

King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

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2



14



16



24

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Contents

2

Wish List: King Airs in Popular Demand for Charitable Flights

by MeLinda Schnyder

14

Maintenance Tip: A Trip Down Memory Lane

by Dean Benedict

16

Ask the Expert: How Does Electric Power Affect Pressurization

by Tom Clements

22

Aviation Issues: Recent Aviation Happenings

by Kim Blonigen

24

Teacher's Pet – The Model 45

by Edward H. Phillips

32

Value Added

36

Technically...

40

Advertiser Index



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AEROBridge matches private aircraft with emergency response teams and critical supplies during catastrophic emergencies, such as hurricanes, earthquakes or major flooding.



A pet passenger headed to a King Air for transport to its new home. The King Air is great for animal rescue missions because the pressurized, climate controlled cabin makes the animals more comfortable, and the roomy cabin can accommodate multiple crates, supplies and helpers to be with the animals.



An unnamed river flows into Kukak Bay in Katmai National Park and Preserve in Alaska. LightHawk often flies to support conservation photographers. This image was captured in support of Carl Johnson's book "Where Water is Gold," which documents the importance of Bristol Bay to local Alaska Native communities. (PHOTO BY CARL JOHNSON, AERIAL SUPPORT LIGHTHAWK)

Wish List: King Airs in Popular Demand for Charitable Flights

by MeLinda Schnyder



Chris Gaertner helps a passenger during one of his missions for Angel Flight West, which provides free non-emergency air travel for children and adults with serious medical conditions. The Gaertners fly their 2013 King Air C90GTx as well as Cessna Citations they own, and they always give children they transport a stuffed animal.



Veterans Airlift Command Founder Walt Fricke assists Army Ranger MSG Cedric King. The organization relies on volunteer aircraft owners and pilots to provide free air transportation for medical and other compassionate purposes to combat-wounded soldiers and their families.



Through Advantage Aviation Charter, Chris and Jackie Gaertners' King Air C90GTx has carried hearts, lungs, kidneys, livers and other organs, along with the surgical teams and patient coordinators involved in the California Organ Transplant Network. Chris Gaertner occasionally flies as part of the required two-pilot crew.



Milwaukee animal rescue pilot Chris Roy and his wife Daphne launched *Doobert.com* in 2014 based on a software platform Chris invented to help with coordinating and mapping volunteer flights. The growing site currently connects about 400 rescue groups, shelters and transport groups with 13,000 volunteers who have registered on the site, including about 500 pilots.

When an earthquake struck Haiti in 2010, a group of volunteer pilots coordinated 715 flights that brought more than a million pounds of critical supplies to the island nation and transported 3,800 passengers, including medical personnel, injured patients and relief workers.

Pilots and aircraft owners have donated 13,000 flights to wounded veterans for medical and other compassionate purposes covering more than 7.8 million miles through Veterans Airlift Command.

Volunteers in all 50 states fly more than 15,000 rescue animals each year for Pilots N Paws, just one of many organizations devoted to animal transport.

Every day of the year there are flights taking off across the U.S. and across borders to assist with patient and non-emergency medical transport, disaster relief, animal rescue, environmental causes, and educational and public services support. These flights wouldn't happen without the volunteers who donate their time, aircraft and operating expenses.

Many of these organizations say they are lucky to count King Air pilots among their volunteers; all would love to

readers to some of the personalities in the volunteer pilot community and the resources available. We hope you'll be inspired.

Referral Sites

A great place to start if you're thinking of volunteering is a referral website that lists a variety of groups seeking pilots. You'll learn a little about many organizations, then you can dig deeper into those that connect with your passion or operate in your area.

see more King Air pilots participate – whether for one flight a month or one a year. The same characteristics that made the King Air your choice for air transportation are also valuable to these non-profits: safety, dependability, pressurization, climate control, cargo and passenger capacity.

In the spirit of the giving season, we would like to introduce *King Air*

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Air Care Alliance (aircarealliance.org) has one of the most extensive lists: 80 volunteer-based charitable aviation transportation groups. You can sort by services provided or by geography, and there's a short description of each with contact information. ACA formed as an umbrella organization in 1990 after Bill Worden, a pilot and board member of Angel Flight West, and Rol Murrow of the Emergency Volunteer Air Corps convened the leaders of volunteer pilot organizations, many of which had started in the 1980s.

Milwaukee animal rescue pilot Chris Roy invented a software platform to help him organize the volunteer flights he accepts. It helps him easily route and coordinate entire trips using Google Maps, so he decided to share the software with the entire animal rescue community in 2014. Named for one of his cats, Doobert (doobert.com) is a portal to connect rescues, shelters and transport groups with volunteers, from pilots or drivers to fosters or photographers.

Roy said 13,000 volunteers have registered on the site, including about 500 pilots. When you set up

King Air owner Jeff Luizza (center) with Dawn Smith Blanton (left), director of the Moultrie Colquitt County Humane Society of Moultrie, Georgia, and Delaney Mitchell Hargraves, secretary of the shelter, with the dogs that Luizza will be transporting to a new home.

a pilot profile in Doobert, you enter information such as the days of the week you're available to fly, the distance you're willing to travel and how many pets you can transport. The software only sends you notifications for the transportation requests that meet your requirements.

Nearly 400 rescue groups and shelters in the U.S. and Canada use the site to connect with volunteers, and Doobert powers the rescue flights of transport groups including Flying Fur Rescue, Flying Dog Rescue, Pilots to the Rescue and Pilot.Dog. "The estimate is that there are 20,000 rescue groups in the country and around 3,500 shelters, so there's still a huge population to make aware of this free tool designed for them," Roy said.

He also hopes making it easier for volunteer pilots will encourage more to help save animals' lives. "Doobert puts the power in your hands – you don't have to do this every day or even every week. If you want to do a flight every two months you can," Roy said. "There's always a need because there's still four million animals that are euthanized each year. It's not an overpopulation problem, it's a logistics problem. If you move these animals to where there is demand, they can live long, healthy lives."



Reasons to Become a Volunteer Pilot

Combine passions: Unite your love of flight with a cause you care about.

Become an advocate: Learn about important issues.

Use your skills: Put your talent and aircraft to good use.

Stay current: You'll have a great reason to fly regularly.

Be challenged: Accept missions to new airports.

Warm fuzzies: Doing good makes you feel good.

Sense of community: You'll bond with other volunteers and those you help.

Tax deductible: Check with your accountant if you fly for a 501(c)(3). Flight training may also be tax deductible if students fly missions with their instructors.

Animal Rescue

In 15 years of flying animal rescue missions, Jeff Luizza has come across only a handful of other King Air owners donating their time and airplane to transport pets to their new forever-homes or moving animals doomed for euthanasia to communities where they have a better chance of being adopted.

"The expense is pretty substantial but life's been good to us and this is a way to give back," said Luizza, who flies a 1981 King Air C90 that he has owned for 10 years. "I feel like I'm really doing something that's important. In some of the rural areas, the distances are too far to drive the dogs and if it wasn't for the pilots these dogs wouldn't stand a chance, they would be put down."

Luizza has flown 2,540 animals in those 15 years (he sold his business and retired nine years ago). His numbers have increased since he created a personal Facebook page three years ago and began posting about his flights. As more rescue groups and shelters have found him, he's accumulated 240 volunteer flight hours in just the past three years, including a year when he transported 800 animals.

To justify the expense, Luizza tries to coordinate flights involving no fewer than 20 animals and focuses on cases where the animals are being moved from a

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shelter where they are scheduled to be put down to a rescue group or home. He and his wife spend their winters in Florida and their summers in Pennsylvania, and most of his rescue missions are within 400 nautical miles from his location.

He most often transports dogs but has also helped kittens and even a 17-day-old female chimpanzee whose mother had rejected her. She needed to move from Maryland to Florida, where a surrogate mother was available. He once was able to fit 60 puppies on one flight.

“The King Air gives us a lot of capacity, and I’ve got an 1,100-pound gross weight increase that takes it up to 10,500 pounds,” Luizza said. “We can fill it with fuel, fill the cabin and still fly away.”

Other benefits of using a King Air for animal rescue, he said, include a cabin that makes the animals as comfortable as possible during a stressful move and its all-weather capability. “Many of the pilots who do this are very weather dependent,” Luizza said.

On the other side of the country, Chris and Jackie Gaertner are using their 2013 King Air C90GTX for regional animal rescue flights from their home in the San Francisco Bay area. *King Air* magazine featured their volunteer work for Pilots N Paws and Angel Flight West in a 2014 article. The couple has been flying together since Chris earned his pilot’s license in 1983. Now that her two sons are grown and inspired by the satisfaction of making a positive impact through volunteer missions, Jackie earned her pilot’s license in 2015.

Since 2013, the Gaertners have flown more than 250 multi-animal missions for Pilots N Paws. With the help of 5,000 volunteer pilots in all 50 states, the organization facilitates flights for more than 15,000 rescue animals each year through a web-based message board. Pilots N Paws sends pilots free equipment such as crates, harnesses, collars and leashes to use on the flights.

Disaster Relief

Alongside Civil Air Patrol, an auxiliary of the U.S. Air Force that uses its fleet of aircraft to support search-and-rescue, disaster relief and to promote aviation to the next generation of pilots, are grassroots organizations looking for pilots to donate their aircraft and crew to disaster relief. The idea is to have available resources identified and processes in place before the next emergency.

AEROBridge is a National Business Aviation Association-endorsed organization that matches private aircraft with emergency response teams and critical supplies during catastrophic emergencies. The group first mobilized to respond to Hurricane Katrina in 2005 then activated again in 2010 when the earthquake hit Haiti. The most recent major operation

The shoreline along the Yucatan Peninsula is shown during a LightHawk flight to survey flamingo populations in the area. In addition to aerial surveys, LightHawk supports many aspects of species survival, including telemetry tracking and transport flights of endangered animals. (PHOTO BY CHRISTOPHER BOYER/AERIAL SUPPORT BY LIGHTHAWK)





LightHawk pilot Michael Baum and staff from the Endangered Wolf Center transporting Maya, a Mexican wolf, from California. Maya was a good genetic match for a male in Missouri, helping increase the genetic diversity of the population. A direct LightHawk flight reduces travel time and stress for both the wolves and scientists. (PHOTO COURTESY OF THE ENDANGERED WOLF CENTER/AERIAL SUPPORT BY LIGHTHAWK)

was in support of Hurricane Sandy in 2012, although some resources were deployed this year in response to help needed during Hurricane Matthew.

Alan Staats, a professional photographer who serves as volunteer vice president of media relations for the organization, said all series of King Airs have flown for AEROBridge. Oftentimes the donated models have wing lockers or cargo pods to supplement the already impressive cabin volume.

“If you’re bringing a couple hundred thousand water purification tablets, it takes up a lot of room, but not a lot of weight, so you can literally throw a couple million doses of pharmaceuticals into a King Air,” Staats said. “The King Air is a wonderful platform to do this type of work. It’s really valuable to be able to mix a load, getting two or three people on board and still haul a ton of supplies.”



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Jeff Luizza's 1981 King Air C90 cabin filled with crates transporting animals. He says besides the King Air cabin's large capacity, it also makes the animals as comfortable as possible during a stressful move.

Environmental Conservation

“What does flying have to do with conservation?” is a question Terri Watson loves to answer. She is the CEO of a non-profit whose mission is to accelerate conservation success through the perspective of flight and she's a long-time pilot with more than 11,000 hours in helicopters and airplanes, including King Air 350, 200 and 90 variants.

Conservation groups can use aircraft as tools in saving the lives of endangered species, collecting data through surveys or photography and showing decision-makers an issue or landscape first-hand. Most groups can't afford to use aircraft though, so LightHawk leverages a nationwide network of volunteer pilots to donate time, aircraft and fuel costs to make the aerial perspective available.

In 2015, LightHawk's volunteer corps of 240 pilots flew 444 missions with 817 passengers for 129 different conservation organizations on 99 different conservation

projects across the U.S., Canada and Mexico. Flying for LightHawk, Watson said, gives their flying a purpose and turns many pilots who weren't initially conservationists into advocates.

A King Air 100 pilot based in Sedona, Arizona, is just starting to volunteer with LightHawk and will be used for important work in the southwest. Access to the King Air 100 will allow one of LightHawk's partners, the Sonoran Institute, to take larger groups of stakeholders on longer “hearts and minds” flights – the term LightHawk uses for taking stakeholders in the air to see the big picture on an issue. In this case, the flights will include individuals who are part of legislation negotiation between the U.S and Mexico over water rights on the Colorado River, America's most endangered river.

“Seeing the terrain and issue in real-time in the immersive experience of an airplane is very effective at bringing about an ‘aha’ moment of understanding and motivation to do something about it,” Watson said. “That's a great mission in the King Air: you've got good visibility and usually a comfortable ride with pressurization and air conditioning.”

Another example of how the King Air could be used is rehab and release flights for Mexican wolves. “We focus on providing transport where it helps with species survival of something endangered and the transport couldn't happen if we weren't there,” Watson said. “If you're moving a Mexican wolf, they are very temperature sensitive. If you try to move them by vehicle or by commercial transport in an airplane, you can't control the temperature and they could die. When we move them, we can control the temperature in the aircraft and the entire move is orchestrated so we arrive based on the temperature at specific times of day. We have that level of schedule control with a LightHawk flight.”

Patient Transport

Transporting patients who need medical care they can't get in their local area is one of the largest categories of volunteer opportunities. Angel Flight has a large system of organizations across the country, while smaller operations focus on a specific geographic area or type of patient, for example children, cancer patients, veterans.

Veterans Airlift Command is a national network of volunteer aircraft owners and pilots providing free air transportation for medical and other compassionate purposes to post-9/11 combat-wounded soldiers and their families. King Airs are some of the most popular aircraft for VAC missions because they offer passengers comfortable

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Neil Hise (right) volunteers his time and his King Air C90SE to Veterans Airlift Command and his daughter Jennifer Hise (left) joins him on some flights. Here they are giving a free flight to Army Sgt. Matthew Melancon, who lost both feet when an improvised explosive device hit his vehicle in Afghanistan.

flights – non-stop routes, flying above weather and plenty of cabin room for family members, service dogs or medical equipment.

According to Jen Salvati, executive director, the organization has coordinated nearly 13,000 flights covering more than 7.8 million miles with the generosity of more than 2,500 pilots and owners. That includes 90 King Air pilots who have signed up for the VAC network and volunteered for missions.

In 2015, *King Air* magazine featured two pilots who regularly fly for VAC: Neil Hise, the second-generation owner of a New Mexico-based manufacturing company who flies a 1996 King Air C90SE, and Jim Harris, flying a 1981 King Air 200C owned by his employer, CHI Aviation headquartered in Michigan. Both are still flying VAC missions.

CHI Aviation is scheduled this month to fly its 43rd volunteer mission; most have been for VAC, along with a few for Honor Flight Network, which transports veterans to Washington, D.C. to visit memorials honoring their service and sacrifice. Harris recently flew a 92-year-old World War II veteran from southern Michigan to Traverse City, where he took part in a donated flight on an airliner with other veterans.

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Andrew Smith, front right, was an Army Specialist on his first tour in Afghanistan in 2012 when he stepped on an IED, losing both legs and suffering severe abdominal injuries. He spent 20 months in the hospital recovering from his injuries. In this photo he's with his family and his service dog on CHI Aviation's King Air 200C during Veterans Airlift Command flight.

In November, Hise flew three missions on his way to and from VAC's annual fundraiser, bringing his total to 32. In addition to signing up for missions posted on veteransairlift.org, Hise lets VAC know when he's on a business trip with room for passengers.

"The volunteer pilots and people that donate their planes and pilots that allow our veterans to travel without the humiliation of enduring TSA inspection at commercial airports are just wonderful and caring people," said Hise, who's been flying since 1968 and has 6,000 hours total flight time. "You meet some of the most wonderful people when you're doing this – from the veterans and their families to the people running VAC. And the FBOs almost always step up, offering a fuel discount, waving ramp fees and bending over backward to help." 

To find more information about the non-profits and transport groups mentioned in this article:

AEROBridge: aerobridge.org

Air Care Alliance: aircarealliance.org

Angel Flight West: angelflightwest.org

Doobert: doobert.com

Emergency Volunteer Air Corps: evac.org

Flying Dog Rescue: flyingdogrescue.com

Flying Fur Rescue: flyingfuranimalrescue.org

Honor Flight Network: honorflight.org

LightHawk: lighthawk.org

Pilot.dog: pilot.dog

Pilots N Paws: pilotsnpaws.org

Pilots to the Rescue: pilotsstotherescue.org

Veterans Airlift Command: veteransairlift.org

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A Trip Down

MEMORY LANE

by Dean Benedict

Last month I was invited to meet up with the *Silver Foxes*, a group of people that worked for Beech Aircraft “back in the day.” Most are long retired, but have stayed in touch with colleagues from what they fondly call “the Golden Days of Beechcraft.” Their reunion this year happened to be in my stomping grounds of Las Vegas, Nevada, and my wife and I were delighted to be included. It was a great trip down memory lane for everyone.

A lot of the guys were in sales and sold the whole gamut of what Beech had to offer. But every conversation at our get-together always seemed to come back around to the King Air – such a versatile and reliable aircraft. It’s no wonder that so many are still flying today after 20, 30, even 40 or more years of operation. There’s a 1964 A90 that was originally sold by BeechWest Van Nuys to a colorful car dealer in the Los Angeles area, and fifty-two years later is *still flying!* The ownership of the King Air has changed but the N-number has stayed the same.

People take great pride in having been involved with Beechcraft way back when, and I’m no exception. It was an honor to be associated with such a great company and products. I thoroughly enjoyed seeing everyone from the old days and rekindling so many forgotten memories.

The 200 and the Mid-Air

I was reminded about the time the factory asked me to look into a King Air that had been in a mid-air collision but landed safely. This was about 30 years ago, when I was the service manager at BeechWest Van Nuys. I had just gotten home from work that evening, when the telephone rang. Someone at Beech in Wichita wanted me to get down to Orange County (KSNA) right away to assess the situation.

I knew the freeway traffic to get there would be a nightmare, so I drove back to work, hopped in a flight club Bonanza, and flew down. When I got there, the 200 was still on the runway. I was familiar with this King Air because we maintained it at Van Nuys. What I saw was chilling.

The R/H lower engine cowling was torn off. The oil cooler was hanging by its hoses. Fuel and oil lines were

torn and dangling. The right engine had sustained heavy damage. Underneath the R/H wing, just outboard of the nacelle where the inboard fuel bladder should have been, was a big hole roughly two-feet in diameter. The R/H gear door was ripped off and I could see the outboard trunion on the R/H gear was broken.

Moving aft, there was another hole that went completely through the R/H wing. It was about one foot in diameter, exactly where the rear spar is located. On a 200, if you look for the outboard, aft wing bolt cover on the right wing – that’s where this hole went right through.

I stood out by the R/H wing tip and grasped it with just my thumb and index finger; I could rock the right wing back and forth with no effort at all. That’s a moment I’ll never forget. *The rear spar was broken.* The forward wing bolts were all that kept that wing from falling off.

I found some more damage on the belly of the aircraft, just aft of the hell hole door. That gash was about 18 inches in diameter. Whatever impacted there took out the rudder boost system.

Luck Was a Lady that Day

The pilot was IFR and had just taken off from KSNA, when he said, “I think I’ve just been involved in a mid-air.” As I listened to the tower tapes, I was amazed at how calm and measured his voice was at that moment.



EDWARD H. PHILLIPS COLLECTION

He then asked to come back to the airport and land. Upon putting the gear down, he noted that he had an unsafe gear indication on the R/H side.

He landed successfully on all three gear. I surmised that the weight of the aircraft upon landing happened to push that broken outboard trunion back into place – a case of dumb luck.

The other aircraft (with a pilot and an instructor onboard) was not so lucky. It was a Cessna 210 on a training flight and apparently not in communication with anyone. The deduction on everyone's part was that the Cessna was doing a power-on stall and impacted the King Air from underneath.

This whole thing was a case of dumb luck. Had the impact area to the 200 been different, it might have gone down with the Cessna; but it wasn't, and it didn't. Maybe it was luck, maybe it was divine intervention.

On the other hand, there are plenty of aircraft out there that could not sustain half the damage taken by this 200 and still make it safely to the ground. I will always stand by the reliability, the flyability and the sturdiness of the Beechcraft King Air. In my opinion, its reputation, coupled with its longevity, is unmatched in general aviation. And I believe the Silver Foxes feel the same way. **KA**

Dean Benedict is a certified A&P, AI, with over 40 years of maintaining King Airs. He owned and managed Honest Air Inc., a maintenance shop specializing in Beech aircraft with an emphasis on King Airs, for 15 years. In his new venture, BeechMedic LLC, Dean consults with King Air owners and operators on maintenance management, troubleshooting, pre-buys, etc. The Honest Air operation merged with Apex Aviation (KHND) where Dean oversees all King Air and Beechcraft activity. He can be reached at drdean@BeechMedic.com.

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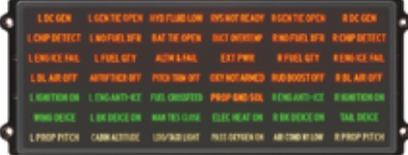
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How Does Electric Power Affect Pressurization

by Tom Clements

I recently received an email from Jay Vierling of Cincinnati, Ohio, seeking my opinion on some pressurization anomalies and what the mechanics had found. Here's what he wrote:

I have a question and haven't been able to find any good answers. I own and fly a King Air C90B. I've been noticing erratic pressurization during climb. Many times, the cabin climbs at the aircraft climb rate and then around 7,000 to 8,000 feet, it starts to build differential pressure and seems to work fine. When I say fine, the rate control seems to function on the descent. On one low altitude (8,000-foot cruise) short flight, the cabin vertical speed was jumping all around and I could feel it in my ears. Luckily, no passengers were on that leg.

I took the aircraft in for service. Friday, they called and said they think they found the problem ... that the pressurization control circuit breaker was bad. I said you mean intermittent? They said no, no power to the controller.

So, that leads me to a bunch of questions:

1. What is electric power used for in the pressurization controller besides lighting?
2. Can the controller partially function with no power?
3. What exactly is in that little box?
4. Is it reasonable to think a bad breaker is the problem?

I'd be very interested in any insight you might have.

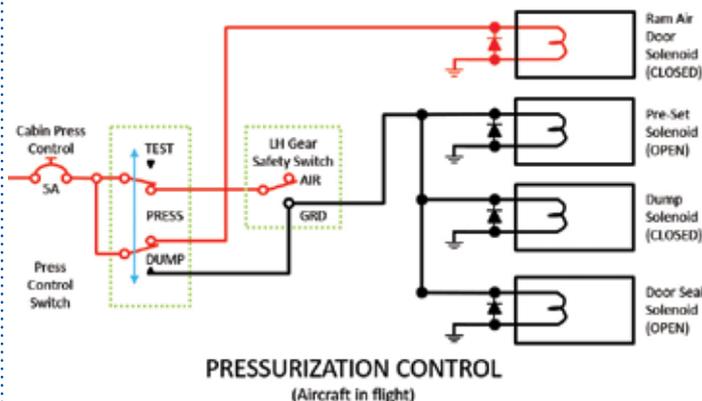
Here is the reply I sent, with some additions and modifications for the purpose of the article:

"Hi Jay,

Yes, I bet your shop is 100 percent correct.

The Pressure Control Circuit Breaker (CB) sends power to (1) the Dump Solenoid, (2) the Door Seal Solenoid, (3) the Preset Solenoid, and (4) the Ram Air Door electromagnet. Except for the Ram Air Door's magnet, all of these things are de-energized in flight,

only getting power when the squat switch activates or when the Cabin Pressure Control switch is moved to "Dump." The three solenoids connect to and operate valves, with the combination known as a "solenoid valve." Two of the solenoid valves, the Door Seal and the Preset, are of the N.O. type. That means they are "Normally Open," and that the valve closes only when electricity activates the solenoid. The Dump Solenoid valve is of the N.C. type, "Normally Closed," only opening when the solenoid is energized.



On the ground, activated, the Dump Solenoid valve opens to allow a vacuum to flow to the safety valve, sucking it wide open. The Preset Solenoid valve closes, shutting off the vacuum line going to the controller, preventing the controller from working. This allows you to preset your final cabin altitude for cruise while still on the ground and yet the controller does not begin to operate the Outflow valve until after liftoff. The Door Seal Solenoid valve closes to prevent the door seal from inflating, making it easier to open and close the door with an engine running.

In your case, with the bad CB, the Preset Solenoid getting no power meant that when you dialed in, say, a 7,000-foot cabin altitude before departure, the controller immediately began trying to climb the cabin to that altitude by opening the Outflow Valve. By the time you lifted off, the controller – depending on how long you spent on the ground – would “think” the cabin should be above you and therefore it would not do anything until you climbed above this “phantom” cabin, and then all would be just fine. This explains the lack of rate control

in the initial climb ... no Delta P (Differential Pressure) until you passed your phantom cabin.

The lack of the Ram Air Door magnet explains why you were seeing the cabin fluctuations during your 8,000-foot cruise: Your high IAS was intermittently blowing open the Ram Air Door. This did not happen when you climbed to normal cruise altitude because the slower climb airspeed was not enough to blow open the door. By the time you leveled off and picked up airspeed, there was enough Delta P to keep the door closed even without the magnet.

The door seal being inflated on the ground is something you'd never notice unless you operated the door, and the lack of dumping would also go unnoticed unless you dialed the cabin altitude down below field elevation ... then the airplane would have pressurized on the ground when your bleed air switches were on.

Once the airplane builds up significant Delta P, the Ram Air Door will remain closed even without the magnet.



So, cruising along normally, one can pull the Pressure Control CB and absolutely nothing changes! Except – and it can be a big deal – now you cannot dump with the Dump switch. If you needed to remove smoke quickly, you'd be out of luck. In effect, pulling that CB is the same as holding the pressurization control switch in Test. In fact, when one is doing a ground pressurization test, pulling the CB frees your hand from having to continually hold the Test switch! Many knowledgeable King Air mechanics do it that way.

To answer your question about what's inside the controller ... it is totally mechanical, with a variable spring and diaphragm operating a bellows. It simply creates the reference vacuum that is then sent to the Outflow Valve via a plastic tube, a different amount of vacuum for each different cabin altitude setting.

When the shop fixes the CB so that power is available to the solenoids and magnet I have mentioned, I guarantee all will be well."

And so they did, and it was – back to normal operation.



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Now I want to add a few additional comments. First, the Preset Solenoid did not appear on King Airs until the B90 model replaced the A90 in 1968. So, if and when you fly a straight 90 or A90, the correct procedure is to leave the controller set for the previous landing and don't dial in your cruise altitude until after takeoff. The Preset Solenoid certainly simplifies this task and eliminates the chance of forgetting to crank the cabin up in the initial climb.

Next, all 90s, A90s and B90s receive their cabin air inflow from a supercharger driven by the left engine, not by the dual bleed air system we have today. (Unless they have been extensively and expensively modified.) In these models, the Pressure Control CB also is the power source for the Flow Control Valve, the device that regulates the flow of supercharger air into the cabin. This Flow Control Valve, when de-energized, defaults to the position that dumps the

supercharger air overboard, not sending any into the cabin. So, if the same scenario – a bad Pressure Control breaker that was not allowing power to pass – befell these early models, the symptom would be total lack of any pressurization at all due to lack of inflow!

Earlier King Airs were not equipped with the Door Seal Solenoid. In the airplanes with superchargers, that same air source inflated the door seal. When the change was made to dual bleed air, for a while it was still the left side only that supplied the door seal; so if the left engine was not running when the door was opened or closed, the inflated seal provided no resistance. Then it was recognized that the advantage of dual bleed sources, left and right, was compromised to some degree since when the right side alone was operating, it would be flowing air into a rather leaky cabin since the door seal was not being inflated. The logical improvement took place

in 1973 when Beech moved the inflation source from the left side's Environmental ("Big P3") air to the Pneumatic Pressure manifold that was fed by the "Little P3" from both sides. Now either engine running led to an inflated seal and soon complaints started being received at the factory that it was now more difficult (sometimes impossible!) to close the door after making a quick drop-off or pick-up with only the left engine shut down. In response to this aggravation, the Door Seal Shutoff Solenoid valve made its appearance in 1978.

One final thought: Suppose you have enjoyed a lovely weekend on a beach in Baja, next to the dirt and gravel strip by the private resort. Heading for home you find that you have no pressurization. After making the normal checklist steps – yes, the Control Switch is not in Dump; yes, both Bleed Air switches are On; yes, no CB is tripped – the problem persists. Before committing

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yourself to a low-altitude cruise up the peninsula, try one more thing: pulling the Pressure Control CB. Maybe a rock whacked your squat switch during the takeoff roll, making it act as if you are still on the ground. As you have reviewed in this article, pulling the CB gives you a neat work-around to allow pressurization even with a bad squat (or WOW, weight-on-wheels) switch. Cool!

Thanks again to Jay for the interesting question! **KA**

King Air expert Tom Clements has been flying and instructing in King Airs for over 44 years, and is the author of "The King Air Book." 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 book, go to www.flightreview.net. 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 kblonigen@cox.net.

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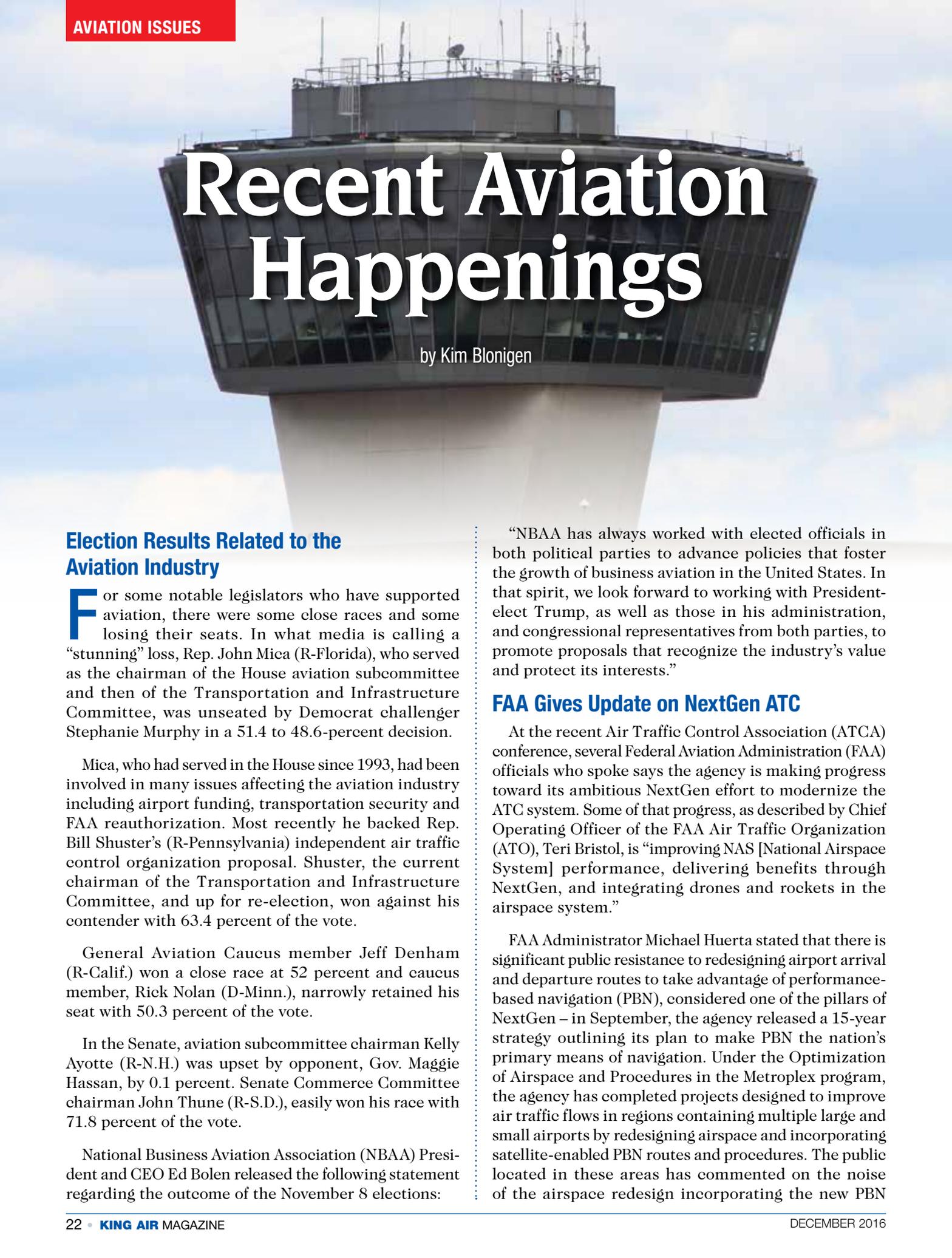
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Recent Aviation Happenings

by Kim Blonigen

Election Results Related to the Aviation Industry

For some notable legislators who have supported aviation, there were some close races and some losing their seats. In what media is calling a “stunning” loss, Rep. John Mica (R-Florida), who served as the chairman of the House aviation subcommittee and then of the Transportation and Infrastructure Committee, was unseated by Democrat challenger Stephanie Murphy in a 51.4 to 48.6-percent decision.

Mica, who had served in the House since 1993, had been involved in many issues affecting the aviation industry including airport funding, transportation security and FAA reauthorization. Most recently he backed Rep. Bill Shuster’s (R-Pennsylvania) independent air traffic control organization proposal. Shuster, the current chairman of the Transportation and Infrastructure Committee, and up for re-election, won against his contender with 63.4 percent of the vote.

General Aviation Caucus member Jeff Denham (R-Calif.) won a close race at 52 percent and caucus member, Rick Nolan (D-Minn.), narrowly retained his seat with 50.3 percent of the vote.

In the Senate, aviation subcommittee chairman Kelly Ayotte (R-N.H.) was upset by opponent, Gov. Maggie Hassan, by 0.1 percent. Senate Commerce Committee chairman John Thune (R-S.D.), easily won his race with 71.8 percent of the vote.

National Business Aviation Association (NBAA) President and CEO Ed Bolen released the following statement regarding the outcome of the November 8 elections:

“NBAA has always worked with elected officials in both political parties to advance policies that foster the growth of business aviation in the United States. In that spirit, we look forward to working with President-elect Trump, as well as those in his administration, and congressional representatives from both parties, to promote proposals that recognize the industry’s value and protect its interests.”

FAA Gives Update on NextGen ATC

At the recent Air Traffic Control Association (ATCA) conference, several Federal Aviation Administration (FAA) officials who spoke says the agency is making progress toward its ambitious NextGen effort to modernize the ATC system. Some of that progress, as described by Chief Operating Officer of the FAA Air Traffic Organization (ATO), Teri Bristol, is “improving NAS [National Airspace System] performance, delivering benefits through NextGen, and integrating drones and rockets in the airspace system.”

FAA Administrator Michael Huerta stated that there is significant public resistance to redesigning airport arrival and departure routes to take advantage of performance-based navigation (PBN), considered one of the pillars of NextGen – in September, the agency released a 15-year strategy outlining its plan to make PBN the nation’s primary means of navigation. Under the Optimization of Airspace and Procedures in the Metroplex program, the agency has completed projects designed to improve air traffic flows in regions containing multiple large and small airports by redesigning airspace and incorporating satellite-enabled PBN routes and procedures. The public located in these areas has commented on the noise of the airspace redesign incorporating the new PBN

routing. Although the navigation paths are more precise, decreasing the area of noise, in many instances the noise is concentrated over a smaller geographic area directly beneath those flight paths. Due to the response, Huerta said that the FAA had “stepped up its public engagement across the United States.”

Among other steps, the FAA recently completed automation system upgrades at 11 of its largest terminal radar approach control (Tracon) facilities, and equipped 48 airport towers to provide text-based departure clearances to pilots under the Data Comm program, which the FAA says is two years ahead of schedule. The Terminal Flight Data Manager (TFDM) program, which aims to facilitate “collaborative decision making” on the airport surface through electronic data exchanges, will start rolling out to airports in 2019.

SAFO Released Regarding Inaccurate ETAs in Oceanic Airspace

The Federal Aviation Administration (FAA) recently released a Safety Alert for Operators (SAFO) notifying pilots that time estimates in oceanic control areas may be inaccurate and cause aircraft separation issues caused by Flight Management System (FMS) management techniques and procedures. The FAA determined that the time estimates less accurate than expected, particularly when adverse weather causes pilots to deviate from the planned course.

Per the SAFO:

Air traffic control (ATC) in oceanic CTAs uses a computerized system to maintain air traffic separation. An important part of the computerized process is a flight’s estimated time of arrival (ETA) over each waypoint. In the case of an aircraft equipped with Automatic Dependent Surveillance-Contract (ADS-C), the ETA is calculated by the FMS and downlinked automatically to ATC, but with non-ADS-C aircraft, a pilot position report is required. When avoiding weather, if a pilot deviates from the FMS course, the FMS ETAs may no longer be valid. If inaccurate ETAs are relayed to oceanic ATC, the controller’s calculations will be invalid, and traffic separation cannot be assured.

When deviating for weather in oceanic CTAs, a reliable way to maintain an accurate ETA in the FMS is to create a parallel offset consistent with the cleared deviation, and then maintain that course. If heading mode is used without regard to the FMS course, the flightcrew needs to be aware of the greater possibility of an error in the FMS ETA. In either event, pilot position report ETAs need to be compared with the original operational flight plan ETA and other operational parameters, such as distance to waypoint, airspeed and winds, to ensure timing accuracy. KA

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Teacher's Pet — The Model 45

In 1948, senior management at Beech Aircraft Corporation saw the need for a new military trainer to equip postwar air forces. Their solution was the “Mentor” that would become one of the most popular Beechcrafts ever built.

by Edward H. Phillips

When World War II ended with the unconditional surrender of Japan in September 1945, the United States Army Air Forces and the U.S. Navy continued to train cadets in the Boeing-Stearman PT-13 and N2S biplanes, respectively, before progressing to advanced trainers such as the North American AT-6 “Texan” and SNJ monoplanes. Although the AT-6 and SNJ were well suited to the task, their thirsty, static, air-cooled radial engines gulped fuel and their airframes were aging fast. In 1948, Walter H. Beech and his engineers realized there was an opportunity to replace the venerable AT-6/SNJ with a modern and cost-effective airplane that could do the work of both a primary and basic trainer.

A series of design studies commenced that year. Fortunately, a significant amount of time and development costs were reduced by using the Model 35 Bonanza airframe as a foundation for the new Beechcraft. The Model 35's airframe and Continental engine had established a record of dependability since the airplane's

certification in 1947, and two years later the fourth Model 35 built was flown by William Odom 4,957 miles nonstop from Hickam Field Oahu, Territory of Hawaii, to Teterboro Airport in northern New Jersey in 36 hours, two minutes.

Although there is evidence that the design studies did include incorporating a V-tail on the Model 45, it was rejected in favor of a conventional vertical stabilizer that was more suitable for a military trainer. Overall, the Model 45's dimensions were similar to those of the Bonanza, but the Mentor featured a narrow fuselage and tandem seating for an instructor and student pilot. In addition, a Plexiglas, three-piece sliding canopy covered the cockpit and provided both occupants excellent visibility.

A prototype was completed in late 1948, powered by a Continental E-185 six-cylinder, opposed piston engine rated at 185 horsepower at takeoff and 165 horsepower for cruise. The airframe was designed to withstand 10 positive and 4.5 negative g-force – more than adequate for



As early as 1947, Walter H. Beech realized that a new, modern airplane was needed for training student pilots that would be significantly less expensive to operate than World War II-era aircraft such as the North American AT-6 and SNJ. The U.S. Air Force agreed, and in 1953 began flying the T-34A. Similarity to the Model 35 Bonanza is obvious, but the wing's angle of incidence was slightly different but span remained at 32 feet, 10 inches. All T-34A trainers were powered by a six-cylinder Continental O-470-13 rated at 225 horsepower.

(EDWARD H. PHILLIPS COLLECTION)



instructing pilots in aerobatics and combat maneuvering. Veteran Beechcraft chief test pilot Vern L. Carstens took the prototype aloft for its maiden flight on December 2, 1948. Maximum speed was 176 mph at an altitude of 10,000 feet, with a cruise speed of 160 mph at a gross weight of 2,650 pounds.¹

Development continued through 1949 and a Model 45 was sent on a nationwide tour of military bases in the United State and Canada to demonstrate the Mentor to officials of the U.S. Air Force and the Royal Canadian Air Force. Later, the airplane was shipped across the Atlantic Ocean where Beech demonstration pilots flew more demonstrations to showcase the Model 45's capabilities to military forces in Western Europe. One of the more interesting demonstrations, however, occurred in 1949 during the National Air Fair held at Chicago's O'Hare International Airport.

On July 4, a Model 45 was flown by two-time women's aerobatic champion Miss Betty Skelton before thousands of spectators. Beech Aircraft Corporation historian William H. McDaniel described it this way: "Proving that brute strength was not required to put the Mentor through a breathtaking array of maneuvers standard in military combat operations, pretty, petite, 100-pound Betty Skelton – only 22 years old and a two-time women's aerobatic champion – thrilled the cheering crowds. To sober-minded military observers, they were a reminder of the need for continued readiness to maintain air power in the defense of the free world – a reminder already accented by the Communist blockade of Berlin."²

Walter Beech believed in the value of public aerial demonstrations, but he was seeking orders from the military, and by the end of 1949 he had received none. In the wake of major budget cuts to America's armed forces after World War II, money was scarce and both

The U.S. Navy began operating the T-34B in 1954 and took delivery of 423 Mentors before production ended in 1957. The only visible difference between the T-34A and T-34B was deletion of the small triangular fillet at the bottom of the rudder. The T-34B used the same engine as the T-34A. (EDWARD H. PHILLIPS COLLECTION)

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the U.S. Air Force and Navy were looking for airplanes that would give them “the most bang for the buck.” In March 1950, the Air Force placed an order for three YT-34 Mentors for in-depth evaluation as a primary/basic pilot training airplane. Their projected economy of operation, which was predicted to be significantly less than existing aircraft employed in that role, was a major factor in the decision to test the new Beechcraft.

According to company records, the three airplanes were designated Model A45T by the factory and YT-34BH by the Air Force. As part of the evaluation, two of the three airplanes were powered by Continental E-185-8 engines rated at 185 horsepower, while the third airplane was equipped with a Continental E-225-8 powerplant that produced 225 horsepower for takeoff. All three Mentors were tested thoroughly not only by experienced pilots, but also by pilot instructors and their students as part of the daily training routine. During the testing period, the trio of YT-34BH accumulated more than 400 hours of flight time in only 32 days. That feat was followed by a function and reliability check that lasted nearly 24 hours and involved seven landings with rapid turnarounds to refuel and change pilots. These flights were conducted at the remote site of Edwards Air Force Base, California.³

One other feat that was unintentional but did much to convince Air Force officials of the Beechcraft’s “battleship” construction, it was reported that during one of the evaluation flights a pilot accidentally struck a cable while flying at more than 180 mph. The cable, stretched across the wide span of a canyon, did not break but nearly stopped the Mentor’s forward motion before spinning it around. With less than 400 feet of altitude to work with, the pilot managed to regain airspeed and control before striking the ground, and flew back to the base. Upon inspection, only the right-wing surfaces and leading edge suffered damage and bore the imprint of the cable.

Satisfied with every aspect of the rough-and-ready Model 45, in 1953 the Air Force ordered a small number of Mentors designated T-34A (company designation A45). The first two Mentors were delivered in September of that year, followed by another 88 trainers one year later. All of these airplanes were powered by the Continental O-470-13 engine rated at 225 horsepower. Performance included a maximum speed of 189 mph and a cruise speed of 175 mph at a gross weight of 2,950 pounds. Service ceiling was 20,000 feet. When production ended in October 1956, the factory had delivered 353 airplanes.⁴

The Royal Canadian Air Force (RCAF) also wanted the T-34A, and in 1954 the Canadian Car & Foundry Company, Ltd, of Fort William, Ontario, obtained a license from Beech Aircraft Corporation to build the Mentor. The Canadian company built 25 airplanes for the RCAF and eventually another 100 for the U.S. Air Force, bringing total production of the T-34A to 453 airplanes.

Meanwhile, the U.S. Navy had been giving serious consideration to modernizing its aging fleet of primary trainers. The Navy Bureau of Aeronautics conducted a series of very tough evaluations at Naval Air Station Pensacola, Florida. Beech Aircraft provided the Navy with one of the earliest Mentors built, but it easily held its own against competing aircraft. Despite its age, the airplane was praised by Navy pilots for its rugged construction and particularly its nearly indestructible landing gear. During testing that lasted from September until December 1953, the airplane was subjected to abuse at the hands of pilots learning how to land on the deck of an aircraft carrier. Unlike the Air Force that had long runways to land on gently, the Navy taught its aviators to slam the airplane down on the deck to catch the arresting cable and “trap” the airplane. Although the landings “washed out” the gear of some competing aircraft, the Mentor’s tricycle landing gear never failed under those severe conditions.

During the summer of 1954, the Navy announced that the Model 45 (company designation D45) had won the competition and would become the Naval Air Training Command’s primary trainer. Initial deliveries began in December. There were only a few distinctions between production Mentors for the Air Force and Mentors for the Navy. These included:

- A small, triangular fillet at the bottom of the rudder was deleted.
- Provision was made for differential braking that allowed nose wheel steering for maneuvering on the ground (the T-43A featured a steerable nose wheel using the rudder pedals, much like that of the commercial Model 35).
- Rudder pedals were adjustable instead of adjusting the seat.
- The wing dihedral was increased slightly.
- The overall exterior paint scheme used a highly visible, bright yellow color that Navy officials believed would make the airplanes more visible in the air and around the training airfields.

Production of the T-34B began in October 1954, and continued unabated until October 1957, when the last 12 airplanes were delivered. During those three years, a total of 423 Mentors rolled off the assembly lines. In 1954-1955, 45 were delivered, followed by 219 in 1955-1956, 147 in 1956-1957 and 12 in 1957-1958. Performance was almost identical to that of the T34A, with a maximum speed of 188 mph at a gross weight of 2,985 pounds (empty weight was 2,170 pounds). Maximum diving airspeed was 280 mph. All T-34B were powered by six-cylinder, air-cooled, opposed Continental O-470-13 engines that developed 225 horsepower for takeoff, and were fitted with Beech-built two-blade, constant-speed propellers that helped the Mentor achieve



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At the behest of the Navy, in 1972 Beech Aircraft Corporation engineers redesigned the T-34B to accept a PT6A-25 turboprop engine built by Pratt & Whitney Canada. Rated at 400 shaft horsepower, the engine breathed new life into the aging Mentor airframe. More than 300 of the more powerful Mentors were produced from 1975-1990. An export version designated T-34C-1 proved popular as basic trainers and light ground attack aircraft with air forces in Peru, Morocco, Argentina, Mexico and Ecuador.

a respectable rate of climb at sea level of 1,280 feet per minute. During a 10-year period spanning 1948-1958, Beechcraft employees eventually built 1,904 examples of the Model 45.⁵

Much to the Navy's delight, the T-34B's record as a primary trainer allowed the service to reduce the number of flying hours to 36 from 74 because students learned more quickly in the Beechcraft than in the SNJ with its conventional landing gear configuration. The Mentor also slashed the time required to solo by more than 50 percent, and the overall accident rate decreased as well compared with the SNJ. In short, the T-34B taught fledgling naval aviators better and more quickly while drastically reducing operating costs.

It is interesting to note that in 1961 the Navy reported that since flight operations began in 1956 at Pensacola, more than 9,000 naval aviators had been trained in the T-34B. These airplanes had flown more than 445,000 hours and boasted a safety record five times better than their predecessors. Navy training squadron VT-1, operating from Saufley Field in Pensacola, reported a record 75,000 consecutive accident-free flying hours surpassed only by VT-3's 80,000-hour record.

One T-34B, the 39th to roll off the Wichita assembly line, earned a "gold seal of approval" from Naval Air Training Command after completing more than 5,000 hours and traveling 700,000 miles in the air. More than 100 Navy and Marine Corps pilots had been trained in the aircraft, which records showed had made 16,459 landings, 4,604 loops, 3,401 spins and 17,904 stalls, and was refueled 3,325 times.⁶

During the early 1960s, the U.S. Air Force began phasing out its fleet of T-34A trainers in favor of jet-powered basic training aircraft. A competition was won by Cessna Aircraft Company's twin-jet T-37 that featured side-by-side seating for the instructor pilot and the student. In the mid-1950s, Beech Aircraft Corporation did build its own version of a jet trainer designated as the Model 73. It was powered by a single turbojet engine and its airframe borrowed heavily from the Model 45. Although the airplane flew well and made many demonstration flights, it failed to win any orders from military forces.

As for the Navy's fleet of Mentors, they soldiered on faithfully for more than 35 years until 1975 when deliveries began of the much improved T34C. In 1973, the Navy awarded Beech Aircraft a contract to develop a turboprop version of the T-34B, and the first of two YT-34C prototypes flew in 1974. Beech engineers modified the T-34B airframe to accept a Pratt & Whitney Canada PT6A-25 turboprop engine rated at 400 shaft horsepower. The engine and other systems upgrades would extend the life of the venerable Mentor for another 25 years until being replaced by the Beechcraft T-6A "Texan II" – another PT6A-powered airplane that is currently

servicing both the U.S. Air Force and Navy as a basic trainer. The Navy accepted 18 T-34C trainers in 1975, to be followed during the next seven years by more than 330 airplanes. A final batch of 19 trainers were delivered in 1989.

The T34C had a maximum speed of 246 mph and possessed a service ceiling of more than 30,000 feet. It featured a wingspan of 33 feet 4 inches and a fuselage length of 28 feet 8.5 inches. In addition to the U.S. Air Force and Navy, the U.S. Army took delivery of six T-34C trainers in 1987 from Navy inventory. Three aircraft replaced the aging North American T-28 "Trojan" with their static, air-cooled radial engines that had been flown by the Army Aviation Engineering Flight Activity based at Edwards AFB, California. Another three were operated by the Army Airborne Special Operations Test Board located at Fort Bragg, North Carolina.⁷

The factory also built an export version of the T-34C known as the T-34C-1, powered by a 550-shp PT6A engine. It was intended primarily as a basic trainer but could be equipped to operate as a light attack aircraft. The chief modification centered on four hard points under the wings that could accommodate up to 1,200 pounds of ordinance. In the late 1970s, the Ecuadorian Air Force took delivery of 14 airplanes, and Peru, Morocco, Argentina and Indonesia also ordered the T-34C-1.

Commercial and export versions of the Mentor received the company designation Model B45. Per factory records, 85 were delivered in 1953-1954, 47 in 1954-1955 and 21 in 1955-1956. Another 45 were delivered in 1956-1957 followed by 29 in 1957-1958 and 91 in 1958-1959 when production was terminated. In 1953, Chile ordered more than \$1 million-worth of T-34A trainers after the Beechcraft proved superior to American, British and French competitors. Chile eventually operated a fleet of 65 Mentors. Japan soon followed by obtaining a license

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for Fuji Heavy Industries to build the T-34A, and 137 aircraft were completed. Other armed forces that flew the T-34A include the Mexican Navy and the Venezuelan Air Force. The first sale of Mentors for civilian use occurred in 1958 when the International Training center for Civil Aviation in Mexico bought four airplanes to train pilots.

As of 2016, the exact number of Beechcraft Mentors being flown by civilian pilots worldwide is unknown, but a reasonable estimate is 100-150. The airplane is prized by sport pilots for its robust airframe and aerobatic capabilities, and some airplanes have been painted in U.S. Air Force and Navy color schemes that replicate the Mentor in service as a “warbird.” **KA**

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, Kan. 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.

Popular airshow pilot Julie Clark wows crowds with aerobatic maneuvers in her T-34A. She purchased the airplane surplus from the U.S. Air Force in 1976 for \$18,000 and completed an in-depth restoration in 1981. A retired captain for Northwest Airlines, Clark flies the Mentor at many airshows across the United States and is a frequent spokesperson in support of women in aviation. For more information about Clark’s T-34A and her airshow schedule, go to www.JulieClarkAirshows.com. (PHOTOGRAPH BY DAVID HENRY VIA JULIE CLARK)

NOTES:

1. Phillips, Edward H.: *Pursuit of Perfection: A History of Beechcraft Airplanes*; Flying Books, Eagan, Minnesota, 1992.
2. McDaniel, William H.: *The History of Beech*; McCormick-Armstrong Co., Inc. Wichita, Kansas, 1971.
3. Ibid
4. Ibid
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7. Harding, Stephen; *U.S. Army Aircraft Since 1947*; Specialty Press, Stillwater, Minnesota. 1990.

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CenTex Announces Certification of Halo 275 for King Air 200 and 250

CenTex Aerospace, Inc. announced that it has received FAA approval of a new addition to the popular Halo series of gross weight increase conversions. The new Halo 275 conversion for King Air 200 and 250 series airplanes increases the maximum takeoff weight to 14,000 pounds and the maximum landing weight to 13,500 pounds. Price of the Halo 275 conversion kit is \$115,000, which includes all the required components and parts, STC, Maintenance Manual Supplement, and AFM Supplement. To be eligible for the Halo 275 conversion, the airplane must be equipped with High Flotation landing gear.

Like its predecessor the Halo 250 conversion, the Halo 275 approves an increase in the maximum Mach number from 0.52 to 0.58 Mach for all 200 series King Airs. Also, it adds five safety systems that increase operational safety and comply with Commuter category requirements. Per the company, the new systems add the following safety functions: engine fire extinguishing, aural over-speed warning, elevator trim out-of-range warning, improved stall warning in icing conditions, and emergency lighting in the cabin.

Additionally, CenTex Aerospace announced a 500-pound increase in the maximum zero fuel weight

for airplanes equipped with Halo 250 and Halo 275 conversions. King Air B200s manufactured in 1993, and after, and King Air B200GTs, as well as King Air 250s are eligible. Contact CenTex Aerospace for details if your airplane is already equipped with the Halo 250 conversion. High Flotation landing gear is not required for this increase in the maximum zero fuel weight.

For more information, contact CenTex Aerospace or one of their authorized dealers, which are listed online at www.centex.aero.

StandardAero Signs PT6A Service Partnership Agreement with Hampton Aviation

StandardAero and Hampton Aviation signed a three-year Authorized Service Center agreement for PT6A engine services. The agreement will provide King Air operators the advantage of one-stop shop services for engine and airframe services.

Under the agreement, StandardAero and Hampton will collaborate on PT6A engine removal and installations, line maintenance, hot section inspections, engine overhauls, heavy maintenance and engine upgrades. Heavy engine maintenance and overhauls will be performed by StandardAero at the company's Winnipeg, Canada facility.



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Hampton Aviation is a King Air-heavy structural repair, inspections and modification facility located at Mena Intermountain Municipal Airport (KMEZ) in Mena, Arkansas. The FAA Certified Repair Station specializes in heavy structural repair, maintenance and modifications on all variants of King Air aircraft. The company has 40 qualified professionals on staff with 65,000 square feet of facilities and has been serving the aviation industry for 50 years. Since 2003, Hampton Aviation has also served as the premier King Air inspection and repair facility for the U.S. Army, Air Force and Navy.

Scheme Designers Announces Three-Dimensional Renderings with Custom Scheme

Scheme Designers has announced that customers who commission a custom paint scheme for their aircraft may now also opt to receive photo-realistic, three-dimensional artistic renderings of their aircraft with their new custom scheme. This new tool allows customers to

visualize all angles of their aircraft's custom livery with stunning realism to fully envision the results of their artistic choices.

While developing a custom paint scheme for an aircraft, Scheme Designers artists work together with aircraft owners to bring their unique vision to life on their aircraft. The company says that the high-resolution renderings can show the aircraft from any angle and in any flight configuration to help clients visualize how their new scheme will appear on their aircraft.

More information and examples of the 3D photo realistic renderings can be found at www.schemedesigners.com.

PPG Extends Warranty on Rebuilt Windshields for King Air

PPG announced it is offering a longer three-year warranty on rebuilt windshields for Beechcraft King Air models due to demonstrating excellent field performance for operators. The three-year warranty, which was previously 24 months, applies to PPG-rebuilt windshields purchased on or after June 1, 2016.

The company says, "As the manufacturer of the certified original-equipment windshields for the

King Air and spares for both the King Air and 1900 models, PPG rebuilds parts to the latest Beechcraft-approved design configuration. Aircraft operators have lower-cost alternatives to buying new spares without compromising performance or quality, and now PPG supports that with an even longer warranty."

The proven performance of the PPG-rebuilt windshields and OEM parts is attributed to proprietary robust heating systems and moisture seals that protect the windshields from environmental degradation.

PPG is certified by the Federal Aviation Administration to rebuild windshields and uses the same materials and processes it does for new parts. Rebuilt windshields for King Air airplanes are supplied with SURFACE SEAL® hydrophobic coating, as are new and spare windshields. Parts are manufactured and rebuilt at PPG's Huntsville, Alabama, factory, where it operates an FAA-certified Repair Station.

For more information and to purchase PPG-rebuilt windshields for the King Air, operators should contact the PPG sales team member at their nearest application support center listed at www.ppgaerospace.com. Operators also can exchange a windshield for an already-rebuilt PPG windshield.

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Textron Aviation Adds Frankfurt-based MSU

Textron Aviation announced it has added a new mobile service unit (MSU) at Egelsbach Airport near Frankfurt, Germany. The new MSU further enhances the company's factory-direct service offerings for Citation, King Air and Hawker operators in Germany and throughout Europe.

The company's newest MSU will be based at longtime partner Hahn Air's Egelsbach facility (QEF). Equipped to respond to scheduled and unscheduled aircraft service needs, Textron Aviation's MSUs are staffed with highly skilled technicians who can perform limited inspections, engine, tire and brake service on Citation, King Air and Hawker aircraft.

In addition to the Frankfurt-based MSU, Textron Aviation has a robust support network serving customers in Germany through a company-owned service center in Düsseldorf and two line maintenance stations located in Stuttgart and Bremen.

Nextant Introduces G90XT and Newly Designed Cabin at NBAA 2016

Nextant Aerospace introduced its fully conformed G90XT turboprop at NBAA 2016 in early November. The aircraft features the new H75 engine by GE in distinctive, redesigned nacelles; along with a forward



looking, fully integrated Garmin G1000 cockpit and the world's first electronically controlled, single lever control system in a turboprop.

With the power of the GE H75 engine, the G90XT delivers a 10 percent improvement in Specific Fuel Consumption (SFC) relative to the current production aircraft, while achieving a 23-knot speed advantage at altitude due to the thermodynamic potential of its core. Nextant said that additionally, the engine benefits from an advanced fuel delivery system which negates the requirement for a midlife hot section and allows for a 4,000-hour TBO; driving significantly lower maintenance costs. The company says its engineers were focused on providing a simplistic, single pilot operating platform with the flight deck. It begins with the single lever electronic control system, an oversized MFD, and the first in the series of aircraft to integrate digital engine and fuel system indication, allowing more accurate management by the pilot. The G90XT is also the first airframe in its series to feature an all new digitally controlled pressurization system linked directly into the FMS.

The redesigned cabin is available in three options and features multiple upgrades including a new acoustic package, environmental system and newly designed seat with full articulation.

The G90XT interior begins with an advanced composite interior shell that significantly increases cabin volume and dimensions in terms of both height and width. The interior also offers an entirely new acoustic and thermal insulation package that lowers ambient cabin noise at altitude by 50 percent. Nextant says its interior design team introduced an entirely new, fully articulating seat that showcases the bespoke upholstery the company is known for. It says the cabin also benefits from an all new LED lighting system featuring upwash, downwash, aisle and individual seat light controls. Finally, based on feedback from current operators, the company added an all new environmental system that is capable of exceptional ground cooling even in the most challenging environment.

The primary aircraft has already received FAA certification and Nextant has just commenced the final phase of test flight, which will incorporate the electronic engine and single lever power control system into the existing airframe certification. Nextant expects to achieve final certification in the first quarter of 2017 and will begin deliveries immediately following.

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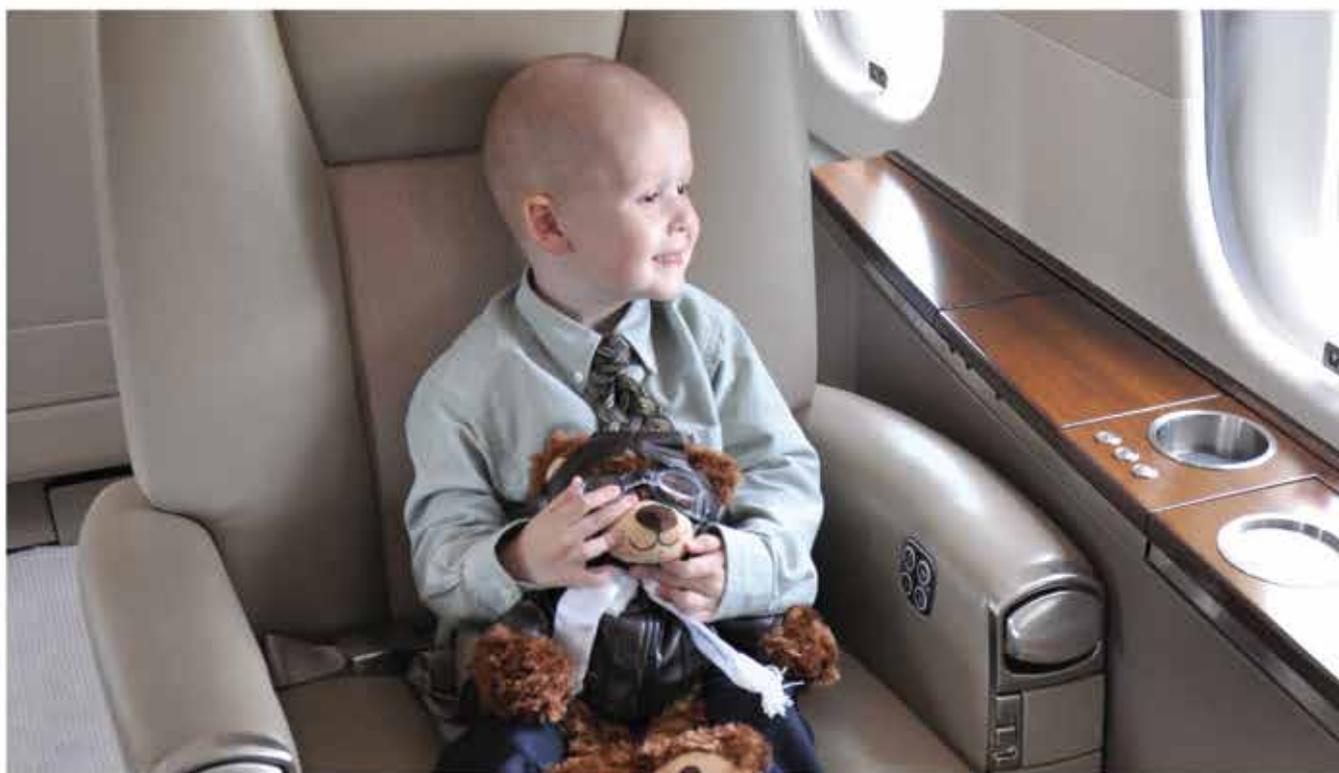
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Service Bulletins

Service Bulletin 27-3459 Rev 1: Flight Controls – Flight Control (Gust) Lock Inspection/Replacement

Issued (Original): September 2002

Revision: November 2016

Synopsis of Change: This Service Bulletin has been revised to add ending serial effectivity. The first paragraph of the Description statement has been moved to the Reason statement. The Material Information table has been revised to reflect additional control lock part number information and ending serial effectivity.

Effectivity:

[Editor's Note: Updates shown include only King Air models and are shown in red for reporting purposes in this magazine.]

Civil:

Beech Model 90, A90, B90, C90, C90A, C90GT, C90GTi, and C90GTx King Air Series, Serials LJ-1 through LJ-2128; Beech Model E90 King Air, Serials LW-1 through LW-347; Beech Model F90 King Air, Serials LA-2 through LA-236; Beech Model 100 and A100 King Air Series, Serials B-1 through B-94, B-100 through B-204, B-206 through B-247; Beech Model B100 King Air, Serials BE-1 through BE-137; Beech Model 200/B200 Super King Air Series, Serials BB-2, BB-6 through BB-185, BB-187 through BB-202, BB-204 through BB-269, BB-271 through BB-407, BB-409 through BB-468, BB-470 through BB-488, BB-490 through BB-509, BB-511 through BB-529, BB-531 through BB-550, BB-552 through BB-562, BB-564 through BB-572, BB-574 through BB-590, BB-592 through BB-608, BB-610 through BB-626, BB-628 through BB-646, BB-648 through BB-664, BB-666 through BB-694, BB-696 through BB-797, BB-799 through BB-822, BB-824



through BB-870, BB-872 through BB-894, BB-896 through BB-990, BB-992 through BB-1051, BB-1053 through BB-1092, BB-1094, BB-1095, BB-1099 through BB-1104, BB-1106 through BB-1116, BB-1118 through BB-1184, BB-1186 through BB-1263, BB-1265 through BB-1288, BB-1290 through BB-1300, BB-1302 through BB-1313, BB-1315 through BB-1384, BB-1389 through BB-1425, BB-1427 through BB-1447, BB-1449, BB-1450, BB-1452, BB-1453, BB-1455, BB-1456, BB-1458 through BB-1683, BB-1685 through BB-1716, BB-1718 through BB-1720, BB-1722, BB-1723, BB-1725, BB-1726, BB-1728 through BB-2019; Beech Model 200C/B200C Super King Air Series, Serials BL-1 through BL-23, BL-25 through BL-57, BL-61 through BL-72, BL-124 through BL-170; Beech Model 200CT/B200CT Super King Air Series, Serials BN-1 through BN-4; Beech Model 200T/B200T Super King Air Series, Serial BT-1 through BT-38, BB-1314; Beech Model 300 Super King Air Series, Serials FA-1 through FA-230, FF-1 through FF-19; **Beech Model B300 Super King Air, Serials FL-1 through FL-953, FL-955 through FL-1009, FL-1011 through FL-1030; Beech Model B300C Super King Air, Serials FM-1 through FM-65, and FN-1;**

Military:

Model 65-A90-1 (U-21A, RU-21A, RU-21D, JU-21A, U-21G, RU-21H), Serials LM-1 through LM-141; Model 65-A90-2 (RU-21B), Serials LS-1 through LS-3; Model

65-A90-3 (RU-21C), Serials LT-1 and LT-2; Model 65-A90-4 (RU-21E, RU-21H), Serials LU-1 through LU-16; Model H90 (T-44A), Serials LL-1 through LL-61; Model A100 (U-21F), Serials B-95 through B-99; Model A100-1 (U-21J), Serials BB-3 through BB-5; Model A200 (C-12A/C-12C), Serials BC-1 through BC-75; BD-1 through BD-30; Model A200C (UC-12B), Serials BJ-1 through BJ-66; Model A200CT (C-12D, FWC-12D, C-12F), Serials BP-1, BP-7 through BP-11, BP-19, BP-22, BP-24 through BP-63; Model A200CT (RC-12D, RC-12H), Serials GR-1 through GR-12, GR-14 through GR-19; Model A200CT (RC-12G), Serials FC-1 through FC-3; Model A200CT (RC-12K, RC-12P, RC-12Q), Serials FE-1 through FE-9, FE-25 through FE-36; Model B200C (C-12F), Serials BP-64 through BP-71; BL-73 through BL-112, BL-118 through BL-123; Model B200C (UC-12F), Serials BU-1 through BU-10; Model B200C (UC-12M), Serials BV-1 through BV-10; Model B200C (C-12R), Serials BW-1 through BW-29; Model 1900C (C-12J), Serials UD-1 through UD-6.

Non-FAA Approved Airplanes:

Model B200CT (FWC-12D), Serials FG-1 and FG-2; Model B200, Serials BB-1385 through BB-1388; Model B200T, Serials BT-39 through BT-43; Model A200CT (RC-12N), Serials FE-10 through FE-24; Model B200C (RC-12F), Serials BU-11 and BU-12; Model B200C (RC-12M), Serials BV-11 and BV-12.



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Left: Chris Crisman/TNC/LightHawk; Right: Lincoln Athas/WCC/LightHawk

Compliance – Mandatory: An Airworthiness Directive has been requested on the matter covered by this Service Bulletin.

Civil Airplanes: Textron Aviation considers this to be a mandatory inspection/modification and it should be accomplished no later than the next Annual/Phase 1 Inspection, as applicable, after receipt of this Service Bulletin.

Military Airplanes: For compliance information on military airplanes affected by this Service Bulletin, contact the appropriate headquarters.

Reason: This Service Bulletin is being issued to provide safety information once more regarding usage of unauthorized or altered flight control (gust) locks on various Beech propeller airplanes. Recurring inspection information will be contained in the inspection program for the applicable airplane Maintenance Manual.

Numerous accidents and casualties over the years have resulted from the failure of a pilot to remove an unauthorized or altered flight control (gust) lock prior to attempted takeoff. A review of the records from these accidents, dating back to 1975, has revealed that many of the accidents involved use of a make-shift control (gust) lock that was not the one provided by Textron Aviation. In some cases, a common bolt or nail had been inserted through the hole provided in the control column for the flight control (gust) lock. Such a device does not meet the requirements for flight control (gust) locks as defined in 14 CFR 23.679, which states in part: “If there is a device to lock the control system on the ground or water, (a) There must be a means to (1) give unmistakable warning to the pilot when the lock is engaged...”

Warranty: None.

Labor: No warranty coverage will be allowed for the inspection portion of this Service Bulletin.

Estimated man-hours: 0.5 hours

Suggested number of technicians: 1

The above is an estimate based on experienced, properly equipped technicians complying with this Service Bulletin.

Refer to ICAs at https://www.beechcraft.com/customer_support/technical_publications/downloadable_data/ for Maintenance Manual Revisions.

From King Air Communiqué 2016-10:

Issued: October 2016

ATA 05 – High Utilization Inspection Program (HUIP) Contact Information Update

King Air Communiqué 2013-04 provided instructions and contact information on how to sign up for the high

Utilization Inspection Program. The web address and email provided have changed as follows:

Web address: <http://pubs.txtav.com>

Email address: tmdc@txtav.com

ATA 30 – Prop Heat Operational Check Procedure-Engines Not Running, Rev 1

King Air Communiqué 2016-08 provided instructions on how to check the propeller heat with the engines not running to prevent damage to the propeller de-ice boots. In the De-Ice Timer Check portion, a step was omitted. The wires to terminal block E21 should be disconnected before this check is done.

ATA 31 – King Air Fusion Adaptive Flight Display (AFD) Nuisance Fan Inop Messages

There have been reports on airplanes equipped with Rockwell Collins Pro Line Fusion® avionics of PFD 1 FAN INOP, MFD FAN INOP, and PFD 2 FAN INOP Advisory CAS messages during flights with high cabin altitude. The messages only appear when the cabin altitude is higher than would be seen during normal flight operations. When the airplane’s cabin reaches a higher than normal altitude, the air density is reduced and the fan speed can vary outside of the current expected range but are still fully functional. Analysis revealed that an overly conservative tolerance for the fan speed monitor was used and the messages are not indicative of an actual fan failure. These messages would not be seen during normal airplane operations, but could be present during testing of the pressurization and cabin altitude warning systems.

Rockwell Collins has made production changes to the fan monitor to compensate for this condition. An optional service bulletin for fielded AFDs has been released to incorporate the change into fielded displays. Please refer to Rockwell Collins Service Bulletin AFD-3700-31-1 for serial applicability and warranty information (*Editor’s Note: attached to this Communiqué on website referenced at end of article.*)

ATA 31 – Pro Line Fusion Adaptive Flight Display (AFD) 3700 Flickering

Several operators with Rockwell Collins Pro Line Fusion® equipped King Airs have reported flickering or dimming of the AFD 3700 when the overhead dimming control is set to the full bright position. This is due to a failsafe function programmed into the AFDs which sets the display to 50% brightness if it senses that the dimming control may have failed. The programmed value for this operation is very close to the specification of the dimming potentiometers. The potentiometers are rated for 1K ohms ± 10% and the programmed value to activate the function is set slightly over 1K ohms. A future update to the AFD software will increase the value for this function and prevent its premature activation. In the interim, Rockwell Collins has published the Operators Service

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1st Source Bank..... Inside Back Cover

Advent Aircraft Systems, Inc.....29

Apex Aviation Inc..... 11

Airtex.....34

AVCON Industries Inc..... 19

Aviation North 10

B/E Aerospace, Inc..... 7

Cleveland Wheels & Brakes40

Commuter Air Technology29

Corporate Angel Network.....35

Elliott Aviation.....27

Garmin InternationalInside Front Cover

Hillaero Modification Center30

Jet Aeronautical23

King Air Academy 9

Light Hawk..... 18, 37

Luma Technologies LLC..... 15

More Company..... 19

Murmer Aircraft Services..... 15

Paul Bowen Photography36

Peter Schiff Aero Inc..... 18

Pilots N Paws33

Precision Aviation Group 19

Raisbeck Engineering.....20, 21

Rapco Inc.....32

Select Airparts25

Shaw Aerox LLC.....33

Textron Aviation..... 13, Back Cover

Trace Aviation..... 11

Veterans Airlift Command39

West Coast Aircraft Sales31

Winner Aviation Inc..... 17

Yingling Aviation 5

Bulletin OPSB 0156-16 (*Editor's Note: attached to this Communiqué at website referenced below*) to inform operators of potential for this condition and to provide guidance should it occur. This issue is not cause for any maintenance action unless the issue also occurs at lower dimming settings. Textron Aviation will announce the corrective action when it becomes available.

ATA 32 – The Use of Re-Capped Tires in the King Air

Textron Aviation Technical Support receives inquiries from time to time concerning the use of re-capped tires on King Air airplanes. Textron Aviation Engineering *has not approved* the use of re-capped tires on any King Air models.

ATA 33 – Emergency Exit Sign Battery Getting Hot

The King Air 300 series airplanes have an emergency exit sign that is powered by four “D” size batteries, part number A14. Textron Aviation

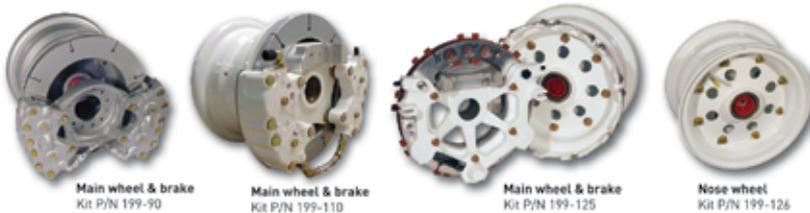
has received reports of the batteries getting very hot – to the point that they were too hot to handle. Investigation has revealed that the batteries used by the referenced incident operator were “D” size battery, but not the part number listed in the Illustrated Parts Catalog.

Some brands of batteries use a very thin wall as part of the construction of the battery.

When the batteries are installed in the exit sign assembly, they are under pressure in the retaining clips; this pressure can collapse the walls of some batteries causing them to short internally. It is very important that operators use the correct part number batteries as called out in the Illustrated Parts Catalog to prevent this from happening.

The above information is abbreviated for space purposes. For the entire communication, go to www.txtavsupport.com.

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