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#### A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT





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#### SUBSCRIPTIONS

King Air is distributed at no charge to all registered owners of King Air aircraft. The mailing list is updated bi-monthly. All others may subscribe by writing to: King Air, P.O. Box 968, Traverse City, MI 49685, or by calling 1-800-447-7367. Rates for one year, 12 issues: United States \$19.95, Canada \$29.95 (U.S. funds), all other foreign \$32.96 (U.S. funds). Single copies: United States \$4.50, Canada/Foreign \$6.50.

**COVER PHOTO** 

Photo courtesy of Textron Aviation

# Contents

One Year Later – A Look at the King Air Program under the Textron Aviation Umbrella by Kim Blonigen

10 Maintenance Tip – More on Windshields

by Dean Benedict

14

Aviation Issues – Aviation Group Leaders Ask for Specific Contract Tower Funding, While Lawmakers Discuss Other Options for FAA Reform

by Kim Blonigen

18 Ask the Expert – Don't Lift the Power Levers in Flight!

by Tom Clements

23 Flight of the "Waikiki Beech"

by Edward H. Phillips

29 Value Added

31 Technically...

32 Advertiser Index

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

King Air (ISSN 1938-9361) is published twelve times a year by Village Press, Inc. with advertising offices located at 2779 Aero Park Drive, Traverse City, Michigan 49686. Telephone (231) 946-3712. Printed in the United States of America. All rights reserved. Copyright 2015, Village Publications.

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POSTMASTER: Send address changes and inquiries to King Air, Village Press, Inc., P.O. Box 968, Traverse City, MI 49685.

# A Look at the King Air Program under the

The King Air 50th Anniversary Flight on January 20, 2014, with the three current models in production, flying in formation.











# **Textron Aviation** Umbrella

### by Kim Blonigen

ast year started with the celebration of the 50th anniversary of the Beechcraft King Air's first flight on Jan. 20, 2014, as well as recognizing the line of turboprops as the best-selling business aircraft family in the world with nearly 7,300 aircraft delivered and a worldwide fleet having surpassed 60 million flight hours. Shortly thereafter, in March, the acquisition of Beechcraft Corporation by Textron Inc. was finalized and Beechcraft, Hawker and Cessna brands would all be housed under the Textron Aviation banner.

Since it's been a little over a year under its new corporate umbrella, has anything changed with the King Air, or its customer support, parts and maintenance services? *King Air* magazine asked these questions of the company's leadership team, including Christi Tannahill, senior vice president, Turboprop Aircraft and Interior Design, and Brad Thress, senior vice president, Customer Service.



### **The Aircraft**

According to Tannahill, the King Air is still being manufactured at the same manufacturing facility, Plant IV, located at what is now called Textron Aviation's east campus.

After coming out of bankruptcy in 2013, Beechcraft had announced it was looking at the possibility of



The upgraded C90GTx with Raisbeck Engineering's swept-blade propellers and dual aft body strakes. The upgrade allows for shorter takeoff and landing distances, better handling characteristics and enhanced passenger experience.

creating new King Air models. When asked if there are still plans for that, Tannahill answered, "With the acquisition of Beechcraft by Textron, you will see additional investments in the King Air product line. In fact, just last year at NBAA we announced two new improvements on the King Airs."

The enhancements Tannahill mentioned are a new standard performance upgrade on the C90GTx and an enhanced payload option on the King Air 250. The new upgrade on the C90GTx allows for shorter takeoff and landing distances – most significantly, shortening the takeoff distance by nearly 600 feet – better handling characteristics and enhanced passenger experience. The upgrades are a result of incorporating Raisbeck Engineering's performance enhancements consisting of swept-blade propellers and dual aft body strakes. With the King Air 250, customers can order this model with a factory-installed modification that increases the maximum takeoff weight from 12,500 pounds to 13,420 pounds, providing 1,025 pounds of payload with full fuel.

## **Meet Christi Tannahill**

Most long-time King Air owners know Christi Tannahill, who joined Beechcraft in 1999. She served as vice president of Hawker Beechcraft Global Parts and Services, then vice president of Beechcraft's Global Customer Support organization before the formation of Textron Aviation. As senior vice president, Turboprop Aircraft and Interior Design, she is responsible for the profit and loss of the turboprop business (King Air and Caravan lines) – from customer input and advanced design, to manufacturing, customer delivery and continued service and support. She also leads the customer-focused interior design organization that supports all product lines. Considering a rebate to upgrade your King Air<sup>®</sup> flight deck?

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The King Air 350ER is being used in many multi-role missions from surveillance to air ambulance and medevac.

The modification, developed with CenTex Aerospace, Inc. of Waco, Texas, also is an aftermarket option for in-service King Air 250 aircraft and available through Textron Aviation's factory-owned service centers.

"These are both great examples of taking our customer feedback and requests, and turning them into improvements on the products," Tannahill said.



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"Continue to watch for announcements, as we expect to make more on the King Air turboprops this year."

## **The Service**

The customer support organization at Textron Aviation is headed by Thress, who has an extensive background in aviation and many years in the customer service organization. Thress oversees the company's customer service network, including partnerships with authorized service facilities. He is responsible for mobile service solutions, as well as parts and service programs for jet and propeller aircraft.

Looking at changes in services for the King Air, in the past year Textron Aviation announced it will offer ProAdvantage product support programs to the global Beechcraft King Air turboprop fleet. ProAdvantage is a legacy support solution, previously exclusively available for Cessna Citation business jet customers, comprised of

### **Meet Brad Thress**

As senior vice president, Customer Service since the formation of Textron Aviation in 2014, Brad Thress is responsible for all aftermarket service and support for the installed base of Beechcraft, Cessna and Hawker aircraft. Formerly a pilot in the U.S. Air Force, Thress began his career with Cessna in 1992 as a demonstration pilot. Through the years he was product marketing manager for the Citation X, was responsible for the production line start-up for the Citation Sovereign, held the position of vice president of Quality and vice president of Component Operations, overseeing all manufacturing operations that supply components for aircraft assembly. In 2009, he became senior vice president of Customer Service for Cessna before assuming the title of senior vice president of Business Jets in 2011.



Textron Aviation has been expanding its company-owned service network to include authorized King Air maintenance and plans to continue to do so, opening up service options for King Air owners around the world.

a number of programs providing life-cycle maintenance and spare part support for aircraft airframes and avionics, engines and, when applicable,

auxiliary power units.

ProAdvantage includes ProParts, ProTech and ProPropeller, with ProParts being the cornerstone element of the package and provides coverage for maintenance – line, scheduled and unscheduled maintenance – and parts such as wheels and tires, avionics, brakes, motors, actuators, gauges and light bulbs.

Textron Aviation has been expanding its company-owned service network to include the authorization for King Air maintenance and plans to continue to do so, opening up service options for King Air owners around the world. Recently the company announced that its company-owned service centers in Sacramento, Calif.; Mesa, Ariz.; and Paris, France, as well as two other European centers in Dusseldorf and Zurich, have gained certification for the King Air 90-, 200- and 300-series aircraft service and repair. Thress also reported that the company continues to have field support personnel dedicated to King Air operators.

"The combination of Beechcraft, Cessna, and Hawker under the Textron Aviation umbrella continues to pay dividends to our customers," Thress said. "Throughout 2015, we'll continue our Beechcraft and Hawker service expansion across our global, company-owned service network."

### **The Numbers**

When looking at the 2014 General Aviation Manufacturers Association's (GAMA) year-end shipping and billing report, the King Air faired very well for Textron Aviation by delivering 127 King Air models, in addition to 94 Cessna Caravans in the turboprop category. In the jet division, 159 of Cessna's current jet models were delivered for the year, and of course zero Beechcraft/Hawker jets were delivered since production was halted when the company emerged from bankruptey.

Although the company stated it could not disclose current production rates, it looks like the King Air is holding its own and then some under the Textron umbrella. The future continues to look positive for this best-selling business aircraft.

Tannahill summed up the new organization by saying, "Customers can expect the same quality of service and support they have received over the past 80 years at Beechcraft."



by Dean Benedict

probably went for two or three years without installing a windshield, then suddenly I completed four installations in a two-month period. I noticed a few changes with the King Air windshields; first was pricing. The price of overhauled OEM windshields and the kits to install them has fluctuated wildly.

Five years ago, I wrote an article on windshields for this magazine ("Windshields 101" in the 2010 March/ April issue) and they were going for close to \$19K per

side from Beech. Now, Beech's price on the overhauled windshields has gone down substantially, but their pricing on the install kit has skyrocketed beyond belief! What used to be a \$550 item is now well over \$2,000 for eight rubber seals and 56 screws! Fortunately, there is a PMA kit that is more reasonable, and in my experience, the holes line up better than the factory kit.

# What is an Acceptable Core?

The biggest new wrinkle in the world of windshields is with core acceptability. An overhauled windshield uses the frame structure from an old windshield with new glass. But now, if the serial number on the windshield you are replacing begins with 95 or below (94, 93, etc.) then your core will not be accepted and you will have to pay the core charge on top of the exchange price.

Windshields with serial numbers that start with 96 or higher are

acceptable cores. They can be returned to the vendor to avoid the core charge. I had an unacceptable core a month ago with one of the windshields I installed because the serial number began with 94, so we had to pay the core value.

### **OEM versus PMA**

PPG makes the OEM windshields used in King Airs. As far as I know, the only PMA windshield is by GKN.



An example of a fractured inner pane of a King Air windshield.

I have installed both with good results over many years. I do know of a King Air owner that recently had a GKN installed and he is very unhappy with the clarity; an unfortunate problem, but one I never encountered before. On the other hand, I once tried to install a PPG windshield that simply did not fit. After a flurry of emails full of detailed measurements and photographs, PPG made everything right.

## Windshield Replacement

If you are monitoring a delamination situation that is gradually getting worse, and you decide to shop around for bids on windshield replacement, check your serial number first so you will know whether you have a viable core. Then, ask about PMA versus OEM, get specific pricing on the installation kit and the labor involved. Remember to factor in shipping costs – the windshields weigh about 85 pounds in the crate.

Be sure to allow plenty of time, as well. This is not a job to be rushed. I estimate between 12 and 18 manhours to change one windshield for an experienced technician. That does not include the time required for the sealant to cure, which is 48 hours at 70 degrees. In colder temperatures, the cure time for the sealant increases dramatically. I've had King Airs in my hangar for days and days with heat lamps on the new windshield, waiting for the sealant to fully cure.

# Windshield Failure at Altitude

When a King Air windshield fails at altitude, it really gets your attention. If the outer pane fails, it usually cracks, making a loud snap. If the inner pane fails, it often fractures completely with a very loud pop as little chunks of glass fall into your lap. I mentioned this in my earlier article, but it bears repeating.

Your POH tells you exactly what to do if a windshield fails at altitude, but many pilots have become completely unnerved, declared an emergency, and put their King Air down on the nearest strip, far from a decent repair facility.

Years ago, a C90 en route to California had a windshield shatter at altitude over southern Nevada. The pilot declared an emergency, landed at Creech AFB, left the aircraft there and took the airlines home. The aircraft owner dithered about for the next 10 days trying to decide what to do and how to get a ferry permit from the FAA to move his airplane, etc. The military was not amused and threatened to chop up the aircraft if he didn't get it out of there. He finally got it ferried to my shop and we took good care of him; but had the pilot consulted his POH, he could have made the necessary adjustments and continued on to his final destination. That would have avoided a great deal of aggravation.





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A close-up look at a delaminated area of the windshield. The cracks running through and around the delaminated area were what caused the windshield to be replaced.

So, check out your POH under "Limitations" and you will find instructions to adjust the cabin pressurization differential to between 2.0 and 4.5 PSID, and to descend to FL 250 or below. You will also learn how long you may continue flying in non-icing conditions before replacing the windshield – you may be surprised at what you learn.

## Windshield Heat and Longevity

Use your windshield heat properly to ensure long-lived windshields. Pilots who run "strictly by the book," use windshield heat all the time. But many King Air pilots dispense with windshield heat in hot weather because they don't like the distortion created by the heating grid.

As you well know, it's quite possible to start a trip in hot weather and encounter icing conditions at altitude. If you embark on a trip with the windshield heat in the "off" position (either by choice or by mistake) and you decide to turn it on later to combat the threat of icing, you run the risk of thermal shock to the windshield.

Thermal shock can cause delamination, it can exacerbate existing delamination, and it can cause full-on windshield failure. Of course, safety is always your priority, but should you find yourself in this predicament, consider whether or not it would be safe to continue flying without windshield heat. Again, safety is uppermost at all times. I cannot stress that emphatically enough. But thermal shock is a good thing to avoid where possible.

# **Delamination**

Delamination does not necessarily condemn a windshield. It is noted at inspections and monitored to see if it spreads to a wider area. Windshield delamination is acceptable as long as it does not interfere with the line of sight. I have seen windshields with delaminated areas that have remained within acceptable limits for many hundreds of hours.

In the photograph (on page 12), there is an example of delamination near the frame. This delamination was not what condemned the windshield; rather, the cracks running through and around the delaminated area were the culprits. The delaminated area was present before the cracks developed, and the windshield was acceptable until the cracks appeared. Also in the photos, you will see a fully fractured windshield – this is what happens when the inner pane decides to go.

## Windshield Failure – A Non-Event

In general, the windshields in a King Air are extremely durable and designed to last thousands of hours. Since they don't fail very often in the career of the average owner/operator, it can be very startling when it happens. But, as expert King Air pilot Tom Clements says, "A windshield failure in flight is a non-event in a King Air." The procedure to follow is right there in your POH. You might have to move from the left seat to the right and fly from there in order to see better; but other than that you should be good to go.

Fly safely, as always. KA

About the Author: Dean Benedict is a certified A&P, AI, and has almost 40 years of experience in King Air maintenance. He is president of Honest Air, Inc., which specializes in Beechcraft King Air maintenance and repair.

If there is a particular maintenance issue you would like Dean to address in a future issue, please email Editor Kim Blonigen at kblonigen@cox.net.



# Aviation Group Leaders Ask for Specific Contract Tower Funding, While Lawmakers Discuss Other Options for FAA Reform

by Kim Blonigen

n March 17, several aviation group leaders sent a letter to the House Appropriations Committee Chairman Hal Rogers (R-KY), Senate Appropriations Committee Chairman Thad Cochran (R-MS) and other related lawmakers, requesting dedicated funding for the Contract Tower Program.

The letter requests that under the "Operations" section of the Federal Aviation Administration (FAA) FY 2016 appropriations bill, specific wording be used and include "not less than \$153,400,000 shall be for the fully funded and cost-share towers in the contract tower program."

It states that the FAA Contract Tower Program has provided cost-effective and essential air traffic safety services since 1982, and currently 252 smaller airports in 46 states participate in the program. The 252 towers handle approximately 28 percent of all air traffic control tower (ATCT) aircraft operations in the United States, but only account for about 14 percent of the FAA's overall budget allotted to ATCT tower operations.

The letter also points out that all federal contract controllers are FAA-certified air traffic controllers who meet the same training and operating standards as FAAemployed controllers, and a majority of them are former FAA controllers or veterans with prior military air traffic control experience. The safety and efficiency record of the FAA Contract Tower Program has been validated numerous times by the DOT Inspector General, as well as by FAA safety audits.

The aviation group leaders also specify that the federal contract towers operate together with FAA-staffed facilities throughout the country as part of a unified national air traffic control system, and as a result, the FAA Contract Tower Program: (1) enhances aviation safety at smaller airports that otherwise would not have a tower; (2) provides significant cost savings to the FAA and taxpayers; (3) helps small airports with retaining and developing commercial air service and general aviation; (4) promotes economic development and creates jobs in local communities; (5) connects smaller airports and communities with the national air transportation system, and (6) consistently receives high marks for customer service from aviation users and pilots.

The aviation group leaders who signed the letter are J. Spencer Dickerson, executive director, U.S. Contract Tower Association; Faye Malarkey Black, interim president, Regional Airline Association; Thomas L. Hendricks, CEO and president, National Air Transportation Association; Ed Bolen, president and CEO, National Business Aviation Association; Greg Principato, president, National Association of State Aviation Officials; Kevin M. Burke, president and CEO, Airports Council International; Jennifer Imo, executive director, General Aviation Airport Council; Peter F. Dumont, president, Air Traffic Control Association and Stephen A. Alterman, president, Cargo Airline Association.

It's apparent that the letter was sent to avoid what happened in 2013, when the FAA threatened to close 149 federal contract towers in order to meet mandated budget-curtailment requirements under the federal budget sequestration. Aviation leaders were also active in efforts then to preserve the funding for the contract facilities and in mitigating the potential impact of tower closures on aviation operations.

The same day, speaking at the U.S. Chamber of Commerce's 14th annual Aviation Summit, U.S. House Transportation and Infrastructure Committee chairman Bill Shuster (R-Pa.) reiterated his vision of "transformative" change for the FAA, upholding private and/or non-profit air traffic management systems run by other countries as examples. In Shuster's vision, the new FAA reauthorization bill could create a new air traffic control structure, which would free up the FAA to return its focus to safety.

NBAA president and CEO Ed Bolen cautioned about this direction saying that the United States has the most complex and diverse system in the world, and other systems have led to access concerns. "These systems are typically paid through user fees, which require a costly bureaucracy to collect," Bolen said. "Any new system must be equitable, transparent and preserve general aviation access."

Airline executives at the summit pushed for a closer look at the international systems and key executives of air traffic management systems touted the benefits of their system. Their thoughts being that until ATC gets out from under the FAA, NextGen will continue to be stalled.



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# Ask the Expert Don't Lift the Power Leves in Flights by Tom Clements

o the best of my knowledge, all King Air Pilot's Operating Handbooks (POHs) have now been revised to include the following statement in the Limitations section:

Do not lift the power levers in flight. Lifting the power levers in flight, or moving the power levers in flight below the flight idle position, could result in a nosedown pitch and a descent rate leading to aircraft damage and injury to personnel.

That is rather straightforward, correct? Beta and Reverse are intended for use while on the ground, of course, not while flying. No pilot with a working brain would be so silly as to lift and pull back on the power levers while flying. Or would they?

Sadly, yes; some very misguided pilots do indeed intentionally select Beta while still flying. In almost every case this involves a model 200 with the standard. older, three-blade propellers. Those airplanes have a tendency to float in the flare for landing, especially if any excess airspeed exists, if the condition levers are not back at Low Idle, and if the pilot overdoes the flare and holds the plane off of the runway for too long of a time. In this situation, coming slightly behind the power lever's Idle gate causes the blade angle to go flatter, killing thrust, and causing the airplane to touchdown soon thereafter. Only in

the 200, with its relatively long body and T-tail, does this crazy technique work. In the 90- and 100-series, the conventional placement of the horizontal stabilizer down on the fuselage puts the elevators in a position where the airflow over them is decreased as blade angle flattens, making it virtually impossible to hold the nose up for a satisfying touchdown. (The T-tailed F90 is definitely *not* a floater and this illegal technique is never needed, even though the elevators could hold the nose up!)

But what if the flare was misjudged, too high? What if the pilot pulled back a little too far into Beta? What if one propeller responded much differently than the other one? All of these "what ifs" can lead to expensive bent metal as the airplane lands too harshly and/or touches down significantly misaligned with the direction of travel, leading to excessive landing gear side-loads.

Here's a sad, but true, story. One of the first 10 model 300s was damaged beyond economical repair during a factory training flight. The transitioning pilot reverted to this in-flight Beta selection technique out of the habit he'd developed while flying his company's previous King Air 200. What he failed to realize – and what the factory instructor could not save in time – was that the 300, unlike the 200, has both a Ground and a Flight Low Pitch Stop (LPS) and the simple action of picking the power levers straight up – not even pulling them aft –

makes the LPS flatten by about 12 degrees! Wham! The airplane basically fell out the sky and hit so hard that, among other damage, all eight propeller blade tips were bent back when the engine mounts sagging so much that the blades made ground contact! You never, ever, want to do this horrid procedure while landing a 300 or 350!

What if we are not landing though? What if there's a fire in the cabin that we cannot extinguish, we are doing the correct emergency descent procedure, yet we want to get down even faster? Couldn't we use some Beta now to get more drag, yet of course return to normal operation long before we hit mother earth? (Before continuing with the next paragraph, give yourself a little mental pop quiz. Would or would not this procedure help in obtaining a greater rate of descent?)

You're wasting effort doing this and all you will possibly achieve is a badly mis-adjusted Low Pitch Stop setting.

I often state, "A pilot cannot *force* the propeller to reverse, he can only *allow* it to reverse." Beta and Reverse are achieved simply because the power lever controls the position of the LPS. You can move the LPS, yes, but will the blade angle follow that moving LPS?

It all depends on whether power and airspeed are both sufficiently low that propeller speed has decreased, and fallen below the selected propeller governor's value.



Expressed in the more often-used terminology, Beta and Reverse can only happen when we are "off of the governor" or in an "under-speed condition."

And, the easy-turning, free-turbine-driven propeller on a PT6 turns very easily, meaning that it takes very little airspeed or power to spin the propellers up to governing speed. Once the RPM becomes constant, the blade angle is now being controlled by the governor and is at some angle greater than the LPS angle. If we are no longer on the LPS, it makes no difference where it is.

The emergency descent procedure calls for using the landing gear extended speed limit as the proper airspeed. This varies from 156 knots to as high as about 180 knots, depending on the exact King Air model. Even with Idle power – also specified in the procedure – the propellers will still be solidly holding their maximum governing speed – and you'll have the governor set for its maximum speed since the procedure also calls for prop levers being moved fully forward. In other words, you will be operating "on the governor," not on the LPS, not in an underspeed condition, so moving the LPS back to flatter blade angles achieves absolutely nothing.

Two interesting notes: First, when I was a wetbehind-the-ears newbie instructor at the Beech factory and hadn't learned enough to know better, one of the



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© 2015 Textron Aviation Inc. McCauley's logo and McCauley-Blackmac are registered trademarks of Textron Innovations Inc., used by permission. King Air is a registered trademark of Beechcraft Corporation. old-timers there regaled some of us with his "war story" about trying out maximum reverse in a King Air dive, and how the airplane pitched over almost straight down and was virtually uncontrollable until he moved the power levers back forward. Now I realize it was a story told to show how macho he was, but all it really proved was what a liar he was. Second, recall the placard on your King Air's power quadrant, "Caution: Reverse only with engines running." If you try to enter deep Beta or Reverse while sitting in the hangar or on the ramp with the engines not running, of course the propeller blades will be in the feathered position. That's as far away from the LPS as they can get. If you now try to move the LPS, it cannot happen. Resistance on the lever's cable will be felt and if some very strong and very dumb pilot continued to pull back, the cable could be stretched to the point that the whole LPS mechanism takes a real beating and gets badly out-of-whack.

Imagine standing outside of a closed, hinged door to a room. The door swings inward toward you. Grab the handle, pull, and the door opens. Now imagine that the door is already wide open, jutting out 90 degrees from the wall. Now grab the handle and pull. Nothing happens. The door is already at its widest open position and all you will feel is stiffness in your muscles as you pull, but the door does not move.

That's a silly, but somewhat proper, analogy about what takes place if you select Beta and Reverse with the propellers not on the Low Pitch Stops ... you're trying to open a valve that is already open!

So to summarize, if we pick up the power levers and pull aft during an emergency descent, all we will get is resistance on the levers, possible LPS mis-rigging, and no extra drag.

Let me relate one more story from my Beechcraft factory training days, and this one isn't a lie. In about 1974, I was giving transition training to a pilot who had been flying a King Air A90 that his company had replaced with a new C90. A part of our flight training syllabus was to give a real engine failure during a two-engine balked landing exercise. Needless to say, we had a rule to do all real engine shutdowns at or above 5,000 feet AGL. Typically, we would start a "make believe" landing pattern at 8,000 feet or so, and end up with gear down, full flaps, and landing speed all set no lower than 6,000 feet. As the instructor yelled, "Deer on the runway! Go around," he would pull one condition lever to fuel cutoff. The whole intent of this exercise was to show that the procedure absolutely could not be accomplished without losing significant altitude; that full flaps and one engine, near the ground, was a commitment to land. If the pilot tried to hold altitude, speed would quickly be lost, getting us even further from VYSE and definitely close to VMCA.





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This particular day, my transitioning student had been doing an excellent job, as would be expected with his previous A90 time. We had briefed this maneuver and he totally knew what to expect. I made the "Go Around" call and pulled the left condition lever back to the fuel cut-off position. He began executing the procedure perfectly: Power went to the proper ITT or Torque limit, the propeller levers were smoothly advanced full forward, the flaps came up, the gear came up, and all the while he managed to obtain and hold VYSE very nicely, as well as heading. This older C90 did not have the optional autofeather system, so now came the "Identity, Verify, and Feather" steps.

He said aloud, "Left foot is dead," and pointed at the low reading on the left torque gauge. He then slowly and carefully pulled the left power lever back to Idle to verify that no sound or thrust change occurred. The landing gear warning horn was triggered by this action and he even reached for the button and silenced it! Only one thing remained, feathering. He brought his hand off of the silence button back to the power quadrant, grabbed the left power lever – the one he'd just brought to Idle - picked it up, and pulled it all the way back to Maximum Reverse!

If there'd been a video of my face, you'd be surprised how wide my eyes could open! And if there had been audio, you'd know that I am not averse to letting certain expletives leave my lips!

The airplane seemed to pivot around that left propeller as we turned about 90 degrees left and found ourselves in what seemed to be a straight-down pitch attitude ... although I doubt it was much more than 20 degrees, if even that. I pulled power back on the right engine and pushed the left power lever forward over the Idle gate. Control was immediately regained so we eased out of the dive, added power on the right engine, leveled off, and got our heart out of our throats and back in to our chests. In this situation, with slow airspeed and no power whatsoever, the left propeller had definitely reached an underspeed condition, resting solidly on its Low Pitch Stop. So when the LPS was moved to Reverse, the blades followed! Of course, without any fuel, we never added power as would normally happen when one leaves Beta and enters Reverse, but we certainly had a negative blade angle and all the extra drag that comes with it.

I looked over at my student and asked the obvious, "Why did you do that?!"

His answer was, and is, very interesting. He was feeling very embarrassed and stupid. His answer? "I did it because I saw the red and white stripes for Reverse and thought they were the red and white stripes for Feather."

This early C90 – like more than half of all King Airs still flying today – did not have the Ground Fine power lever stop that came in later years. The only separation between Beta and Reverse is shown by the stripes being painted on the power quadrant. There was certainly no intention on his part to lift the power levers in flight nor to pull them back into Reverse ... but it certainly happened due to his error in selecting the correct lever for feathering.

As I keep saying, y'all be careful out there!

About the Author: King Air expert Tom Clements has been flying and instructing in King Airs for over 43 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.

# Flight of the "Waikiki Beech"

In 1949, William Odom flew a Model 35 *"Bonansa"* nonstop from Hawaii to New Jersey, setting two world records for light aircraft, as well as demonstrating the reliability of Beechcraft's single-engine flagship.

### by Edward H. Phillips

harles Lindbergh, Wiley Post, Sir Frank Kingston-Smith, Amelia Earhart – names that have earned a special place in aviation history for their longdistance flights. Lindbergh was first to fly solo, nonstop from New York to Paris, France; Post flew around the world not once but twice, the second time solo; Kingston-Smith blazed the first sky trail from England to Australia, and the lanky, shy woman from Kansas captured the hearts of America and the world with her daring flights, the last beset by a mystery that is yet to be solved.

These and many other pilots, both male and female, made headlines in the late 1920s and throughout the 1930s as the airplane revolutionized travel between distant places. Even such remote regions as the frigid and inhospitable Arctic and Antarctic had been conquered by air, and the vast Pacific Ocean between America and China had been traversed by Juan Trippe and his fleet of Sikorsky and Boeing "Clippers." By 1940, there were few potential record-setting challenges remaining to long-distance fliers, and World War II had put an end to almost all civilian flying for five years. In the wake of the war, however, public interest in aviation remained high. Airline service in the United States expanded significantly, and air travel across the Atlantic Ocean between New York, London and Paris was increasingly becoming commonplace.

Onto this stage stepped a young pilot named William "Bill" Odom. Born in Oklahoma but raised in Missouri, Odom helped fight the war by ferrying bombers from America to England, and later flew transports above the infamous and deadly "hump" from India to China, delivering much-needed supplies to the fighting men on the ground. Bill's record-setting achievements began after the war when he flew a Douglas A-26 *Invader*, named "The Reynolds Bombshell," around the world in 78 hours, smashing the mark set in 1933 by Wiley Post flying the famous Lockheed monoplane, "Winnie Mae." One year later, Odom followed up that feat by circling the globe flying the same A-26 solo in less than 73 hours.

Confident of his cumulative abilities as an airman as well as a navigator, by 1948 Odom was contemplating a nonstop flight from Hawaii to the United States,

Introduced in 1947, the four-place Beechcraft Model 35 was not the only all-metal, general aviation airplane to emerge in the postwar era, but it quickly established itself as the most advanced single-engine, light airplane on the market. Its combination of cabin comfort, speed and economy were unmatched by its competitors. (EDWARD H. PHILLIPS COLLECTION AND TEXTRON AVIATION)



## Record-Setting Beechcrafts: 1949-1979

The following is only a sampling of important speed and distance records captured by Beechcraft airplanes during a 30-year period.

**1949:** Captain William Odom, Beechcraft *Bonanza* A35; Honolulu-Oakland, 2,406.9 miles in 22 hours, six minutes.

**1949:** Captain William Odom, Beechcraft *Bonanza* A35; Honolulu-Teterboro, New Jersey, 4,957 miles in 36 hours, two minutes.

**1952:** Paul Burniat, Brussels, Belgium; world speed record of 225.7 kilometers per hour, Beechcraft *Bonanza*.

**1953:** Mrs. Marion Hart, nonstop Newfoundland-Ireland, Beechcraft *Bonanza*.

**1958:** Pat Boling, world record for nonstop flight in a light airplane; Manila, Philippines-Pendleton, Oregon; 7,090 miles in 45 hours, 43 minutes; Beechcraft *Bonanza* J35.

**1960:** James D. Webber; world altitude record of 34,862 feet, Beechcraft Model 65 *Queen Air*.

**1966:** Robert and Joan Wallick; round-the-world record for piston-powered aircraft; 23,629 miles in five days, six hours, 17 minutes, 10 seconds; Beechcraft C55 *Baron*.

**1971:** Travor K. Broughan and R.N. Dickeson; around-theworld record for piston-powered aircraft; 24,800 miles in five days, five hours, 57 minutes; Beechcraft B55 *Baron*.

but he needed an airplane that was up to the challenge. He found it in the Beechcraft Model 35. Developed during 1944 and 1945, the all-metal *Bonanza* was a major step forward in postwar light airplane design and replaced the aging but classic, steel tube and fabriccovered Model 17 cabin biplane.

The Model 35 first flew on December 22, 1945, with Beechcraft engineering test pilot Vern Carstens at the controls. The airplane quickly earned an Approved Type Certificate from the federal government and initial deliveries to customers began in 1947. By the time Odom was preparing for his flight, more than 1,900 Bonanzas were flying not only in America, but in Europe, India and many other countries. The Model 35 selected for Odom's flight bore serial number D-4 and was among the very first Bonanzas built by the Beech Aircraft Corporation. During the three previous years, it had served the company well as an experimental engineering platform and had been flown (unmanned and under radio-control) through a series of high-speed dives that approached 300 mph, followed by high-G pullouts.

The Beech Aircraft Corporation sponsored both the first and second flights made by Odom. Walter and Olive Ann Beech not only supported Bill's plans, they also threw the weight of Beech Aircraft's technical expertise behind the project. The only major change made to the **1971:** Louise Sacchi; speed record for Class C-1.d Group 1 aircraft; New York-London, 3,443.5 miles in 17 hours, 22 minutes, 54 seconds; average speed: 198.8 mph; Beechcraft *Bonanza* A36.

**1975:** Denys Dalton and Terry Gwynn-Jones; aroundthe-world record for piston-powered aircraft; 24,854 miles in five days, two hours, 15 minutes; Beechcraft Model 60 *Duke*.

**1977:** Jack Rodd and Harold Benham; shortest elapsed time around the world in a single-engine aircraft; 10 days, 23 hours, 33 minutes; Beechcraft *Bonanza* S35.

**1977:** Dieter Schmitt; 4,300 miles nonstop, New York City-Munich, Germany, in 25 hours, 48 minutes; Beechcraft *Bonanza* F33A.

**1978:** F.T. Elliott, Jr., Thomas Clements; three speed records over a recognized course; 233.2 and 206.2; distance in a straight line, 2,033.9 miles, San Francisco-Poughkeepsie, New York; Beechcraft *King Air* C90.

**1979:** Marie McMillan; world speed record for National Aeronautics Association Class C1c aircraft; Fresno, California-Las Vegas, Nevada; Beechcraft *Bonanza* F33A.

**1979:** Jeanette Fowler; world speed record; Sacramento, California-Los Angeles; 220 mph, Beecheraft *Bonanza* A36.

airframe was installation of a Continental six-cylinder, E-185 engine that was standard equipment in the current production Model A35. In addition, special fuel and oil tanks were installed that held 288 gallons and 7.5 gallons, respectively. The aft cabin seats were removed and replaced with fuel cells that held 126 gallons, and wing tip tanks each contained 62 gallons.<sup>1</sup>

In 1949, the record for light airplanes in the Model 35's weight category (aircraft weighing 2,204.7 to 3,858 pounds) had been held by Russian pilots Goussarov and Glebov since 1937. In September of that year, they flew a Moskalev monoplane powered by a 100-hp M-11 engine an official distance of 2,061.7 miles, from Moscow to Krasnoyarsk. Odom, however, was aiming to break not only that record but also exceed the mark for nonstop miles flown by a light airplane established in 1938 by German aviators Horat Pulkowski and Lieutenant Jenett flying an Arado AR 79. They covered a distance of more than 3,917 miles from Bengasi, Libya, to Gaya, India.

In January 1949, Odom was ready to make his assault on both records. The Model 35 was disassembled and shipped from Oakland, Calif., to Honolulu, Territory of Hawaii, via a Douglas DC-4 freighter operated by Pan American Airways. After the airplane had been assembled and given a series of test flights, Bill and his trusty Bonanza were ready for takeoff. Their destination



was Teterboro, N.J. – more than 6,000 statute miles to the east. Ahead of them lay nearly 3,000 miles of the vast Pacific followed by another 3,000 miles of American soil. On January 12, Odom taxied into position on Runway 8 at Hickam Field. The takeoff was uneventful, and good weather made the long, eastward traverse of the Pacific relatively easy.

Unfortunately, after crossing the West Coast and penetrating well inland, he encountered severe weather William Odom and the famous "Waikiki Beech" posed for the camera after their record-breaking flight from Hawaii to New Jersey in March 1949. The Model 35 Bonanza eventually was donated to the Smithsonian Institution and as of 2015, was on permanent display at the National Air and Space Museum's F. Steven Udvar Hazy Center at Dulles International Airport near Washington, D.C. (Edward H. PHILLIPS COLLECTION AND TEXTRON AVIATION)

near Reno, Nev. Unable to circumnavigate the storms, and after carefully considering fuel consumption, Bill made a 180-degree turn and landed at Oakland 22 hours and six minutes after leaving Hickam Field. He had

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As was Bill Odom's flight, Captain Pat Boling's journey across the Pacific Ocean in 1958 was sponsored by the Beech Aircraft Corporation. Boling flew the Beechcraft J-35 "Philippine Bonanza" nonstop from Manila, Philippines, to Pendleton, Ore., setting a world record and easily exceeding Odom's flight of eight years before. In 1960, the Bonanza and its next pilot, Peter Gluckmann, were lost at sea while attempting to fly nonstop from Tokyo to the United States. (EDWARD H. PHILLIPS COLLECTION AND TEXTRON AVIATION)

failed to reach New Jersey, but he had achieved one of his goals – he took the record away from the Russians. In addition, the flight marked the first crossing from Hawaii to the U.S. mainland by a light airplane. The Bonanza had flown a great circle distance of 2,406 miles although total distance in the air was 2,900 miles.

Undaunted, Odom began preparations for a second attempt to reach Teterboro from Hawaii. Two months later at 12:04 a.m. (Honolulu time) on March 6, the Model 35, dubbed "Waikiki Beech," took off again from Runway 8 at Hickam Field after a takeoff run of only 2,400 feet. The airplane weighed 3,858 pounds (compared to 2,650 pounds for a stock A35) with full fuel and oil tanks. Despite a nearly 50 percent increase in maximum gross weight, the *Waikiki Beech* managed to climb at 400 feet per minute and was soon cruising comfortably above the Pacific. Accompanying the Beechcraft for the first 900 miles was a Boeing B-17 air/sea rescue aircraft operated by the Hawaiian Sea Frontier, conducting a part of its normal patrol route.

More than nine hours later, Odom reported by radio that he was overflying the weather ship "Red Head Fox," but he soon learned from radio contact with San Francisco that rough weather lie ahead on his route. As a result, Bill detoured 100 miles south, but as he skirted around the southern edge of the storms had to revert to instrument flying for about one hour. Eventually, he cleared the worst weather and continued eastward toward the West Coast, 450 miles away. Soon after he was joined by a U.S. Coast Guard Martin PBM that rode "shotgun" on the Beechcraft until it flew over San Francisco's famous Golden Gate Bridge at 4:51 p.m., Eastern Standard Time.

The hardest and most dangerous phase of the flight was history. The 2,474 miles across open ocean had been navigated in slightly more than 16 hours. During that time, the E-185 engine had consumed 128 of the 288 gallons on board, leaving 160 gallons of avgas available to reach New Jersey. As the flight progressed eastward over the Sierra Mountains, Odom was forced to change course well to the north to avoid more storms. The detour took him over northern California into Oregon, then into Idaho, but the storms were one step ahead of the *Waikiki Beech*. Odom strapped on his oxygen mask, went on instruments and climbed the Beechcraft to 16,000 feet. Finally, after a busy night dealing with bad weather, Odom and the monoplane emerged over Nebraska in the early morning hours.

As the sun rose in the eastern sky, the long trek was drawing ever closer to its destination. Fortunately, the weather cooperated and the remaining hours went by

without incident as Bill looked down on Omaha, Des Moines, Iowa; Moline, Ill.; Chicago, Toledo, Ohio, and Cleveland. Then, at 12:06 p.m. on March 7, the Bonanza and its pilot landed safely at Teterboro. Total flight time had been 36 hours, two minutes, and Odom's careful fuel management resulted in about 16 gallons of fuel remaining – an amount sufficient to fly another 370 miles. Total cost for fuel and oil: \$75. The second flight of Bill Odom and the Waikiki Beech succeeded not only in establishing two world records, but came within a mere 191 miles of equaling a record for the longest single flight between refueling of 5,464 miles set by a U.S. Air Force B-50 bomber during a nonstop, around-the-world flight completed earlier in 1949.

During the long journey from Hawaii to New Jersey, both man and machine had performed flawlessly. After the flight, Beech chief engineer Theodore "Ted" Wells calculated that if a Model A35 was stripped of all unnecessary weight and stuffed with fuel and oil tanks, the airplane would be capable of flying more than 8,000 statute miles nonstop. When asked what the flight had achieved, Odom responded, "We set out to prove the efficiency and economy of Beechcrafts by breaking the nonstop distance record."<sup>2</sup>

The prestigious New York Times reinforced Odom's comments: "Qualities of dependability have been so well developed in the airplane Odom flew that it is now in daily use by scores of large businesses, to speed and simplify the coming and goings of their respective staffs. The world record is abundant proof that the light plane and its power plant have reached full stature." Although the record was impressive by standards of the day, the era of long-distance, recordsetting flights and the ensuing public enthusiasm for them was drawing to a close. The advent of the jet engine and its application to advanced aircraft designs during the 1950s and 1960s gradually brought the world much closer together, overshadowing the role of the light airplane. In 2015, a nonstop flight from Hawaii to New Jersey by a pilot flying a Bonanza would be ignored by all except the aviation press that would at least acknowledge it.

As for Bill Odom and the Waikiki Beech, in the wake of their epic accomplishment, the pilot and his trusty Beechcraft toured the nation and received the honor and acclaim they so well deserved. Later, the airplane was placed on display in the Smithsonian Institution until 1951 when it was removed and prepared for use by Congressman Peter F. Mack, Jr. Renamed the "Friendship Flame," the airplane was flown by Mack on an around-the-world, goodwill tour that covered 33,000 miles in 113 days and visiting 45 cities in 35 countries.<sup>3</sup>

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Only six months after his record-setting flight, Bill Odom was killed in the crash of a North American P-51C Mustang named "Beguine" that had been custom-built for air racing events. Although a respected and highly competent pilot, Odom had relatively little experience in air racing. On the second lap of the 1949 Thompson Trophy race, he had flown Beguine into third place and was gradually catching up with the second- and first-place airplanes, both Goodyear F2G Corsair IVs. According to an eye-witness observation by none other than famed pilot Bob Hoover, Odom realized that he was about to fly inside the second pylon and rolled the airplane rapidly to the right in an attempt to avoid cutting the marker. The Mustang continued to roll and struck the ground at a 45-degree angle, killing Odom instantly.<sup>4</sup>

Perhaps the best testimony to William Odom and the *Waikiki Beech* was spoken by aviation pioneer Glenn L. Martin: "Testifying in the most effective manner possible to the ability of the American aviation industry to produce an aircraft and ideas of dramatic character, I invite your attention to the recent feat of Captain Bill Odom in accomplishing the greatest nonstop flight while using a Beechcraft Bonanza."

Beech Aircraft Corporation's final involvement in long-distance flights occurred in 1958 when Pat Boling flew a Beechcraft Model J-35 named the "Philippine Bonanza" nonstop from the Philippine capital of Manila, to Pendleton, Ore., on July 31-August 1. The J-35 was equipped with the wingtip tanks removed from the *Waikiki Beech* as well as two 31-gallon auxiliary fuel tanks and three additional tanks installed in the fuselage that were interconnected. To accommodate the auxiliary tanks, the wing structure was modified to accept wing sections from a Model 95 *Travel Air* light twin-engine Beechcraft. Total fuel capacity was 402 gallons. In addition, an auxiliary five-gallon oil tank was installed.

A number of novel devices were included in the J-35's special equipment list: an autopilot, warning horns that would sound every hour or anytime the airplane deviated from a preset altitude or airspeed; HF radio set, an electric shaver that was powered from the cigarette lighter, a coffee percolator, and a vibrating pillow for the pilot seat. Boling flew the Beechcraft a distance of 7,090 statute miles, and the great circle route was 6,856 miles. Of that distance, 6,555 miles were flown over water compared with only 535 over land. Total flight time was 45.4 hours. Boling landed with only 11 gallons of fuel remaining – the 250-hp Continental IO-470C powerplant burned 391 gallons during the flight at an average rate of 8.55 gallons per hour.

In 1960, an attempt was made to break Boling's record. Peter Gluckmann, who had significant experience flying an older Model 35 on long-distance

flights, offered to buy the *Philippine Bonanza* for his proposed trek across the Pacific. Beech Aircraft officials declined to sponsor Gluckmann but sold him the airplane, including all the fuel and oil tanks but less the IO-470C engine. He installed a 260-hp Continental that was modified to operate at 2,800 rpm and 275 horsepower for takeoff. When fueled and fully prepared for the flight (including Gluckmann's weight), the airplane tipped the scales at a staggering 6,020 pounds – far above the J-35's standard maximum takeoff weight of 2,900 pounds. One Beech engineer calculated that the Bonanza's initial rate of climb (landing gear retracted) would be zero! <sup>5</sup>

To give the heavily-laden Beechcraft a boost on takeoff, two Aero-Jet General, Jet-Assisted Take off (JATO) bottles would be used but only one was eventually installed. The J-35 was airborne after rolling 6,000 feet down the 8,350-foot long runway before Gluckmann ignited the JATO bottle. Sixteen hours into flight he was forced to land at Tokyo because of severe weather along the intended route. On April 27, Gluckmann and the Philippine Bonanza departed Tokyo (without JATO) and headed eastward toward Midway Island. The J-35 carried sufficient fuel for about 60 hours of flying. According to Bonanza historian Larry Ball, Gluckmann intended to reach the United States and fly inland as far as possible before landing. About eight hours after departing Tokyo, he made radio contact with a U.S. Coast Guard ship patrolling between Japan and Midway. It was the last report received from the pilot. Peter Gluckmann and his Bonanza never made it to America. What happened remains a mystery, but during the next few days it became clear that both man and machine had disappeared somewhere over the vast Pacific Ocean. 6 KA

#### NOTES:

- 1. Ball, Larry; *"Those Incomparable Bonanzas;"* McCormick-Armstrong Co., Inc., Wichita, Kansas; 1971.
- 2. Ibid.
- 3. McDaniel, William H.; "*The History of Beech*;" McCormick-Armstrong Co., Inc., Wichita, Kansas, 1971.
- 4. Tegler, John: "Gentlemen, You have A Race;" Wings Publishing Company, Severna Park, Maryland, 1984. In addition to Odom, a mother in a house and her child playing in the yard were killed when the Mustang crashed on their property.
- 5. Ball, Larry; "Those Incomparable Bonanzas;" McCormick-Armstrong Co., Inc., Wichita, Kansas, 1971.
- 6. Ibid

About the Author: 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.

# MT-Propeller Receives FAA STC for Five-Blade Composite Propeller for Select King Airs

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## Aero/Mechanical Technologies Offers Superior Tie-Down Kit

One of the unique qualities of the King Air is its ability to fly in to remote airports, where sometimes there isn't much in aircraft service and support. If a King Air owner/ operator would find themselves in a situation where they would have to tie-down their aircraft, Aero/ Mechanical Technologies, Inc. has created angled rings and tail skids out of stainless steel which it says is far stronger than the OEM standard parts. The company estimates their parts on a King Air can hold up to 170 mph wind speeds, eight to ten times that estimated for the standard rings.

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For more information, go to their website at www.aeromechtech.com.

## Raisbeck Engineering Expands Authorized Dealer Network in Arizona

Raisbeck Engineering announced its official partnership with Executive Aircraft Maintenance (EAM) in Scottsdale, Ariz. as the newest Raisbeck Authorized Dealer. Executive Aircraft Maintenance will be authorized to install all of Raisbeck's Performance Systems on the Beechcraft King Air fleet.

EAM provides general aviation services to regional airlines, corporate, ag/utility and military organizations. They offer engine, avionics, and airframe coverage for piston, turboprop, and turbofanpowered aircraft and have multiple facilities in Arizona, including Scottsdale, Phoenix, and Glendale.

For more information about Raisbeck Engineering and Executive Aircraft Maintenance, please visit www.raisbeck.com and www. eamaz.com.





### RECENT SERVICE BULLETINS, ADVISORY DIRECTIVES AND SAFETY COMMUNICATIONS

#### From Model Communiqué # KA-2015-01 issued in March 2015:

### ATA 27 – Lower Rudder Attach Bolt Bent

#### F-90; 200 Series; 300 Series, B300 Series

Beechcraft has received a few reports of a bent attachment bolt at the rudder horn assembly (P/N 101-524059-1) and the lower rudder hinge (P/N 101-524063-1). The part number of this bolt is AN175-20A. This condition was found after inspection of airplanes that had been subject to jet blast while parked or left out in heavy winds without the rudder (control or gust) lock assembly installed. The reports noted a "squeaking" sound when moving the rudder from stop to stop during inspection.

Unfortunately, this bolt is not visible when the rudder is removed, so extra effort is required to gain access to the bolt. Bolt inspection is recommended any time the rudder is removed. number airplanes listed. The part number of the kit is 101-3601-0001. Each light bulb is sold separately. The part numbers of the light bulbs are:

Landing light bulb: 01-1030-LA, two required.

Taxi light bulb: 01-1030-LB, one required.

This kit is available through Beechcraft Authorized Service Centers or may be obtained directly from Hawker Beechcraft Parts and Distribution.

# Service Bulletins

There have been no Service Bulletins issued since the last issue of *King Air* magazine.

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



### Pilots N Paws<sup>®</sup> is an online meeting place for pilots and other volunteers

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1st Source Bank	Cover 3
Aero-Tow LLC	11
AVCON Industries	13
B/E Aerospace	19
Banyan Air Service	
BLR Aerospace	25
Cleveland Wheel & Brake	
Elliott Aviation	Cover 2
Garmin International	Cover 4
Gill Battery	22
Hillaero Modification Center	
Luma Technologies LLC	13
McCauley Propeller	20
MORE	11
Murmer Aircraft Services	11
Paul Bowen	32
Pilots N Paws	
Precision Avionics Group	15
Raisbeck Engineering	16, 17
Rapco	
Rockwell Collins	5,6,7
Select Airparts	29
Shaw-Aerox LLC	
Silverhawk Aviation	12
Textron Aviation	20
Trace Aviation	8
West Coast Aircraft Sales	21
Winner Avition Inc.	4



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