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# ***FAST as Lightning***

**Texas businessman quickly  
ramps up use of bizav**

by MeLinda Schnyder

Photos courtesy of AeroPhotographic.com



**M**ark Hicks probably isn't the first business owner to credit road construction with pushing him into aircraft ownership but he might be one of the fastest at ramping up his involvement in business aviation.

Within four years, the owner of Hicks Lightning Protection in Dallas went from frustrating, day-long drives from north Texas to Houston, Austin or San Antonio to chartering and then owning his own aircraft for relaxing, quick flights to all three satellite offices in the same day.



Mark Hicks uses his 1981 King Air B200 about 250 hours a year, mostly flying within the state of Texas and bordering states to visit satellite offices and job sites for his Hicks Lightning Protection company and for hunting, fishing, golfing and family vacation trips.





“All of our family vacations were in private airplanes, and I just thought it was the coolest thing ever as a kid,” Hicks said. “I remember flying to Ducks Unlimited meetings, Disney World and even going along with my dad to show or deliver airplanes.”

Being raised in the industry made aviation a natural solution when his business grew large enough. He started Hicks Lightning Protection in 2005, at first serving Texas and the surrounding states. Today the company has 66 employees and works in 15 states, installing lightning protection and grounding systems in new commercial buildings.

Hicks has refurbished two King Airs in a style he calls “rustic with a modern flair.” Dark wood cabinetry contrasts with the tans of the distressed leather seats, the alligator skin sidewalls and the tan and white zebra print carpet.

“It’s completely changed our business,” said Hicks, 44, who now owns a 1981 Beechcraft King Air B200 and a 1997 Cessna Citation Ultra. He hires Oshman Aviation Group to operate the aircraft, which are flown about 300 hours a year for business and personal use from Hicks’ custom-built 10,000-square-foot hangar at Denton Enterprise Airport. And earlier this year, Hicks became an investor in Oshman Aviation Group.

## An aviation pedigree

Although not a pilot, Hicks has spent plenty of time in small aircraft. His father, the late John Hicks, was a new Piper dealer in north Texas.

“The majority of our work is data centers,” Hicks said. “We work for a lot of big companies: Facebook, Google, eBay, Microsoft.”

One of the company’s largest customers is CyrusOne, a Dallas-based real estate investment trust that has invested in more than 35 data centers in 11 markets.

***“For most of our flying in Texas, you’re not going to be there any sooner if you fly a jet versus a King Air. We love the pilot availability and how easy it is to get parts for the King Airs. Plus, they hold their value well.”***

“We bought the first airplane in 2014, a Piper Navajo, but it didn’t take long to know I wanted something safer, faster and bigger,” Hicks said.

After a year, Hicks traded the Navajo for a 1979 King Air 200. Since then, he has owned two different King Air 350 models and purchased his current 1981 King Air B200.

Now Hicks has the chance to take his own family, a wife and two daughters ages 5 and 7, on private flights, including to their beach house on the Texas coast and on golfing, hunting and fishing trips.

In addition to an exterior paint scheme of Texas-style tans and browns, Mark Hicks – founder and president of Dallas-based Hicks Lightning Protection – added lightning bolts to the wing tips on the 2005 King Air 350 he bought, refurbished and sold recently.





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“The first King Air 200 wasn’t necessarily a hard sell primarily because Mark had done his due diligence prior to our first meeting and he knew the strong capabilities of the aircraft,” said Oshman, a fellow Denton resident. “It became a matter

of pinpointing the right available on and off market options with the best value to fit his missions needs.”

Mark Hicks, left, and Scott Oshman met when Hicks was buying his first Beechcraft King Air in 2015. Oshman opened his own business earlier this year and Hicks is an investor. Oshman Aviation Group is an aircraft dealership based in North Texas providing aircraft sales, management and consulting services, specializing in Beechcraft King Airs and Cessna Citations.

## Growing the business

Hicks estimates that in the three years since he started using aircraft for business, Hicks Lightning Protection has grown by 40 percent. Flying privately has allowed his team to communicate face-to-face more often and enabled them to get to more job site meetings, improving relationships with customers.

The company uses either the King Air or the Citation to take engineers, estimators and project managers to bid on jobs around the country, from as far west as Arizona to as far east as Virginia. “They’re usually in remote locations where flying commercial is just out of the question,” Hicks said.

Of Hicks Lightning Protection’s 300 hours flown last year, 250 were in the King Air. The majority of those King Air B200 flights were for travel from the main office in Dallas to satellite offices in Houston, Austin and San Antonio.

“We have managers at each location,” Hicks said. “The King Air is a good tool to get everyone together in the same location to have a meeting, and then everyone can be at home in their own beds that same night.”

## Buying and selling King Airs

Scott Oshman met Hicks in 2015, when Hicks came to the dealer Oshman was working for to buy his first King Air.

Since then, the two have teamed up on each of Hicks’ acquisitions. His current B200 is a 1981 model loaded with Raisbeck options including Four-Blade Quiet Turbofan Propellers, Enhanced Performance Leading Edges, Dual Aft Body Strakes and a Ram Air Recovery System. In March 2016, Hicks worked through Oshman to completely refurbish the interior and paint with the same scheme he applied to a 2005 King Air 350 he acquired in January 2016.

“The 2005 King Air 350 was a low-time airplane with Pro Line avionics and the engines had never been overhauled before, which to us was a good value,” Oshman said. “It had Raisbeck strakes and wing lockers, satellite phones, dual FMS, and a TCAS II that is about a \$100,000 add-on. It had a good pedigree from a corporate company in Japan and was just coming off fresh inspections from Beechcraft maintenance. It was a good clean airplane that allowed Mark to make it his own with new paint and interior.”

Hicks outfitted the plane to his own style, with the idea he’d be flying it for years.

“In Texas, we like to do things western, so we made the paint scheme tans and browns,” Hicks said. “I call the interior ‘rustic with a modern flair.’ The seats are distressed leather, alligator skin for the sidewalls, real dark woods and the carpet is tan and white zebra print. It sounds crazy but it looks very good together.”

It looked so good, in fact, that Hicks used the design for his B200 and ended up with the chance to flip the 350. A buyer fell in love with the airplane, increasing his initial offer earlier this year to make Hicks an offer





Hicks bought this 2005 King Air 350 in 2016 and contracted with Oshman Aviation Group to give it an interior and exterior update before selling it recently. Along with his current King Air 200, he plans on owning a 350 again, as it has become his favorite model.

he couldn't refuse. That transaction whetted Oshman and Hicks' appetite for buying and selling airplanes. Oshman formed his own company at the beginning of the year, and Hicks is now an investor.

"Mark and I developed a friendship early as a result of our first aircraft deal together," Oshman said. "After getting to know each other over a few months, we quickly

realized we had similar personal and business interests, a few mutual friends, and we both shared a passion for aviation. I knew very early on that Mark was a great guy. Our friendship then easily built itself from there. The decision to go into business together was based upon the opportunity to combine our core values, knowledge and experience to create a successful aviation company that provides customers with an 'above board' experience."

Oshman Aviation Group specializes in buying and selling King Air and Citation aircraft, along with fleet management and refurbishment services.



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Mark Hicks, founder and president of Hicks Lightning Protection, built a 10,000-square-foot hangar at Denton Enterprise Airport this year. One of the features is this Pearl Jam tribute wall, with concert posters from Hicks' favorite band.

## Future fleet

Earlier this year, Hicks built a new 10,000-square-foot hangar at Denton Enterprise Airport, an indication he plans to grow his use of business aviation.

"The main reason for building the hangar was that the airport we stay at in Denton didn't have much space for a King Air-size airplane," Hicks said.

"I decided to build my own, plus it gives me the ability to not have to work through an FBO or lease space."

The hangar features restrooms, an office, a bar and a wall dedicated to Pearl Jam. "I'm just a huge Pearl Jam fan and I started collecting their concert posters 20 years ago," Hicks said. "The collection has gotten pretty big, so my wife isn't letting me hang them at home anymore."

There's also room to grow his fleet. Hicks plans to always keep a King Air 200 in his fleet and likely will trade the Citation in the near future for another King Air 350, which has become his favorite model.

"The 200 is just an overall great plane and very economical," he said. "And I love the cabin layout and feel of the 350. For most of our flying in Texas, you're not going to be there any sooner if you fly a jet versus a King Air. We love the pilot availability and how easy it is to get parts for the King Airs. Plus, they hold their value well."

Added Oshman, "The Citation goes faster, farther and higher, but for Mark's business purposes, the King Air is the best bang for the buck." **KA**

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# Brakes – OEM versus STC

by Dean Benedict, A&P, AI

**A**ll King Airs come out of the factory with BFGoodrich® brakes, and most come with a multi-disc brake assembly. The only exceptions were the F90s and the 100s (straight A and B models) with standard gear, which came with a single-disc brake assembly by BFGoodrich (BFG). The multi-disc brakes by BFG have excellent stopping capability, but they're very expensive to maintain.

## Internal Multi-Disc

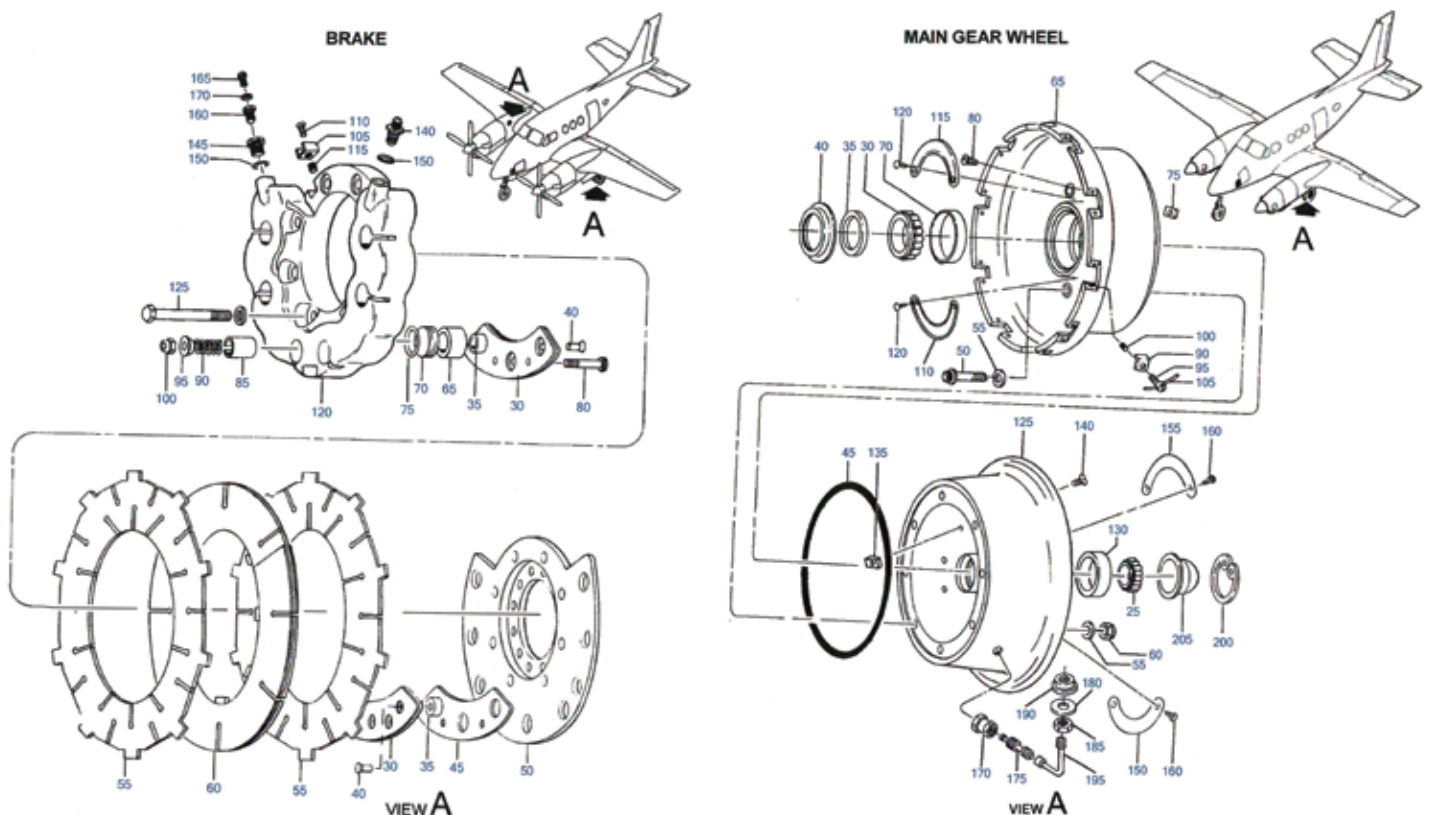
The multi-disc brake assembly is considered an internal disc setup. The discs fit together; the wheel, with special cut-outs to accommodate the disc assembly, slides around the discs. Relining or overhauling these items is very labor-intensive. The usual practice is to purchase an exchange brake unit. Your core unit is then returned for evaluation and credit (hopefully) against the core value. But as we have seen over and over, in recent years, most cores (everything from brakes to fuel

probes) generate a core charge billback. The rotatable pool has aged, and some of the components needed for overhaul are so scarce they must be replaced with new. As the cost to overhaul a unit has increased, the core charge values have skyrocketed.

These days you can buy an exchange widget in overhaul condition with a core value nearly equal to a brand-new widget. Then, upon evaluation, if your core widget is deemed BER (Beyond Economical Repair), you end up paying the exchange price plus the nearly new price for a used widget. Even if your core isn't completely condemned, you can bet on a billback, and a hefty one at that. Core charge billbacks, once the exception, are now the norm. But I digress ...

## External Single-Disc

When it comes to the BFG multi-disc brake assembly, their exchange units have always been exorbitantly



A diagram from the King Air 90 manual (left) shows the internal, multi-disc BFGoodrich brakes that come on most King Airs out of the factory. The King Air 90 wheel diagram (right) portrays how the brake is sandwiched between the two wheel halves.

expensive. In response, Cleveland developed a brake conversion kit that gets rid of the internal multi-disc setup in favor of an external single-disc setup with two calipers per disc. While the stopping power of these brakes is not quite as good as the multi-disc assembly, these Cleveland conversion brakes are still very good. It only takes a little bit to get used to them.

## Conversion Kits for Standard Gear

The upfront cost of converting to Cleveland brakes is a bit steep because you must replace the wheels. The kit for the STC includes new wheels plus all the other brake components – calipers and pucks, discs and linings, seals and hardware.

The payoff for the conversion comes later when it's time to change your brakes, as they are easily disassembled. The worn parts are replaced, the brake is reassembled, the fluid is serviced, the lines are bled, and you are good to go. The cost of replacement components is more now than back in the day, but even so, the savings are huge and well worth it in my opinion.

## Single Truck versus Double Truck

All the 90 series King Airs, except the F90, have a single truck gear, and this poses a little extra hitch when completing the Cleveland conversion. The wheel wells require a minor modification. This should only take a few additional hours of labor.

King Air models with double truck gear (the F90, 100, A100, B100, 200, B200, B200GT) can get a Cleveland conversion, even with if they already have the soft touch tire STC. No additional sheet metal work is required because the wheel well requires no modification. The conversion is almost as simple as changing the tires. But I'm still talking standard gear here. (High float gear and 300s/350s, hold short, you're next.)

Another advantage to the external single-disc is the comparative ease in fixing a leaky O-ring on a puck. There is much less labor involved. As far as I'm concerned, the significant savings in maintenance costs with Cleveland brakes on standard gear far outweighs the slight difference in braking performance.

## High Float Gear

King Airs with high float gear also come from the factory with BFG multi-disc brakes. You may know from experience that the lining is very thin. They can wear out very quickly, depending on how you use your brakes. I've seen pilots wear them out in less than 200 hours because of heavy braking on landing and/or riding the brakes on taxi. I think everyone with high float gear knows this already, so I'm just preaching to the choir.

Unfortunately, there isn't a great alternative to the OEM brakes on high-float gear. Yes, Cleveland makes



A Cleveland-manufactured brake on a King Air 90 shows the external single disc setup.

a conversion kit, but it's not much different from the OEM brakes installed by the factory. The Cleveland kit for high float gear has internal multi-disc setups just like the BFG brakes, but the cut-outs in the wheels are slightly different, so the kit includes new wheels. It's a lot of money to spend, and for what?

For those of you with high float gear, I recommend you research your logbooks and POH to verify with certainty whether your brakes are OEM or STC'd. You cannot tell the difference until you take them apart. I learned this the hard way many years ago when I was exchanging the brakes on a King Air with high float gear. For some reason, they just didn't look like BFG to me, so I ordered Cleveland exchange parts. When I tried to install them, the BFG wheels would not slip over the Cleveland brake assemblies. That was the last time I made that mistake!

## The 300 Series

Finally, for you 300 and 350 drivers – I got nothin'! All 300 series King Airs have standard gear with the same OEM brake assembly as the other double truck King Airs; but strangely, Cleveland has no STC'd conversion kit for these models. I'm guessing that the extra gross weight is a factor and that the external single-disc setup cannot meet the stopping distance requirement in the POH.

My only suggestion is to take care of your brakes and get the best wear out of them to extend the time between exchanges.



## Burn Them In

Lastly, don't forget that a new set of brakes, whether OEM or Cleveland, must be properly burned in before putting the aircraft back in service. Burning in new brakes ensures they have the proper stopping capacity, reduces the possibility of noise or chatter, and makes them wear better. This is a must-do. If your brakes were changed, or if you got new linings installed on your Cleveland brakes, make sure the shop did this.

I once had a customer with a C90 and a 200 on a 135 certificate. He arrived to pick up the 90 after service and I hadn't yet burned in his new brakes. He offered to have his A&P do it, so I assumed he knew what I meant. Well ... we all know what they say about the word "assume" – it makes a "you know what" out of "U" and "ME." It turns out that his version of burning in new brakes was to burn them off! He taxied back in with smoke billowing behind him. His brand-new linings were burned completely away and he got down into the discs. The O-rings on the pucks were melted. I had to order and install new linings *and* new discs, plus rebuild all the calipers. Good thing they were Clevelands!

When you get new brakes, your best bet is to have your mechanic burn them in. Second best is to take him or her with you on the ground run if you have to do it.

In closing I'll say this: Be nice to your brakes and let's hope they don't break the bank. **KA**

Dean Benedict is a certified A&P, A1 with over 40 years' experience in King Air maintenance. He's the founder and former owner of Honest Air Inc., a King Air maintenance boutique (with some Dukes and Barons on the side). In his new venture, BeechMedic LLC, Dean consults with King Air owners and operators on all things King Air related: maintenance, troubleshooting, pre-buys, etc. He can be reached at [dr.dean@beechmedic.com](mailto:dr.dean@beechmedic.com) or (702) 773-1800.



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# What's Happening in Aviation

by Kim Blonigen

## ATC Proposal *May* be Headed to a Vote Soon

The latest hearsay regarding the ATC Proposal is that a vote may soon be on the Senate floor – the “first few weeks of October,” but we’ve heard many predictions before. Not only are the general aviation groups still voicing their opposition, but now there are videos with well-known astronauts and famed military pilots (former Blue Angels and

Thunderbirds pilots) who have come forward to voice their disapproval of privatizing the ATC.

Business and general aviation groups have recently asked House and Senate leaders to strip the ATC measure out of the bill and adopt at least a six-month extension of the FAA’s current authorization which would provide continuity for NextGen and airports projects and allow a longer-term FAA reauthorization to be hashed out.

## FAA Aligns North Atlantic Nav Ops with ICAO Specs

On September 29, 2016, the FAA published a notice of proposed rulemaking (NPRM) which proposed to “harmonize the FAA’s regulations regarding the North Atlantic Track (NAT) Minimum Navigation Performance Specifications (MNPS) with those of the International Civil Aviation Organization (ICAO)” whose NAT Region had transitioned from a decades-old MNPS navigation specification to a more modern, Performance-Based Navigation (PBN). This included requiring PBN specifications to operate in NAT high level airspace by January 2020. Accordingly, the FAA proposed to remove all mention of MNPS in Part 91. The proposed rule



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would also correct and update the incorporation by reference of ICAO Annex 2 in the FAA's regulations.

The FAA did not receive any comments on the NPRM, therefore all of the amendments as proposed were adopted. The new rules go into effect on October 23, 2017.

## NPRM for Removal of RVSM Authorization

The FAA issued a notice of proposed rulemaking (NPRM) to revise its requirements for application to operate in RVSM airspace. Requirement for operators to apply for an RVSM authorization would be eliminated if their aircraft are equipped with qualified ADS-B Out systems and meet specific altitude keeping equipment requirements for operations in RVSM airspace.


The National Business Aviation Association (NBAA) supports the proposed rule stating, "Operations in RVSM airspace are now commonplace, and technology allows the FAA to monitor the height-keeping performance of aircraft in real time." The association also feels the change will provide significant savings to operators by both reducing the time and cost in putting together separate application packages for each operator, as well as the extra fuel expense the operators face while waiting for their applications to be processed.

Appendix G of Part 91 outlines the requirements for operators seeking an LOA or OpSpec to operate in RVSM airspace. Because this is the only place in the FARs that references RVSM, the change will affect commercial and non-commercial operators alike.

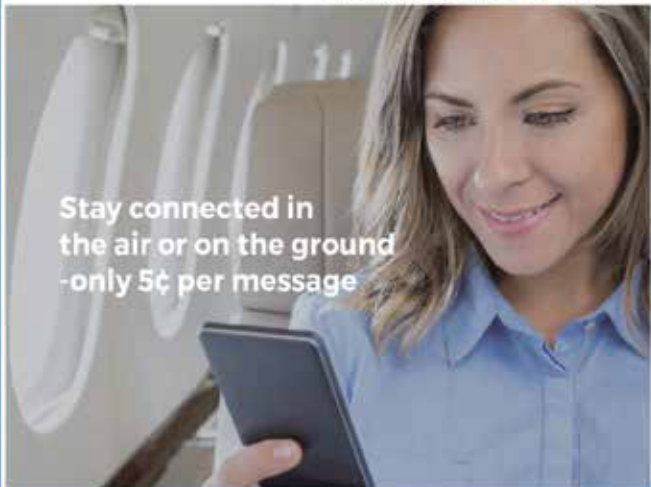
The proposed new Section 9 to Appendix G would permit aircraft equipped with an ADS-B Out system that meets the equipment performance requirements of Part 91.227 to operate in RVSM airspace without the LOA or OpSpec outlined in Section 3. Pilots will still be required to go through RVSM training, and operators will have the option to seek an approval under Section 3, as they do today, to comply with foreign airspace requirements.

The NPRM says that once the rule is final, the FAA will mail a letter to inform operators that their approval will automatically transition from a Section 3 authorization to a Section 9 authorization. However, operators that conduct international operations will have the option to maintain their current Section 3 approval.

The NBAA emphasizes that "it will be important for operators that conduct international operations to maintain the LOA or OpSpec to comply with requirements of foreign regulators while traveling abroad." **KA**



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# Propeller Restraints: The Good, the Bad, and the Ugly

by Tom Clements

**A**s you have experienced, the propeller on the PT6A engine series turns very freely. Even a child using a little finger can spin it quite easily in the hangar or on the ramp due to the fact the PT6 is a “free turbine” engine in which the propeller shaft is not physically connected to the gas generator or compressor section of the power plant. Wind can also supply the force that causes prop rotation. When parked on a windy ramp, almost always one or both propellers will be rotating, sometimes in the proper clockwise direction, sometimes in the opposite way, depending on the wind’s direction. Due to the ratio of input to output shaft speed designed into the Reduction Gearbox (RGB) – N2 to NP – the Power Turbine is rotating 15 or more times faster than the prop.

The lubricating oil supply to the RGB comes from the engine’s oil pressure pump that is driven by the compressor section ... the other shaft in the engine: N1, not N2. See the problem? When the propeller is allowed to turn without the engine running, no lubrication is supplied to the gears and bearings in the RGB except for residual oil that was originally there.

So that is why airplanes with PT6 engines are always supplied with some type of propeller restraint





device that can be connected to the propeller when parked on a windy ramp: The engine people want to prevent propeller RGB and N2 shaft rotation when no positive lubrication is being supplied. Beech's factory-provided restraints consist of a rubberized fabric sleeve that fits over the end of one propeller blade and two elastic straps that connect the sleeve to two rubberized fabric exhaust stack covers.

Questions have often been raised during initial and recurrent King Air pilot training classes about the importance of and use of the restraints. A common one is "How important is it to stop rotation? If I am just going to be in the FBO for 15 minutes, paying the ramp fee, should I put the restraints on?" Also, "How cool should the exhaust stacks be before I attach the restraint?" And the ever-popular one, "Should I place the propeller blade with the sleeve attached in the up or down position?"

There are not black-and-white, right-or-wrong answers to these questions. Some operators let the props spin for an hour or more while others install the restraint immediately before leaving the airplane alone. Some exhaust stack covers are more heat-resistant than others ... and some pilot's fingers are more heat sensitive than others! The up versus down question? I doubt that an answer will ever be resolved to everyone's satisfaction. But let me provide a few of my observations, comments and "war stories."

If you have spent time in Wichita, Kansas, you well know that it is usually windy there. Leaving the King Air on the ramp without restraints will almost always lead to aggressive propeller rotation. We at the *Beechcraft Training Center* always emphasized

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A King Air turboprop aircraft is shown from a low angle on a runway. The aircraft's propellers are blurred, suggesting motion. The background features a dramatic sunset sky with orange and pink clouds. The tail of another aircraft is visible on the right side of the frame.

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the importance of installing the restraints if the airplane would be parked for more than 30 minutes or so. Yet, when our students drove to lunch, what did they see on the factory ramp? They saw every new King Air sitting there with no restraints and the props turning like crazy! Right or wrong, the production test personnel had been directed not to worry about it ... and they surely did not! Was harm caused? Probably; no one knows the exact answer, but I'll say this: I don't think Beech ever received a warranty claim for RGB damage in a new King Air. (At least not when I worked at the factory, 1972-1977. I wonder if the Textron production test flight department still lets them spin?)

From this experience I, personally, am not worried about restraining the props during a fuel stop or passenger drop-off or pick-up. Even if the airplane will be sitting for hours waiting for the passengers to return, I will still not install them if the wind is light and forecasted to remain that way. But overnight stops? I will always install the restraints along with the other "loose equipment" items, like pitot tube covers and intake plugs. In fact, I will do this even if I have arranged for hangaring the airplane overnight at the FBO, since I don't know what the wind condition will be when they pull the

airplane out onto the ramp an hour or so before the scheduled departure the next day.

I have observed some operators who do not always use the Beech-provided restraints, but instead have taken a simple bungee cord of the right length so that it can be looped to tie one blade to one exhaust stack. This eliminates the hot stack worry since the tight-fitting exhaust cover does not need to be installed. The simple bungee is used when it's windy even during a relatively quick turn and the "proper" restraint only is used for the overnight situations. By the time the passengers and baggage are off-loaded, the fueling is done, the potty stop has been made, and the other covers and plugs installed, the exhaust stacks are cool enough that affixing the restraints to them is not problematic.

However, a word of caution: If you are going to use the simple bungee cord, I strongly suggest having a big, red, "Remove Before Flight" tag that can be readily seen from the cockpit attached to it. It's embarrassing to get all situated ready to start and then realize the bungee was never removed. And that leads to a humorous war story:

One day back in the 1960s, a King Air A90 had made a trip from its Northeastern home base airport to LaGuardia airport in New York. The Chairman of the Board (COB) and his aides were the passengers and he, the COB, had a very important dinner meeting back home that evening. It was a cold and windy day, so the airplane sat at KLGA with the standard prop restraints in place.

As the day wore on, the nervous-nelly chief pilot, who was PIC that day, got more and more worried that the boss would not return in time to make his dinner engagement. He briefed the co-pilot, "Now when the boss arrives, you load the passengers and get the door and I will go straight to the cockpit to get the clearance and start the engines."

"Is that him?" "Is that him?" was the PIC's query as each limousine arrived. Finally, there he was! Like a bullet, our intrepid hero ran to the cockpit to get ready. The copilot, as directed, saw that everyone was safely aboard, briefcases stowed, briefing given. Before he pulled the airstair door up, he heard the sound of the right engine being started ... but he hadn't yet pulled the restraints! He quickly, temporarily (he thought), closed the door and raced up the aisle. "Mike! Mike! Wait, I haven't untied the props!" He could also see the linemen waving at the cockpit and pointing to the still-tied down right prop that was not yet rotating but pulling strongly against its restraint. About that time, as the engine reached high idle, the exhaust burned through the stack covers and the elastic cord

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broke, flinging off the sleeve and freeing the propeller. "Hell, that worked. We need to get moving. Sit down and buckle up." And with that, the PIC fired up the left engine, burned its restraint off, and proceeded with the flight!

(This story was related to me by the copilot. Names have been changed to protect the not-so-innocent. I never found out if the boss made his appointment!)

I learned from that incident that (1) You need some visual reminder that the restraints are installed. (2) The engine starts satisfactorily with the fabric exhaust covers on, not reaching excessive ITT. (3) Never be in such a hurry!

Now on to the blade up versus blade down argument. In the days of nothing but three-blade propellers, there was – and still is for those with three-blades – a "correct" answer: Down. This is true for two reasons. First, the shape of the exhaust covers and the angle at which the elastic straps connect to them permit the stack cover to fit perfectly when the strap comes upward to the cover. If the strap angles downward the exhaust cover can be forced to fit, but it is obviously not designed with that position in mind. Second, why was it designed this way? So that rain could drain out of the spinner through the hole for the down

blade. There were incidences reported of noticeable propeller vibration and it was traced to water that had collected in the spinner, turned into ice as the temperature dropped, and left that ice slug inside the spinner, upsetting the balance.

The main reason that a lot of pilots prefer the blade up orientation is to make the restraint more obvious from the cockpit – less of a chance of making the "Start with 'em on" mistake. With the four-blade propellers, of course there will be a hole for rain to exit the spinner no matter whether the sleeve connects to the down or up blade. Thus, putting the sleeve on the up blade does not increase the risk of propeller imbalance due to ice inside the spinner. However, the fit of the strap and cover to the exhaust stub still favors the blade down profile ... leading me to still use the original orientation. But I have no complaint whatsoever for those who choose to go blade up position for the increased visibility reason.

Ready for another war story? Because of the delay needed to wait for the exhaust stack to cool enough for comfortably installing the stub covers, this particular operator had made a second set of prop restraints that replaced the elastic cords and the stub covers with simple bungees with hooks on both ends ... one

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connected to the sleeve and the other available to hook to the exhaust stub lip. Easy peasy, right?

The early model 200 landed and was parked for the day at an airport in Kentucky that had a King Air maintenance facility associated with the FBO. It was a windy, cold and rainy day, so the pilot installed the homemade restraints. The temperature kept falling as hours passed until the rain had turned to sleet. When the passengers arrived later in the day, the pilot found a major starting problem – no N1 rotation when he activated the start switch. The large drop in voltage led him to believe that the starter was receiving power, but the compressor shaft never showed any speed. Into the maintenance facility he goes, reports the problem, and is advised that they will pull the plane into the shop. “We had this same thing happen about a month ago on another 200. The number two bearing – the forward support of the compressor shaft – had seized and we had to replace that bearing. I bet yours is the same. Probably a bad batch of bearings.”

The passengers were put on another plane and into the shop our 200 goes. The shop personnel start by removing the starter-generator and inserting a socket wrench into the accessory case splines, trying to rotate the compressor by hand. “Yep, she’s frozen

solid.” The pilot authorized the shop to proceed to replace the suspected seized bearing.

This shop, being well-versed on King Airs, had the cowl off and the power section separated from the compressor section at the C Flange in a jiffy, to gain access to the bearing. Wait! What is this we see?!

We see the bottom quarter or so of the Compressor Turbine (CT) solidly encased in a hunk of ice. What the ...?!

Seems like the rain and wind angle had conspired to blow lots of water into the engine via the uncovered exhaust stacks. As the temperature dropped, the water inside of the engine had now frozen, locking the CT in its icy grip. This was the reason for the lack of rotation; the bearing was fine.

I had – and still have – a question that has never been satisfactorily answered. PT6 engines have two drains, forward and aft, at the bottom of the compressor case. These are designed to spring open when the pressure equalizes on both sides of the drain but they close when the compressor’s rotation creates higher internal pressure, to avoid an undesirable P3 leak. Their primary purpose is to provide an exit path for fuel following a no-light-off starting attempt. Why didn’t they permit the water to drain from the case in this situation?

Were they installed incorrectly? Were they defective? Or did the ice freeze over them rapidly enough that they became plugged before much water could exit? I don’t think we will ever know the exact reason but we do know that this incident did indeed happen and led to unnecessary delay and expense.

Bottom line? Do not use a simple bungee cord setup under these conditions. Cover up those exhaust stubs with the propeller restraint when it’s rainy and cold.

My last comment has to do with storing the restraints when not in use. There may be room in a wing locker – if you have them – simply toss them into the locker along with the pitot tube covers, engine intake plugs and heat exchanger inlet plugs. But if no locker is available or if it is full of baggage, golf clubs or skis, now is the time to fit all the items into the small canvas bag that Beech provides with the new airplane. That can be a tight fit.



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What I have found that works well is to mesh or insert one exhaust cover into the other one, then roll the combination down the elastic straps until they're three inches or so away from the sleeve. Now insert the wad of covers and straps into the sleeve. Voila! A rather compact package easy to stow and easy to unroll and use the next time. There are probably other methods that work just as well or even better, but I like this one.

The good of the restraints? They protect the RGB from possible damage. The bad? They are difficult to install until the exhaust stacks cool. The ugly? When you start the engine with them still installed, you'll need to buy a new set ... not to mention the ridicule you will receive from the line people and other pilots! **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, contact Tom direct at [twcaz@msn.com](mailto:twcaz@msn.com). Tom is actively mentoring the instructors at King Air Academy in Phoenix.

*If you have a question you'd like Tom to answer, please send it to Editor Kim Blonigen at [kblonigen@cox.net](mailto:kblonigen@cox.net).*



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# The Best Bonanza Ever?

Starting with the Model E33A, in 1968 Beech Aircraft engineers dug deep into their airframe “cook book” to create the company’s most popular and versatile *Bonanza* – the Model 36 series.

by Edward H. Phillips

“The biggest, most versatile Bonanza ever built.” That was how Beech Aircraft Corporation described the new Model 36 Bonanza when it was certified in May 1968. Introduced to company dealers and distributors on June 18, by the end of the year, sales of the six-place Beechcraft had soared to more than \$3.5 million. Standard equipped price was \$40,650.<sup>1</sup>

During those months, the production line was kept busy as orders for Model 36 poured in from Beechcraft’s global sales organization. When workers went home to celebrate the 1968 Christmas season, they had built 105 airplanes. In addition, increasing demand for the new multi-mission Bonanza would keep Beechcrafters busy throughout 1969.

From the beginning of the Model 36 design and development program, the airplane was aimed directly at three markets: air taxi, light cargo and private aviation, with an emphasis on the first two. Unlike some of its siblings such as the twin-engine Model 55 Baron, the latest Beechcraft was not answering competition from Cessna Aircraft Company or Piper Aircraft Corporation – neither had a single-engine, retractable-gear airplane that could accommodate six people. The Cessna Model 210 was a four-place design, and Piper’s twin-engine Aztec was in a different class entirely than the Model 36.

The Beech Aircraft engineering department, led by Vice President James Lew, used the Model E33A Bonanza as a starting point and relocated the rear cabin bulkhead 19 inches farther aft (also similar to that of the Model V35A Bonanza) and stretched the E33A’s fuselage 10 inches. As a result, distance from the cabin’s forward bulkhead to the aft bulkhead increased by 29 inches. Cabin volume increased by six cubic feet, and the modification only increased empty weight by 31 pounds.

Compared to the Model S35, V35 and the V35A, the Model 36 fuselage being 10 inches farther forward over the wing, resulted in a much more flexible center of gravity (CG) envelope. The new Bonanza could easily accommodate six 170-pound occupants and remain within the specified CG envelope based on a standard-equipped airplane. Another benefit of stretching the fuselage was a 10-inch increase in landing gear wheel base, making the airplane easier to maneuver on the ground.



Introduced in mid-1968, the utilitarian Model 36 had evolved into the improved A36 for the 1970 model year and featured cabin and interior appointments that were equal in quality and appearance to that of the Bonanza V35B. (WICHITA STATE UNIVERSITY LIBRARIES, SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES)

Another significant feature centered on making access to the main cabin easy, particularly for air taxi operators who wanted the ability to remove the aft four seats and carry lightweight cargo if required. To provide that access, engineers designed a four-foot wide double door located on the right side of the fuselage. The doors, constructed of bonded honeycomb for strength and light weight, could be removed for flight although airspeed and other restrictions applied. The ability to remove the doors made the Model 36 an attractive platform for aerial photography. Air taxi operators also liked the Bonanza’s FAA certification in the Utility Category at the maximum gross weight of 3,600 pounds, as well as its cruise speed of 195 mph that placed it among the fastest six-place, single-engine lightweight transports in that market segment.<sup>2</sup>

The choice of a powerplant for the Model 36 would be the ubiquitous six-cylinder Continental IO-520-B. Rated at 285 horsepower, the reliable engine also powered the Model V35 and V35A Bonanza. Early production versions of the Model 36 featured a utilitarian interior that was not well received by some Beechcraft customers accustomed to the well-appointed cabin of the V35. The company did, however, offer a deluxe interior in addition to the standard and utility versions that were designed for the rugged environment of air taxi operations.



During the 1969 model year, 79 of the versatile Model 36 were built. Salient upgrades included (but were not limited to):

- A third latch on the cabin door beginning with serial number E-4
- A more powerful flap motor on E-106 and all subsequent airplanes
- Quick release pins for fifth and sixth seats in the aft cabin, first installed on E-146
- A Prestolite alternator replaced the Delcontron unit beginning on E-124
- The Narco Mark 16 radio replaced the aging Narco Mark 12 (digital avionics were not yet available)
- Heat and cold air ductwork were rerouted for improved air circulation. First installed on E-106.

For the 1970 model year, Beech Aircraft officials paid attention to feedback from salesmen and operators calling for more upgrades to the airplane that would essentially make it a six-seat equivalent of the V35B – the company’s single-engine flagship. There was, however, a problem of how the new Bonanza was perceived by operators.

Bonanza historian Larry A. Ball summed up the situation this way: “The original Beech factory approach to marketing the Model 36 was to advertise it as an aerial moving van, an air taxi, a carry-all and an ideal charter airplane for the fixed base operator. Although the Model 36 was all of these, the [company’s] marketing approach did not sell many airplanes.”<sup>3</sup> Although Beechcraft dealers were eager to sell the Model 36, a key disadvantage was that most of air taxi and charter operators were already dealers for Cessna and Piper airplanes, and they were not inclined to buy a Beechcraft.

As a result, it was decided to give the airframe a “make-over,” a new look that would bring it up to V-tail Bonanza and Baron standards, both inside and out. Perhaps more importantly, the advertising shifted emphasis to the owner-flown segment of the market – a group that had purchased so many Bonanzas over the years. The changes that occurred demanded a new designation, and the Model A36 was born.

The A36 boasted a litany of improvements from a much more aesthetic, eye-catching exterior paint design, a luxurious interior with a choice of leathers, three green landing gear “DOWN” annunciator lights instead of one used on earlier aircraft; Hartwell quick-release cowl latches, redesigned instrument subpanels, engine and fuel quantity indicators used on the Model 55 Baron, optional internally-lighted flight instrumentation, and electroluminescent components that provided improved lighting for night flying.

These and other changes increased empty weight to 2,023 pounds from 1,980 (including standard avionics), but performance remained the same with a maximum speed of 204 mph, range of 530 statute miles with 50

gallons of useable fuel (980 miles with optional 80-gallon capacity), and service ceiling of 16,000 feet.

As was the usual custom, further improvements were made during 1970-1972 as the A36 established itself as the “Rolls-Royce” of six-seat, high-performance single-engine airplanes in the general aviation industry. A sampling includes:

- Wing tips used on the V35B were adopted to the A36, increasing wing span to 33 feet six inches from 32 feet 10 inches
- Thicker Plexiglas on the pilot’s side window
- Self-exciting alternator (no longer required two dry cell batteries to excite the alternator field coils)
- Rotating beacon mounted on top of vertical stabilizer
- Anti-slosh fuel cells that prevented momentary loss of fuel flow during slips, skids and turning takeoffs with low fuel level in the tanks
- Optional club seating (center two seats facing aft, rear two facing forward) became available beginning with serial number E-221
- From E-226 onward, a relay was added to the landing gear electrical circuit that prevented illumination of the three green landing gear “DOWN” annunciator lights until the gear motor had completed its operating cycle
- Exterior decals were replaced by metal placards on production airplanes beginning with E-243
- The Narco Mark 12 radio (standard equipment) was replaced with a King KX-170 unit on E-244 and all subsequent airplanes
- Cabin seats and the instrument panel were revised for the 1972 model year, providing a slight increase in head room
- Redesigned ventilation system to increase volume of airflow and to reduce noise
- Electrically-operated, vertical-readout engine instruments introduced on the 1971 V35B
- Empty weight increased to 2,040 pounds from 2,023 pounds

Production of the A36 during the 1970-1971 model years began with E-185 and ended at E-282 – 98 units. Base price started at \$42,950, but in August 1970 increased to \$45,550.

As sales of the A36 continued into the late 1970s there was a growing, albeit small, movement toward a turbocharged version of the A36. Beech Aircraft had long been familiar with the advantages of turbocharging, and in the 1966 model year the company offered the Bonanza V35TC. With a base price of \$37,750 and powered by a Continental TSIO-520-D engine rated at 285 horsepower, the artificially-aspirated Bonanza could maintain maximum manifold pressure all the way up to an altitude of 19,000 feet.

As expected, performance increased significantly, with a maximum speed of 250 mph at 19,000 feet compared with 210 mph for the naturally-aspirated Model V35. Production of the V35TC continued into the 1967 model year, and 79 were built before production changed to the V35A-TC, of which 49 were manufactured during the 1968-1969 model years. The last turbocharged version of the V-tail Bonanza was the 1970 V35B-TC that cost \$45,250. Only seven were built and none were produced during 1971.

After a nine-year absence, turbocharging returned to the Bonanza family of Beechcrafts with introduction of the A36TC in 1979. The company may have been motivated to revisit the concept of a turbocharged A36 thanks to the popularity of Cessna's Turbo Stationair 7, T210N Centurion and Piper's new PA32-301T turbocharged Saratoga that was certified in January 1980.



The turbocharged A36TC was introduced for the 1979 model year and featured a Teledyne Continental TSIO-520-UB engine rated at 300 horsepower. To cope with cold temperatures at 25,000 feet, the cabin heating system was revised to provide a 20 percent increase in heat compared with a standard system. Fuel capacity, however, was only 74 gallons. (WICHITA STATE UNIVERSITY LIBRARIES, SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES)

Built initially for the 1979 model year, the A36TC was powered by Continental's TSIO-520-UB engine that developed 300 horsepower. Cowl flaps were eliminated in favor of air cooling louvers that caused cooling problems for certain cylinders during the flight test program, but these were eventually resolved and the airplane received FAA certification on December 7, 1978, under (amended) Approved Type Certificate 3A15. An oxygen system was available and the cabin heating system was improved to provide 20 percent more heat at the turbo Bonanza's maximum certified altitude of 25,000 feet.

The A36TC was well received by pilots, but they had to closely monitor cylinder head temperatures and mixture during climbout to avoid having to "step-climb"

the airplane due to high cylinder head temperatures. Beech Aircraft established a special training course to familiarize pilots with the airplane's characteristics, particularly if they were new to turbocharging. If, however, pilots flew the A36TC in accordance with procedures they were taught and specified in the Pilot's Operating Handbook, the airplane was a strong performer and a welcome addition to the Bonanza lineup. During the first year of production, 32 airplanes were built followed in 1980 by 126 and another 113 in 1980 – the last year of manufacture for the A36TC.

During 1980-1981, Beech engineers reworked the A36TC into the improved Bonanza B36TC. It incorporated a series of upgrades to the airframe and engine including:

- Continental TSIO-520-UB engine rated at 300 horsepower
- New instrument panel featuring separate control wheel shafts (the iconic, 1940s-vintage Beechcraft throw-over control column was finally eliminated)
- Throttle, mixture and propeller controls were grouped into a quadrant located in a console between the two front seats
- Circular engine instruments similar in appearance to those installed in the King Air product line were mounted vertically
- Fuel capacity was increased 108 gallons total (102 useable)
- Wingspan increased to 37 feet 10 inches from 33 feet six inches
- Wedge-like vortex generators were installed in specific locations on the wing leading edge to improve roll control at high angles of attack
- The engine/turbocharger installation was improved
- Air conditioning was available as an option
- Maximum takeoff weight increased to 3,850 pounds

At a power setting of 31 inches Hg manifold pressure at 2,400 RPM (maximum power setting), the B36TC could cruise at 200 knots true airspeed (TAS, ISA conditions) at 25,000 feet. The first and only airplane built in 1981 was serial number EA-242. Another 50 were built in 1982 followed by 65 in 1983. The factory manufactured only 139 airplanes during the 1984 through 1992 model years. According to Textron Aviation, production of the B36TC ended in 2002 after a total of 424 airplanes had rolled off the assembly line since 1981.<sup>4</sup>

The current production version of the venerable Model 36 series is the Bonanza G36, first introduced for the 2005 model year. Priced at \$800,000 for a standard-equipped airplane, the G36 ushered in the era of flat





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Introduced in 1981, the B36TC featured significant upgrades that set it apart from its predecessor, the A36TC. Although the turbocharger system was essentially the same, the installation was reconfigured to improve cylinder cooling. An important improvement was the airplane's fuel capacity that was increased to 108 gallons. Maximum speed at 25,000 feet was 200 knots TAS. Production was terminated in 2002 after 424 airplanes had been built. (WICHITA STATE UNIVERSITY LIBRARIES, SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES)

In 2012, the G36 and its G58 Baron sibling were given a new interior with more comfortable seating, and an improved cabin environmental system was installed that provides air inlets for all occupants, not just in the cockpit as on previous aircraft. The G36 also features a 28 VDC electrical system fed by dual alternators and electrical buses that automatically tie together when the engine exceeds 2,000 RPM. According to Beechcraft parent company Textron Aviation, the Bonanza G36 has a maximum range of 920 nautical miles, maximum cruise speed of 176 knots and a useful load of 1,038 pounds. Takeoff roll (sea level, standard day) is 962 feet.

The author was among flight instructors at the Beechcraft Training Center that conducted ground-based courses and familiarization flights aimed at teaching pilots new to the B36TC how to manage the turbocharger system. In my opinion, the B36TC was a major improvement over the A36TC and possessed excellent flight characteristics, but cylinder head temperatures still had to be monitored closely during extended climbs, particularly on a hot day. As of early 2017, prices for a pre-owned B36TC varied from about \$400,000 for a late production airplane with less than 1,200 hours total time, to \$189,000 for an early production version with more than 3,000 hours total time.

As the Model 36 series enters its 50th year of production in 2018, the versatile Beechcraft will continue to be one of the company's most popular airplanes. Despite its extraordinary price tag for a single-engine machine,



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The Bonanza G36 made its debut as part of the Beechcraft product line in 2005. Although overall performance and basic specifications had changed slightly from the original Model A36 of 1968, its price did not. As of early 2017, a standard-equipped G36 cost \$800,000 (before options and customization). (TEXTRON AVIATION)

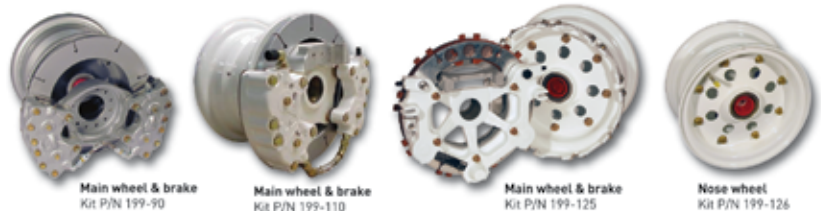
Ed Phillips, now retired and living in the South, has researched and written eight books on the unique and rich aviation history that belongs to Wichita, Kan. His writings have focused on the evolution of the airplanes, companies and people that have made Wichita the “Air Capital of the World” for more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

the G36 offers pilots an attractive combination of speed, value, quality and utility that should keep it in production for years to come. **KA**

#### NOTES:

1. By comparison, in 1977 when the author went to work at the Beech Aircraft factory as a Bonanza marketing representative, base price for a Model A36 had increased to \$105,000. As of early 2017, sticker price for a base Model G36 with typical options is \$900,000.
2. Cruise speed based on a power setting of 75% at an altitude of 6,500 feet and full throttle (2,500 RPM). It is interesting to note that the 2017 G36 offers essentially the same performance as the original Model 36, but features a plethora of upgrades made during nearly 50 years that set it far apart from its 1968 ancestor.
3. Ball, Larry A. *“Those Incomparable Bonanzas;”* McCormick-Armstrong Company, Inc. Wichita, Kansas, 1971.
4. According to Textron Aviation, as of early 2017 its subsidiary Beech Aircraft Corporation had manufactured more than 4,700 of the Model 36 series, including the A36, G36, A36TC and B36TC.

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## Raisbeck Engineering Receives STC Approval for Composite Five-Blade Swept Propellers

As announced in the last issue of *King Air* magazine, Raisbeck Engineering and Hartzell Propeller collaborated on a new composite five-blade swept propeller for the Beechcraft King Air 350, and it has recently received STC approval from the FAA.

According to the companies, the composite five-blade swept propeller is designed to improve King Air comfort, performance and efficiency. At 106 inches in diameter, the swept propeller reduces weight and contributes to improved short field and climb performance, while providing strength and durability expected from modern composites. The blade design which optimizes airfoil efficiency combined with carbon fiber structural design also maximizes thrust therefore increasing performance while reducing noise for the aircraft. The composite five-blade swept propellers provide a total weight savings of 47 pounds compared to the current OEM propeller for the King Air 350.



The new composite propellers have an extended 3,000-hour, three-year warranty and unlimited blade life.

The company received FAA Parts Manufacturing Approval (PMA) following STC approval and propellers are available for immediate delivery.

## Advent Announces Promotion on eABS Anti-Skid Braking System

Advent Aircraft Systems has launched a world-wide "Get Ready for Winter" promotion of its advanced technology eABS™ anti-skid braking system for all King Air B200/B300 aircraft.

The promotion offers a \$3,000 cash rebate directly to any operator who commits to the purchase of Advent's eABS by October 31, 2017 and has the installation completed by the end of 2017. The rebate is paid by Advent upon completion of the installation. Advent has recently completed certification of eABS in the U.S., Canada, Europe and Australia and is offering the incentive now to ensure kits will be available for winter operations on the aircraft operator's desired schedule.

The company says that eABS provides worry-free braking by eliminating risk of tire damage in all runway conditions; haptic technology that provides direct feedback to the pilot, optimizing brake control; active, independent control of each wheel that improves directional control on contaminated surfaces and in crosswind conditions; a useful alternative to reverse thrust, lessening risk of engine FOD and prop erosion on unimproved fields; and reduced stopping distances whether at idle or max reverse power settings.

List price before rebate for the King Air series is \$55,890 plus the cost of installation labor charged by the Advent authorized dealer. Downtime is typically one-to-two weeks. A complete list of dealers in the U.S., Canada, Europe and Australia is available on the Dealer page on Advent's website, and also includes independent Textron authorized service centers.

To date, 120 aircraft owners have installed eABS since its initial certification in 2013. All eABS components are approved for on-condition maintenance, with a minor inspection at 1500 hours, and are listed in the MMEL for the King Air. System installed weight is 29 pounds and is easy to install.

For further information or to order, operators may contact Tom Grunbeck, VP-Marketing and Sales, (203) 233-4262, email: [Tom.Grunbeck@AircraftSystems.aero](mailto:Tom.Grunbeck@AircraftSystems.aero) or by contacting their preferred Advent authorized dealer.

## NBAA Announces 2018 Regional Forum Locations

Every year the NBAA hosts three Regional Forums in different locations that bring local business aircraft owners, operators, manufacturers, customers and other business aviation professionals to share knowledge, discuss issues affecting the region and learn how business aviation can help companies succeed.

The forums feature vendor exhibits and a static display of aircraft, as well as provide educational experiences with networking, in a single day.

The dates and locations for 2018 are as follows:

January 24	West Palm Beach, Florida (PBI)
June 21	White Plains, New York (HPN)
September 6	San Jose, California (SJC)

## Rectrix MRO Named Authorized Rockwell Collins Dealer

Rectrix MRO, an FAA Part 145 Repair Station located at Westfield-Barnes Regional Airport (KBAF) in Westfield, Massachusetts, is now an authorized dealer for Rockwell Collins. The designation expands the capabilities of the Rectrix MRO (maintenance, repair, and overhaul) division to now include sales and installations of new Rockwell Collins-manufactured cockpit avionics and



cabin electronics as well as servicing the existing needs of Rockwell Collins-equipped aircraft.

Becoming an authorized dealer for Rockwell Collins greatly expands the scope of Rectrix MRO maintenance capabilities to include nearly all avionics needs of most business and regional aircraft. The operation's ratings cover the following aircraft: Global Express, Challenger 600/300, Gulfstream, Falcon, Hawker, Citation, Lear, Beechjet and King Air. It also holds ratings for performing RVSM, FAR 91.411 and FAR 91.413 check, and other avionics-related systems servicing. Rectrix MRO also offers a variety of airframe and powerplant maintenance services ranging from the simplest checks to in-depth 96-month inspections, tail number change/transponder restrapping, sheet metal repairs, gear overhauls, aircraft weighs, and pitot static testing.

Rectrix MRO can be reached at (413) 568-4686 or (800) RECTRIX.

### Foreflight 9.3 Adds Route Options, Step Climbs

ForeFlight has released Version 9.3 of its aviation app which includes several additional capabilities. The Route Advisory tool now gives a visual preview of all route options on an interactive map. The Route Preview

map also appears in the Flights view form-based planner to provide a quick visual reference of the route.

The app's performance planning now supports step-climbs. The flight planning engine calculates the highest possible initial altitude, then automatically creates step-climb legs as the aircraft weight decreases.

After filing your flight plan in ForeFlight, you will now receive a push notification to your device when ATC issues a revised expected route and when adverse weather conditions arise that may affect your flight. Weather alerts can be accessed in the Messages tab in the Flights view and Flight Notifications are available to all customers who file flight plans via ForeFlight.

Close Navigating  
KIAH to CYUL

KIAH — CYUL (September 07, 2017 GMT-5) in N61234 (B20)

STD	Distance	Alt	STD	STD
5h24m	1404nm	28kt tail	0715 PM GMT-5	0139 AM GMT-
2523 lbs	1140 lbs	3672 lbs	550 lbs	599 lbs

Route: LURICS ORRTH HENSY N6242F350 LULOU IU BOWRR ZANDR ZORBO ART HAB

Waypoint	Alt	Alt	Alt	Alt	Alt	Alt	Alt	Alt
KIAH	-	00	-	3682	0kt	0kt	0kt	0kt
-TOC-	LURICS	050	FL330	0h42m	3171	208kt	227kt	256021
ORRTH	LURICS	050	FL330	0h57m	3069	238kt	258kt	255023
200-HENSY	DCT	046	FL330	1h08m	2999	239kt	254kt	272022
100-HENSY	DCT	047	FL330	1h31m	2826	243kt	259kt	276030
HENSY	DCT	048	FL330	1h54m	2663	243kt	259kt	282029
100-LULOU	DCT	046	FL350	2h14m	2542	210kt	222kt	278022
LULOU	DCT	046	FL350	2h37m	2384	243kt	257kt	282029
IU 114.8	DCT	052	FL350	2h52m	2282	244kt	252kt	285043

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Flight planning enhancements include an “Add Next Flight” button in the Flights view which makes it faster and easier to plan multi-leg flights by carrying forward departure, aircraft details, payload, fuel policy and more. In addition, you can now export your flight plan in the official ICAO format and print, email, share via AirDrop or save a copy in ForeFlight Documents.

ForeFlight 9.3 is available in the App store.

## Hartzell Propeller Creates Composite Blade Pre-flight Check Video for Pilots

Hartzell has added to its series of how-to videos and the newest one covers the evaluation of structural composite propeller blades by describing the ins and outs of composite prop pre-flight checks for pilots.

Hartzell’s composite expert Kevin Ryan walks pilots through the pre-flight step-by-step, including a discussion of nicks, gouges and paint erosion caused by runway debris. Also covered is trailing edge impact damage from tow bars or other ground handling equipment.

Although Hartzell uses aerospace grade composite construction materials that are incredibly durable, they are not entirely immune to damage. The composite

propeller blades can be restored to their original dimensions over and over again providing excellent life-cycle costs.

Pilots can view the new video by going to YouTube and searching for “Hartzell Preflight Instructional Video”.

## Straight Flight Named Raisbeck Dealer

Raisbeck Engineering announced it has named Straight Flight, a subsidiary of Sierra Nevada Corporation, as an authorized Raisbeck dealer in a move to strengthen and provide added value to Beechcraft King Air owners and operators.

Located in Englewood, Colo. at Centennial Airport, Straight Flight has spent nearly 30 years in the aviation industry, and specializes in heavy structural repair, inspections, modifications, paint, composite repair and fabrication, among some of the services the company provides worldwide.

For more information about Straight Flight, contact Jennifer Stoffels at (720) 788-3841 or go to [StraightFlight.com](http://StraightFlight.com).

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## From Communiqué # ME-TP-005

Issued: August 2017

### ATA 20 – Ballast - Engine and Propeller Removed

All

During regular maintenance, there are times that removal of the propellers and engines is required. This configuration leaves the airplane in a tail-heavy condition causing concerns that the tail would settle; especially if the airplane is undergoing other maintenance requiring maintenance personnel to enter and exit the airplane. This is also concerning if the airplane is on jacks. Textron Aviation recommends that ballast be added to the engine truss to replace the weight removed. This can be sandbags or a weight that bolts to the engine truss (Note: see Communiqué online for photo). There is no part number for this device as this is a shop aid and it can be made locally. The amount of weight used should be the same as the weight that was removed and can vary depending on which King Air is used. Using a tail stand is also recommended. Refer to King Air Communiqué 2016-04 for more information about the use of a tail stand.

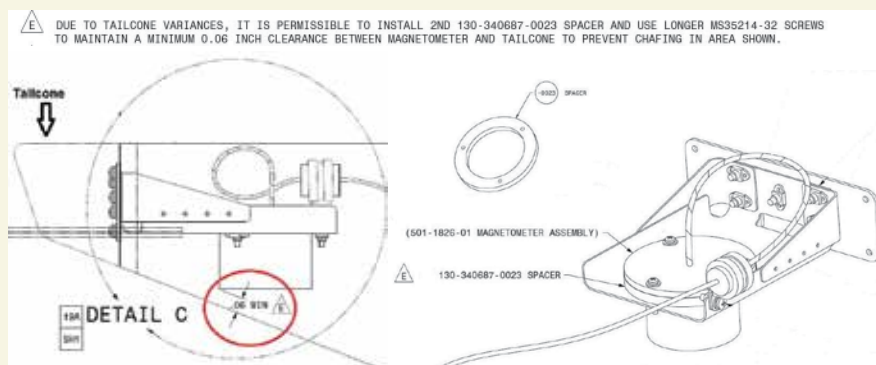
### ATA 34 – Magnetometer Relocation Kit 434-3013-0001 on Fusion-Equipped King Airs B200GT, B200CGT, B300, B300C

Kit 434-3013-0001 was released to resolve attitude roll over and heading drift issues on the Electronic Standby Instrument System (ESIS) on Fusion-equipped King Airs. The kit relocated the ESIS magnetometer from the aft canted bulkhead to the rear of the tail cone to distance it from large magnetic influences. Several aircraft which have had the kit installed have reported that the heading still drifted. It was discovered on these installations that tail cone variances could allow the bottom of the

magnetometer to contact structure. This contact could create vibration in flight that can affect magnetometer performance. The kit has now been revised to address the clearance issue.

The revision to the kit includes an optional additional spacer (130-340687-0023) to prevent magnetometer contact with the tail cone. If you are experiencing an anomaly with ESIS heading issues as described, or when maintenance/inspections are being performed in the tail cone, ensure that there is a minimum of .06 inches clearance, as shown below left. If clearance is not present or heading issues are continuing, please contact technical support at [teamturboprop@txtav.com](mailto:teamturboprop@txtav.com) for resolution.

*The above information is abbreviated for space purposes. For the entire communication, go to [www.txtavsupport.com](http://www.txtavsupport.com).*



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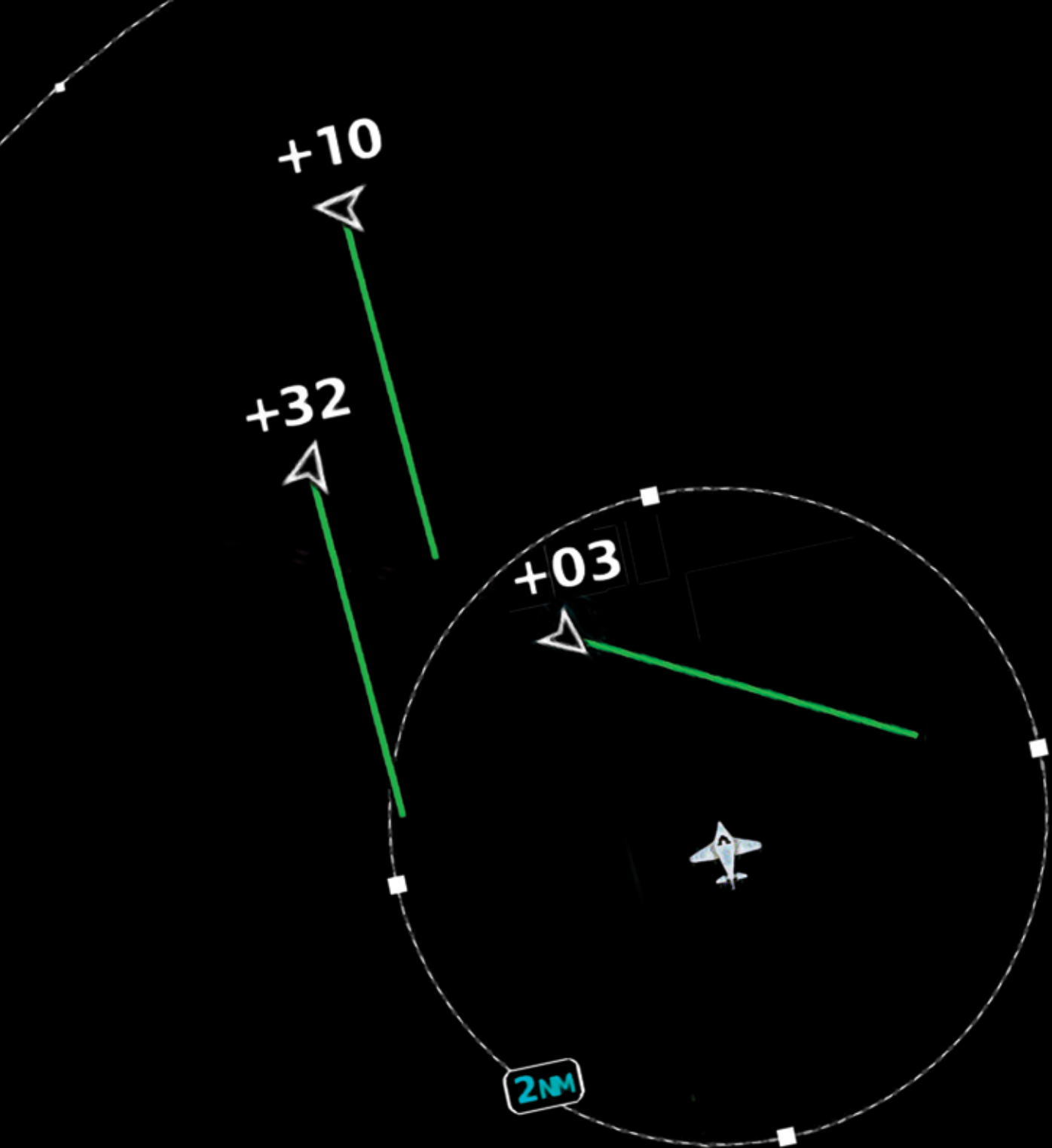
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