King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

JANUARY 2015 • VOLUME 9, NUMBER 1 • $4.50

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JANUARY 2015 Volume 9 / Number 1

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Photo courtesy of
Mike Fizer

Contents

Letters TO THE EDITOR

Thank you

I would like to say thanks to you and *King Air* magazine for your help in asking Tom Clements my question about Cleveland brakes. I must say I was surprised to have emailed you the question on Friday afternoon and getting a response that night from Tom. I was in the middle of a three- and four-phase check and had hoped to get an answer soon enough to take advantage of a better brake.

Thanks to all, I have ordered the new brakes for my B200. I am sure I will be pleased with the new brakes.

WBC

A Recent Flight with Executive Air

I am Managing Director, as well as one of the pilots of Executive Air, a charter and MEDEVAC company of 30 years, based at Charles Prince Airport in Harare, Zimbabwe.

Caroline, my partner in business as well as life, and I were returning to Harare after picking up our patients from Ghanzi, in western central Botswana. We were flying our King Air 200 on this MEDEVAC and had been cleared direct to Harare from Ghanzi at FL270. It was a dark, stormy night with some lightning from the dissipating storms that we had negotiated on the way in to Ghanzi.

As we were reaching our flight level, we heard South African Airways SA203 talking to Gaborone Control about their MAYDAY call. They had smoke in the cockpit! This got our attention and our thoughts were with the crew and passengers on that aircraft. We heard them downgrade the MAYDAY to a PAN call and they told Gaborone that they would be going back to Johannesburg. I think they had 215 passengers and 12 crewmembers on the aircraft. Gaborone told them that they would be watching their progress constantly. The crew, a man and woman, sounded very much in control, although the situation was still tense! They then requested permission to jettison fuel along the airway they were flying. I thought to myself that this was so that they would be within the weight limit the aircraft had for the landing when they got back to Johannesburg. Gaborone told them that they would need to wait for eight minutes before dumping, in order to have the required clearance between another aircraft apparently on the same routing. Gaborone duly called them at the appropriate time and told them to go ahead with the fuel jettison. Caroline and I chatted about the possible situation that these chaps were in and we both agreed that we were glad it wasn't us in that plane, wherever they were.

We were making good speed at FL270, about 260 knots despite the clouds and lightning. We were passing south abeam Maun at about 1940Z time when there was a bright lightning flash and the plane shuddered a bit. Caroline and I mentioned that we may get a bit of turbulence from the weather. I put on the seat belt sign with chimes to remind our passengers to tighten their belts.

Then Caroline said she was losing an engine! We both checked and confirmed the left engine torque had started fluctuating. Then the engine started surging with loud bangs and flames blowing from the exhausts to beyond the wing. This was shortly followed by the same on the right engine!

Adrenaline was now at peak! We checked all the gauges and besides fluctuation on the torque meters, the other gauges were holding steady with the correct readings! However, the surging and noise were seriously off-putting and we were concerned for our safety, to put it mildly. We had not covered anything like this before in our sessions in the simulator or in our previous flights.

When the situation had not gotten any better for what was probably only a couple of minutes, we decided to divert to Maun. I informed Gaborone control that our engines were surging and that we wanted to divert to Maun to assess the problem. Caroline turned left toward Maun and started the descent. As she did that, we got the engine fire warning in cabin on our annunciator panel. The engines were still surging and spitting impressive flames; however all appeared to be coming out of the exhausts and nothing from the nacelles. I cancelled the warning light and kept a watch on the engines. At the same time, I was talking to Maun and telling them we were descending for their field with engine problems.

During the descent, I thought about the SA203 fuel jettisoning and told Caroline that is what I thought was the problem. I told her to stop the descent and climb back to FL250 and turn back on course for Harare. We would see if the problem would go away. It was not long after returning to our course that the two engines started performing properly again. I told Maun and Gaborone that we had resumed our course and that all appeared okay!

I then called SA203 and asked them if they had jettisoned their fuel in the vicinity of Maun? Yes they had! I thanked them for the excitement and all returned to normal for the rest of our flight home.

What had happened? I believe that we had been overlooked by Gaborone control and had been allowed to fly through the mist of jettisoned fuel from SA203! When we entered this fuel rich air, the engines were choked with too much fuel and not enough air for combustion. Then, maybe there were less dense patches and the engines then flamed up with the excess fuel lighting up outside the engines. This went on for a couple of minutes, although it felt much longer!

The engines then performed flawlessly for the rest of the flight. We are now waiting for the report from our engineers to see if any damage has been suffered within the engines. We've got crossed fingers!

Has anyone else had a similar experience or have any brainwaves on alternative courses of action in this situation?

Thank goodness, *Executive Air is still here to fly you there!*

Ed Mordt
General Manager, Executive Air

Editor's Note: As a follow-up to his letter, Mr. Mordt sent the following:

We were advised by the Pratt and Whitney representative for Africa to do the following, which he received from headquarters.

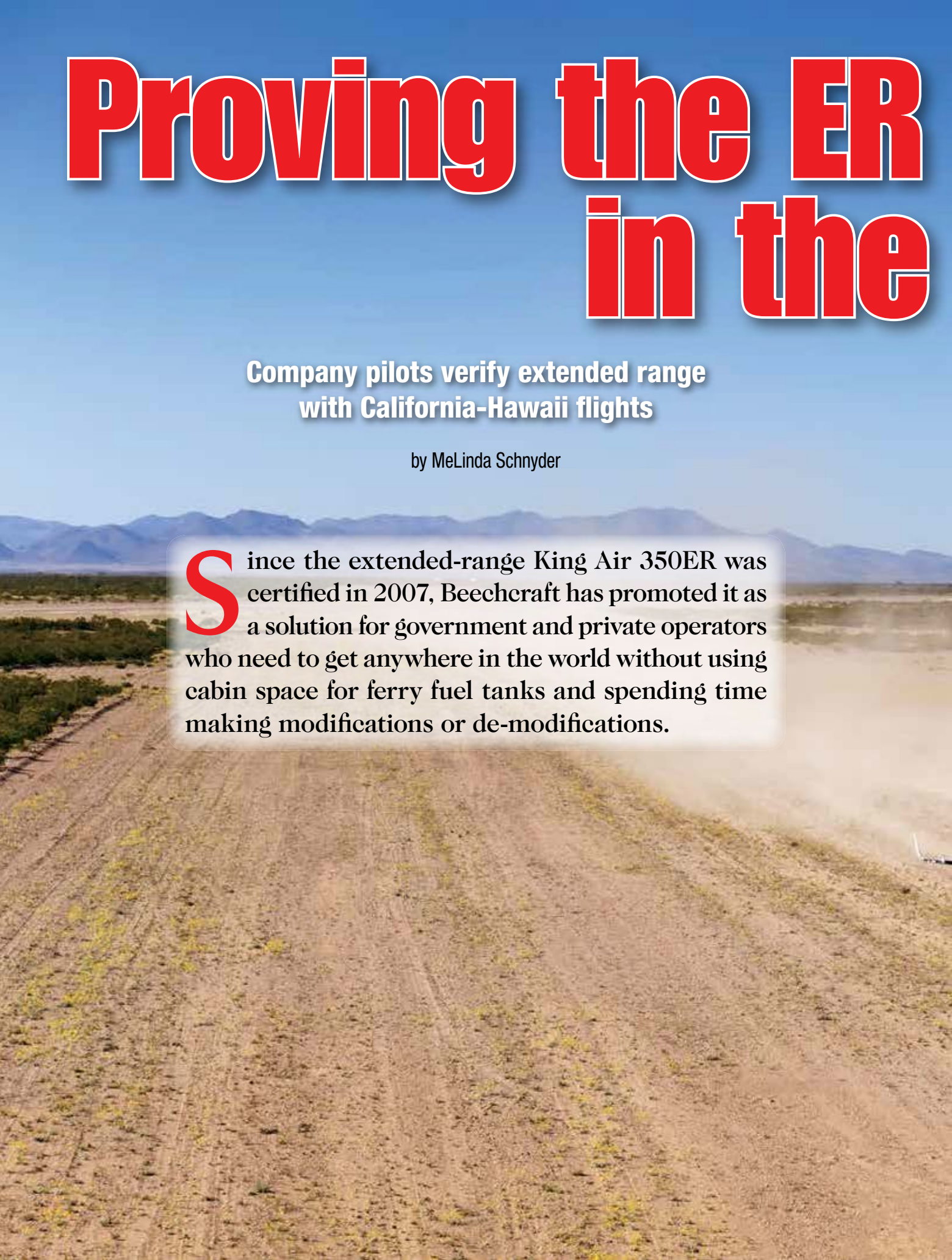
If there were no exceedances of engine parameters, it was recommended to do a boroscope of the hot section, compressor, including access via the bleed valve in order to see that there was no ignition in the compressor. As a precaution, an oil change should be carried out as a possibility that fuel entered the oil system. If you need any assistance regarding BVI findings, please forward the pictures or video for further evaluation. If possible please provide airframe and engine details (airframe and engines serial numbers) including hours and cycles for our internal system requirement.

My engineers have had a good look at the engines and did the boroscope as recommended. We have also taken an oil sample from the engines and sent them for analysis. The engines have no symptoms or signs of any damage from the incident. We have since done another MEDEVAC flight and the aircraft performed flawlessly.

Proving the ER in the

Company pilots verify extended range with California-Hawaii flights

by MeLinda Schnyder



Since the extended-range King Air 350ER was certified in 2007, Beechcraft has promoted it as a solution for government and private operators who need to get anywhere in the world without using cabin space for ferry fuel tanks and spending time making modifications or de-modifications.

King Air 350ER

Beechcraft used N350KA – a standard production configuration King Air 350ER – to fly the California-Hawaii route and demonstrate that operators can go anywhere in the world in this airplane without the need for installing internal ferry tanks. (PHOTO CREDIT: MIKE FIZER)

N350KA (serial number FL-924) is one of Beechcraft's two King Air 350ER special mission demonstrators that tour the world showcasing the model's multi-mission versatility and reliability. (PHOTO CREDIT: MIKE FIZER)

In September, two longtime Beechcraft company pilots completed flights to verify the promised performance was not just a marketing claim. The results should be helpful for future sales of a model that has more than 120 serving a variety of military and civilian roles across the globe.

"This is the first time a King Air class airplane has made the California to Hawaii leg without additional ferry fuel tanks," said Dan Keady, vice president, Special Missions for Textron Aviation. "We've been touting the King Air 350ER's endurance, range, payload and mission flexibility and now we've demonstrated the airplane's unique deployment capabilities."

Here's a look at the planning and execution of the flights.

The Preparation

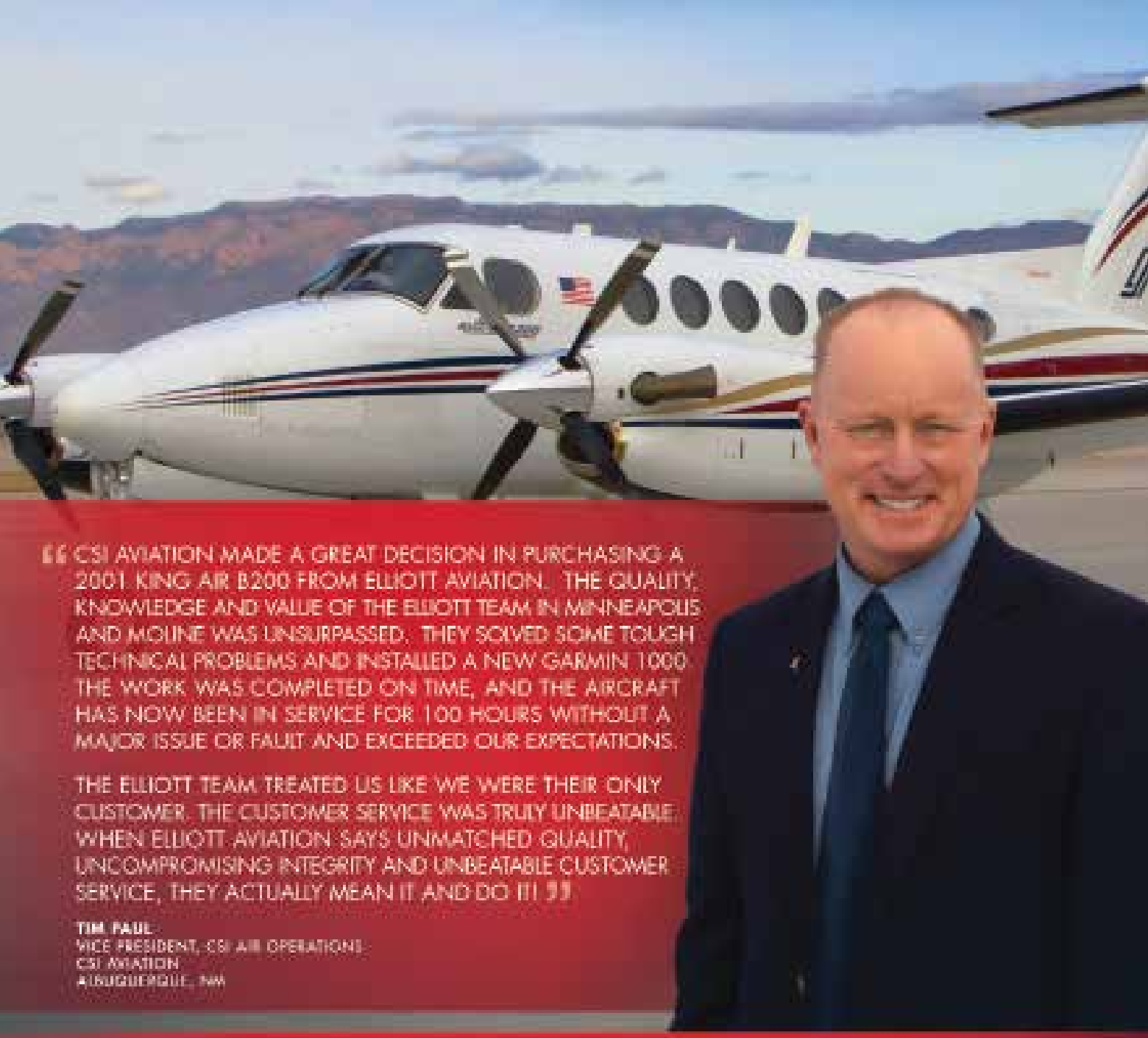
In August, sales demonstration pilots John Guidry and Mark Mohler were selected by Textron Aviation's chief pilot of turboprops to begin working with one of the company's contracted flight planning agencies to look at routing, altitude and weather options for the mission. They settled on a route starting at California's Napa County Airport (KAPC) to Hawaii's Honolulu International Airport (PHNL).

"Our team worked closely with our flight planning agency to see what type of forecast winds aloft would be present for the September timeframe targeted for the mission," Mohler said. "We also looked at a variety of altitudes to fly the mission. One of the selling points of the King Air models is the ability to fly missions at different altitudes economically. We were interested in flying the trip in the mid 20,000-foot range, as well as the lower 30,000-foot range to show the ability to burn roughly the same amount of fuel with the altitude variances. We proved this by flying to Honolulu at FL280, and returning at FL310 then FL330 and burning the same amount of fuel (with the average wind component being the same)."

The Pilots

As demonstration pilots, Guidry's and Mohler's days are spent working with a global sales force to demonstrate aircraft capabilities and providing transportation for Textron Aviation personnel. They were both thrilled with the proving flight challenge and they split pilot-in-command duties, Guidry taking the flight to Hawaii and Mohler taking the return flight to California.

This wasn't the longest flight in a King Air for Mohler, who previously flew a 350ER 10 hours and



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A standard production configuration King Air 350ER is a King Air 350i with several minor airframe modifications, aft-engine mounted fuel tanks and heftier landing gear to handle the increase in weight. (PHOTO CREDIT: MIKE FIZER)

six minutes on an endurance mission from St. Petersburg, Florida, to Yakima, Washington. After graduating from Wright State University in Dayton, Ohio, Mohler was a flight instructor then advanced from first officer to captain at a regional airline. He missed instructing so he moved to Wichita, Kansas, for a job at FlightSafety International's Beechcraft Learning Center. In 1997, Raytheon Aircraft hired Mohler for what he calls the best flying job in aviation.

"It is diverse and never has a dull moment," said Mohler, who enters his 18th year flying for the company with just over 13,000 hours. "I get to fly brand new airplanes all over the world. As we like to say, 'I'm 'living the dream.'"

Guidry has been a pilot at Beechcraft for more than 25 years, joining the company in 1989 after stints giving flying lessons, flying freight, then flying for a regional airline. He is based in Atlanta, Georgia, and has 13,600 total flight hours since he started flying at age 24.

"Being with Beechcraft for 25-plus years now, I've seen the King Air mature into the best turboprop in the world," Guidry said. "In my opinion, the King Air 350 and 350ER are the best. The multi-role mission of this airplane is incredible. I'm very proud to have proved that by flying the first King Air from California to Hawaii nonstop without having to put in internal fuel tanks."

The Aircraft

For the proving flights, Beechcraft used a standard production configuration King Air 350ER, which is based on the King Air 350i with several minor airframe modifications, aft-engine mounted fuel tanks and heftier landing gear to handle the increase in weight. The company advertises that the 350ER could take off at gross weight with full fuel and full payload, fly out 100 nautical miles, perform a low altitude surveillance mission for seven hours and 20 minutes, fly back 100 nautical miles and still land with more than 45 minutes of fuel on board.

About three of every four King Air 350ER aircraft delivered (80 of 120-plus) have gone to Department of Defense-type customers around the globe. There have been a handful delivered to private operators for executive transport and commercial ventures like Sundt Air in Norway who use the 350ER to contract with various agencies for oil pollution patrol, fishery inspection flights, border patrol and search and rescue missions. Aside from surveillance, the most popular uses of the 350ER are air ambulance, aerial survey, transporting people or freight, flight inspection/airway calibration and radar/navigation training.

One of the more visible operators of the 350ER is the United States Air Force, which uses a fleet of 350 and

N350KA's interior shows both a four-seat executive club configuration including writing tables in the front cabin (top) and an air ambulance configuration with a fully functioning medical station including medical oxygen, vacuum and pressure, a medical cabinet and a side-facing, three-place couch(below).

350ER aircraft (designated Project Liberty MC-12W) to support ground forces in Afghanistan. The aircraft are modified with intelligence/surveillance/reconnaissance (ISR) equipment. King Air 350ER aircraft are also used by the Iraqi Air Force for type training, VIP transport, light cargo duties and as part of Operation Peace Dragon, the air force's daily sortie missions over Baghdad and other Iraqi cities. Local government agencies also employ the 350ER, like North Slope Borough in northern Alaska, which uses a 350ER for medevac and search and rescue services within its remote 95,000-square-mile territory.

The airplane used for the California-Hawaii flights is one of Beechcraft's two King Air 350ER special mission demonstrators that tour the world. This one – N350KA/ serial number FL-924 – has an interior that shows both a four-seat executive club configuration including writing tables in the front cabin and an air ambulance configuration with a fully functioning medical station including medical oxygen, vacuum and pressure, a medical cabinet and a side-facing, three-place couch.

"When the extended-range fuel tanks were added to the King Air 350 and branded the 350ER, it took a platform already utilized for staying aloft for extended periods in search and rescue, reconnaissance, aerial survey, etc. and gave it an additional 236 gallons of fuel to stay aloft even longer," Mohler said. "Demonstrating the aircraft can fly up to 2,580 nautical miles and 12 hours economically, places it in a category very few products are capable of doing."

The Flights

The night before departure, the pilots stocked up on water, soda, sandwich supplies and snacks. "Probably the biggest challenge on long flights like these are physiological – food and potty brakes," Mohler said. "John and I would take turns going to the cabin to take care of said requirements."

The pilots departed Napa with full fuel at 5,192 pounds and landed in Honolulu with 790 pounds remaining. The 2,121-nautical-mile flight took eight hours, 52 minutes with average winds aloft of 237 degrees at 33 knots. The pilots reported cruise altitude of 28,000 feet and an average groundspeed of 240 knots.

"When we reached the halfway point, I was very optimistic we had the fuel required to complete the flight and very proud of the airplane and the people who made this possible," Guidry said. "On final approach into Honolulu, I remember trying to get a glimpse of Pearl Harbor. I could only imagine what went through the minds of our military personnel that fateful morning of December 7th."

The mood changed from solemn to celebratory quickly.

"Upon landing, we were met by a young Hawaiian woman who was the customer service representative for our handling agent," Guidry said. "As we were securing the aircraft, she asked if we wanted a mai tai. Of course after an eight hour, 53 minute flight, we gave a resounding 'yes.'"

Guidry and Mohler had plenty of time to get to know each other on the long haul to Hawaii, including reminiscing about comfort foods from their youth. So when it was Guidry's turn to shop for provisions for the flight back to California, he remembered Mohler mentioning liverwurst sandwiches his mother made. He made sure to stock some for his co-pilot.

Longtime Beechcraft sales demonstration pilots John Guidry (left) and Mark Mohler made the proving flights between California-Hawaii.

Returning from Honolulu to Napa, the 350ER again took off with full fuel and landed with 900 pounds at shutdown. The trip covered 2,131 nautical miles in eight hours, 17 minutes. Cruise altitude was 31,000 feet, then 33,000 feet for the final third of the flight with average winds aloft of 234 degrees at 15 knots and an average groundspeed of 257 knots.

While every effort is made by the flight planning agencies to provide accurate winds, seasonal winds are a factor when flying the Pacific Ocean and can change unexpectedly. Both pilots said having plenty to keep their minds focused on during the flight made the time in the air go quickly.

"On a trip like this, the pilots are busy monitoring the aircraft's progress with the master document flight plan log," Mohler said. "Obviously there isn't anywhere to land and get fuel, so monitoring fuel burn is very important. The crew is constantly tracking winds aloft as well as the weather at destination and alternate airports. Every hour there are required position reports to ATC, so time goes by pretty fast."

The Significance

California-Hawaii is an important stage length for aircraft lacking in-flight refueling capability, and while the mission has always been successful on paper, now the 350ER is the first King Air class airplane to have demonstrated the mission in a standard production configuration.

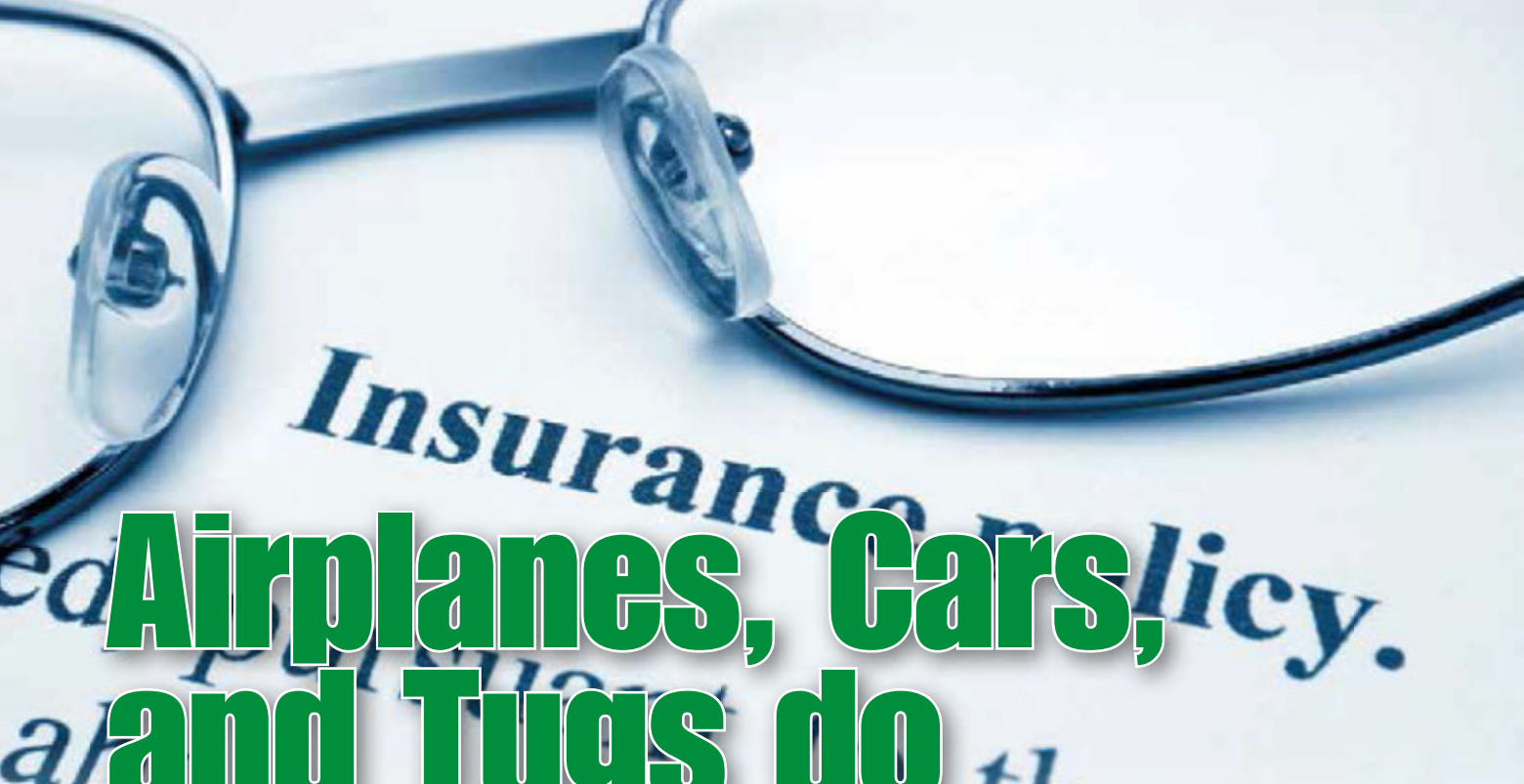
"Making these oceanic flights demonstrates that operators can go anywhere in the world without the need for installing internal ferry tanks," Keady said. "There are some government organizations that have rapid response requirements to be able to stage halfway around the world and be prepared to conduct operations on arrival. The King Air 350ER can do that without

taking up cabin space with ferry tanks or the penalty of waiting for modifications or de-modifications."

Both commercial and government operators also like the endurance because it means they can depart with full fuel and land at airports that don't have fuel, charge too much for fuel or have unreliable fuel or fuel delivery.

Armed with the data from the September proving flights, Beechcraft will keep its two King Air 350ER demonstrators busy showcasing the model's multi-mission versatility and reliability this year with visits to governments across the globe and on the show circuit in North America, Latin America, Europe, Africa, Middle East and Asia. KA

Guidry (right) and Mohler being welcomed Hawaiian-style to Honolulu International Airport after the 2,121-nm nonstop flight.



Airplanes, Cars, and Tugs do Collide . . . so Who Pays?

by Kyle White

The crew of a King Air 350 arrived at their destination, met with the professional ground crew and advised them they would be there overnight. The FBO asked if they'd like to have the aircraft put in the hangar for the night, but the crew, knowing the pleasant forecast for the evening and morning declined, electing to leave the airplane on the ramp. Why not save the owner a few dollars?

After securing the covers, locking the door, making sure the parking brake was off, and completing the "contact form" at the FBO counter, they were free until morning. However, that evening at the hotel, the phone rang. What could the FBO possibly need at such a late hour?

"Captain, this is 'we don't want to be named' FBO. I'm calling because there is a problem with your King Air. A car was driving to an airplane and drove under your left wing. They wrongly assumed they had sufficient clearance between the roof and the wing tip, but it appears the GPS antenna on the car did quite a bit of damage to the aileron. You should probably come out here and take a look to see if you need to make alternate arrangements for your passengers."

Once you get to the airport and see the damage, you recognize immediately that alternate travel arrangements will be needed, as the King Air is not airworthy. After completing new travel arrangements for the passengers, you are now left to figure out how to get your aircraft repaired and who will be paying the bill. Will this damage be paid for by the FBO, the driver of the car, or the policy on your King Air? That depends …

The person or entity operating the car will have the means/coverage to fix your airplane if they have an aircraft policy that has coverage to extend to ***"On Airport Premises Automobile Liability."*** *This section of the aircraft policy states, "…Policy is amended to include coverage for your ownership,*

maintenance or use of automobiles, but only while on airport premises."

Most aircraft policies state that this coverage is "excess coverage." This means if you have coverage on your auto policy, then the auto policy would pay out first and then the aircraft policy would pay out once the auto policy limits were exhausted.

The probability that the auto policy would cover this in the first place is minimal, and if it did, there likely wouldn't be enough coverage to pay for the entire claim. The aircraft policy would then kick in as "excess." The limit within the aircraft policy will vary, but it should be the amount shown on your declarations page. Meaning, if you have a $25,000,000 liability limit, then you should have $25,000,000 worth of **"On Airport Premises Liability."** Again, you need to read your policy to make sure you have this coverage and confirm that it isn't "sub-limited."

Keep in mind that this is only applicable if you are involved with operating the car. If the person or entity driving the car does not have coverage, your policy will pay to fix your airplane. However, this will affect your loss record, which could adversely affect your rates. The FBO's insurance should only come into play if it was their employee or contractor that was negligent; however they could be involved in the claims process due to "negligence."

While on the ramp this week at a large general aviation airport, I noticed non-FBO golf carts and tugs driving around. Perhaps you have a piece of mobile equipment kept in your hangar to drive around the airport? If you caused bodily injury or property damage in that mobile equipment, you may want to make sure you have coverage for that! This would be under the "Liability Coverage" section of your policy, titled **"Use of Mobile Equipment."** The paraphrased version is this: Your policy will cover you up to the policy limits if you are operating equipment that you own or lease (must have a written agreement if leased) while it is on airport premises. There are three caveats for the "mobile equipment:"

1. Not subject to motor vehicle registration, and
2. Designed for use principally off public roads, and
3. Used exclusively on airport premises owned by or rented to you, including roadways immediately adjoining.

With that in mind, one would ask their broker, "What if I borrow the golf cart at a transient FBO to go to my airplane, am I covered? Number three above says "exclusively on airport premises owned by or rented to you." How many of us have borrowed the FBO's

golf cart and driven out to check on our airplane? I know I did it just this week!

The third coverage, as it relates to automobiles and mobile equipment, centers around your guests or passengers' automobiles. When I was in high school, I worked for a large company in their flight department. We had our own hangar and frequently the passengers would pull onto the ramp and I would put their bags on the airplane and then drive their car away. If I hit something on the ramp, we now know there could be coverage under the aircraft policy for **"On Airport Premises Liability."** But what if I wrecked their car while driving it into the hangar or around the airport? I could even be held liable if I damaged the car while it was sitting in the hangar. This situation would be protected by **"Garagekeepers Operations."** This coverage is typically sub-limited to around $150,000 each automobile, not to exceed $1,000,000 each occurrence. So, if you damaged every passenger's car, the most the insurance company will pay for the loss in its entirety is $1,000,000. When I was 17, I never asked the chief pilot if we had this coverage in our policy. Thankfully, I never needed it, but it easily could have happened.

Next time you are at the airport, think about who will pay if something bad happens involving a car, tug, golf cart, or some other mobile equipment. We all know airplanes are expensive and traditional auto policies have "cheap" liability limits. It is alarming when you look at state minimum requirements for automobile operators. So, when one of those cars wanders onto the airport, what happens when they hit your airplane? What happens if you run into an airplane in your car? What if it isn't a car, but a golf cart? You might be covered, but now you know what to look for to know for sure. 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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Fuel Crossfeed… Why Can't We Do It?!

by Tom Clements

Every Pilot's Operating Handbook (POH) for the various King Air models contains a prohibition against using crossfeed except when one engine is inoperative. In the case of the A90, B90, and C90 variants, the POH also allows crossfeed when one side's boost pump is inoperative.

This prohibition means that we are not allowed to crossfeed (1) to correct a fueling imbalance, side-to-side, or (2) to consume the remaining fuel as rapidly as possible from a side that has sprung a large leak. Why can't we do this? Why are we prevented from taking advantage of this desirable option in these two cases?

The crossfeed prohibition did not exist until after the POHs got revised in the mid- and late-1970s. Prior to that, pilots could and did use crossfeed as needed to correct a fueling imbalance. The case of a major tank leak is so rare – and probably only of great concern when far from land on an oceanic ferry flight – that I will not address it again in this discussion.

In fact, all King Air models, including the latest 350 variants, are designed and manufactured with sufficient pump capacity and fuel line capacity that feeding both engines from one side's fuel supply can physically be done, even during periods of maximum fuel flow. Knowing this, it is apparent that the crossfeed limitation did not originate with the engineering designers; instead it came from Beech's legal team.

In June 1974, a Beechcraft BE95 Travel Air – the 180 horsepower Lycoming-powered predecessor to the Baron – experienced fuel starvation to both engines, crashed, caught fire, and killed the four occupants. Investigation revealed that both engines had been drawing fuel from the same tank on one side, the exhaustion of which led to the double engine failure. The fuel selectors were positioned properly for this crossfeed situation. The pilot never repositioned the fuel selectors such that he could feed the engines from the existing fuel in the other tanks.

Although most aviation-savvy people thought this was an obvious case of pilot error, a jury trial found Beech to be liable for a "Failure to Warn." Huh? I guess the jury thought there should be something like, "Thou shalt not feed all engines from one tank, run said tank dry, and not utilize the remaining fuel in other tanks!"

That tongue-in-check type of warning never got inserted into revised POHs, but the crossfeed prohibition we have lived with ever since came as a direct response to this infamous legal case.

A chapter in my "The King Air Book" discusses the C90's fuel system in depth and one of the discussion points therein tries to highlight the absurdity of prohibiting crossfeed except with an engine out, while at the same time allowing the feeding of both engine's from one fuel supply following a boost pump failure. In other words, the fuel system designers specifically intended feeding both engine's from one supply while the lawyers, later, told them not to do so.

The fact is that any King Air's fuel system can supply fuel to both engines from one side's nacelle tank. It is quite obvious that the degree of risk has gone higher when this is done, since fuel contamination or exhaustion (of that tank) will affect both, not just one, powerplant. Realizing that increased risk, I am sure that few, if any. pilots would choose to feed both engines from one tank while near the ground: During takeoff, initial climb, approach, and landing. On the other hand, I believe most pilots would be willing to accept the increased risk while established in cruise at an altitude high enough to permit glide and airstart procedures in the event the unlikely happened.

The actual fuel imbalance limitation varies widely among the various King Air models, from no limitation being stated to a high of 1,000 pounds in the 200-series and to a low of 200 pounds in the C90B and later 90 models. Unless the fuel load can be equalized between the two sides, it means that our endurance and range

calculations must always be based on the side with the lesser amount of fuel.

For example, if the FBO's fuel truck broke down, leaving our B200 with about 1,300 pounds on one side (full main), but only 700 pounds on the other, instead of basing our fuel calculations on the total 2,000 pounds the airplane contains, we'd need to plan our flight based on an available fuel load of 1,400 pounds, double the low side figure. This assumes the two engine's fuel consumption rates are the same, which is a reasonable assumption.

On the other hand, suppose we departed with the fuel imbalance – that a little aileron trim would easily handle – and by the time we set up cruise at top-of-climb we are now down to 500 pounds on the low side and 1,100 pounds on the high side. If we now use crossfeed to supply the high side fuel to both engines, in about an hour 600 pounds will have been consumed, the fuel would be balanced; we could stop crossfeeding and proceed with the original 2,000 pounds usable.

Do you see why it's quite desirable to have that crossfeed arrow in your quiver of alternatives?!

If you are ever going to do this – of course, in direct violation of the POH limitation – it would surely be a bummer to forget that you were now feeding both engines

from one tank, run the tank empty, and perhaps have a replay of the 1974 accident! Setting a timer, sticking a post-it note on the instrument panel, moving your watch to the other wrist … any "bugging" technique such as one of these is a great idea to remind you to go back to normal operation when balance is achieved.

Let me conclude by giving a brief tutorial about sending fuel from one nacelle tank to the opposite engine, or to both engines if you do not have an engine shut down. Although the fuel always originates from the outlet of the nacelle tank, realize that how the wing fuel gets into the nacelle varies quite a bit between the various models. For models with a filler cap near the wingtip, the nacelle tank is simply the lowest member of the set of fuel tanks that comprise the main system. For the LJ-series, the nacelle tank must be fed via the transfer pump or gravity flow, and gravity flow causes 28 gallons on that side to become unusable.

Because of a checkvalve that prevents flow *into* a nacelle tank *from* the crossfeed line, also realize that we never flow fuel from the tanks on one side into the tanks of the opposite side. No, we only feed engines with fuel in the crossfeed line, we never flow that fuel into tanks.

So, to crossfeed, first we need a shove coming from the bottom of a nacelle tank, and that push can only be supplied by an electric boost pump or standby pump. Second, we need a path to the other side: An open crossfeed valve and line. Third, we need to guarantee that an opposing shove is not coming from the other side.

For the LJ-serial number series, just move the crossfeed switch to Open and turn off the boost pump on the low fuel side. For E90s, A100s, and B100s, turn on the high side's standby pump, move the crossfeed switch to Open, and make certain the low side's standby pump is off. For the F90-, 200-, and 300-series, merely move the Crossfeed switch left or right, towards the lower side, and verify that both standby pump switches are off.

Here is something of significant importance: Since, with the exception of the 350 model, the crossfeed annunciator only indicates *that power is being sent to the valve, not that the crossfeed valve actually opened,* we could have a failure of the valve, leading to no crossfeed taking place, yet the annunciator could still illuminate. Similarly, if the feeding standby pump were to stop operation, crossfeed would cease but fuel flow would continue normally, each side feeding its own engine.

Therefore, there is only one 100% accurate verification that you are indeed feeding the high side fuel to the opposite engine or to both engines: The high side fuel quantity goes down and the low side fuel quantity remains constant. Make absolutely certain that you check the fuel gauges regularly and confirm carefully that indeed the high side is decreasing.

Twice in my 42-years of King Air experience, I have discovered airplanes in which crossfeed worked backwards! One case, a 200 had the crossfeed switch mis-wired such that it turned on the incorrect, opposite, standby pump. The other situation, a 350 had the left fuel gauges connected to the right side tanks and vice versa!

In closing, please realize that this article is instructional in nature, meant to increase the reader's systems knowledge. Be careful out there! KA

About the Author: King Air expert Tom Clements has been flying and instructing in King Airs for over 41 years, and is the author of "The King Air Book." He is a Gold Seal CFI and has over 22,500 total hours, with more than 15,000 in King Airs. For information on ordering "The King Air Book," go to *www.flightreview.net.*

If you have a question you'd like Tom to answer, please send it to Editor Kim Blonigen at kblonigen@cox.net.

Walter H. Beech and the Ford Reliability Tours

"Air Tours" that made their debut in the mid-1920s thrust the Travel Air Manufacturing Company and Walter Beech into the public spotlight when the daring aviator claimed back-to-back victories in 1925 and 1926.

by Edward H. Phillips

Wichita, Kansas, in the early 1920s was still a sleepy little town tucked away amongst America's once-vast prairielands. Known chiefly for its wheat industry, the city's reputation began an exciting transition in 1925 when aviation planted its roots in the "Peerless Princess of the Prairie." Three men, Clyde V. Cessna, Walter H. Beech and Lloyd C. Stearman had forged a new entity named the "Travel Air Manufacturing Company, Inc." and set up shop in a tiny workspace behind the Broadview Hotel located downtown.

The infant company was struggling to meet growing demand for the "Model A" that was available with either the Curtiss OX-5 or OXX-6 of 90- and 100-horsepower, respectively. Company officials, led by vice president Walter H. Beech, realized that additional income was essential to help keep the balance sheets in the black. As a result, Travel Air soon began offering flight instruction at the flying field located about five miles from city center. A lease agreement with the City of Wichita was arranged and two *Model A* ships were located at the field and housed in makeshift hangars that were crude but functional.[1]

In addition to giving flight instruction to student pilots who could afford to pay the high price of $50 per hour, Travel Air operated an air taxi service at the field that was kept busy flying people to points within Kansas and beyond. The company also gave "joy rides" to the curious souls who wanted to experience soaring above the earth. According to company information provided to the Aeronautical Chamber of Commerce of America, Inc., in 1925 the two hard-working Travel Airs made about 3,200 flights carrying an estimated 6,500 passengers a total of 75,000 miles. The revenue gained from these flight operations went into the company coffers and contributed substantially to paying the bills.

In today's highly-regulated, ultra-sophisticated glass-cockpit and automated world of aviation, it is easy to forget that the birth and growth of commercial flying in the United States after World War I was a very slow and laborious process. Nearly 90 years ago, in an effort

Early in 1926, a Travel Air Model "B" equipped with the navigation technology developed by Pioneer Instrument Company was flown on the East Coast to conduct flight tests and aid in development of the new earth inductor compass. The ship was powered by a Curtiss OXX-6 engine rated at 100 hp. (SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES, WICHITA STATE UNIVERSITY LIBRAIRIES)

View of the Travel Air Model "BW" as it appeared in the 1926 Ford Reliability Tour equipped with Pioneer instrumentation. The fuselage was slightly wider than a stock Model BW to accommodate installation of equipment in the aft cockpit area. Two liquid compasses are visible, one below the upper wing center section and the other forward of the aft cockpit. The airplane was powered by a Wright J4 static, air-cooled radial engine rated at 200 hp. (SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES, WICHITA STATE UNIVERSITY LIBRAIRIES)

The aft cockpit is crammed with Pioneer instrumentation including vertical readout displays that monitored engine operation. The drift device is mounted on the left side of the cockpit, and the wind-driven vane that powered the earth inductor compass is visible on the aft turtledeck.
(SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES, WICHITA STATE UNIVERSITY LIBRARIES)

to create widespread public awareness and fuel national interest in aviation, automotive mogul Henry Ford helped to create the *National Air Tour for the Edsel B. Ford Reliability Trophy*, named in honor of and managed by his son and heir to the Ford empire. The aerial tour was, to some extent, patterned after popular automobile activities such as the Glidden excursions that began in 1904. These "road trips" were intended to not only educate the public and promote sales of the "horseless carriage" as a useful means of reliable transportation, but also to promote the creation of non-existent infrastructure such as paved roads, bridges and travel facilities including refueling stations, hotels and restaurants.

The concept of airplanes flying a pre-determined course between cities actually originated with America's Aeronautical Chamber of Commerce soon after the Armistice was signed in 1918; when proposed, it was met with silence and found little or no public or political support. In theory, the tour was a good idea but was too far ahead of its time. Although the reasons are numerous, chief among these was the fact that in 1919 the United States was recovering from the horrors of World War I, the airplane was essentially ignored as potential means of public and private transportation, and a commercial aviation industry did not exist to support and assist the creation of such a long-distance aerial exhibition.

During the early 1920s, however, that scene had slowly begun to change. By 1925, there were at least 290 operators in 41 states flying 676 airplanes. Only a handful of small, would-be airframe manufacturers existed, many of them (including the Travel Air Manufacturing Company) tucked away in make-shift facilities across the nation. The aviation visionaries who worked in those shops were building a limited number of airplanes per year, including seaplanes and float planes, while others managed to create a niche market by modifying World War I surplus biplanes to meet specific customer requirements. In addition to Travel Air, other early pioneering companies included Waco (abbreviation for Weaver Aircraft Company), Curtiss, Laird, Martin and many others too numerous to mention.

As the momentum for private and commercial flying gradually accelerated, the climate was finally ripe for an air tour. In addition to exposing the public to the advantages of flying, the event provided small manufacturers such as Travel Air the opportunity to demonstrate the design and performance attributes of their airplanes. When the Ford-sponsored event was announced, Beech, Stearman and Cessna, management's "top guns" at the company, were quick to enter three airplanes – two "Model B6" three-place biplanes, one powered by a Curtiss OXX-6 and another powered by an OX-5; and one *Model A* three-place biplane powered by an OXX-6. Travel Air's trio of flying machines easily met the technical and performance requirements stipulated by tour officials for entry. These included a maximum speed of more than 80 mph carrying the pilot and a payload of 0.5-lb. per cubic inch of engine displacement, and the payload could consist of a passenger, ballast or a combination of both. In addition, the rules required pilots to promise that they did not take alcohol in any form, and state that they were in good health.

Additional impetus for the Ford Tour came from Congressional passage of the Kelly Air Mail Act of February 1925, which cleared the way for airlines, then in their infancy, to assume responsibility for carrying U.S. Government air mail. It was a crucial first step toward creating a viable commercial aviation industry. The inaugural "Ford Tour," as it became known, was sponsored by the Society of Automotive Engineers (SAE) and managed by the Detroit Aviation Society. Last but not least, Edsel Ford donated a special, gold and silver trophy standing nearly four feet tall that reportedly cost about $7,000. It was inscribed with these words: "***This trophy is offered to encourage the upbuilding of commercial aviation as medium of transportation***."

The tour would be flown over a 1,000-mile course divided into 10 individual legs stretching from Detroit to Chicago, on to Omaha and St. Joseph and Kansas City; thence to St. Louis, Indianapolis, Columbus, Cleveland and returning to Detroit. The Travel Air Model A (assigned Tour number "0") was piloted by E.K. Campbell, one of the original handful of Travel

Air distributors, and the two B6 ships were flown by Walter Beech (Tour number "4") and Francis Bowhan (Tour number "2"). Bowhan, who earned his nickname "Chief" because of his Osage Indian heritage, was a colorful but competent local pilot who often flew for the company. Campbell was accompanied by S.A. McGinnis and later W.B. Mueller, and Bowhan's passenger was none other than his wife, Charlotte, and Thomas Day. As for Beech, he carried only one passenger – Charles E. Planck. Total payload for each airplane included 335 pounds for Campbell, 315.5 pounds for Bowhan and 286.5 pounds for Beech.

In addition to pilots representing Travel Air, local pilot Earl Rowland flew an OX-5-powered "Swallow" accompanied by "Jake" Moellendick as passenger. Hart Bowman, John W. Stauffer and Edgar Goff flew in two other *Swallow* biplanes. The weather did not cooperate for much of the initial route, but overall the tour was deemed a success. The first Ford Tour produced 11 pilots who had achieved "perfect scores," including Walter Beech and the other two Travel Air entrants. Each participant received a cash award of $350 and had their name engraved on Edsel Ford's impressive trophy. The next Ford Tour, scheduled for August 7-21, 1926, would prove to be more competitive than the first, but Walter promised Tour officials that he would be back with a new Travel Air and first place in his sights.

Nine months later during the summer of 1926, not only was Wichita awash in a sweltering heat wave, but Walter Beech was feeling the "heat" from his fellow associates regarding construction of a biplane for the upcoming Ford Tour that was only a couple of months away. Clyde Cessna and Lloyd Stearman, while sympathetic with Walter about his desire to compete in the tour, objected to the $10,000 it would take to build the ship. Travel Air's coffers were always lean and the company could afford to pay only a small portion of the total amount. As a result, Beech decided to contact his financial friends in New York City, which he knew would be receptive to his plans. He sent a telegram describing his situation, and much to his surprise, five minutes later he received a reply stating that the money he requested would be immediately made available.

With the money side of the equation solved, the next hurdle was factory manager William "Bill" Snook, who controlled Travel Air's production line. Fortunately, Snook enthusiastically agreed to make room in the production schedule for a "Model BW" powered by the then-new Wright J-4 static, air-cooled radial engine. Featuring nine cylinders and a rating of 200 hp, the J-4 represented a major advance in engine technology in terms of weight per horsepower compared with contemporary in-line and V-8 piston powerplants.

Walter Beech (front cockpit) and navigator Brice Goldsborough posed for the camera after winning the Ford Tour in August 1926. Two innovative instruments visible in the photograph are the "Air Log" mounted on the right interplane strut, and the drift device with its eye cup for sighting the ground. The venturi on the right cabin strut provided suction to operate the turn and bank gyroscopic instrument in the front cockpit. (SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES, WICHITA STATE UNIVERSITY LIBRAIRIES)

Before construction of the *Model BW's* airframe began, Travel Air was approached by the Pioneer Instrument Company, led by Brice Goldsborough. Early in 1926 Pioneer had purchased a "Model B" biplane powered by a Curtiss OXX-6 engine to serve as a demonstration platform for its new series of advanced flight and navigation instruments. After discussion between Beech and Goldsborough that summer, the two men reached an agreement whereby Pioneer would supply a complete "avionics suite" of instrumentation to be installed in the *Model BW.* To accommodate the equipment the fuselage was widened slightly in the aft cockpit area. Goldsborough was a highly respected engineer who had worked for Vincent Bendix before starting the Pioneer company. He was acknowledged as an expert in navigation theory and practice, and had installed an early version of the earth inductor compass in Admiral Richard Byrd's Fokker monoplane that he operated during exploration of the Artic.

Goldsborough told Beech that he wanted the Travel Air to be a flying showcase of Pioneer's vertical readout engine and flight instruments and particularly the sophisticated earth inductor compass (Lindbergh had the device installed in the "*Spirit of St. Louis*" for his solo transatlantic flight in May 1927).[2] The two men would work together in an effort to win the Ford Tour, and precise navigation between points would be a key factor in achieving that goal. When the cost of building and equipping the airplane were finalized, the bill came to a whopping $12,000. Walter Beech was counting on the glory of winning the Tour, coupled with the widespread publicity that would occur in the wake of such a major event, to bring in a flurry of orders for Travel Air ships that would far surpass a mere $12,000.

Although accurate navigation and reliability of the airframe and engine were paramount to winning the Ford Tour, the 1926 competition included special contests open to all entrants. Among these was the "stick/unstick" event that tested an airplane's ability to take off and land in the shortest distance. Success in that event would add valuable points to a pilots overall score for the Tour that would be visiting airports whose grass or dirt runways varied in length. Judges stationed along the runways at each destination would determine when the airplane landed and came to a stop, and a score would be recorded. In 1926, wheel brakes were still a bit of a novelty on small aircraft, and five of the 40 ships entered were equipped with them, including the *Model BW.* The other would later prove to be tough competition – a Stinson "Detroiter,"

Mercury Biplane, Ford Tri-Motor and a Buhl/Verville "Airster."

As the starting date for the Tour arrived, both Beech and Goldsborough believed they had a serious chance at claiming victory. Assigned Tour Number two, the Model BW sported the hand-painted letters "PI" on each side of the fuselage along with the word "Pioneer" across the upper wing panels. The aft cockpit was bristling with the latest in navigation instrument technology. These included a display for the earth inductor compass, which was powered by a generator and a wind-driven vane mounted atop the aft fuselage turtledeck, vertical readout engine instruments for the tachometer, engine oil pressure, oil temperature and fuel pressure; airspeed indicator, vertical speed and a pitch indicator completed the impressive installation. Conventional, circular engine instruments were installed in the front cockpit that would be occupied by Beech, while Goldsborough guided each leg of the Tour from the aft cockpit.

A venture was mounted on the right cabane strut and supplied vacuum to operate the gyroscopic turn and bank indicator. The "T&B," as it was often called, was among the earliest flight instruments that made "blind flying" a reality. What King Air pilots today take for granted as instrument flight was still relatively unknown in 1926 outside of the U.S. military. The Pioneer company had promoted the use and reliability of gyroscopic flight instruments, as had Sperry, Bendix and other innovators in the years before and after World War I. The era of all-weather flight, however, was still many years in the future but serious progress was being made. Another important capability built into the Travel Air was the drift indicating and compensation system. Its purpose was to help Goldsborough correct for the effects of wind on the airplane's trajectory across the earth's surface. A chief component of

that system was the earth inductor compass, which compared to a conventional liquid compass featured significantly improved stability during flight as well as superior accuracy.

The Ford Tour got off to a safe start on August 7, with pilot Louie Meister flying a Buhl/Verville *Airster* being the first to depart. The 2,585-mile route took pilots from Dearborn, Michigan to Milwaukee, Des Moines, Lincoln, Nebraska; Wichita, Kansas City, Moline, Illinois; Indianapolis, Cincinnati, Cleveland, Fort Wayne, Indiana, and finally, back to Dearborn. As the tour progressed, it quickly became obvious to competitors that the Travel Air entry was well prepared for the navigation challenges that lie ahead. As each leg of the route unfolded, Goldsborough informed Beech what compass heading to fly, despite having to override Walter's occasional disagreement.

In addition to Walter Beech and Brice Goldsborough, Andy Hufford, a mechanic for the Wright Aeronautical Corporation, and T.J. Herbert posed with the winning Travel Air and its crew. Herbert was president of the National Aeronautics Association's Cleveland chapter.

(MARY LYNN OLIVER)

As each leg of the tour was flown, the earth inductor compass controller mounted on the left side of the instrument panel showed deviation from the intended course, which had been carefully plotted the night before by Goldsborough. He prepared each set of charts with checkpoints marked at 10-mile increments.

Working in concert with the earth inductor compass was a special drift indicator mounted on the left side of the fuselage below the aft cockpit. The device consisted of an adjustable scale incorporating two sight wires and an eyecup for viewing the ground. By adjusting the scale to match the biplane's altitude, the distance between the two wires was always exactly one mile. Using the preselected ground checkpoints every 10 miles as a reference, Goldsborough would look through the eyecup and sight wires at the ground passing below. When a checkpoint passed beneath the front wire he would activate a specially-built stopwatch, and stopped timing when the checkpoint passed the rear wire. The stopwatch was calibrated in miles per hour instead of minutes and seconds – a useful feature that obviated any need to calculate the Travel Air's forward speed. By taking drift readings as the flight progressed and comparing results with previous drift checks, any change in the winds aloft were detected and course corrections passed on to the pilot. Another unique instrument was the Pioneer "Air Log" unit. The ingenious device calculated how may miles the airplane had flown through the air and was mounted on the right interplane strut. Using wind power and suction from a small venturi, the instrument provided a cockpit display of both total miles flown and distance per leg. Goldsborough always knew how far the ship had flown as well as the distance remaining on each leg before arriving at the next destination.

Back in Wichita, the entire city seemed to be "rooting" for Beech and Goldsborough. One of the city's leading newspapers, the Wichita "*Eagle*," set up a special scoreboard on the east side of the *Eagle* building downtown and kept track of the Travel Air's progress during the tour. Beech and Goldsborough were first to land in Kalamazoo and Chicago, and after arriving at Maywood Airport in the "windy city," Beech was told he had won a $1,000 prize given by local Ford automobile dealers for the first airplane to land. Up to that point the Wright J-4 kept roaring along. Goldsborough was living up to his reputation as a skilled navigator, the instruments were working perfectly and Beech was flying the *Model BW* with a deft hand on the stick. Throughout the event Goldsborough was able to inform Beech within 45 minutes of their next destination what time they would arrive, and he was never wrong by more than two minutes! It was an impressive feat of precision air navigation whether judged by standards of 1926 or 2015.

When the parade of tour ships arrived at the next destination, St. Paul, Minnesota, the Travel Air still led the pack and had flown the Milwaukee-St. Paul leg at an average speed of 137.4 mph. Although the Model BW was leading the tour, it was only 44 points ahead of the tenacious Louis Meister and his *Airster*. Next, Walter and Brice won the leg from Lincoln, Nebraska to Wichita at an average speed of 128 mph, winning a silver loving cup from the White Eagle Oil Company. All of the tour contestants paused for a rest in Wichita during the weekend and were feted royally by the city fathers and local officials. Miss Ruth Richardson, the reigning "Miss Wichita" that year, presented each pilot with a rose and key to the city – a gesture that was well received by everyone.

On Monday, the tour departed Wichita for Richards Field in Kansas City. Once again the Travel Air landed first after a flight of only 1:30. By the end of the tour, Beech and Goldsborough had accumulated an impressive 4,034 points and easily beat all competitors. The Travel Air team earned $3,850 for their efforts and had their names inscribed on Edsel Ford's expensive and very special trophy. It was shipped to Wichita in October and sat briefly on Walter Beech's desk before being placed in a guarded case in the city's Chamber of Commerce building. Later, it was returned to Ford Tour officials to await presentation to the winner of the 1927 event.

Of all the triumphs Beech and Goldsborough had achieved during the tour, they had proven that the airplane was a viable and reliable form of public and private transportation that could be flown between two points with great precision. Walter, however, was quick to give his navigator much of the credit for their victory. He realized that without Brice and his abilities, coupled with Pioneer's special package of advanced instrumentation, it is doubtful that the Travel Air would have captured top honors. After all the hoopla surrounding the tour celebrations subsided, Beech flew the *Model BW* to New York City specifically to thank his financial supporters and to let them inspect the ship. He then flew to Philadelphia to attend the "Sesqui Air Meet," where the Travel Air was delivered to its new owner. KA

END NOTES:

1. These airplanes must have been among the first batch of ships built, but the lack of any reliable manufacturing records before 1926 precludes identifying them by each airplane's construction (serial) number.

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.

HALO 250
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CenTex Halo 250 Kits Option on New and Field King Air 250s

Centex has completed its first shipment of Halo 250 kits to Beechcraft. The kits will be installed as the Enhanced Payload Option on new production Beechcraft King Air 250 aircraft at the company's manufacturing facility in Wichita, Kansas.

After working with Beechcraft and BLR Aerospace, CenTex is now able to offer the Halo 250 conversion with AFM data that fully reflects the increased performance capability of the King Air 250. The new data allows a King Air 250 to carry more weight under "hot and high" conditions and to operate from shorter runways. With the Halo 250 conversion, a King Air 250 can carry an additional 920 pounds of payload and/or fuel.

The Enhanced Payload Option is also available to aircraft in the field and can be purchased and installed at Textron Aviation's company-owned service centers or any of the other CenTex Aerospace dealers.

For more information, please contact CenTex Aerospace by telephone at (254) 752-4290) or on the web at *www.centex.aero*.

Garmin Announces New Connectivity Options

Recently, Garmin announced the availability of the Flight Stream 110/210 Bluetooth wireless gateway. Flight Stream enables connectivity and communication between select Garmin avionics and Garmin Pilot on certain iPad/iPhone and Android devices. Flight Stream is Garmin's latest addition to an expanded Connext portfolio of products and features, offering a true connected cockpit so pilots have easier access to information in flight.

The Flight Stream 210 is compatible with the GTN 650/750 and GNS 430/530 WAAS series navigators, as well as the GDL 88 ADS-B datalink and GDL 69/69A SiriusXM datalink receivers. Flight planning is simplified with the Flight Stream 210, which offers wireless flight plan transfer capabilities. The flight plan transfer between Garmin Pilot and corresponding GTN 650/750 or GNS 430W/530W occurs with a couple of taps once the avionics are powered on. Additionally, flight planning is simplified even further for customers incorporating Flight Stream 210 with an existing GNS WAAS navigator.

Customers who have a GNS 430W/530W now have the ability to incorporate Victor airway navigation into flight plans using the Flight Stream 210 and Garmin Pilot. With a few simple taps within Garmin Pilot, routes, waypoints and airway intersections are quickly transferred to a 430W/530W navigator. Customers with the GTN touchscreen series also have the option of wirelessly uploading Victor airways via Flight Stream and Garmin Pilot. Flight Stream 210 offers pilots enhanced accessibility to the information they need in the

cockpit and streamlined flight plan entry throughout the entire flight planning process.

Customers who have a GDL 88 ADS-B datalink or GDL 69/69A SiriusXM datalink may also take advantage of the benefits of wireless connectivity with Flight Stream 110. When Flight Stream is paired with the GDL 88, ADS-B traffic and weather is wirelessly transferred and displayed within Garmin Pilot. Expanded functionality of the GDL 69/69A is available when incorporating a Flight Stream, which displays SiriusXM aviation weather on a tablet or phone utilizing Garmin Pilot. Remote control of SiriusXM satellite radio is also available with a free version of Garmin Pilot, including the ability to make channel selections, adjust volume controls, as well as the option to save favorite audio channels.

Adding to the wireless versatility of the Flight Stream 110/210, GPS location information from the GTN and GNS WAAS navigators or GDL 88 with an internal WAAS receiver, can be shared to display precise position information for use within Garmin Pilot. Flight Stream 210 also contains an internal attitude sensor, which provides back-up attitude information for display within Garmin Pilot. With a future software update, high-integrity attitude information from a G500/G600 flight display can take priority to display back-up attitude and heading information.

Flight Stream 210 is available immediately for a list price of $999 and the Flight Stream 110 is available for a list price of $549. Corresponding software for the GTN and GNS WAAS series is also available as a free upgrade from Garmin Authorized Dealers (installation charges may apply).

Visit *www.garmin.com/connext* for additional information.

FltPlan Adds Multiple, Customizable FRATs

FltPlan announced that it has enhanced its Safety Management System program by adding multiple FRATs (Flight Risk Assessment Tools) that are customizable for both a flight department's operation and its different aircraft as well.

The addition of multiple FRATs is the latest new feature added to FltPlan's Safety Management System (SMS), a systematic approach to managing the day to day hazards and risks associated with running a safe flight operation. The ability to incorporate multiple FRATs allows users to develop the most effective SMS for their organization.

The company says it recognizes that each flight department has different needs, based on the aircraft they fly and a multitude of other factors, such as their geographical location, and the type of flying that they do. Its goal is to provide maximum flexibility to SMS customers and they believe that the multiple FRAT feature is an important component to its practical approach to SMS.

FltPlan's SMS integrates with a user's account for easy entry and retrieval of weather briefings, navigational logs and FRATs for flights entered by its flight department. All records and documents can be stored on FltPlan's secure servers, accessible online by everyone on a user's team, or to show inspectors, from anywhere in the world.

For additional information about FltPlan's Safety Management System, go to *www.fltsafety.com/SMSinfo.htm* or *www.fltsafety.com*.

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RECENT SERVICE BULLETINS, ADVISORY DIRECTIVES AND SAFETY COMMUNICATIONS

From Model Communiqué # KA-2014-03 issued in November 2014:

ATA 99 - Beechcraft "How To" Videos Now Available on YouTube

All Beechcraft & Hawker Models

Textron Aviation is pleased to announce the inclusion of Beechcraft and Hawker models in a series of "how to" videos available on YouTube. This growing list of videos will be located on the Beechcraft YouTube website at:

https://www.youtube.com/user/flyhawkerbeechcraft

The videos can be used as a visual reference in addition to the normal steps and procedures found in many service documents and maintenance manuals. Feedback is welcome and video suggestions can be directed to individual Beech or Hawker Technical Support team member(s).

Watch for Quick Response (QR) codes too. Instructional videos are being produced for many service documents. The QR code example below provides a path to a video about the FAA Reduced Vertical Separation Minimum Approval Process that was posted on the Beechcraft YouTube channel in September 2014:

QR codes can be scanned so the viewer can play the video either on or near the airplane with a smart phone or similar device as long as a wireless source is available.

For questions or additional information, please contact:

Hawker or Beechcraft Technical Support Hotline:

1.316.676-3140 (Direct)
1.800.429.5372

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®

is an online meeting place for pilots and other volunteers

who help to transport rescue animals by air. The mission of the site is to provide a user-friendly communication venue between those that rescue, shelter, and foster animals; and pilots and plane owners willing to assist with the transportation of these animals.

A general aviation transport requires just one pilot volunteer and is far more efficient and dependable than time-consuming ground transportation for these animals who are often in danger of euthanization. Volunteer pilots retain complete authority of their planning and flights, and can give as much or as little time as they like.

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1. Go to www.pilotsnpaws.org and register
2. Post your information and read other posts
3. Wait for contacts / make contact with others

WHY JOIN THE PILOTS N PAWS NETWORK?

- Enjoy flying while helping a worthwhile non-profit organization
- Flights are tax-deductible 501c3
- Expand your network of pilot/aviation contacts and other professionals
- Gain flight experience and log more hours
- Explore new geographical areas
- An extremely rewarding experience every time

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