opinions without the stress of a fast-paced, heart-racing, noisy environment cluttering up your decision-making process.

You're in a fabulous spot to think through complex situations and come up with an "if that were me"

scenario with the hindsight of someone else's decisions and without the pressure of the actual conditions. It's nice, right?

This comfort level is how we get great case studies and potentially new training protocols by learning from how someone else handled an emergency. With hindsight, we all learn, so we can then repeat, modify or correct the actions taken to ensure a successful flight outcome. This is the luxury that you, the reader, get over the crew of the recent King Air Autoland activation.

My husband, Joe, has always said, "Autoland is a solution looking for a problem." Personally, that's how I prefer my solutions to present themselves – before I encounter the problem they solve!

Too often in the aviation industry, we have regulations, technology and best practices that are reactive in nature to accidents and incidents. Contrary to Joe's opinion, Garmin's Autoland technology is the same. Though few and far between, there are plenty of reports of pilot incapacitation in which another pilot or passenger had to take control of the aircraft, or worse, couldn't take control of the aircraft. That's why two crew-member planes are always going to be safer than single-pilot operations. Two pilots act as backup systems to each other aiding in the workload, the decision-making process and adding redundancy when one fails, much like the cockpit technology we rely so heavily on.

To (Auto)land or not to (Auto)land? That is the real question

By now, every pro pilot and most others have heard of the King Air that departed Aspen, Colorado, experienced a sudden depressurization at FL230, and successfully landed nearby at Rocky Mountain Metro Airport using Garmin's Autoland technology. What a great success for Garmin!

The system performed exactly as it was supposed to, and the airplane was reusable (I'll give you a moment to recite the old "great landing" joke here mentally). What makes this incident (is it an incident?) contradictory is that the two pilot crew members were not actually incapacitated, as the Autoland system was informatively broadcasting, and as would be assumed during this particular "emergency." We all saw the video of the airplane touching down, rolling to a stop and the engines shutting themselves down as the emergency ➤

V2X
YOUR TRUSTED AEROSPACE PARTNER

A51E MADISON REPAIR STATION

When safety, precision, and performance matter, leading aerospace operators turn to A51E Madison Repair Station. Backed by FAA certification and Designated Engineering Representatives, we deliver high-quality repairs, inspections, and custom solutions for commercial and military aircraft.

WHAT SETS US APART

- Full-spectrum component repair and overhaul – from landing gear, wheels and brakes, props and avionics to complex systems
- DER-approved repairs and modifications for seamless compliance
- Onsite and deployable NDT Level III inspection services
- In-house CNC machining, cadmium plating, painting, and more
- Certified to FAR Part 145, EASA 145, ISO AS9100, and AS9110 standards

V2X • Madison, Mississippi • repairs@gov2x.com



Avionics | Components | Distribution | Engines | Manufacturing/DER



Our comprehensive MRO services and support have made us the go-to provider for King Air owners and operators worldwide. Whether you manage a fleet or a single aircraft, our consistent component availability and in-stock, ready-to-ship parts include:

- Starter Generators
- Wheels and Brakes
- Hydraulics
- Landing Gear
- Pneumatics

Call today for immediate access to more than 200,000 flight-ready parts.

Others sell parts,
WE SELL SUPPORT®

United States:

sales.us@precisionaviationgroup.com
+1.404.768.9090

Canada:

sales.ca@precisionaviationgroup.com
+1.604.542.8820

Latin America:

sales.latam@precisionaviationgroup.com
+55.12.3905.1088

EMEA:

sales.emea@precisionaviationgroup.com
+44.141.638.2265

Australia:

sales.au@precisionaviationgroup.com
+61.7.3198.3660

Singapore:

sales.sg@precisionaviationgroup.com
+65.6817.3370



26 Repair Stations
24/7/365 AOG Support

precisionaviationgroup.com

800.537.2778
AOG: 404.218.5777

vehicles waited to assist anyone on board the aircraft. News blasts went out immediately about the incapacitated pilot whose life was saved by the technology. Then came the real story. First responders stated that there was no one to treat or assist. The aircraft's occupants were just fine. Cue the armchair quarterbacks, keyboard warriors and "experts" ... now we have an interesting dilemma in decision-making as pilot-in-command to debate.

Here is an excerpt from the written statement from the aircraft operator Buffalo River Aviation:

Due to the complexity of the specific situation, including instrument meteorological conditions, mountainous terrain, active icing conditions, unknown reasons for loss of pressure and the binary (all-or-nothing) function of the Garmin emergency systems; the pilots, exercising conservative judgment under their emergency command authority (FAR 91.3) made the decision to leave the system engaged while monitoring its performance and attempting communications as able within the constraints of the

system. While the system performed exactly as expected, the pilots were prepared to resume manual control of the aircraft should the system have malfunctioned in any way.

Herein lies the rub. A system designed to take over in case of a pilot's incapacitation did exactly as it was supposed to do, except there was no pilot incapacitation. Had the crew members not donned their oxygen masks promptly, incapacitation could have undoubtedly been the case. But that's not what happened.

When I'm training pilots in high-altitude operations, I often say that if a depressurization occurs, once you put on your mask, the emergency is over. While that is simplified and removes any nuance to the actual situation at hand, what I mean is that as long as the pilot is breathing and capable of troubleshooting and taking corrective action, the outcome of the flight is rarely in question. At the very least, the pilot should be able to descend to a breathable altitude (if there are passengers with limited oxygen on board), select a suitable airport and safely land the aircraft. For decades, this was

the only option available to us as pilots; there was no magic button to deploy a parachute or land the plane without pilot input.

The advent of the whole aircraft recovery parachute system, developed in the 1970s and made popular as standard equipment on Cirrus aircraft in the late '90s, was the first step toward a solution that passengers (or pilots) could engage in the event of a loss of control due to incapacitation or airframe structural failure. Introduced in 2019, Garmin's Autoland system is the culmination of years of research and data that could not only save the occupants but also save the airframe in most scenarios. For six years, owners, operators and pilots waited for the first real-world save from the system, only to have the event clouded by the controversy surrounding whether it should have been allowed to follow through on the entire sequence on its own, without input from two competent, qualified and coherent pilots on board.

Cue the quarterbacking

Did the pilots make the right decision? The answer is yes, absolutely. If their account is factual, they experienced a sudden depressurization and, due to the many variables, allowed an installed safety system to do what it was designed to do.

Did they make the only correct decision? No.

Another thing I love to tell pilots I'm training, usually as they're pushing buttons to get to a particular screen in an avionics unit, is that there are many ways to skin a cat and they all lead to the same outcome. When I'm loading new information into



A still image from North Metro Fire Rescue District's dash camera video of an emergency crew responding to the automated landing of a King Air B200 at Rocky Mountain Metropolitan Airport in Broomfield, Colorado.



“That’s how I prefer my solutions to present themselves – before I encounter the problem they solve!”

an FMS, I’m usually looking for the most efficient way with the fewest button pushes. Sometimes I don’t know what that path is and revert to a less efficient method I know works. I get the same result, albeit with a little more effort on my part. In this case, the pilots were faced with a decision: allow an autonomous, already-activated emergency system to do its thing or override it and do what they know to do.

There is no right or wrong decision here (until the FAA tells us otherwise), only a decision to be made under the emergency authority granted to PICs everywhere, under FAR 91.3, to act in the best interests and safety of the flight as they deem appropriate. The crew, in a high-stress, heart-racing, noisy environment (when was the last time you experienced an uncommanded depressurization in an aircraft?), made a conscious, informed decision (using the information available only to them at the time) that ensured a safe outcome for the flight.

Is it what I would do? Probably not. Is it what others would do? Probably so. The determination will depend on the circumstances at the time, whether the conditions are those in which the pilot is comfortable and proficient, and the comfort level with the airframe itself. I know that if I were to have a safe outcome in an emergency, I would hate for my judgment and actions to be second-guessed by others, without them experiencing the same conditions in real time.

Will this make a great case study or training scenario? Absolutely. Will we likely see this exact scenario in the future? I doubt it. I suspect future training, now that we’ve all had time to review the data, will point pilots toward disabling the system and continuing under their own

authority and power. In this case, the ability to choose an airport, choose a runway and make appropriate communications that could have alleviated ground-based resources would have been highly beneficial.

Am I on the pilots’ side? One hundred percent, whatever their decision, if it results in the safe outcome of a flight with no unnecessary damage to the airframe due to said decision-making. There is no “standard” emergency, and there is no limit to how creative pilots should be allowed to handle such an emergency. We should all be trained in best practices and solid, proven emergency mitigation techniques, but we should always be allowed to deviate as necessary using the information that only we have as we’re sitting in that cockpit. **KA**

Joe Casey and Deanna Casey live in East Texas and operate Casey Aviation based at Angelina County Airport (KLFK). Joe founded the company, which specializes in PA-46/TBM/King Air training and offers a range of other services. They manage four Part 91 King Air aircraft and have ferried King Airs across the globe. Joe has 19,300 hours of total flight time, more than 4,500 of which are in King Air airframes. He is a certified ATP-ME/SE commercial pilot with ASEL/ASES, rotorcraft-helicopter/instrument and glider ratings. He also is a designated pilot examiner (DPE) with BE-300 type rating issuing authority up to the ATP level, and he also holds CFI, CFII, MEI, CFI-H, CFI-IH and CFI-G certificates. A career instructor, Deanna has amassed 14,000 flight hours since she started flying in 1997 and is a 26-year Gold Seal CFI/CFII/MEI with more than 5,000 hours dual given. She has a bachelor’s degree in aviation management from Auburn University and a master’s in aeronautical science from Embry-Riddle Aeronautical University. Deanna holds an ATP-ME certificate, is single pilot typed in the King Air 300/350 and flies all King Air variants regularly, including the B100 with TPE-331 engines.

OPERATOR SPOTLIGHT



Cuatro Strack poses in front of the A90 with his children (left to right) Kayla, Harleigh and Cinco.

Don't Fence Him In

Texas fence builder finds a King Air A90 fits his mission

by Grant Boyd

After a few particularly long drives across the state of Texas, Cuatro Strack decided to pursue earning a private pilot certificate. Now nearly 20 years later, the South Texas-based aviator owns a 1967 King Air A90 (serial LJ-260).

Strack currently flies the twin turboprop in support of his fence-building business as well as for personal use. The aircraft is a significant step up from his first aircraft, a Piper Arrow, which was an impactful change from driving at the time.

Flying to drive fence posts

Strack has fostered an entrepreneurial spirit for most of his life and started a fence construction business when he was in ninth grade. He pursued that endeavor as time allowed throughout high school and college.

"After Texas A&M, I thought I needed a real job, so I started with our local farmers' co-op," he recalled. "I was still building fence on the weekends and such, and after two months of making more on the weekends, I could not afford to stay at the real job. So, in the spring of 2003 my wife and I started working full time in the fence construction business and have been blessed ever since."

The Stracks' company, J4 Fencing and Services – a play on Cuatro's legal name, Joe Strack IV – is based in El Campo, Texas, and completes fence projects across the state and beyond. The company provides residential and commercial solutions, with a popular product being their livestock, deer and exotic game fences.

"We were driving sometimes as far as six or seven hours out to look at work, and I was doing all the sales at the time," he explained. "I didn't need to be there but only for a couple of hours and was spending all day driving. It was too time-consuming, so I started flying lessons around Thanksgiving and got my pilot's license by the end of January. I had an Arrow at that time, which is what I got my instrument ticket in."

It was clear that the travel time to these faraway jobs could still be condensed, so Strack began considering what his next move would be.

"The Arrow was a good little starter plane and it dang sure served the purpose of being better than driving," he said. "But I started looking for something faster and it wasn't long that I was searching. I bought an RV-6 that was disassembled for paint. The assumption was that in a couple of months I could have this thing painted and put back together. Well, it took about a year to get to that point – but I flew that thing for almost 1,500 hours and at some point while owning it I also bought a Cessna 310."

Moving to a turboprop

The piston twin was a good transition to multi-engine operations and Strack flew it for around 600 hours in total. His hand was forced into getting a replacement for the 310, though, as its front gear collapsed and resulted in a total insurance loss.

"We started looking at the options out there," he said. "At first, I was really hesitant about getting into turboprops. There were some things that made me feel that way, especially knowing that the engines could be extremely expensive to operate and maintain. But I have some family in the ag aviation business and they're like, 'Man, you know, yes – they cost more to get into, but the uptime is so much better. And if operated correctly, you shouldn't be running into any problems.'"

Strack took an initial interest in the Piper JetProp until he learned more about its useful load. Further examination revealed the aircraft would meet his missions only about a tenth of the time. Conversations with those in his circle led Strack to the King Air 90 series as a good option.

"We really enjoyed the 310 for its load and range but wanted a safer cross-country plane. The King Air 90 fit



Strack flies his 1967 King Air A90 roughly 100-150 hours per year. He also has a Cessna 182 used for missions closer to his home base of Wharton Regional Airport (KARM). Inset: The King Air allows Strack, who owns J4 Fencing and Services, to easily visit work projects across Texas and beyond. Game fences are one of the company's most requested products.

that need," Strack said. "I started looking at different King Airs and I really wanted an E model because a friend of mine was flying an F and he said that if he had to choose another, he would buy an E. He really liked the -28 motors and the additional fuel capacity that came with them."

A good time to buy a King Air

In late 2021 when Strack was looking for an aircraft, inventory was favorably priced – about half compared to prices

now. He looked hard for an E90 but ultimately found an A90 with a newer panel at a great price.

"At the time, the acquisition cost for early-year King Airs 90s was around \$650,000 to \$850,000 and I was looking at the lower end of that scale," he said. "Many of the aircraft in that price range still had -20 engines and original equipment, and I was being told that it could be hard to find parts for those engines. I decided that I really wanted to find

an airplane with -28s and found an A90 that was in pretty good shape. The paint and interior were pretty nice, and it had a great panel with Garmin G600 and GTN 500."

A borescope evaluation completed during the prepurchase inspection revealed minor CT disc chipping and some issues with the lining of the exit duct. Both were fixed and Strack purchased the 1967 King Air A90.

"Once it was all done, everybody gave their blessings on the engines



and I knew this was going to be the plane for us," he said. "The airplane has been really good to us, and we've had it for four years now. In that timeframe we've had to overhaul the gear this past season and the props the season before that. Those were big items that were expensive, but otherwise the plane has been pretty good as far as maintenance goes."

The most unique aspect of LJ-260 is its maintenance pedigree, having been cared for by the same MRO for most of its recent life.

"The popularity in the numbers of King Airs out there means that the

support is really good," Strack said. "The plane was owned and kept in Tyler, Texas, before it was sold to the previous owner in McKinney, Texas. They elected to keep the aircraft with East Texas HSI in Tyler since they have worked on that aircraft for so long. In 15 years, the owner of the MRO told me they [the operator of LJ-260] have only had one departure delay due to a maintenance problem. We haven't had any extended unexpected downtimes, and we send it in for phase inspections, which is nice. They are a fair provider that services the airplane properly and doesn't go overboard [with unnecessary work requests]."

Near or far, the King Air is there

Strack's mission hasn't changed much over the course of two decades of aircraft ownership. The need to get to projects across Texas remains, with the A90 operating for 100 to 150 hours per year mostly between jobsites.

"Sometimes we use the plane to move crews around if they're off on a faraway job; instead of putting them on the road for a couple of days, we might just fly them out there," he said. "I also have a 182, so if it's close enough a lot of times it's more feasible to take the Cessna to move parts and stuff like that. But if I need to get farther out there, the King Air wins with its range and speed."

The A90 also gets chosen frequently over the 182 due to its larger cabin. Whether it's the litaney of gear required for a successful hunting trip or the many parts and

pieces needed during a fence job, the ability to remove the seats, load up and go is heavily relied on.

"Normally I try to fly between 18,000 and 25,000 feet, depending on the winds," he said. "At 24,000 to 25,000 feet is pretty much the maximum you can fly because the plane really doesn't have much power any higher than that. And I plan for around 230 knots while burning 80 gallons an hour."

One change King Air ownership brought is the A90's additional seats and range make personal travel practical.

"There is about four hours and 45 minutes worth of fuel available, and our longest flight is right at the four-hour limit," Strack said. "I do a lot of flights for business that are around two to three hours long, and then our family has flown direct [from Wharton, Texas] to Cabo San Lucas and Cozumel, Mexico."

Flying privately with their father has stoked an interest in aviation among Strack's kids.

"My oldest daughter is a commercial pilot and CFI," he said. "She just finished college, so she does a little flying as well but isn't checked out in the King Air yet. She doesn't have enough twin time but is going to work toward that now that she's out of school. Then my son, who's still young, mentioned that he's interested in getting his license."

Looking to the future

Operating a King Air has met, if not exceeded, Strack's expectations.

"When you look at turboprops for sale, probably half of them are King Airs," he said. "I don't think you can



"I decided that I really wanted to find an airplane with -28s and found an A90 that was in pretty good shape. The paint and interior were pretty nice, and it had a great panel with Garmin G600 and GTN 500."



Before owning his King Air A90 (top left), Strack owned this speedy Van's Aircraft RV-6 (top right) and this Cessna 310 (below).



go wrong with running a Beechcraft because they are still supported really well and considering the overall package of what you get and the robustness of the airframe.”

Strack said he doesn't feel like he is compromising too much with the A90.

“Granted, we could find something faster, but then you're talking about a lot more cost – acquisition and hourly,” he said. “You have to compromise somewhere and try to find that sweet spot that works for your business and family. The King Air A90 has been a good fit for our mission.”

Like all pilots, the evaluation of the aircraft and mission fit is continuous. For now, Strack doesn't see himself flying anything else.

“I think in the future I would continue to change out some of the panels, although the aircraft is very capable right now,” he said. “There is an Avidyne display there that's basically a paperweight, which I would like to change out for a new Garmin 750 and 650 eventually. We had replaced the old autopilot with a new S-TEC 3100. That's helped a lot with approaches, which has been very useful. As time goes on, I think we will start using the airplane more and more.” **KA**

Grant Boyd holds a doctorate of education and is a private pilot and business aviation professional with a passion for writing. His background includes aviation marketing, communications, customer service and sales roles.



Flying has become a family affair. Strack's daughter Harleigh is a commercial pilot and CFI.

QUALITY CONVERSION KITS FROM A BRAND YOU TRUST

Trusted Conversion Kits for many King Air Models





Kit #199-110
compatible with
100, 200, 200C,
200CT, 200T,
B200, B200C,
B200CT, B200GT,
B200T, F90, A200,
A200C, A200CT



Kit #199-90
compatible with
65-90, C90, C90A,
C90GT, C90Ti,
E90

Exciting News
Expanded Distribution Network



BOEING **airPart**



SOUTHERN CROSS
AVIATION



CJ
AVIATION



CLEVELAND
WHEEL & BRAKE SYSTEMS

A Sigina Aerospace Company

Scan to Check
Compatibility

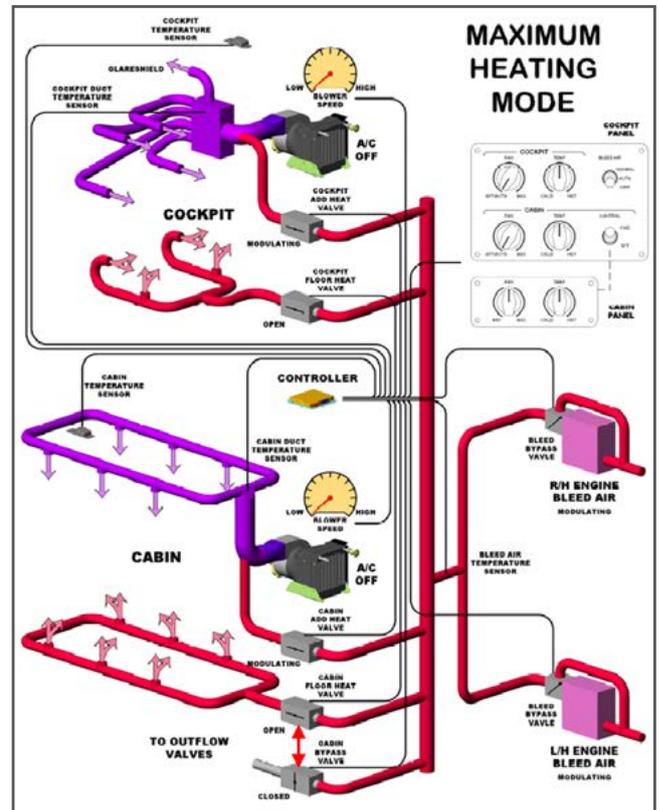
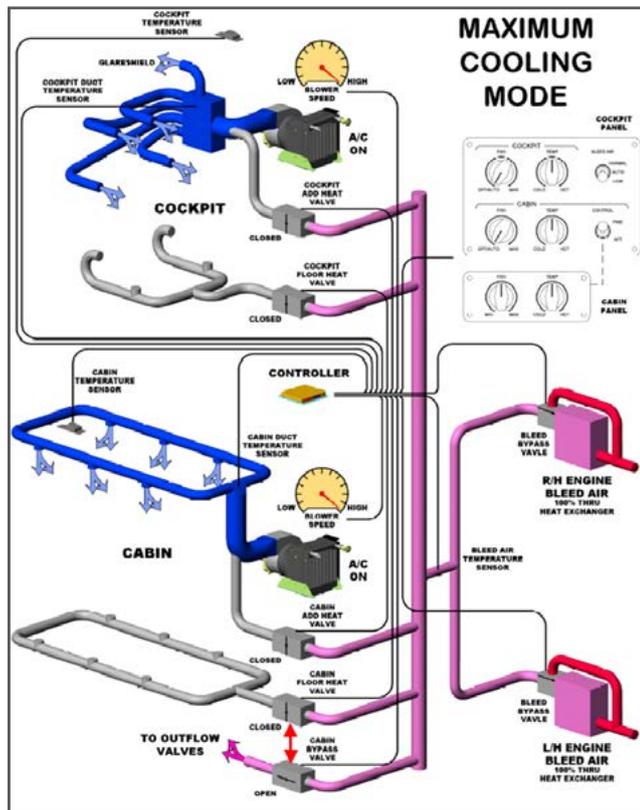


FIND BY AIRCRAFT

clevelandwheelandbrake.com 1-800-BRAKING (272-5464)

The New (Old) Kid on the Block: Keith Temperature Control

by Paul Sneden



With the retirement of our much-loved author of Maintenance Tips, Dean Benedict, I've been given the honor of becoming a maintenance columnist for *King Air* magazine.

I'm humbled to follow in the footsteps of great authorities like Dean and Tom Clements, and I hope you'll enjoy what I bring to the table.

A brief background

I cut my teeth in general aviation in 1973 as a right-seater on a Beech 18 and a general assistant in my father's aircraft management/pilot services business. I went to A&P school for the 1976 calendar year and

proudly took home my fresh A&P in January 1977, having won the Knox Family Foundation Award along the way.

I spent a four-year stint in the U.S. Air Force as I studied and then taught avionics. That made a nice addition to my skillset and my resume. Afterward, I returned to GA with a King Air E90 to help maintain and manage.

My career since has been one that's made me a "Jack of all trades, master of none." I've done time in all parts of several shops, including maintenance, avionics and serving as a chief inspector in three of them.

King Airs have always been a love and became a career focus in 2006 when I landed a job teaching them. I've taught classes at some of the well-known

instructional organizations and conducted many on-site training classes. My personal achievements include the development of type-specific, hands-on engine rigging training that has been well received in the King Air community. I continue to instruct when I can.

With luck, I can provide both entertainment and useful technical information for you, the readers.

Since it just wouldn't be right to try to walk in Dean's "Maintenance Tips" shoes, without further nonsense, welcome to "Tech Tidbits."

The Keith Temperature Control System

The venerable King Air has somehow stayed the course for many years and is still very much the same airframe that was first a hit in the 1960s. That's not to say the aircraft hasn't evolved, and what may be one of the most significant changes to the B200s and B300s came in 2006 when the environmental system was finally updated with a complete system mentality by what was then Hawker Beechcraft Corporation. I suspect most of the development was done under Raytheon's ownership. This development was a joint effort between Beechcraft's engineers and a team from what was then known as Keith Products. Those of us in the trenches at the time simply dubbed it the Keith System, as opposed to the Legacy System that preceded it. Keith later became part of Air Comm Corporation, which later became part of Ace Thermal Systems. Maintainers will know Keith Products from Sikorsky, Citations, Bonanzas and many others.

What made the Keith version of the B200/B300 temp control was the approach to intelligently steering the hot/warm engine bleed air to where it could be most used or disposed of. In my opinion, the biggest contributor was that the system would route the bleed air to the back baggage deck anytime we were trying to cool the aircraft, allowing the air conditioning to truly recirculate and cool efficiently. The legacy aircraft always added the hot/warm P3 to the cabin, even when we are trying to cool it down. Yep, we need to pressurize, but *where* we bring in the bleed air can be an amazing change.

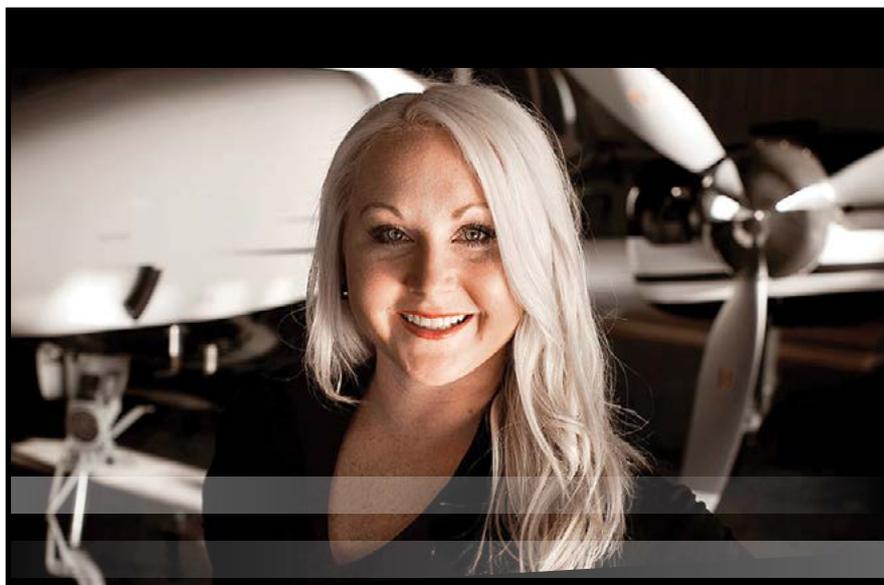
The system also became dual zone, allowing the cockpit and cabin

to have separate temperature selections for comfort. No more robbing Peter to pay Paul when it came to warm feet in the winter.

Cooling the incoming bleed air using the bypass valves and the heat exchangers in the wing has always been at the core of temp control, but that's never been cool enough for humans except when we're trying to heat the cabin, and even then it's usually reduced from the engine delivery temperature.

The Max Heating Mode and Max Cooling Mode diagrams on page 18 will give you a general idea of what's going on.

Some items of note are the six temperature sensors (including OAT) and four servo motors.



**TO ADVERTISE IN KING AIR
MAGAZINE CONTACT:**
**JENNA REID,
ADVERTISING DIRECTOR**
JENNA.REID@VPDCS.COM
816-699-8634



Cockpit duct temp sensor on B300

```

KATC 300 Control, V1.07
01-Cabin Temp, deg F:      100.96      11-Auto Enable Input:      Manual
02-Cockpit Temp, deg F:   102.49      S1 CA Heat Servo %:        0
03-Cabin Duct Temp, deg F: 96.91      S2 CO Heat Servo %:        0
04-Cockpit Duct Temp, deg F: 98.00      S3 CO Add Heat Servo %:    0
05-Bleed Duct Temp, deg F: 98.63      S4 CA Add Heat Servo %:    0
06-Outdoor Air Temp, deg F: 96.67      Cabin Blower Speed %:      0
07-Cabin Setpoint, deg F: 60.28      Cockpit Blower Speed %:    0
08-Cockpit Setpoint, deg F: 60.00      HX Valve On Time, sec:     0.000
Dominant Zone Diff, deg F: 40.67      HX Valve Off Time, sec:    0.000
Secondary Zone Diff, deg F: 42.41      HX Cooling Enable:         OFF
Dominant Zone:              Cabin      HX Heating Enable:         OFF
Current State:              Idle      Bleed Flow Status:         Normal
09-30 Deg Limit Sw:        ON        Dominant Zone Delay, sec:   0
10-Cabin Press Low Sw:     OFF       Cooling Delay, sec:        0

MFTM for Manufacturing Test
MCTM for Manual Control
Q to refresh █

```

Controller data screen

The servo that controls the heat bypassing the cabin also controls the heat to the cabin floor outlets. They trade off. In AUTO, all the valves are handled by the system controller. That computer takes the temperature requests from the zones and turns that into servo positions and air conditioning on/off to achieve those temperatures.

When it comes to system troubleshooting, there's good news and bad news. First, the good news: The system will try to communicate the failure of a temp sensor should it become what the controller considers out of range. If the crew reports the cockpit blower pulsating, that's a sure sign that a temp sensor has failed or disconnected. The photo

(left) shows a favorite problem area. It's the temp sensor for the cockpit duct, and it's just forward of the copilot's rudder pedals. Apparently, it gets kicked and the connector comes loose.

Another piece of good news is the ability to hook up a PC for diagnostics. If you have doubts over which sensor may be faulty, running a terminal emulator program and plugging into the controller with a USB cable can be a super diagnostic aid. Even parked in the hangar, a notable difference between sensor temp indications can take you right to the troublemaker. In addition, the data screen will show (in Fahrenheit!) the cockpit and cabin temp knob positions as well as the travel positions of the four servos. In the controller data photo, the system is in cooling mode so there's no Add Heat servos trying to add any warmth.

Of course, with good news, there's always a bit of payback. If you haven't yet had the experience of downloading, running and setting up a terminal emulator program on your PC or laptop, then you're in for a bit of a learning curve. For whatever reason, Textron Aviation still hasn't put any of the laptop troubleshooting information in the maintenance manual, so you'll need to consult a couple of Model Communiqués.

Us old-timers may have some experience with com ports and baud rates, but if that's Greek to you, be sure to check out Model Communiqué ME-TP-0014. That MC has detailed information regarding the necessary downloads and setup process for the PuTTY

terminal emulator program. You can find that app directly in the Microsoft Store now (you Apple folks are on your own).

The next communiqué that's a must-have is ME-TP-0017, which has descriptions for each of the readouts as well as troubleshooting hints.

Locating and changing servos can be challenging, although they are not items that fail very often. If you do have to change a servo, getting there will be the hard part. Once there, four bolts and a connector should have you on your way. One caution here: Be sure to lift gently as you remove the servo. If it's stuck, you might consider additional access through a duct hole. The servos drive a "D" shaft that has a thin spot. If you break it, you'll be diving inside the plenum to remove the butterfly valve and change the part.

One last downside to this system, which most air crews are familiar with. To allow the controller maximum flexibility over temp control, Beech incorporated an AUTO position on the ENVIR BLEED AIR – Normal/Low selection. That switch in AUTO allows the controller to decide whether to put the flow control in Normal or Low, but it *only* does so for heat demand purposes. There is no accounting for any engine ITT concerns. This auto operation has resulted in many reported cases of cabin pressure bumps during cruise flight. The auto controller is selecting back and forth in an effort to increase or reduce the bleed duct temp, and occasionally it can't make up its mind. Many hours have been wasted when techs try to troubleshoot what seems to be a pressurization problem. I strongly suggest that flight crews revert to manual selection as required for takeoff and ITT considerations and leave AUTO bleed air selection out of your operation.

Until next time, keep them flying! **KA**

Paul Sneden is the owner/president of KingAirDOM, a consulting firm, and King Air Maintenance Academy in Jupiter, Florida. He has been in the general aviation business for more than 50 years, holding numerous positions in aircraft maintenance, avionics and quality assurance. Beginning in 2006, Paul became immersed in the King Air world, creating and instructing maintenance courses for 90-, 200- and 300-series King Airs. He is also a regular speaker at the annual King Air Gathering.



Servo mount



Servo valve drive shaft



B300 forward mixing plenum

Recognizing a Runaway

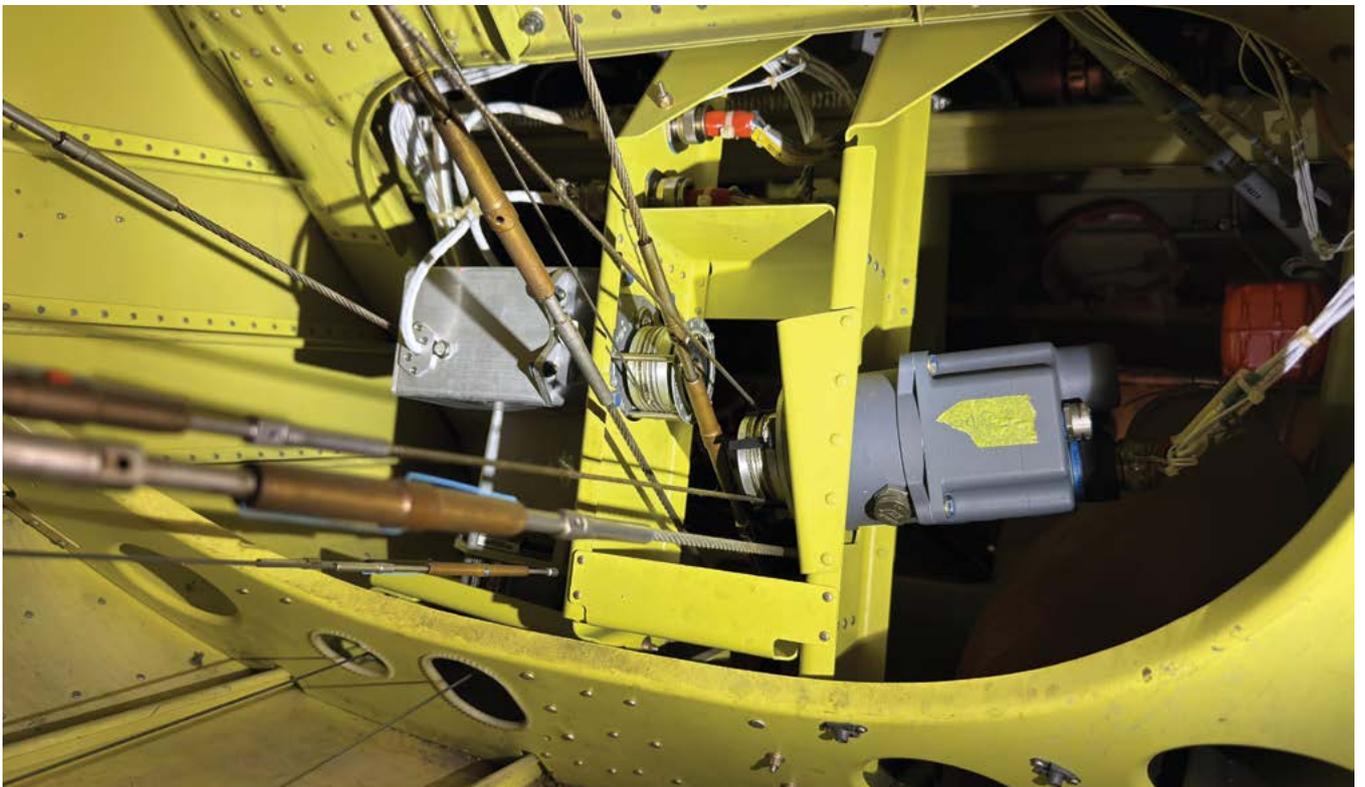
Most don't. Can you?

by Joe Casey

Nope, we are not talking about George Clooney and his band of runaway felons in the movie "O Brother, Where Art Thou?" In that movie the felons wore striped clothing and were easy to recognize. They ran across fields in chains, somehow found their way to a microphone to sing some *really* great music on the radio and generally got into all sorts of fun trouble. In modern times, a felon would probably start a runaway attempt in an easily identifiable orange coverall. A runaway felon, whether in modern times or in the Great Depression era, would be easy to recognize.

But recognizing a runaway pitch trim while in flight in a King Air is a whole other matter. When the trim wheel progressively turns in one direction unabated and uncommanded, some pilots have a poor record of handling that emergency. I bet 50% of my recurrent training clients do not quickly recognize a pitch trim runaway when administered in a training environment, and they instead attempt to remedy the problem with incorrect actions.

Here's what the scene (of the crime?) looks like. I'm in the right seat as the instructor and the training client is



King Airls have two separate devices to help with pitch control: a pitch trim servo (on the left) and a pitch servo (on the right).

PHOTO CREDIT: CLINT GOFF

in the left seat. I simply take my electric pitch trim switch and hold it in one direction (usually up). I then look over at the pilot flying and watch for them to do something to remove the errant pitch trim from running steadily on one direction. All they have to do is push the LRB (little red button, that's what we called it in the U.S. Army) on the yoke, grab the pitch trim wheel and physically hold it from moving, pull the pitch trim circuit breaker, pull the autopilot circuit breaker or all of the above. When they make any such response, I immediately remove my thumb from the electric pitch trim and let them fly the airplane by hand. It's that simple.

I bet more than 50% of my clients wait far too long to recognize the problem, try pushing buttons on the autopilot instead of grabbing the controls, and we end up in a dangerously nose-high condition with super-heavy controls from which I have to recover the airplane.

I'm also amazed at how many pilots don't know the audible tone that sounds when an autopilot disengages. This is a tone that every pilot should be able to decipher from memory. There's no other sound in your cockpit like the audible tone of a disengaging autopilot!

For the armchair quarterbacks out there, it seems like such an easy problem to solve, doesn't it? Just grab the controls and push the LRB. It is that simple. But the condition must be recognized first and herein lies the problem of recognizing the runaway. The tone is a dead giveaway, and the uncommanded pitch up/down is the other. Too many pilots don't recognize the giveaway signals.

Turn off the automation

Before we go a step further, even though it doesn't really need to be said, I'm going to say it anyway: When the airplane is not doing what you want it to do, grab the controls and fly the #\$\$%^* airplane! Grab the controls, turn OFF the automation by pushing the LRB, and fly the airplane! Aircraft control is *always* subservient to every other consideration, especially when an emergency is being handled.

We've come upon a time in aviation when I'm afraid that good airmanship is being supplanted by good button-pushing. We have level buttons, envelope protection, underspeed protection and a whole host of gizmos available to us that are good safety devices. Worse, we have pilots who think these gizmos can save

“In training, it's the pilots who grab the controls, push the LRB and fly the airplane who excel, and I suspect these are the pilots who also recover nicely from a spatial disorientation situation in the real world.”

you from any and all problems. But all these devices can fail. None work perfectly every time, and none work as well as a proficient pilot grabbing the controls and flying the airplane. And all need to be turned OFF when control of the airplane is in question.

When I administer the pitch trim runaway in training, the pilots who try to use automation to correct the flight attitude deviation are the ones who fly the airplane dangerously close to the stall. Yes, I know there's a level button on the panel, but that button is there when the pilot is spatially disoriented. If the autopilot disengages uncommanded and the nose is doing something you didn't command, then there is no aircraft commander unless you grab the controls and fly.

In training, it's the pilots who grab the controls, push the LRB and fly the airplane who excel, and I suspect these are the pilots who also recover nicely from a spatial disorientation situation in the real world.

Need I say it again? When aircraft control is in question, grab the controls and push the LRB!

Show me the muscle!

In King Air models, we have two separate devices to help with pitch control: a pitch servo and a completely separate pitch *trim* servo.

The pitch servo is attached to the elevator cable and is used to move the elevator. It behaves exactly as you would if you were flying the airplane with your hand. The pitch servo moves the yoke forward and backward. The pitch servo literally moves the elevator in the pitch axis when the autopilot is coupled, doing your bidding as you push the buttons related to the pitch axis of the



Joe urges pilots to grab the controls and push the little red button when aircraft control is in question.

PHOTO CREDIT: CLINT GOFF

autopilot control head. Your autopilot has a whole host of different pitch modes including ALT (altitude), GA (go around), V/S (vertical speed), GP/GS (glide path/glide slope) and PTCH (pitch attitude). Some of the better autopilots also have A/S (airspeed), FLC (flight level change) and V_{nav} (vertical nav) modes. When you select a particular pitch mode on your autopilot, your pitch servo is the muscle that moves the elevator to fly the mode you selected.

What does the pitch *trim* servo do? The pitch trim servo relieves control pressures. Let's say, for instance, that you were holding altitude and flying by hand when ATC commands you to slow down 30 KIAS. You'll pull back on the power levers to reduce torque and the airplane slows down. As you slow down, you'll have to pull back on the yoke to hold altitude, the yoke will get heavy and your biceps will become tired. So, you'll move the pitch trim aft too (electric or manual), relieving control pressure. Pitch trim relieves control pressure, and the pitch trim servo can move the pitch trim electronically.

There are two ways to electrically manage the pitch trim servo: (1) electric trim from either of the two (pilot/copilot) yokes or (2) when the autopilot is flying, the pitch trim is moved by sensors in the pitch servo. When you move either the pilot or copilot pitch trim, you are activating the pitch trim servo, moving it in the desired direction. When the autopilot is operating, the pitch trim servo is activated in one direction (or the other) by the pitch servo.

In older non-digital King Air autopilots, the pitch trim servo is moved by one of two switches that

are in the pitch servo that sense cable tension. If tension is sensed in one direction, then the pitch trim servo is activated in that direction until the pressure is relieved. In newer digital autopilots, electrical energy is measured and if excessive energy is required by the pitch servo to hold the elevator in a certain position, it will send a signal to the pitch trim servo to rotate and relieve that pressure.

Normally, this system works well. Most autopilots bolted on a King Air are good, especially the newer digital autopilots. But this entire system is electro-mechanical; the electronics can fail and mechanical devices will fail too. When they fail in the pitch trim system, they fail with flair. Usually, the failure causes a pitch trim runaway.

A runaway can occur from one of the pitch trim switches on either yoke (pilot or copilot) failing in one direction. I've had several happen in my years of flying. I once had a pitch trim runaway because of a failed switch on the yoke that stuck in position after being damaged by something bumping the switch. In a King Air, the trim switch can be damaged by a pilot's foot when entering/leaving the cockpit or by bumping your coffee canister when putting it by your left foot. That switch failed in a pitch-down manner, and I lost about 500 feet of altitude before I solved the problem.

I once had a non-pilot passenger who joined me on a flight. That person had a rather heavy notebook in his hand and accidentally laid that notebook on the copilot pitch trim. The autopilot kicked off and the airplane pitched forward. I grabbed the controls and returned the airplane to level flight, and I made sure my passenger's notebook found its way to his knee.

The switch you cannot see

The more insidious cause of a pitch trim runaway is when a pressure switch in the pitch servo is erroneously activated. When this happens, it can be surprising. The autopilot will instantly disengage, and the airplane will begin pitching either up or down, depending on which switch failed. The pitch trim wheel will be turning. This is the time to grab the controls and hit the LRB. Speed in recognition is critical as the control forces will become increasingly heavier rapidly. In fact, pushing the LRB one time might not be enough. You might need to push and hold the LRB. If that doesn't work, find the pitch trim servo circuit breaker and pull it. You must ensure the pitch trim wheel stops turning uncommanded!

You should know where the pitch trim circuit breaker is in the cockpit of your King Air. This is one of the important circuit breakers that you should have collared for easy identification. When you have a pitch trim runaway, you'll be very busy. Finding that circuit breaker could be a bit difficult, especially if you are flying solo. Collar it for easy identification.

King Air aircraft have a pitch trim wheel that I love; it is easily accessible and ergonomically comfortable. I use it often when hand-flying. Sometimes I'll lay my right knee against the trim wheel and feel when those small movements occur.

But not all King Airs have a pitch trim wheel. King Air 100 models have a completely different pitch trim system. In the 100 series, the pitch trim moves the entire horizontal stabilizer, not just a trim device. And it has a backup system that operates at half-speed. So, if a pitch trim runaway happens in a King Air 100, the pilot's response is a bit different. A 100 series pilot needs to be familiar with this system and the emergency procedures for this unique airplane.

Whatever King Air you operate, you need to fully understand the pitch trim system and be able to recognize a runaway. A runaway will include an audio tone specific to your autopilot installed and an uncommanded pitching of the airplane. That's your cue to grab the controls and fly the airplane, push the LRB and know where the pitch trim circuit breaker is in your King Air. Hand-fly the airplane for the rest of that flight, ideally flying to a location where you can have your airplane repaired. A pitch trim runaway is no joke; it is a very dangerous situation that requires a prepared pilot. **KA**

Joe Casey is the owner of Casey Aviation, Inc. based at Angelina County Airport (KLFK) in eastern Texas. The company manages four King Air aircraft and provides flight training in many models of airplanes. He has 19,300 hours of total flight time, over 4,500 of which are in King Air airframes. He is a certified ATP-ME/SE commercial pilot with ASES, Rotorcraft-Helicopter/Instrument and Glider ratings. Casey is also a Designated Pilot Examiner (DPE) with many authorizations from Sport Pilot through ATP, CFI-Initial and the BE-300 type rating issuing authority up to the ATP level and holds CFI, CFII, MEI, CFI-H, CFI-IH and CFI-G certificates. He has flown 83 North Atlantic crossings in King Air aircraft.

IN MEMORIAM



Dr. Gladys West photographed on Dec. 6, 2018, when she was inducted into the Air Force Space and Missile Pioneers Hall of Fame.

PHOTO CREDIT: ADRIAN CADIZ

The Mind That Unleashed GPS

Remembering Gladys West's remarkable mathematical skill

by Dennis K. Johnson

The older (or should we call them vintage?) pilots will tell you how easy it is to navigate these days, with inexpensive GPS systems in our phones, electronic tablets and cockpits. We only need to look for the little airplane icon to see we're over the Wabash River and the nearest airport is 4 miles northwest. You just can't get lost. There's no longer a need to follow railroad tracks from town to town, land in a field to ask the farmer for directions or tune in two VOR signals and draw lines on a chart.

We have a lot of people to thank for this enhanced flight safety and convenience, from the engineers and rocket scientists who built the GPS satellites and the rockets to launch them, to the mathematicians who used their big brains to figure out how the system would work. One of those who toiled diligently behind the scenes was a woman from rural Virginia named Gladys West. Her mathematical and computer programming expertise contributed significantly to the Global Positioning System we rely on today.

From farm to college

West (née Gladys Brown) was born on the family farm south of Richmond in 1930, the same year as Neil Armstrong. When not in school, she worked on the farm like most children of the Depression. Many of her classmates would go no further, living out their lives as farmers or working at the local tobacco factory. For

West, school offered a path to a better career.

"I was going get an education and I was going to get out of there. I wasn't going to be stuck there all my life," West said. She hit the books, becoming valedictorian of her high school graduating class and earning a scholarship to Virginia State College, a historically Black college that is now Virginia State University.

Once there, she learned that while she had been at the top of her rural high school class, she now had to work hard to keep up with students from city schools. After graduating with a mathematics degree in 1952, she taught math while earning a master's degree in 1955.

Putting numbers to work

In 1956, West was hired as a mathematician by the U.S. Naval Weapons Laboratory in Dahlgren, Virginia, about 40 miles south of Washington, D.C. There, her calculations supported new weapons development, such as ballistic missiles. At first, the mathematicians solved complex equations by hand, but they soon transitioned to programming computers to solve long and complex problems. West became a computer programmer and managed systems that analyzed satellite data. In the 1960s, she worked on an astronomical study that determined the movements of Pluto in relation to Neptune.

Looking down on Earth

By 1978, West was project manager of Seasat, a satellite designed to measure ocean wave height, water



PHOTO CREDIT: GLADYS WEST X ACCOUNT

temperature, currents, winds and icebergs. It was the first project to demonstrate that satellites could collect oceanographic data.

Next came GEOSAT, a satellite that gathered data to create computer models of the Earth's shape. To increase the accuracy of the computer models, West employed complex algorithms to account for various forces that distort the Earth – such as its gravity, rotation and tides, plus the fact that the Earth is not actually spherical – especially the ever-changing ocean surfaces. West and her team created a program to precisely calculate satellite orbits, which allowed accurate position calculations. These computer models became the basis for GPS.

While at Dahlgren, she met fellow mathematician and her future husband, Ira West. They married in 1957 and had three children.

GPS

Today, GPS is a network of 24 orbiting satellites (24 is the minimum, extras are orbiting as backups) that can pinpoint a GPS receiver's location to an accuracy of about 15 feet using the average smartphone. To do this, each satellite must know its position in space and the precise time, determined by an onboard atomic clock. The satellites transmit their position and time to GPS receivers on Earth, which calculate the distance to the satellite by measuring the time the signal took to arrive. With signals from four satellites, a GPS receiver can triangulate its position.

Hidden figures

Like the NASA mathematicians depicted in the book and movie "Hidden Figures," West is often included as one whose scientific contributions went unrecognized at the time. However, in 2018, she was finally recognized for her contribution to GPS development by the Virginia General Assembly and inducted into the U.S. Air Force Space and Missile Pioneers Hall of Fame. At the induction ceremony, the commander said, "She rose through the ranks, worked on the satellite geodesy, and contributed to the accuracy of GPS and the measurement of satellite data. When Gladys West started her career as a mathematician at Dahlgren in 1956, she likely had no idea that her work would impact the world for decades to come."

West said of herself, "When you're working every day, you're not thinking, 'What impact is this going to have on the world?' You're thinking, 'I've got to get this right.'"

Since my little airplane icon never fails me, I guess she did.

I'll take a folding map

Although she was instrumental in creating GPS, West said she continued to prefer a paper map.

"I'm a doer, hands-on kind of person. If I can see the road and see where it turns and see where it went, I am more sure," she explained.

I'll bet she could even fold the map properly.

West died Jan. 17, 2026, at age 95, but her legacy will live on. **KA**

Dennis K. Johnson is an aviation writer and pilot living in New York City.



BECOME A DOVE!

EVERYBODY NEEDS A LIFT
EVERY NOW AND THEN



MINNESOTA'S TWIN CITIES
FRIDAY, JUNE 19 &
SATURDAY, JUNE 27, 2026



© 2025 Textron Aviation Inc. All Rights Reserved.
Cessna® & Beechcraft® are a trademark or service
mark of Textron Aviation Inc. or an affiliate and may
be registered in the United States or other jurisdictions.
Special Olympics is a trademark and/or service mark
of its respective owner.



KING AIR GATHERING

Agenda Announced for 2026 Gathering

by King Air Gathering organizers

King Air Gathering co-hosts King Air Nation and BLR Aerospace have announced the speakers, companion activities and a full list of educational and networking events attendees can expect during the 2026 King Air Gathering happening March 26-28 in Horseshoe Bay, Texas.

KAG's venue is Horseshoe Bay Resort, featuring Texas Hill Country scenery paired with a private airport and world-class resort amenities including golfing, spa services, lakeside activities, dining and more. The resort is situated along Lake Lyndon B. Johnson, approximately 50 miles northwest of downtown Austin.

Find the latest information for the King Air Gathering at kingairgathering.com. Registration is \$995 per person for all attendees and the lodging rate is discounted at \$289 per night plus fees if you use the KAG room block, available until Feb. 24.

A new option this year, Pratt & Whitney Canada PT6 Connect offers operators, pilots and maintainers direct engagement with P&WC experts on Thursday at the Horseshoe Bay Resort Airport (KDZB). There is no additional cost for registered KAG attendees to participate in this activity, though registration is required.

The following is an overview of the schedule of presentations, hands-on learning and expert-led sessions focused on strengthening pilot skills and deepening King Air knowledge. Note: This schedule is subject to change after publication.

Visit kingairgathering.com for the latest details and email questions to event@kingairgathering.com.

Thursday, March 26

- Arrivals
- PT6 Connect with Pratt & Whitney Canada (separate registration required) at KDZB
- Evening welcome reception



Friday, March 27

- Welcome & overview with Kevin Carson, King Air Academy
- Keynote speaker
- King Air Incidents & Accidents with Peter Basile, Textron Aviation
- How To Keep Your FAA Medical with Dr. Brent Blue
- Lunch and sponsor time
- Mitch Heaton, Hartzell Propeller
- Buses to static display
- Introduction of the King Air Safety Foundation
- How To Care for Your Windshields for Maximum Life with Ken Blow, KADEX Aero Supply
- Travis Lamance, Haven Aviation Services Group

Saturday, March 28

- Gogo Galileo HDX STC for King Airs with Rob Reed, Stevens Aerospace
- New King Air Fuel System with Scott Philiben, CiES
- Propeller Materials with Martin Albrecht, MT-Propeller
- PT6A Technical Updates, Best Maintenance Practices & More with Pratt & Whitney
- Lunch and sponsor time
- Avionics Breakout Sessions with Garmin and Collins
- King Air Connectivity & Starlink with Paul Sneden, King Air Maintenance Academy
- How To Get Better Insurance Rates with Jeff Rhodes, 5X5 Insurance
- Parts Availability and Maintenance Panel Discussion
- Dinner, awards and auction

COMBAT WOUNDED

THEY'VE GOT HEART, THEY NEED WINGS

Imagine a soldier returning home from combat facing devastating injuries and long-term hospitalization-- in a facility hundreds of miles away from their family.

Now imagine yourself bringing them together.



The VAC provides free air transportation to post 9/11 combat wounded and their families for medical and other compassionate purposes through a national network of volunteer aircraft owners and pilots.

FIND OUT HOW YOU CAN MAKE A DIFFERENCE.

VETERANSAIRLIFT.ORG - 952-582-2911

ADVERTISING INDEX

Banyan.....	6
BLR Aerospace	Back Cover
CenTex Aerospace.....	5
Cleveland Wheels & Brakes.....	17
Corporate Angel Network	Inside Back Cover
Elliott Aviation	Inside Front Cover
PAG/Precision Aviation Group.....	9
Select Airparts.....	7
Special Olympics Airlift.....	29
V2X.....	8
Vac-Veterans Airlift Command.....	31

2026 GENERAL AVIATION INDUSTRY EVENTS



PHOTO CREDIT: TEXTRON AVIATION

- **March 19-21:** Women in Aviation International Conference, Dallas, Texas
- **March 23-26:** Aircraft Electronics Association International Convention & Trade Show, Dallas, Texas
- **March 26-28:** King Air Gathering, Horseshoe Bay, Texas
- **April 14-19:** SUN 'n FUN Aerospace Expo, Lakeland, Florida
- **April 22-25:** AERO Friedrichshafen, Friedrichshafen, Germany
- **May 2-3:** Great Alaska Aviation Gathering, Anchorage, Alaska
- **June 2-4:** European Business Aviation Convention & Exhibition (EBACE), Geneva, Switzerland
- **June 19 & 27:** Textron Aviation Special Olympics Airlift, across the U.S.
- **July 20-26:** EAA AirVenture, Oshkosh, Wisconsin
- **Aug. 4-6:** Latin American Business Aviation Conference & Exhibition (LABACE), São Paulo, Brazil
- **Sept. 19-20:** National Championship Air Races, Roswell, New Mexico
- **Oct. 8-10:** Beech Party, Tullahoma, Tennessee
- **Oct. 20-22:** National Business Aviation Association Business Aviation Convention & Exhibition (NBAA-BACE), Las Vegas, Nevada

Let us know of additional events at
melinda@kingairmagazine.com.



They're
going
through
Hell.
Give them
a lift.
Literally.

Imagine needing a ride to the doctor, but the doctor is states away. Corporate Angel Network (CAN) provides cancer patients free seats on jet and turboprop business aircraft to treatment throughout the United States.

Thanks to the generous support of our partners, CAN has coordinated more than 69,000 patient flights. Will you help us save more lives by supporting our mission? The spirits you lift may well be your own.



The quietest propeller available.

BLR 5 blade Whisper Prop®

HOW IT WORKS

Combine advanced noise reduction with high durability, featuring field-repairable and replaceable blades made from natural composite materials. These propellers are designed for long-lasting performance.

AVAILABLE FOR

King Air 90, 200 & 300 Series, Beech 1900, Air Tractor AT-602 / AT-802

OUR BENEFITS

- *Most Durable Propeller Available*
- *Field Repairable/Replaceable Blades*
- *Nickel-Cobalt Leading Edge Protection*
- *Unlimited Blade Life*

