King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

JULY 2015 • VOLUME 9, NUMBER 7 • $4.50

Royal Upgrade

New Production King Airs Get Avionics and Interior Update

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COVER PHOTO
Photo courtesy of
Textron Aviation

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Making the Even

New Production King Airs Get State-of-the-Art Avionics and Upgraded Cabin Features

Beechcraft Corporation recently announced that new production King Air turboprops will soon feature the Rockwell Collins Pro Line Fusion avionics system as standard equipment. As a further investment in the popular King Air aircraft line, the company is also upgrading the aircrafts' cabin features.

Advanced Avionics

Pro Line Fusion for the King Air features commercial aviation's first full touchscreen capability on all three main flight displays. The touchscreens bring pilots intuitive interactive maps, easy-to-use icons, and the ability to simply touch the items that they want to control.

According to Rockwell Collins, specific features of the Pro Line Fusion avionics feature:

- Three 14-inch widescreen LCDs with advanced graphics, configurable windows, and touchscreen or point-and-click navigation
- Synthetic vision as a standard feature, including Rockwell Collins' patented airport dome, and extended runway centerlines with mile markers to better orient the pilot from top of descent through final approach
- Touch-interactive maps with eyes-forward flight planning, high-resolution topography, real-time onboard weather radar overlays, obstacles, and

BEST BETTER

by Kim Blonigen

The Pro Line Fusion offers a flight deck with three 14-inch displays that are interchangeable, high-resolution touchscreen and cursor-controlled.

special-use airspace and search patterns for expanded situational awareness and reduced workload

- A fully loaded package of baseline equipment for operation in modernizing global airspace: DO-260B compliant ADS-B, SBAS-capable GNSS, localizer performance with vertical guidance (LPV) approaches, radius-to-fix (RF) legs and more
- Baseline geo-referenced electronic navigation charts that display own-ship aircraft position for enhanced situational awareness during approaches
- Easy and fast database updates using a standard USB drive port on the front of the displays, or the optional Aircraft Information Manager wireless data loading service
- Selectable video windows on the displays for viewing inputs from Enhanced Vision System (EVS) or other external cameras.
- Open and scalable architecture for future upgrades and mandates

In-service King Air aircraft with Pro Line 21 avionics can benefit from this enhancement as well; the avionics can be upgraded to the Pro Line Fusion touchscreen displays through Textron Aviation's company-owned service centers. Pro Line Fusion upgrades for earlier King Airs equipped with Pro Line II are also nearing certification and will be available through Rockwell Collins-authorized dealers worldwide.

Initial and recurrent pilot training for the Pro Line Fusion King Airs will be available at TRU Simulation + Training's new ProFlight training center near Tampa, Florida. It will also offer training for learning the new offerings of the Pro Line Fusion avionics that earlier Pro Line avionics don't have.

Upgraded Cabin Features

The King Air cabin is also getting enhanced, which Beechcraft says "will offer an improved and connected passenger experience." International or domestic Wi-Fi

The touchscreens bring pilots intuitive interactive maps, easy-to-use icons, and the ability to simply touch the items that they want to control.

Also standard on all three new production King Air models will be electronically dimmable window shades.

will be standard on the King Air 350i and 250 models and available as an option for the King Air C90GTx. This will allow passengers to use their personal devices in real time. Also standard on all three models will be electronically dimmable window shades, offering a simple interface that provides clearer views and darker shading at the touch of a button.

According to Beechcraft, the King Air 250 will be the first model available with the modernized upgrades; certification and initial deliveries are expected in the third quarter of this year. The 350i/ER will follow with certification also projected for third quarter, and deliveries to begin during the fourth quarter of this year. Certification and deliveries for the King Air C90GTx are pegged for the second quarter of 2016. KA

Editor's Note: If your current budget doesn't allow for a new King Air but may be able to upgrade your avionics, the following pages will discuss what options King Air owners/operators have.

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Current Avionics Retrofit Options for King Airs

by Mark Wilken

When talking about King Air avionics retrofits, it is important to understand the difference between integrated and non-integrated systems. An integrated avionics retrofit is a system that is operating off of all its components in a similar generation. These components are all made to work together as a group. This includes a new autopilot system.

A non-integrated avionics package is a system that has newer components working with older ones. Think of trying to hook up an old Atari with a new smart TV. You can probably find the right parts to make it work, but your system is only as good as the weakest link. The reason non-integrated systems exist is that it is very expensive to engineer and certify a new autopilot system and, depending on your mission and intended use for the aircraft, a fully integrated system upgrade may not make sense for you.

I often get asked by aircraft owners, "What is the best option for me?" I like to stress that they should do their research and reach out to experts that are indifferent to the avionics manufacturers and make sure that they are a highly reputable shop that works on a lot of King Airs. For instance, someone who does a lot of piston work might not have the best information and may pass along what they're comfortable with and not what is best for the King Air customer. In addition, find someone who will be unbiased and will educate you on the pros and cons of each system. While a lot of these systems may look similar on the surface as they market the same types of features (synthetic vision, flat-panel displays, etc.), it is important to talk in-depth with your King Air service center representative to fully understand what you are buying. A reputable shop is going to educate you so you are truly knowledgeable about your purchase. Their end goal should be that they can call you five years later and there is no buyers' remorse because you truly understood what you purchased.

Because of the amount of King Air model changes, it's hard to offer a "one-size-fits-all" solution. For example, if you have a cockpit that has Collins Pro Line 21 avionics (2004 or later), your upgrade paths can be completely different than one that is built just one year earlier. That being said, let's get into what the solutions from each avionics manufacturer are and to what models of King Air they apply.

BendixKing

BendixKing is currently working on certifying their AeroVue system. It is targeted toward King Air 200 and B200 models, and is similar to the Honeywell Apex which is currently installed in Pilatus PC-12 aircraft. The AeroVue system will be integrated, completely replacing your old avionics package including the autopilot. It will have synthetic vision, WAAS/LPV, three 12-inch LCD displays and ADS-B compliance. As the system is not currently certified, pricing and many other details are still unknown.

Garmin

Garmin has a couple of options for King Air operators. Their non-integrated offering is the G600/GTN panel-mount avionics system. It includes synthetic vision, charts, weather and an ADS-B solution. It is available for the King Air 90 series, not including the Pro Line 21 aircraft, several in the 200 series and the B200. Keep in mind that if you are considering this solution, it is very specific to the autopilot in the airplane. For instance, a King Air 200 with an APS-80 autopilot could not consider the modification while a King Air 200 with a Sperry SPZ200 could. The G600/GTN system should take about six weeks to install and cost between $200,000 and $250,000.

Garmin's fully integrated system, the G1000 (pictured on page 8), is available for the King Air C90, 200, B200, 300 and 350 models. The system offers synthetic vision, WAAS/LPV, charts, weather, safe taxi, XM radio, ADS-B solutions, a 15-inch multi-function display and two 10-inch primary flight displays. A G1000 installation should take 15 working days and have an approximate baseline cost between $325,000 and $375,000.

The Garmin non-integrated G600/GTN panel-mount avionics system.

Garmin's integrated avionics system, the G1000.

Rockwell Collins

Rockwell Collins has a few options for King Air owners/operators depending on what you presently have. If you are currently operating a Collins Pro Line 21 system, they offer several updates and enhancements like ADS-B, Datalink weather, charts and many other updates if you don't currently have them. Pricing varies depending on the number and scope of the updates needed.

One upcoming solution for existing Pro Line 21 cockpits and new production King Airs is the Pro Line Fusion, which features commercial aviation's first touchscreen PFDs, and was just announced as becoming standard on all new production King Air 350i/ER, 250 and C90GTx models. It is still being integrated into production and will start with the King Air 250 later this year. Rockwell Collins is also offering a retrofit option on the existing Pro Line 21 King Airs to provide the Pro Line Fusion, which would give operators an integrated upgrade solution.

If you don't have Pro Line 21, but have Collins Pro Line II in a King Air 350, you can upgrade to Pro Line Fusion. Pro Line Fusion in a Pro Line II-equipped King Air 350 includes three new 14" touchscreen displays (that eliminates the CRT obsolescence problem), new GPS navigator with WAAS/LPV, synthetic vision, charts, weather and ADS-B compliance. This non-integrated upgrade retains the current autopilot, nav, comms, audio system and weather radar. This system is still under certification and final pricing has not been

Rockwell Collins' Pro Line 21 avionics is a fully integrated system.

released, but is expected to be comparable to the non-integrated Garmin G600/GTN upgrade.

The final option for King Airs from Rockwell Collins is the fully integrated Pro Line 21 upgrade. This is available for the King Air B200, 300 and 350 models. Typical downtimes for this retrofit is about two months and costs between $1,200,000 and $1,400,000 depending on options.

Universal Avionics

With Universal Avionics, non-Pro Line 21 airplanes have the option of going with the WAAS/LPV UNS-1 series FMS for all King Air models. The typical downtime for this type of upgrade is about two weeks. Installation will run approximately $100,000-$150,000. Once you have it, you will have new ADS-B options that will use the UNS-1 as a position source for GPS. Universal and Rockwell Collins are partnering using Collins transponders to meet ADS-B requirements. Certification is currently in process.

Not Ready for an Upgrade

If an upgrade is currently not within your budget, you can always go the route of maintaining your aircraft with aftermarket avionics. Keep in mind that this is a temporary solution, because eventually many of the parts in an older King Air avionics system, such as CRTs, will become completely obsolete. However, if you do have an immediate need and do not want to spend the money for an upgrade, a good reputable King Air shop should be able to get you a cost-effective replacement part to save you some money.

Upcoming ADS-B Requirements

With ADS-B requirements coming in late 2019, getting your aircraft equipped to meet requirements is going to be increasingly more difficult. All of the major avionics manufacturers either currently have solutions that will work for King Air operators or are very far down the path to certification.

Current numbers show that less than 10% of the business aircraft in the United States are compliant. Although it seems like it's still a long way off, there are a lot of aircraft to modify and avionics manpower is limited, so the longer you hold off, the longer you might wait in line.

In addition, if you are an aircraft owner that is thinking you will not need to have ADS-B compliance because you are going to sell your aircraft before 2020, be very careful. An aircraft purchaser in the year 2019 is going to be highly reluctant to take a non-ADS-B-compliant aircraft in on trade because, by that time, every avionics shop in the country is likely to be completely booked many months in advance. They may be unwilling to take the risk of an aircraft that would be grounded because of non ADS-B compliance, which will have an impact on the value of the airplane.

Regardless of the direction you take, make sure you fully understand what will work best for your mission. Do your research and make sure to reach out to a reputable King Air service center to get all of your questions answered. A good avionics shop will have the customer's best interest in mind as they fully understand that this is a relationship business and the best way to create meaningful relationships in aviation is to work together to come up with solutions that will work for the people operating the aircraft. KA

About the Author: Mark Wilken is the Director of Avionics Sales for Elliott Aviation, which employs over 40 avionics technicians at their headquarters in Moline, Ill. Mark began his career at Elliott in 1989 as a bench technician repairing radios and quickly became the manager of the department. He helped launch Elliott Aviation's Garmin G1000 retrofit program in which the company has installed more King Air G1000s than all other dealers in the world combined. Recently, he has headed STC programs for the newly launched Aircell ATG 2000 system for Hawker 800/850/900, Phenom 300 and King Air 350/B200/B200GT. Mark is a licensed pilot and holds an associate's degree in avionics and a bachelor's degree in aviation management from Southern Illinois University.

With so many carriers to choose from, which one is right for you?

by Kyle White

I recently attended the Aviation Insurance Association's annual conference in Colorado Springs. Working in the insurance segment of the aviation industry, this is an excellent event to attend and stay abreast of changes in the marketplace. The senior management team of every aviation insurance carrier doing business in the United States is in attendance, as well as some of the industry's finest aviation attorneys. The three-day conference allows brokers, like myself, to meet with many of the underwriters, claims adjusters, and aviation defense attorneys to ensure we are up-to-date with the current market, trends, and legal liabilities the insurance buyer needs to be aware of.

Not surprisingly, the attendance for this year's conference hit an all-time high. In the last 10 years, consumer options have grown significantly, which has been good for the buyer – the increased supply has forced pricing down, while increasing the broker's negotiating power for enhanced ancillary coverages (i.e., broader policy content). At the same time, the demand for insurance has decreased. This does not refer to the number of aircraft needing insurance, but to the value of insurance necessary on each policy. For example, before the financial crisis in 2008, it was difficult to find a King Air B200 for less than $1,000,000, or a quality C90 for less than $500,000. Now, if you have $300,000 and can afford the operating cost, you can purchase a King Air 90, and find a variety of B200s for less than one million dollars.

The value of the King Air fleet impacts your insurance purchase. The reduced fleet value opens the doors to more carriers being able to offer coverage for your risk. Not all insurance carriers have the same "capacity" (the amount of coverage they can, or are willing, to provide). Although there are more than 20 aviation insurance carriers in the market today, only a handful can provide you with $1,000,000 of hull coverage, and even fewer can provide liability coverage above $100,000,000. So, when the values of aircraft fall, more options are available for the insurance buyer, especially if you require $50,000,000 of liability coverage or less.

There are now 10 more insurance carriers available to you today than a decade ago. You have over twice as many options! With so many selections, how do you choose? Understandably, many consumers default to the cheapest option. If you are only buying coverage to check a box, with no intention of incurring physical damage or getting sued, then that can be a good option. But, if you're confident you'll never have a loss, why purchase coverage at all?

Three Factors to Consider

Obviously, foregoing insurance would be foolish, so consider the following three areas to help you make an informed decision at your next renewal.

First, most likely you didn't buy the cheapest King Air. You considered many factors, such as damage history,

equipment, and engine time. Then you chose the aircraft that provided you with the best value. That's precisely how you should buy your insurance policy. In addition to looking at the price, look at the "equipment list," also known as the ancillary coverages. Review each coverage, line by line, amongst the carriers. Which of those ancillary coverages are important to you? Do they meet your needs; do any of them need to be modified? Are all the carriers offering the same coverages and limits for a particular peril? Some carriers are negotiable on those coverages and will increase them if your broker asks. For example, consider medical payments. Do you have $5,000 per passenger and want $25,000 per passenger, including crew? Perhaps one carrier is only offering $10,000, but is cheaper than the carrier offering $25,000? Another example is *Guest Voluntary Settlements*. Do you want $1,000,000 per passenger, including crew? The lower premium quoting carrier may only be offering $250,000, and excludes crew members. There are dozens of ancillary coverages you need to consider when comparing and contrasting the insurance quotes you receive. You may find the cheapest quote isn't necessarily the best quote for you. Just like the cheapest King Air may not be the best aircraft.

Another consideration when evaluating which insurance company is best for you is the carrier's time and experience in the marketplace. No one wants to purchase insurance from a carrier that doesn't renew your policy 12 months later because they are exiting the aviation market. Most likely there are many King Air owners reading this article who experienced this exact scenario after having a policy with a well-known carrier that stayed in the aviation market less than 24 months. Their policies were so inexpensive buyers would ask if it was for a six- or 12-month policy. They were quoting King Air insurance for 50% of their expiring premium. Not surprisingly, they left the market as quickly as they had entered.

Note, that the carrier left the market by choice, not because of insolvency. There is a significant difference between the two. If they were insolvent, the state insurance commissioner would have been involved for any existing claims. This is less than ideal if you are in the middle of one of the most common claims a King Air operator faces, FOD, which may not be found until a routine inspection. This means it is entirely possible your previous policy, which expired six months ago, could be held liable for FOD damage that isn't uncovered until the carrier is no longer in the aviation market and you are with a new provider. This might seem far-fetched, but it happened to a King Air 200 operator, and was determined when the current carrier hired a metallurgist to verify the date of the FOD occurrence.

Lastly, consider the claims process and reputation of the carriers whose policies you are considering. Ask your broker what their experience is with the varying carriers regarding claims management, as well as their attitude towards "betterment" when adjusting a claim. Some carriers have a more favorable reputation than others when adjusting claims.

Consider this "betterment" claim we processed with a new carrier about six years ago. It was our first claim with this market and was not going well. The claims adjuster wanted to put a used deice boot on the leading edge of the wing, or charge "betterment" for putting on a new boot. The client was furious. He explained, and showed pictures and documentation to show the boots on his airplane were in excellent condition and meticulously maintained. He routinely stripped the old wax off and resealed them. There weren't patches over pinholes, or any other devaluing aesthetic appearance. After relaying this information to a manager at the insurance company, they recognized they had an opportunity to go above what was legally required. We also reminded the carrier that, being new to the aviation market, they needed a good reputation amongst the aviation community regarding claims adjustments. Although they aren't the cheapest quote today, the client is still insured with this carrier six years later. The primary factor in the client willing to pay more was how that claim was adjusted.

As with most things in life, cheaper isn't necessarily the best option. This applies to your insurance policy, as well. There are many great carriers out there, some are legacy markets and some are new. A market may be aggressive for your business by offering a cheap quote. Be cautious, and ask three simple questions of your insurance broker:

1) How do the ancillary coverages compare?

2) How long have they been in business and what is their financial rating?

3) How does their claims process compare to other markets?

It can be difficult to consider these less than ideal scenarios, but is necessary to ensure you have the best policy and carrier defending you, should you need it. KA

About the Author: Kyle P. White is the president of Aviation Solutions, LLC, and has professionally flown King Air 90s and B200s. He holds a Commercial and Flight Instructor license, and now specializes in aviation insurance. You can reach Kyle at *kylewhite@aviationsolutions.aero.*

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Plan to Propose an FAA Reauthorization Bill Unveiled

by Kim Blonigen

On June 15, Rep. Bill Shuster (R-9-PA), House Transportation & Infrastructure Committee chairman formally revealed his plan of an FAA reauthorization bill to the Aero Club of Washington. Shuster has been hinting for weeks about the direction he feels the United States should go with its next aviation bill and in his prepared remarks noted that what is needed is "a U.S. aviation system that's built for the future," and by "relying on yesterday's aviation system guarantees that we will not have the best system of tomorrow."

In order to get there, Shuster believes "it's essential to separate the air traffic control from the FAA by establishing a federally chartered, fully independent, not-for-profit corporation to operate and modernize the ATC services." He also suggests that this corporation should be financed by "a stable, self-sustaining, and fair user fee funding structure."

NBAA President and CEO, Ed Bolen, shared his concerns about Shuster's latest comments at the 2015 Aviation Business Conference, hosted by the National Air Transportation Association (NATA) as well as to several news sources. He stated that the general aviation community has long agreed that "the nation's system of airports and airspace belongs to the public," and must be run for the benefit of the public. "Congressional oversight of the nation's aviation system ensures that funding and governance decisions are made with the public interest – including the citizens and companies that rely on aviation service in small towns and communities – as the primary focus."

By stripping Congress of its oversight role, Bolen said, Shuster's proposal will shift aviation governance to a group of self-interested parties, which would be more focused on aviation service in large, metropolitan areas – ultimately "destroying general aviation," he added. "Historically, there has been agreement that taxing authority needs to be with Congress, access to airspace needs to be fair, and the fuel tax is the best way for general aviation to pay for its use of the system," he added.

The House Transportation & Infrastructure Committee has jurisdiction over FAA reauthorization, which sets funding and governance priorities for the agency. The current reauthorization bill expires September 30. KA


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That Pesky Fuel Arm

by Tom Clements

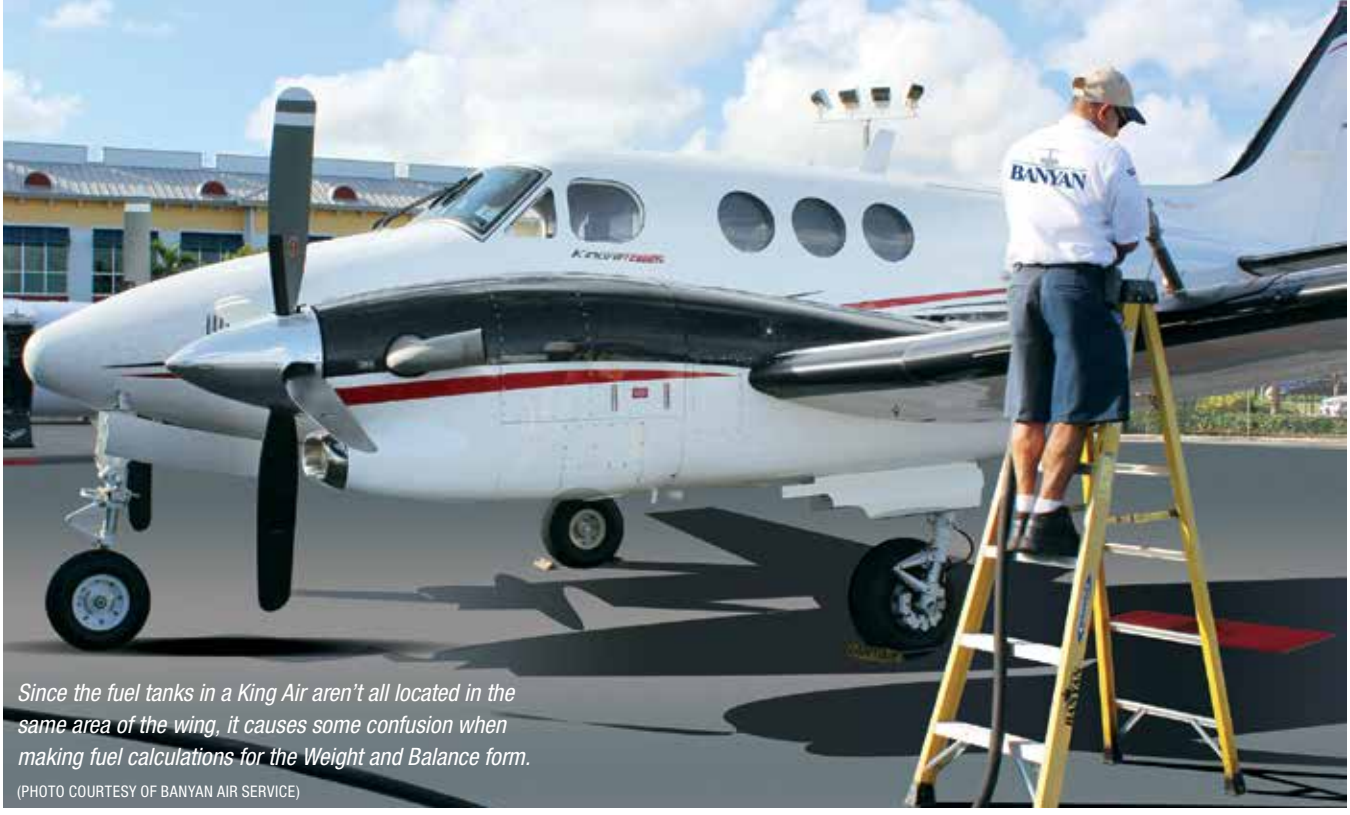
Throughout my many years of conducting initial and recurrent King Air training courses, a topic that consistently stirs some consternation is the fuel calculations associated with the Weight and Balance form. The problem arises because the fuel tanks in a King Air do not all reside at the same location in the wing. Hence, there is not one location – one "arm," the distance aft of the Weight and Balance (W & B) datum point – that applies to all of the fuel.

In fact, the W & B section of the POH does not even list a fuel arm! It lists arms for every other cockpit and cabin option – pilots, passengers, baggage, cabinet contents – but no fuel arm is shown. Huh? Then how do we do our W & B calculations?!

Not to worry. We need an arm to be able to calculate the fuel's moment, using the familiar formula, *Moment = Weight x Arm*. Instead of giving the *Arm*, Beech simply provides the associated *Moment* for each different *Weight* of fuel on board. If we wish to actually know the Arm – and there is really no need to know that, other than for curiosity's sake – then we can rearrange the formula to see that *Arm = Moment/Weight*. Let me give you a couple of examples, using the fuel in a King Air model 200 as an example.

A chart in section six of the POH shows that 200 gallons of Jet A fuel, with a density of 6.7 pounds per gallon, gives a weight of 1,340 pounds and a moment of 2,437. However, there is a little gotcha here: 2,437 is not the moment, but is the moment divided by 100.

Back in the day when none of us carried around a calculator in our smartphone, and we preferred to avoid the laborious task of doing longhand multiplication and division, Beech did the work for us by providing charts that gave the Moments for different Weights and the



Since the fuel tanks in a King Air aren't all located in the same area of the wing, it causes some confusion when making fuel calculations for the Weight and Balance form.
(PHOTO COURTESY OF BANYAN AIR SERVICE)

various locations. The actual numbers were rather large. For example, a 180-pound pilot at an Arm of 129 inches gives a Moment of 23,220. A fully loaded airplane might have a Total Arm in excess of 2,000,000! Therefore, Beech presented all Moments as "Moments divided by 100." Instead of the 23,220 of our example, it was listed as 232. This simplified the longhand addition of the individual Moments into the Total Moment, yet the inaccuracy caused by this "rounding off" method was so tiny as to be negligible.

Back to the fuel chart. If curiosity compelled me to know the Arm for that 200 gallons of fuel, the formula *Arm = Moment/Weight* would now be *Arm = (2,437 X 100)/1,340 or 181.87 inches*. No pilot cares where the Arm is to the nearest hundredth of an inch, so it is normally stated to the nearest whole inch: 182 inches.

For "fun" – satisfying that itch of curiosity – let's calculate the Arm for the first 10 gallons put into the airplane and for the last 10 gallons added before the tanks are full.

The chart shows, for 10 gallons, a weight of 67 and a Moment/100 of 103. The Arm, calculated by us, is 154 inches. The 10 gallons that brings the chart from 530 to 540 gallons adds the same weight, 67 pounds, but increases the Moment/100 by 138 for an Arm of 206 inches. Wow, that fuel arm changed a lot! It moved aft by 52 inches, nearly a yard and a half!

This shift in Arm is not surprising when one understands the fuel system on the model 200. When the refueler pumps in the first ten gallons into an empty airplane – maybe the fuel had been drained for a re-weighing of the airplane – he uses the filler cap at the wingtip, fueling the main tank before the aux tank. The fuel he adds flows downhill, propelled by gravity, and ends up at the bottom of the nacelle tank – the lowest and most forward position of the main complex of fuel tanks. As fuel continues to be added, it gradually begins to fill the other tanks in the main complex, some of which are forward of the main spar and some of which are located between the main and rear spars in the outboard wing. Only after the mains are topped, would the fueler now go to the aux tank cap between the nacelle and the fuselage to input fuel – a single bladder tank located between the spars of the center section. As you can see, the first fuel added sits more forward than the last fuel added.

In the Weight and Balance section of the POH, where we find the fuel chart we have been using, Beech also provides a "Weight and Balance Loading Form" chart. In fact, they even fill it in with actual numbers for both a forward and an aft loading example using the true Empty Weight figures for this exact Serial Number airplane as it was when it left the factory. How nice!

Line #11 on that form, labeled "Less Fuel to Destination," has a column for "Weight" and another for "Mom/100." I will wager that those who decide to use this form for their own W & B calculations make an error on this line more often than not. For example, let's say they started the flight with 380 gallons – almost full mains – and landed with 100 gallons remaining, for a total consumption of 280 gallons. To find the numbers to enter into line 11, they refer to the fuel chart, go

to 280 gallons, and find a weight of 1,876 pounds and a Moment/100 of 3,437. Our curiosity shows that the average Arm for this fuel is 183 inches. Entering 1,876 pounds for the Weight on line one is correct; using 3,437 for the Moment/100 is incorrect.

Why? Because that Moment is showing the *increase* in Moment that the first 280 gallons, added to an empty airplane, contributed to the airplane. Yet the 280 gallons we consumed during this flight are not those same gallons. To calculate the correct Moment to use, we must find how much the Moment *decreased* as we went from our starting fuel to our landing fuel. The Moment/100 of the initial 380 gallons is 4,700, and for the remaining 100 gallons is 1,196. The difference – the Moment/100 decrease that our 280 gallons of consumed fuel provided – is 3,504. This is the value that should go in the Mom/100 column on line 11. The average Arm for this fuel is 187 inches. Although the error caused by using a fuel arm that is four inches off is not huge, it definitely makes for a CG error that is noticeable.

Two thoughts about how to fight this tendency to use the wrong Moment figure on line 11 of Beech's form: First, reread my discussion here and be certain you are using the *difference* between starting and ending fuel moments to enter on line 11. Second, avoid using this form!

A different and perhaps easier way to calculate the CG for your landing condition is to start from the Zero Fuel Weight condition that you have already calculated and add to it the Weight and the Moment of the remaining fuel on board at landing. The Moment figure can come straight out of the chart in Section six, since this fuel is the same as the chart shows: The fuel that remains sits at the same location as that much fuel does when added to an empty airplane.

"Hey, you out there in readership land! Yes, I am talking to you, Mr. Foreflight, and also to you, Mr. Fltplan.com! I presume you are doing this correctly and not providing slightly erroneous answers to my peeps, right? You are? Great! Thanks." KA

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.

Walter Beech and the "Pineapple Derby"

Three months after "Lucky Lindy" landed in Paris, eight airplanes took off from California westbound toward Hawaii in a free-for-all race to win $25,000. Two of those airplanes were built by Travel Air, thanks to company CEO Walter Beech's optimism that at least one would win the prize.

by Edward H. Phillips

Hawaii – sun, surf and hula girls. Although known as the Territory of Hawaii in 1927, the four scenic islands 2,400 miles from the West Coast were becoming increasingly popular as America's new-found playground. Only four days after airmail pilot Charles A. Lindbergh landed his Ryan "NYP" in Paris on May 21 of that year, Hawaiian pineapple entrepreneur James Dole offered the stunning sum of $25,000 to the first commercial airplane to fly nonstop from the mainland to the U.S. Army's Wheeler Field near Honolulu. The second place winner would receive $10,000. The offer, however, was valid for only one year from the starting date of August 12.

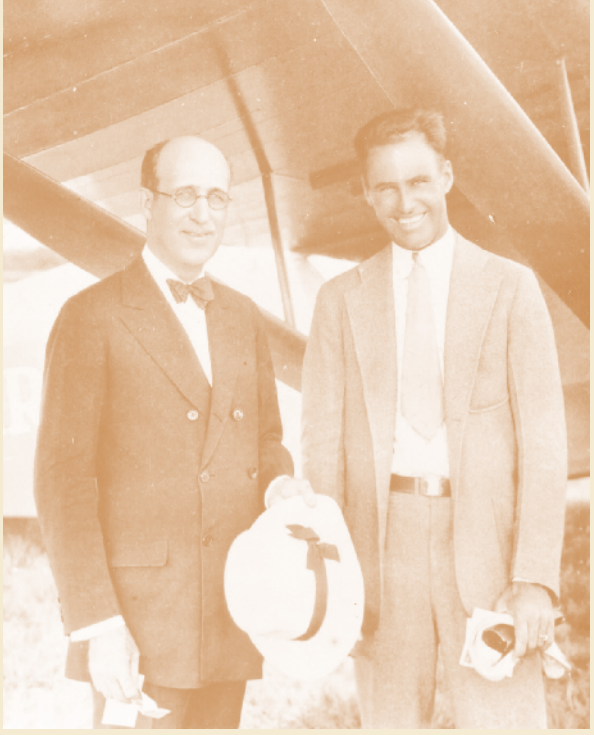
Prior to Dole issuing his challenge, however, two airplanes and their brave crews already had made successful flights from California. The first was the Army's Atlantic C-2 monoplane flown by Lieutenants Lester Maitland and Albert Hegenberger. They departed California on June 28 and landed at Wheeler the next day. The second ship to make the crossing was the first Travel Air Type 5000 monoplane built. It was piloted by Ernest Smith accompanied by navigator Emory Bronte. The aviators took off from Oakland, California, on July 14 and crash-landed the *City of Oakland* in some trees on the island of Molokai the following day. Although they were the first civilian airmen to span the vast waters between California and Hawaii, their trusty Travel Air and its Wright *Whirlwind* static, air-cooled radial engine were badly damaged almost to the point of being beyond economical repair.

In the wake of Dole's announcement, Walter Beech and the Travel Air Manufacturing Company received 17 requests for custom-built airplanes to compete in the race. During the summer of 1927, the factory was humming with activity as workers struggled to build airplanes already on order by other customers. President Beech, along with the board of directors, sifted carefully through the mountain of requests for a racing Travel Air. A majority of the applicants were quickly dismissed because of their obvious inability to pay or distinct lack of flying experience for such a risky endeavor.

Among the serious contenders, however, was one Arthur C. Goebel, a California-based pilot employed by National Pictures, Inc. The 31-year old aviator had learned to fly in 1920 at the famous Clover Field in Santa Monica and had earned an excellent reputation as a competent and savvy pilot. After being seduced by "race fever," he had been busy evaluating various aircraft that were potentially suitable for the contest, but he eventually decided that the Type 5000 *Travel Air Transport* monoplane was the best candidate. "Art,"

The race-winning "Woolaroc" was photographed at Bartlesville, Okla., after returning to the United States from Oahu by ship. (COURTESY OF WOOLAROC MUSEUM)

as he was known to his friends and colleagues, visited the Travel Air facility in mid-June. After five days of in-depth discussions with Walter Beech and other officials, it was decided that Mr. Goebel would get his Travel Air. To initiate construction, he signed a contract and plunked down the required deposit of $5,000. Despite a tight timeline for entering the race, Beech estimated the ship would be ready by early August.[1]



Art Goebel (right) and Frank Phillips celebrate their victory in the Dole Race at the Woolaroc ranch in Oklahoma.

(COURTESY OF WOOLAROC MUSEUM)

Goebel was one of two applicants that succeeded in convincing Beech to build them an airplane. The other was Benny H. Griffin and Al Henley, who signed their contract and another check for $5,000 for a second Type 5000 late in June. Both of the airplanes would receive modifications to the airframe that centered chiefly on the installation of large fuel tanks holding more than 400 gallons of aviation gasoline. In addition, a larger oil tank was installed to keep the Wright J-5 static, air-cooled radial engine lubricated properly during the 2,400-mile flight. Both airplanes were further modified to accommodate a space for the navigator in the aft cabin amidst the extra fuel tanks. Travel Air's chief engineer, Horace E. Weihmiller, supervised the alterations.

Goebel had originally planned to fly solo, but race rules required a navigator. Fortunately for Goebel, his friend and fellow pilot D.W. "Tommy" Tomlinson suggested Lieutenant William V. Davis for the job. A 1924 graduate of the U.S. Naval Academy, Davis was trained in celestial and marine navigation and was familiar with the operation of radio equipment that Goebel planned to install in the Type 5000 before the race began. As for Griffin, he had an excellent navigator in Al Henley, who had accumulated 10 years of valuable flying and navigation experience in the U.S. Army Air Corps.

With both monoplanes under construction, the only question that remained unanswered was how to pay the $15,000 balance due upon completion of each ship. Griffin had obtained partial funding from four prominent businessmen in Oklahoma, but he also sought help from Frank Phillips, an oil magnate from Bartlesville, Oklahoma, and president of the Phillips Petroleum Company. Similarly, Goebel had limited financial support from friends in California, but eventually he, too, turned to Frank Phillips for help. Phillips agreed to pay off both monoplanes with the stipulation that Art's airplane carry the name "WOOLAROC" emblazoned on both sides of the fuselage. The name *Woolaroc* was an acronym for the topography of "woods, lakes and rocks" that dominated Phillips' ranch near Bartlesville. Griffin's Travel Air would be dubbed "OKLAHOMA," also painted on the fuselage.

Travel Air assigned serial number 10 to the *Oklahoma*, but no official record exists regarding a factory serial number for the *Woolaroc*. Department of Commerce records state only that it was later assigned serial number 1000 by the Phillips Petroleum Company. The fuselage and wings of both airplanes were painted Travel Air blue and orange, respectively. On July 29, Griffin's monoplane rolled out of Travel Air's new factory on East Central Avenue, its rudder bearing the registration NX911, followed on August 2 by Goebel's ship registered NX869. Both monoplanes were test-flown by Clarence Clark and deemed ready for delivery. Soon after acceptance, both pilots flew their ships to Bartlesville so Frank Phillips could see what he had paid for, and then the two Travel Airs headed west to the jumping-off point at the airport in Oakland, California.

After arrival, Goebel's airplane was fitted with the same radio set used by Maitland and Hegenberger on their flight to Hawaii. A few of the aircraft were equipped with earth inductor compasses and radio equipment that would help them make the dangerous journey across 2,400 miles of unforgiving Pacific Ocean, but others were hopelessly ill-equipped for such an arduous undertaking. As a result, some were disqualified, others withdrew and a few airplanes had been wrecked enroute to Oakland. Frank Phillips had shipped 20 barrels of the company's recently-developed "Nu-Aviation" fuel to Oakland for the exclusive use of the two Travel Air entrants, and the gasoline was a closely guarded asset. When straws were drawn to determine the takeoff sequence, only eight airplanes remained in what had been dubbed the "Pineapple Derby" by the press. Benny Griffin won the first takeoff slot and Goebel drew the seventh spot.

On the morning of August 16, the "Oklahoma" was pushed to the starting line. When the starter's flag dropped, Griffin gunned the 200-hp Wright radial powerplant and the heavily-laden monoplane slowly accelerated down the two-mile long dirt runway. After rolling about 3,000 feet, the ship lifted slowly into the air. The Dole race was finally underway. Thousands of spectators, some anticipating that one or more airplanes may crash on takeoff, watched as the "Oklahoma"

Artist's rendering of the "Woolaroc." (COURTESY OF WOOLAROC MUSEUM)

gradually disappeared to the west. Next in line was the Breese "El Encanto" cabin monoplane piloted by Norman Goddard. During the takeoff roll, he lost control as the ship entered a gradual ground-loop to the right, coming to rest on its left fuselage side. The right wing was pointing upward in a mournful farewell salute to those who would dare to follow. Next in line to depart was the "Pabco Pacific Flyer," but it was forced to abort and would attempt another takeoff later. The Lockheed "Golden Eagle" was next and easily took to the sky, followed by the Buhl Air Sedan "Miss Doran" and the Breese "Aloha." Waiting impatiently, Art Goebel finally taxied the "Woolaroc" into position and awaited the signal to take off.[2]

When the flag dropped, Art advanced the throttle and the Wright J-5CA engine roared to full power, blue flames licking the tips of the exhaust stacks as the ship gathered speed. In a demonstration of his flying skill and the Travel Air's generous rudder area, Goebel easily kept the Travel Air heading straight down the runway. He waited patiently for sufficient lift from the wings before easing the stick forward to lift the tail, and then aft as the monoplane left terra firma and began a slow, laborious climb westward. The *Woolaroc* was on its way to Honolulu. One of the anxious observers of the takeoff was Walter Beech. A week before the race began he had flown a Travel Air Type 4000 biplane to Oakland to supervise detailed preparation of Griffin and Goebel's airplanes, applying his detailed attention to both airplanes.

About one hour after departing, the *Oklahoma* suddenly hove into view from the west and landed safely despite the heavy fuel load. Griffin reported that the engine was "running hot" and blamed the *Nu-Aviation* fuel for his withdraw from the contest. Meanwhile, the *Woolaroc* was proceeding on course thanks to the low-frequency navigation signal transmitted by the Army. It would offer reliable guidance only for the initial portion of the journey. Although the radio receiver/transmitter was working well, Davis would eventually have to rely increasingly on long-established celestial and marine navigation techniques during the day and throughout the night until they could receive an incoming navigation signal from Hawaii the next morning.

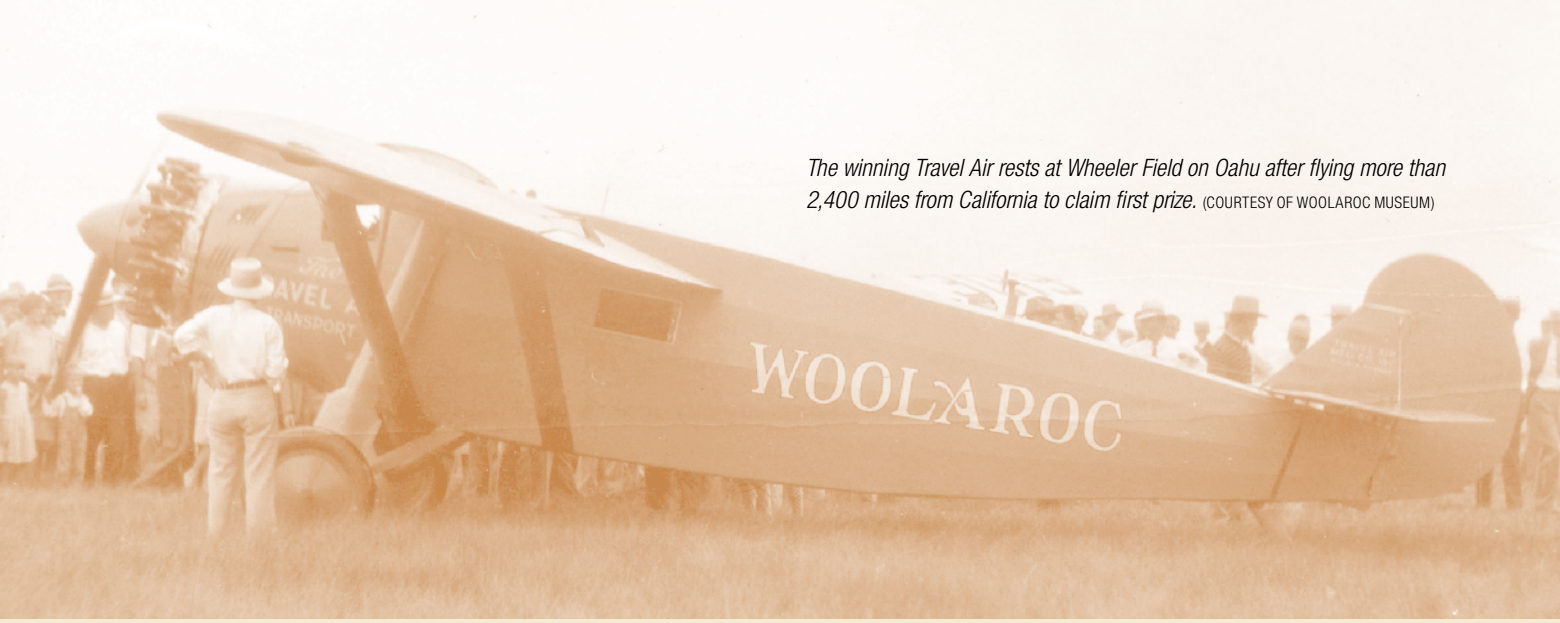
The Travel Air "Oklahoma" during an engine test run at Oakland airport before the Dole Race began. (COURTESY OF WOOLAROC MUSEUM)

As the sun retreated and daylight slowly dissolved into darkness, Davis prepared to take the first of many nighttime observations of the stars. Using a celestial sextant, he carefully held the instrument in a level position before taking a reading on a reference star. He would repeat the reading a number of times for accuracy, always checking to be certain the sextant was level (a bubble, similar to that used in a carpenter's level, was an integral part of the device and was illuminated by a battery). The average reading of a star's height and its bearing from the airplane gave Davis the *Woolaroc's* approximate position above the earth's surface. Taking the readings was easy when the air was calm, but in turbulence or if the observer was buffeted by the slipstream, the procedure was more difficult. Because Davis was located far behind the cockpit and isolated from Goebel by the extra fuel tanks, the two men devised a string and pulley telegraph system to communicate throughout the flight. Based on the observations taken with the sextant, Davis would write down the information and suggest new compass headings to remain as close as possible to the pre-planned course.

To help him guide the *Woolaroc* toward Hawaii, Davis referred to the Great Circle route he laid out for the flight. Great Circle routes were commonly used for long-distance flying, particularly over a large expanse of water such as the Pacific Ocean (Lindbergh had used a Great Circle route for his flight to Paris). Initially, Goebel flew a heading of 250 degrees. As the hours passed during the night, Davis telegraphed Goebel minor changes in heading. The *Woolaroc's* pilot occasionally disagreed with his navigator, but better judgment prevailed and Art dutifully complied with the course changes.

Another concern throughout the flight was the effect of the upper winds on the airplane's position. Winds aloft could easily blow the airplane off course, particularly during the night hours when Davis had no way to observe the waves below. Any deviation of the monoplane's path across the earth's surface could adversely affect accurate navigation. To help compensate for the wind, white stripes had been painted across the airplane's horizontal stabilizer and elevators at various angles such as 10-, 20-, 30- and 45-degrees.

Fatigue was another adversary. Goebel and Davis both fought to stay awake as the *Woolaroc* droned its way across the ocean at an average speed of 93 mph. As the monoplane cruised along, Goebel appreciated the fact that the only thing keeping him from an unwanted swim in the cold Pacific was the reassuring roar of the nine-cylinder Wright radial engine (all eight of the contestants that day were flying behind a Wright "Whirlwind" engine and were counting on its rugged reliability to keep them in the air). As a result, Art kept a constant vigil on the powerplant's vital signs, and after



The winning Travel Air rests at Wheeler Field on Oahu after flying more than 2,400 miles from California to claim first prize. (COURTESY OF WOOLAROC MUSEUM)

midnight he climbed the ship to 6,000 feet to stay above a layer of stratus clouds.

Finally, the long-awaited dawn arrived as the sun lifted itself above the eastern horizon, now far behind the Travel Air. As soon as he could see the waves below, Davis set to work taking readings of the sun's position and checking to see if the wind had blown the aircraft far off course during the night. It was essential that he determined the airplane's position expeditiously and make any necessary course corrections. Sighting the sun would determine the Travel Air's position relative to longitude. As for drift, Davis tossed smoke bombs out the navigator's compartment window. When it hit the water, he observed which way the smoke was being blown.

Based on that information, he estimated the wind's effect on the airplane and computed a new heading to compensate. Fortunately, the northeasterly winds aloft from a Pacific high pressure area proved accurate and gave the *Woolaroc* a slight tailwind that increased groundspeed to nearly 100 mph. As the sun rose higher, Davis continued to make sightings and drift checks. He verified that the winds aloft were shifting to the east and then the southeast, and telegraphed Art to make a slight heading change farther to the south. The pilot quickly telegraphed back that he thought the Naval officer was wrong, but Davis insisted otherwise. Goebel relented and steered the Travel Air to the left. In addition, the radio was beginning to receive the low-frequency navigation signal from Hawaii, boosting his confidence that they were at last nearing their goal.

It is important to note today's King Air pilots accustomed to using WAAS, radar, ADS-B and a host of ground- and space-based navigation tools to guide them with exceptional accuracy to their destination, may find Davis's techniques almost comical, but using only dead-reckoning to find Hawaii in 1927 was no laughing matter. With only the sun and stars to guide them for a majority of the flight, Davis and Goebel could ill afford to make a mistake in navigation. An error in position of merely two or three degrees could spell the difference between finding the islands and missing them entirely, probably with fatal consequences.

The *Woolaroc* had been in the air for more than 24 hours when a tired Art Goebel sighted what he thought was a murky cloud on the distant horizon. He kept an eagle eye on that "cloud" and soon realized that it was not a cloud but land! Art notified Davis that he hoped what he saw in front of them was Hawaii. It was, in fact, the island of Maui. Suddenly, the big question that ran through their minds was whether they were the first to reach the goal, or second, or even third? Their minds begged for an answer as Maui began to fill the windshield. Soon they were flying over Molokai and eventually spotted the famous shape of Diamond Head on the island of Oahu.

As the *Woolaroc* flew past Hawaii's most famous landmark in search of Wheeler Field, an Army Boeing PW-9 biplane fighter appeared off the left wingtip and tucked into close formation with the Travel Air. The pilot was signaling something with one hand but neither Goebel nor Davis could understand it. Seeing no reaction from Goebel or Davis, the pilot gradually brought the nimble Boeing very close to the Travel Air and made his message very clear – he was smiling and holding up one finger – a clear indication that they were first to arrive! It appeared that the *Woolaroc* may win the Dole race, but Goebel still had to find and land on Wheeler Field to claim the $25,000 prize.[3]

Fortunately, the PW-9 guided him directly to the Army airfield. By that time, thanks to local radio stations that were following the race, news of the *Woolaroc*'s sighting had spread across Honolulu. The military field was quickly overrun with hundreds of people eager to see the intrepid aviators. With the dirt runway in sight, Art settled the *Woolaroc* on final approach. The monoplane gently touched down on Hawaiian soil after a flight that had lasted 26 hours, 17 minutes and 33 seconds, consuming 317 gallons of Phillips Petroleum Company's *Nu-Aviation* fuel en route to victory.

"The two men climbed down, their legs a little wobbly, their voices sounding strange, both of them not quite willing to believe they won until they looked around to be sure none of the other airplanes were there. They stood for a moment, hemmed in by the crowd, both Goebel and Davis repeating foolishly, "Oh boy! We did it! We did it!"[4] The cheering throngs crowded around the men and their Travel Air as the Wheeler Field band played military marches, then the exhausted duo was led to a flag-draped platform and formally greeted by none other than James Dole himself, along with Hawaii Governor Farrington and members of the race committee. Goebel and Davis each received $7,500 and financial supporters of the *Woolaroc* claimed the remaining $10,000 of the first-place prize money.

The faithful Travel Air monoplane and its trusty Wright J-5CA engine were eventually shipped back to the California on board the steamship "Monoa." In the autumn of 1927, the now-famous Travel Air was reassembled, inspected and checked before being flown by Goebel on a farewell tour of selected cities. In October, Art flew the airplane back to Wichita and was welcomed enthusiastically by large crowds. During his visit, he laid the cornerstone for Factory "B" of the expanding Travel Air factory complex, turned the first spade of dirt for Clyde V. Cessna's new factory across town on Franklin Avenue, and helped dedicate Lloyd C. Stearman's manufacturing facility north of the city. Reflecting on the Dole Race and the role Travel Air had played in that contest, Walter H. Beech recalled that back in June he was surprised that a young Arthur Goebel declined to choose paint colors for the *Woolaroc* – he simply left it up to Mr. Beech.

After completing the farewell tour, the ship was in dire need of a complete overhaul in preparation for Art's proposed attempt to set an endurance record with the airplane. That idea, however, was soon dismissed and in February 1928 the monoplane was flown by Clarence Clark to Arkansas City, Kansas, where it was placed in temporary storage. It remained there until August when Goebel resurrected the ship from its seven-month slumber and flew it back to California. It was placed on static display in Los Angeles while Art was setting a west-east transcontinental record of 18 hours, 58 minutes flying a sleek Lockheed "Vega" monoplane. Frank Phillips, however, informed Goebel that he wanted the Dole race winner to garner more publicity for Phillips Petroleum Company, and one way Art thought he could comply was by transforming the airplane into a "slicked-up speedster."

When he approached Walter Beech about Travel Air performing the modifications, Beech and his engineering staff were less than enthusiastic but agreed to tackle the task. They made it clear to Art that the monoplane was designed as a transport and was inherently unsuitable for modification into a "hot" ship. Goebel was unconvinced, and early in November he flew the ship from Los Angeles to Wichita where it underwent a series of major alterations that Goebel hoped would make it the fastest Type 5000 ever built. He planned to enter it in cross-country races that would prove highly lucrative if he could win, and the key to winning was speed. To reduce drag, workers in the experimental shop dismantled the cockpit entirely, removing the canopy, pilot seat, rudder pedals, instrument panel and all flight control cables. Fuel tanks were installed in the cockpit area that, when added to the existing tanks, provided a total capacity of 600 gallons. The navigator compartment where Davis had skillfully guided the ship across 2,400 miles of unforgiving ocean was transformed into a cramped cockpit. To power the born-again Travel Air, a 400-hp Pratt & Whitney "Wasp" static, air-cooled radial engine was installed, fitted with "bayonet-type" exhaust stacks that were thought to generate a very slight thrust when the engine was at full power.

Major modifications made to the "Woolaroc" in late 1928 proved unsuccessful and the ship was retired permanently. (COURTESY OF WOOLAROC MUSEUM)

Late in November the ship was completed and ready for test flights. Art arrived at the factory and carefully inspected the airplane. Every effort had been made to reduce parasitic drag, including the landing gear that was redesigned to present less resistance to the air. It was time for the maiden flight. Goebel fired up the *Wasp* powerplant, taxied to the runway and took off without incident. Flying a Model 4000 biplane, Walter Beech took off to fly formation with Goebel and observe the airplane, but he quickly discovered he could not keep up with Art and his speedster. Goebel immediately discovered that visibility from the aft cockpit was severely limited.

That flaw became painfully apparent when he tried to land. Forward visibility was zero. The airplane hit the sod runway hard, bounced back into the air, hit hard again and bounced a second time before Art fed in power and avoided a stall. He finally managed to get the temperamental *Woolaroc* on the ground undamaged. After the excitement of the landing, Art wanted more changes. Beech ordered his men to make the side windows larger, which did slightly improve forward visibility. Goebel was anxious to take off for New York, and after a second test hop he bade Travel Air farewell and headed east.

As he was flying over St. Louis, Missouri, in the dark of night he searched in vain for Scott Airport, where he planned to refuel. Failing to locate it, he flew around until he spotted another suitable airport near the city. Still fighting poor forward visibility that was greatly complicated by nighttime conditions, Art landed the ship safely but failed to see a ditch. The Travel Air abruptly lurched and came to rest with a damaged landing gear. The next few days were spent performing repairs. The next time Goebel took off he was headed back to Wichita, but the *Woolaroc* had one more scare in store for its master. Flying along in a misty fog on the west side of St. Louis, Art barely missed a water tower that suddenly flashed by, barely missing the left wingtip. It was the final straw. Goebel landed at Travel Air Field on December 1, 1928, and informed Frank Phillips that the airplane was no longer safe to fly. Phillips accepted Art's verdict and the old monoplane was retired – permanently.

Frank Phillips, however, was keenly aware of the *Woolaroc's* historic significance and paid Carl and Guy

Walter Beech (standing next to fuselage), Goebel and a group of pilots with the modified "Woolaroc" in November 1928. Note the Pratt & Whitney "Wasp" radial engine and aft-mounted cockpit. (COURTESY OF WOOLAROC MUSEUM)

Winstead, two of Wichita's most skillful mechanics, to restore the ship to its configuration in the Dole race. After restoration it was flown to Arkansas City and placed in a hangar. In 1929, the airplane was removed from storage, inspected and made ready for a short flight to the Phillips ranch near Bartlesville, Oklahoma. By 1930, it had been placed on static display in a building on Phillip's ranch. In 1980, it was moved to a large garage that had once housed automobiles and served as a bunkhouse for ranch hands, but the facility was woefully inappropriate for such a famous flying machine. In 1985 the old monoplane underwent a thorough restoration and the Woolaroc Museum on Phillips' estate was expanded specifically to display the airplane.[5]

In addition to the *Woolaroc*, only one other Travel Air Type 5000 monoplane exists. It served with National Air Transport from 1927-1930 flying passengers on the Chicago-Dallas route before being gifted to Fort Worth aviation pioneer Amon Carter. In 2013-2014, it underwent a complete restoration and is on static display in downtown Fort Worth, Texas.[6] KA

FOOTNOTES:

1. Phillips, Edward H.: *"Travel Air – Wings Over the Prairie;"* Flying Books, Publishers and Wholesalers, Eagan, Minnesota; 1982.
2. Forden, Leslie: *"Glory Gamblers – The Story of the Dole Race"*; The Nottingham Press, Alameda, California; Second edition, 1986.
3. Ibid.
4. Ibid.
5. Meek, Ken: Woolaroc Museum, Bartlesville, Oklahoma; conversations and correspondence, November/December 2014. To read more about the *Woolaroc* go to *www.woolaroc.org*.
6. To read more about the Amon Carter Travel Air Transport go to *http:facmuseum.org/travel_air_5000_saveaplane.aspx*.

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.

AFTERMATH

Of the eight airplanes that took off from Oakland on August 16, 1927, four soon returned to the airport and were out of the race, but another four managed to get airborne to begin the long journey toward Hawaii. These included the *Woolaroc*, *Golden Eagle*, *Miss Doran* and *Aloha*. Two hours after Art Goebel and William Davis arrived at Wheeler Field, pilot Martin Jensen and navigator Paul Schulter landed the *Aloha* to claim second place and $10,000.

The other two airplanes disappeared somewhere over the Pacific Ocean. No trace of the Lockheed or Buhl were ever found, despite a massive, week-long search that involved 40 ships of the U.S. Navy. The vessels swept 540,000 square miles of sea between the Farallon Islands and points 50 miles north and south of the Hawaiian Islands. A third airplane, the Swallow *Dallas Spirit*, was lost attempting to search for the others after taking off from Oakland on Friday, August 19. The death toll for the race came to 10, including the pretty 22-year old, sixth-grade school teacher from Michigan, Mildred Doran. In addition, five airplanes were wrecked and thousands of dollars lost by financial supporters of the various contestants.

William Davis held increasingly important leadership positions in the U.S. Navy during World War II and the postwar era. (COURTESY OF WOOLAROC MUSEUM)

During the late 1920s, Goebel competed in air races and set numerous records for speed, including a west-to-east transcontinental dash flying a Lockheed Vega. (COURTESY OF WOOLAROC MUSEUM)

As for Art Goebel, he went on to more fame and fortune setting speed records and operating a flight school in Kansas City, Missouri. During World War II, he flew military transports in the Army Air Forces and retired with the rank of colonel. He died in December 1973, at age 78. His companion aboard the *Woolaroc,* Navy Lieutenant William V. Davis, Jr., had a distinguished career as a naval officer. He commanded Torpedo Squadron Five onboard the aircraft carrier U.S.S. *Yorktown* during the war and later served as captain of the carrier U.S.S. *Franklin D. Roosevelt*.

After the war, Davis was appointed commanding officer of the Navy's Patuxent River test facility in Maryland, and later became Deputy Chief of Naval Operations and Deputy Commander of the Atlantic Fleet. In 1949, Davis was the second naval aviator to fly faster than the speed of sound when he piloted the experimental research Douglas D-558 "Skyrocket." His final assignment was Executive Director of the battleship U.S.S. *Alabama (*BB-60) that is permanently moored at Battleship Park in Mobile, Alabama. Davis died in July 1981. He also wrote his own account of the Dole Race entitled, "Long Trail with No Dust."

EFA Offers Complimentary Detailing Package for King Air Customers

English Field Aviation (EFA) is offering their extensive aircraft detailing package to customers at no charge for any King Air customer who has a phase inspection completed at either of the EFA locations. The package is made up of multiple detailing and finishing services including a full machine buff and wax, wheel well cleaning, de-ice boot treatment, bright work polish and full interior detail.

The machine buff/wax deep cleans and polishes heavily contaminated surfaces and removes heavy oxidation, carbon buildup, oil, and fuel stains in order to restore paint to "like new" condition and provide a layer of protection against dulling, fading and debris buildup. The de-ice boot treatment cleans and restores the boots to proper condition, ensuring the safe operation of the aircraft and providing a protective layer between the boots and external elements. Bright work polish offers complete cleaning and polish of all bare metal surfaces – spinners, leading edges, engine intakes, etc. – which are all machine buffed to a mirror finish. The complete interior detail includes a deep cleaning of all interior surfaces, interior vacuum and wipe down, leather and vinyl conditioning and minor stain removal.

The time and resources needed to complete the detailing package varies based on the type of King Air being serviced, but the package has been valued at $3,000. EFA has a variety of additional detailing and finishing options that can be purchased individually or added to the detail package.

Specializing in King Air aircraft, EFA provides professional aircraft maintenance, avionics upgrades and inspections and refurbishment services. From small inspections to complete renovation packages, EFA has the comprehensive capabilities to meet client requests and deliver concierge quality customer service. As an FAA-approved Part 145 facility, EFA features fully trained and certified technicians.

EFA has two locations located in Amarillo, Texas, at the Rick Husband International Airport (KAMA) and the Tradewind Airport (KTDW). To learn more visit *www.efa.aero* or call 1 (806) 322-1971.

West Star Aviation's Satellite Facility at Chicago Executive Airport Now Operating

West Star Aviation recently announced they are operating a satellite facility at Chicago Executive Airport (KPWK) in Chicago, Illinois. A Class 4 Repair Station, CRS PAZD068H, West Star will provide maintenance and avionics troubleshooting and repairs, minor inspections, customer assistance, as well as support the AOG and mobile repair activity in the area.

The satellite facility is already fully operational, and features 12,915 square feet of hangar space, as well as 3,208 square feet of shop and office space.

The company says its main goal with the satellite facility is to provide support to the Priester Aviation and Net Jets operations at the airport, as well as to any customers located in Chicago or the surrounding areas. They would like customers to take advantage of the convenience and accessibility of the satellite facility when in need of minor services, but also have the confidence to use West Star's larger facilities to handle any additional needs that may arise.

For more information visit *http://www.weststaraviation.com* or call (800) 922-2421.

AvFab Receives Russian Approval for King Air Traveler Airline Seat

Aviation Fabricators (AvFab) recently received Russian approval for the installation of their Supplemental Type Certificate (STC) approved King Air Traveler Airline Seats for the Beechcraft King Air B300 and B350 series aircraft.

- The Airline Style Seats were designed for high density applications, and are available in two models, Econo Seat and Traveler Seat. Both also have FAA, EASA, Mexican, Nigerian, and Transport Canada STC approval.
- The Traveler Seat builds on the quality and durability of the Econo Seat, which was engineered for durability and affordability, while adding some additional features including more leg room, easier entry and exit, and improved comfort. Both seats were developed to be a lightweight "no maintenance" solution for those wanting to add capacity without adding unnecessary cost.
- All airline style seating includes seat belts, back and bottom cushions (unupholstered), life vest, and installation instructions. Add-on options include aisle-side arm rest, headrest, and side wall/arm ledge panel for outboard armrest. The seats come with a one-year warranty.
- Installation is as simple as removing the existing seats/furnishings, and then placing the high-density seats into the desired locations by locking them into the seat tracks. AvFab also offers pricing quotes on the removed seats as potential trade-ins.

For more information on this or any other product or service offered by AvFab, please visit their websites at *www.kingairupdates.com* and *www.avfab.com* or call (660) 885-8317.

King Air Technically...

RECENT SERVICE BULLETINS, ADVISORY DIRECTIVES AND SAFETY COMMUNICATIONS

Safety Communiqué No. 343

Issued: June 2015

Effectivity: Beechcraft King Air Model F90, all serial numbers; Beechcraft King Air 200 series (U.S. Military King Air models equipped with ground idle solenoids), all serial numbers; Beechcraft King Air 300 series (King Air 300, 300LW, B300, B300C), all serial numbers.

Subject: Uncommanded Yaw Events

Beechcraft Corporation is issuing this Safety Communiqué to advise owner/operators/flight crews of airplanes listed of a potential safety condition related to uncommanded yaw events during the flare portion of a normal landing.

Beechcraft Corporation has received uncommanded yaw event reports on the models listed above. Beechcraft and Pratt and Whitney Canada (PWC) have investigated previous reports and in some cases, corrected the issue by proper rigging of engine controls or replacement of the primary governor. Events have occurred on airplanes with various engine types including certain PWC PT-6A-42, PT-6A-60A, PT-6A-65, and PT-6A-67 series engines with similar ground idle solenoid/beta valve configurations.

The reports have described significant, uncommanded yaw events that were controlled by appropriate flight control input. Beechcraft Corporation is issuing this Safety Communiqué to advise owner/operators/flight crews of this condition and emphasize that there is a potential for the condition to repeat itself.

Beechcraft Corporation and PWC will continue to investigate this condition to gather more information concerning this issue. Additional information will be issued as appropriate. For technical questions, please contact your local Beechcraft Field Service Representative or Beechcraft Corporation Technical Support at 1 (800) 429-5372 or 1 (316) 676-3140.

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

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