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When Hurricane Katrina made landfall in August 2005, it shut down communication and transportation in much of southern Louisiana. The owners of Rouses Markets had no way of knowing what was happening at their 17 supermarkets or with their employees and their communities. There was no cellphone service and flooding caused many road closures.

“We didn’t know if we had stores that were under water, we didn’t know if we had stores that had no power, or stores that were closed because the manager couldn’t get there to open and service customers,” said Donny Rouse, CEO and grandson of the company’s founder; at the time he was handling the family’s real estate developments. “And with so many road closures, we couldn’t just drive to our stores to check on them. So I went by the airport to see if I could get a helicopter to fly around to the stores.”
Hurricane Katrina leads Rouses Markets to business aviation, transformational growth

CEO Donny Rouse says the King Air 350 is perfect for visiting Rouses Markets’ 63 locations – none of which are more than an hour flight away in the King Air. A pilot certified in helicopters and fixed-wing aircraft, he continues to regularly fly the company’s R66 helicopter and occasionally co-pilot the King Air 350.

(Photo credit: Channing Candies Photography)
It was the best solution for a crisis that turned out to be one of the deadliest and costliest storms in U.S. history. With the widespread destruction in the Gulf South region, Donny said the company felt fortunate with what they found. Two stores were flooded with 4 to 5 feet of water inside, and 11 others were down, but not completely out. Within one week all but those two flooded stores reopened. “Selling food and other essentials was important, not just from a business standpoint, but as a neighbor and resource in each of the communities they serve,” Donny said.

That first helicopter ride was the start of Rouses Markets foray into business aviation. Soon after, Donny got his helicopter license and the company purchased a Robinson R44 helicopter, followed shortly by his fixed-wing license and the purchase of a Cessna 182 single-engine piston. Today, as the CEO for Rouses Markets, he says he can’t imagine doing business without it.
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aircraft as business tools or a time when the company won’t use a Beechcraft King Air, which they’ve operated for eight years.

The timeframe during which they’ve owned a helicopter or fixed-wing aircraft has also been the era of the largest growth period in the family’s nearly six decades in the grocery business. What started in 1960 with one small store in Houma, Louisiana, now is one of the largest independent grocers in the United States with 63 supermarkets across southern Louisiana, along the Mississippi Gulf Coast and in lower Alabama.

**Deep family roots in food supply, community**

Rouses Markets is considered one of the Top 50 grocers in the United States by supermarket industry experts and is one of the fastest growing family-owned companies in the country. The company earned 2018 Southeast Retailer of the Year accolades from The Shelby Report, a leading food and retail publication that gives out its highest honor based on industry and community contribution and leadership in the industry.

Donny said Rouses Markets is built on a foundation of service to community that started four generations ago and has been nurtured by family and team members since.

Joseph P. Rouse, known as J.P., immigrated to Louisiana from Sardinia in 1900. He worked at a family truck farm raising garden vegetables. In 1923, he moved to Thibodaux to start his own farm, growing shallots and potatoes. He started City Produce Company that same year, which helped local, independent farmers get their fruits and vegetables to the rest of the state and, eventually, stores as far away as Alaska. J.P.’s son Anthony J. Rouse, Sr., and his cousin, Ciro Di Marco, worked side by side in the City Produce Company’s packing shed washing and sorting green onions, which were then packed in trucks and rail cars filled with ice. When J.P. died in 1954, the cousins continued to run the farm and the produce distribution company.

But the big farms that drew J.P. to Terrebonne and Lafourche parishes were already starting to shut down. Trading on the tradition of quality at City Produce Company, Anthony and Ciro changed course in 1960 and invested all they had to open the family’s first grocery store. Called Ciro’s, it was a simple 7,000-square-foot store in the nearby town of Houma.

They focused on finding the best quality and then getting the best prices so they could sell groceries cheaper. There were not large wholesale suppliers like the industry has today, so their efforts were pioneering: making their own Cajun specialties, drying their own spices, cutting meat to order, asking neighboring farmers to deliver produce directly to the store, for example.

As they got old enough, Anthony’s children joined in the business, stocking shelves, bagging and carrying groceries for customers after school and on weekends. Often, they were sent to the local dairy to get milk to sell in the store.

By 1975, it was time to open a larger store and Ciro, who had no children, was ready to retire. Anthony’s son Donald bought his uncle’s share in the business, and the family opened Rouses #1, a supermarket in their hometown of Thibodaux. While a typical supermarket at the time was 20,000 square feet, this one felt massive at 28,000 square feet and offering the area’s first floral shop, bakery and deli.

It was a true family business. The cooks used produce, meat and seafood off the store’s shelves to make the deli specials, which were based on what Anthony’s wife Joyce was making for dinner. Eventually all of the couples’ six children would work in the business, with sons Donald and Tommy becoming managing partners.

Through the 1980s and 1990s, the family added new stores in surrounding south Louisiana communities either through purchasing existing stores or building new. The third generation started tagging along at the stores and working during the summers and after school.

“We lived across the street from our offices so basically every day after school I was in the office sitting with my dad and grandpa, so I grew up listening to them talk and learning the business,” said Donny, who has worked in nearly every department for Rouses Markets from bagging to produce to his current CEO role.
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Donny said he always planned to be in the family business. After college he was handling the company’s real estate developments as his father Donald was leading exciting growth. That’s when Hurricane Katrina hit. At that time, Rouses 17 locations were primarily in two parishes within about a 30-minute drive of home offices in Thibodaux. Two were in Metairie, and one was in St. Tammany Parish. But none were in New Orleans itself.

A&P decided to sell its Southern Division following the double-punch of Hurricane Katrina followed closely by Hurricane Rita, and in 2007 Rouses acquired 17 of their stores. It was a pivotal moment in the family’s history: two stores were in Mississippi, Rouses first outside its home state, and it was their access to the largest market in the state, New Orleans.

“It was a really big gamble for our company,” Donny said. “If we wouldn’t have done that acquisition, it would have been very difficult to get into the New Orleans metro area and our company would probably look very different today. We felt like if we wanted to have a brand that is really strong and known throughout the grocery industry, we had to be the dominant player in New Orleans.”

Donald Sr. led the acquisition, which not only doubled Rouses store count but also increased their sales by 110 percent. They were No. 1 in market share in New Orleans soon after converting the stores to Rouses Markets.

“The success of that acquisition gave us more buying power and gave us the confidence boost to continue to grow,” Donny said.

Rouses has added more stores in New Orleans, including opening the first new grocery store in the city’s downtown core in 50 years in 2011. They also are the Official Grocer of the New Orleans Saints and LSU Athletics.

Other sizable acquisitions came in 2014, with their first five stores in Alabama, and in 2016, with nine stores in Baton Rouge. Now with 6,700 team members, Rouses is preparing to celebrate its 60th year in the grocery business next year and could reach store No. 70 by then. It opened its 60th in fall 2018, and by the end of 2019 there will be 65 locations with plans to add four or five stores in 2020.

In 2016, Donald Sr. stepped down as CEO and remains chair of the board, as well as managing partner. The other two managing partners are Donny and Tommy’s daughter, Ali Rouse Royster. This third generation is joined by at least eight more cousins working for Rouses Markets, and the fourth generation – the oldest is currently 10 years old – looks to be even bigger.
Competition has changed dramatically since the first generation of Rouses opened that first market. Today, Rouses Markets are fighting to remain competitive as independent grocers against pressure from corporate chains like Albertsons and Walmart Supercenters, discount stores like dollar stores and online giant Amazon.

Donny said they compete by offering services like online ordering, same day delivery, curbside pickup and digital coupons, and set themselves apart by operating each store as a local community partner better than anyone else.

“The roots of the company come from farmers, and we’ve always taken care of farmers, supported local and that’s still true today,” he said.

Supporting local, he said, is different for each location and ranges from décor to what’s on the shelves. A Rouses store fits into its neighborhood rather than forcing a cookie-cutter supermarket model into a community.

You’ll find a New Orleans Saints theme at the Baronne store in the Warehouse District in New Orleans, which is near the Saints’ home field at Mercedes-Benz Superdome, and shelves stocked for urban shopper habits versus what you’ll find at suburban locations.

No matter the location, there will be food from area farmers, fishermen, chefs and food manufacturers that highlight that area’s tastes. Donny said Rouses sells more Louisiana seafood than any other company in the state of Louisiana, and it makes more than 500,000 king cakes every year.

Rouses Markets sells more Louisiana seafood than any other company in the state. Here, the seafood display at Rouses’ newest location in Covington, Louisiana.

( Photo credit: Romney Caruso)
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In addition to national brands, there is a focus on fresh ingredients and prepared food. Produce sections are front and center, and items are sourced from local farmers. Meat and seafood cases are seasonal and feature many Cajun favorites. Most stores have extensive ready-to-eat options prepared in-store, from jambalaya to a hot bar, soup and salad bar, Mongolian Grill, poke and sushi station, and chef’s case featuring sandwiches and entrees.

**King Air allows hands-on approach as geographic footprint grows**

Donny didn’t grow up interested in aviation and it wasn’t until the helicopter experience during Hurricane Katrina that he saw the value in learning to fly.

“I didn’t want to be put in the position again where we couldn’t check on our stores,” he said. “I wanted the flexibility to do that, plus I enjoyed flying a lot.”

Now, having business aircraft means that as the company’s geographic boundaries expand, the family can still be hands-on. They like to visit the stores, get to know employees, customers and the communities. They like to take their teams, whether that’s meat, produce or organics, to see the stores the way their customers are seeing the stores.

He was 24 when he got his helicopter license and 25 when he started flying the Cessna 182, which the company no longer owns. The current fleet – hangared at Houma-Terrebonne Airport – includes a five-seat Rouses’ King Air 350 flies about 150-200 hours per year, and Donny says it came along at a time when the company needed its range, load and short field capabilities.
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King Air Performance Systems.
Donny Rouse, middle, was instrumental in bringing general aviation to Rouses Markets, the company established in 1960 by his grandfather. After hiring a helicopter to take him to survey stores immediately following Hurricane Katrina’s landfall, he decided to learn to fly. He continues to fly but focuses his time as CEO of Rouses Markets. The company employs two full-time pilots: Pete Savoie, Hawker 900XP chief pilot, on the left and Russell Redmond, King Air 350 chief pilot.

(Photo credit: Channing Candies Photography)
2013 Robinson R66 turbine engine helicopter, a 2006 King Air 350 purchased in 2011 and a 2008 Hawker 900XP jet acquired in 2016. Rouses employs two full-time pilots who handle scheduling and fly the King Air as well as the Hawker 900XP. One pilot also flies the R66, as does Donny. Donny is not type-rated in the King Air 350 but the company always flies the King Air with two pilots, so when on board he often co-pilots.

In addition to visiting existing stores, Rouses uses the aircraft to visit new stores during construction, meet with suppliers and to research potential new sites and partnerships. Donny said the King Air came along at a time when the company needed its range, load and short field capabilities.

“It was 2011 and it was the right time for the business and the right deal,” he said. “As we began expanding and opening up our footprint more, the King Air 350 would allow us to take more people when we went to different markets, attend trade shows or visit other stores around the country.”

The farthest market from Rouses headquarters is Orange Beach, Alabama, where they have eight stores. Driving there and visiting all the stores would take several days while the King Air makes it a one-day trip with stops at two airports.

Besides adding swept propellers, Donny said they haven’t made any modifications though will likely contract interior refurbishment and an exterior paint job in the next few years. They fly the King Air about 150-200 hours a year. Having a fleet allows mission flexibility, which grows more important as the footprint continues to grow. The Hawker 900XP is used for trips to trade shows in California and New York, or for travel related to the family’s business investments. The helicopter remains valuable for its ease of operation.

“If it’s just going to be me, I’ll take the helicopter and go,” he said. “Or if we have a full load on the King Air and a couple more people need to go somewhere, we’ll take the helicopter. The helicopter helps out a lot because I can fly it alone and we can land right in the store parking lot, no need for a rental car.”

He says he doesn’t see a future without the King Air.

“It just meets our requirements so well. For our one-hour flights, it has great speed and it has range when we need it,” he said. “It makes me more comfortable being able to grow our geographic footprint farther from our home base because it gives us the opportunity to get to those stores more often than we could if we didn’t have the King Air.”
Recently I was consulted about a PT6 undergoing a Hot Section Inspection (HSI). It began benignly enough; the hot section itself was in decent shape. But things took a left turn when a broken diffuser tube was found. This meant the rest of the engine (the “cold” section, if you will) had to be removed and inspected. The teardown of the compressor section revealed eight bad compressor blades (not to be confused with the CT blades on the turbine wheel). The engine shop tab is over $100K and the job is not yet complete.

**Ballpark Estimates**

King Air owners and operators need to know what it costs to maintain the aircraft, but when I’m asked for a ballpark figure on the HSI, I balk at the question – especially with someone new to King Airs. I hate to discourage them with the worst-case scenario, nor do I want to mislead anyone with a lowball estimate. When I had my shop, my wife often fielded this question. She explained that once the hot section is opened up, all sorts of things might be found that must be addressed. Her answer was “anywhere from $15,000 to $150,000, per side.” That’s a really big ballpark!

King Air owners who aren’t turbine engine experts can have a hard time wrapping their minds around the idiosyncrasies that can crop up during the HSI. And it’s especially frustrating when, prior to the inspection, the engine(s) seemed to be running great.
Sometimes you get a big zig when you expected a little zag. I remember the time I had two model 200s in my shop going through hot sections at the same time. The outcome for each was the opposite of what one would have logically expected.

**King Air A versus King Air B**

King Air A was a B200 with -42s (and Service Bulletin 3360 completed on each). It had around 5,500 total hours on the engines and 1,800 hours since overhaul. The tab from the engine shop was around $43,000 per side (this was about eight years ago). That didn’t include items like the R&R assist by my shop, freight charges and miscellaneous expenses.

King Air B was a straight 200 with -41s, both of which were on the MORE (Maintenance On Reliable Engines) program. One engine had roughly 9,800 total hours and the other had around 11,000 total hours. Both engines had run approximately 4,800 hours since overhaul. The last hot sections were 1,500 hours ago when these engines were first put on the MORE program. In accordance with the program, they were due another HSI.

One might assume that the older engines on King Air B, with 4,800 hours since overhaul, would have hot sections far more expensive than King Air A. Surprisingly, the for one engine on King Air B, the hot section was a mere $18,000 – nearly best-case scenario. The other engine was less cooperative and the engine shop’s tab came to $58,000.

**What Goes Wrong?**

It is very troubling to pilots and owner-operators when they’ve seen excellent engine performance indications in the cockpit, but at the HSI they get hit with astronomical bills. Understandably, many feel they are at the mercy of the engine shops.

Compressor blades from the compressor “cold” section of the engine. Some of the blades are good (shown by green line) and some are worn (shown by red line).
Even I sometimes feel these engines are a Pandora’s Box and as soon as we split that C-flange, all heck breaks loose. In reality, however, that is not the case.

Inside these engines the various parts begin to crack and/or erode on a microscopic basis. Over time, noticeable anomalies develop. Usually they are well within limits when first noticed, but eventually these anomalies exceed allowable limits and the part must be repaired or replaced. As simplistic as this may sound, any problems found and corrected during a Hot Section Inspection begin in this manner. My apologies to PT6 fanatics everywhere – I realize this is problem for you.

**The 1,000-hour HSI**

“If it ain’t broke, don’t fix it” is one of my most basic principles, but I will tell you a story that flies squarely in the face of that concept. Going back to 1978 or so, when the King Air 200s first came out, there was no Service Bulletin 3360. Engines were overhauled at 3,000 hours and HSIs were done in between at 1,500 hours. I was running the Beechcraft shop in Van Nuys, California, and King Airs reigned supreme.

In those days there were 1,000-hour inspection items on the airframe and 1,000-cycle items on the gear. Most of my customers did these simultaneously and had to leave their aircraft in the shop for more than a few days. I convinced a few of them (particularly those for whom downtime was a big problem) to let me perform hot sections at this 1,000-hour interval, concurrent with all this other maintenance. This meant they didn’t have to come back in 500 hours just for the HSIs. They could go 1,000 hours, then they came back for another HSI at 2,000 and an overhaul was at 3,000 hours.

These 1,000-hour HSIs were minimal in expense because the cracks and erosion were caught very early and were easily remedied. When we compared the HSI costs, we found in every case that the aggregate cost of two HSIs at 1,000-hour intervals was less than the cost of one at the 1,500-hour interval. Not only did these owners save downtime, they saved money. In fact, Pratt & Whitney even adopted a 1,000-hour HSI schedule for the PT6A-41s, for a while, based on the work we were doing in Van Nuys.

There is a little more to this whole picture, obviously. For example, back then we didn’t perform nozzle or borescope inspections every 400 hours; these engines weren’t touched between HSIs. Ah, those were the days. It was a different time and a much different economy. But you see my point: catching things early really paid off.

**Splitting the Engine**

When a PT6 is split at the C-flange, the power section is pulled away from the hot section, with temp harness and probes still attached. Portions of the power section are inspected on-site, and if no anomalies are found, the
power section stays behind. The hot section components, along with fuel nozzles, are sent to the engine shop for inspection, repair and/or replacement. The power section (male) and the hot section (female) fit together like a hand in a glove. Great care is taken at reassembly.

**Segments and T-Wheels**

Segments, which surround the T-wheel (turbine wheel), should always be changed at the HSI because the T-wheel is removed and trued (brought back to its original shape). If the old segments are left in, the clearances between them and the newly trued wheel are increased; this, in turn, causes the engine to run hotter and possibly not make performance specs.

Pratt had an issue a while back with warping segments rubbing against the T-wheel and reducing the outside diameter of the T-wheel too much. The T-wheels had to be re-bladed.

There are 58 CT blades on each wheel and they are expensive. These days they can run as high as $1,900 per blade. I’ll let you do the math on that one.

Sulfidation is a type of corrosion on the T-wheel blades found in engines that operate regularly in heavily polluted or salt-laden air. Turbine compressor washes help keep sulfidation to a minimum. Heavy sulfidation (Stage 3) will condemn the T-wheel blades.

**Burner Cans**

Burner cans (aka, combustion liners) always seem to crack, especially the newer two-piece construction. Some cracks are perfectly acceptable, but others need welding or new pieces installed (such as cooling rings). Burner cans are typically sent out for repairs which are always expensive and take extra time; but to exchange a burner can in the interest of saving downtime is an expensive proposition.

**CT Guide Vanes**

Compressor turbine (CT) guide vanes are subjected to the highest temperatures inside the engine. They are assaulted by flame pattern and corrosive particulate matter such as smog or salt-laden air. This abusive environment results in cracks, erosion and warping. Guide vanes have had lots of improvements in material and design over the years so they are better now than
they were years ago. Nevertheless, since they take the brunt of the wear and tear inside the engine, they develop problems that must be addressed. Prepare for sticker shock as $40-$50,000 is not unusual.

All guide vanes have a class expressed as a numerical designation. The class indicates how the guide vane flows. Replacement guide vanes, whether exchange or new, must be the same class, or the engine will not perform correctly. I cannot emphasize to you how critical it is that the engine shop correctly determine the class of vane being removed and replace it with the exact same class.

**PT Guide Vanes**

Power turbine guide vanes do not take as much abuse as their CT counterparts, but they still can crack or warp. Although located in the power section, they are inspected at the HSI. If they...
pass, they are not removed. If they don’t pass, they are removed for evaluation, repair or replacement. If replaced, the class is kept exactly the same as mentioned.

**PMA Parts, Exchange Parts**

Fortunately, there are now PMA parts available which can reduce the exorbitant costs in some areas. Not all engine shops will use PMA parts. Any warranty being extended by Pratt & Whitney will not cover PMA parts. At minimum, the engine shop should make every effort to find exchange parts where possible.

**Preventative Measures**

The best piece of advice I can give is to keep up with the fuel nozzle and borescope inspections at the recommended 400-hour interval. These will sometimes (not always) reveal a developing problem. Usually this would be something like minor sulfidation that does not
need immediate attention but can be monitored and fixed at the next HSI. Occasionally the borescope finds something that needs to be addressed right away.

Certainly, if you operate regularly within 100 miles of the coast or in and around big cities with frequency, insist on turbine compressor washes.

My final recommendation is to keep good records. Trend monitoring on your engines could reveal a slow, subtle change that you wouldn’t notice until you start comparing the figures from last week to last year. Further, trend monitoring comes in very handy when the engines go back together and you are trying to compare post-inspection performance with the way they ran beforehand. If you have it in writing, there is no guesswork.

My main message is that HSIs can be very unpredictable. Engines that have been running perfectly fine before the HSI can take a substantial bite out of your budget. And, as mentioned in the opening paragraph, the HSI could lead to issues elsewhere in the engine that must be addressed.

While I hope that all of your inspections go smoothly with no expensive snags, let’s not forget the whole purpose of these inspections – to find and fix a developing problem before anything catastrophic happens.

Have confidence in your engines and keep enjoying your King Air.

Dean Benedict is a certified A&P, AI with nearly 45 years’ experience in King Air maintenance. He’s the founder and former owner of Honest Air Inc., a “King Air maintenance boutique” (with some Dukes and Barons on the side). Now, with BeechMedic LLC, Dean consults with King Air owners and operators on all things King Air related; maintenance, troubleshooting, pre-buys, etc. He can be reached at dr.dean@beechmedic.com or (702) 773-1800.
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Tetration Aviation
ADS-B Preflight Requirement

The Federal Aviation Administration (FAA) will issue a NOTAM that will largely exempt general aviation operators from an ADS-B preflight requirement after the Jan. 1, 2020, deadline. The NOTAM exempts ADS-B Out transmitters that use WAAS GPS receivers as a position source from the preflight requirement and states specifically: “It is not necessary for operators of aircraft equipped with the Wide Area Augmentation System (WAAS) (TSO-C145 or TSO-C146) receivers to conduct a preflight availability prediction.”

ADS-B re: Flight Tracking Opt-Out

The National Business Aviation Association (NBAA) recently communicated that “given the long-standing recognition by government and industry of the need to maintain in-flight security, it is working with the FAA and other stakeholders to identify the most effective means to ensure that operators continue to have the ability to opt out from having their flights tracked in real time,” with new ADS-B technology, starting Jan. 1, 2020.

Through the FAA’s working group Equip 2020, the NBAA is working with other general aviation associations to develop an opt-out solution based on providing operators an alternate 24-bit ICAO (Mode S transponder) code.

“Under this solution, operators would retain their permanent transponder code tied to an aircraft’s N-number, but would also be able to use a secondary, nonpublished code, assigned and managed by the FAA, which would not link to the specific aircraft tail number. It is expected that operators could request a new secondary code at least once every 30 days.
“The addition of this new, secondary ICAO code program to the existing FAA Blocked Aircraft Registration Request (BARR) program would address not only what information managed by FAA is shared under BARR, but also the data transmitted by the aircraft itself to determine its identification throughout the NAS. While private ADS-B receivers could still detect an aircraft flying overhead, they would not see any information allowing them to match that aircraft to the owner listed in the FAA Registry.”

“Everyone agrees that a person shouldn’t need to give up his or her security when boarding an airplane,” said NBAA President and CEO Ed Bolen. “We remain committed to working with the FAA and others to ensure that operators are given an ability to opt out from having their flights tracked in real time, basically by anyone, anywhere in the world, who happens to have the appropriate equipment for doing so, and whose intentions may be unknown.”

The communication also stated: “Since 2000, Congress has repeatedly passed legislation mandating that the FAA provide a means for opting out from real-time flight tracking, regardless of the technology involved. While such a provision has long been in effect in the U.S., it does not necessarily apply to international flights.”

Change in IFR Clearances from Non-tower Airports

The FAA recently announced that in an effort to reduce the risk of potential errors, pilots calling via telephone for an IFR clearance or canceling a clearance from non-tower airports can now call the overlying Air Route Traffic Control Center (ARTCC) Flight Data Units or an approach control facility.

Previously pilots would call Leidos Flight Service (LFS), a contractor that provides flight service information for pilots flying in the United States and relay the request to FAA facilities. LFS will still relay clearances over remote-communications outlets (RCO) located on the airport, and also continue to provide full weather briefings and flight plan filing services, along with the relay and cancellation of IFR clearances for medevac pilots via telephone at (877) 543-7433.

Applicable phone numbers are published in the FAA’s Chart Supplement (formerly Airport/Facility Directory), which are available (broken down by region) for free online.
The delay caused by the need to build new ferry tanks – to replace the ones that had been crushed when tested with the original venting system – put the delivery of the Super King Air 200 to its buyer in Malaysia behind schedule. Sabah, the Malaysian state on the island of Borneo, had bought the airplane to be used by its chief minister and his staff to both travel to various cities within Borneo, as well as make the occasional trip across the south China Sea to the Malaysian capital, Kuala Lumpur, and to Singapore, the bustling city-state at the southern tip of the Malay peninsula. Both of these destinations were about 900 nm west of Sabah’s capital, Kota Kinabalu.

California had been experiencing drought conditions for much of 1977, but as 1978 dawned the rains finally began. Boy, did they begin! The weather pattern suddenly shifted and allowed the wet storms in the Pacific to reach the California coast at last. It was great for the empty lakes and thirsty fields, but bad for our desire to get the 200 safely across the ocean to its new home. The experienced ferry pilot, Nick – not his real name but the one I use here – and I had calculated that we could safely handle an average headwind component on our flight to Hawaii of 30 knots. Now, however, the winds were averaging 50 knots and more! Each day we would check with Oakland Flight Service Station (remember when we actually spoke to briefers?) and receive the depressing news that the winds were still too strong. A week went by, then another. We were not able to take on any further assignments since we had to be ready to depart immediately when the winds finally abated.

After what seemed like an eternity, the briefer indicated that if we departed the next morning the winds would meet our “less than 30 knots average headwind” requirement. Hurray! We rechecked all of our supplies, filed the flight plan – FL280 was our requested altitude – and arranged to have the standard and ferry tanks all filled to capacity early the next morning. We aimed for a 6 a.m. takeoff with a planned en route time of 10 hours.

How would we navigate to Honolulu? This 1977 King Air left the factory with a brand-new, long-range navigation system installed in the pedestal ... an early VLF (Very Low Frequency) system that used the Navy’s submarine communication radio waves for aerial navigation. Ever heard of such a thing? It was not IFR-certified – nor would it ever be – had no database and was very prone to losing the signals whenever the plane flew in precipitation. Yet, by typing in the Lat/Long coordinates of Honolulu and being able to see the desired track and distance while on the ramp at Oakland ... wow! Will wonders never cease! For “legal” purposes, we were flying based on NDB signals for as long as we could, both outbound from California and
inbound to Hawaii – both places had very strong NDBs – as well as simple compass headings based on forecast wind conditions.

Here’s the way Nick really navigated: He followed the jet contrails. I had asked him how he found the way to Hawaii in the 172s he more commonly ferried and that was his answer: Follow the contrails. At night, follow the lights of the overhead jetliners. “But, Nick, what if it’s cloudy? Then you can’t see the lights or contrails. What then?” I asked. “Oh, it’s never cloudy for very long over the Pacific,” was his somewhat surprising answer. By the way, the 172s and similar airplanes that Nick ferried went VFR, usually in “packs” of three to six airplanes flying in very loose formation, in uncontrolled airspace below 5,000 feet. He told me that he actually preferred flying a 172 or Cherokee to a 310 or Aztec since fuel/range was much more critical in the twins!

We received our IFR clearance, departed, climbed to 28,000 feet with no need for intermediate level-offs, enjoyed having the rising sun at our back and tried not to be bothered too much by the groundspeed readout on the DME. It is depressingly slow. As we accelerated into cruise and switched from our standard fuel to using the ferry fuel, all goes well. Our True Airspeed at our heavy weight and conservative power setting is about 240, but we had not yet seen a ground speed over 200. Damn! This was not looking good!

To be frank, the smart thing to do would have been to tell ATC we needed to return, do a 180 and head back to Oakland. But we didn’t. We were so “chomping at the bit” to head west after our more than two-week delay, we kept delaying that decision. With so much headwind our “point-of-no-return” was way far out there. We could fly a long time westbound, fighting the headwind, since the return flight eastbound would be flown in a much shorter time due to the now tailwind providing a much higher groundspeed. At times, our GS dropped below 160 knots. Golly, an 80-knot headwind! So much for our “less than 30” forecast.
As we neared the half-way point in distance, about five hours after takeoff – still thinking we would soon have to admit defeat and turn around – we hear a U.S. Navy C-130 on the oceanic HF frequency that we were using for ATC communications. He reports that he is at FL270 (just 1,000 feet below us), eastbound to his station in California, at a reporting point near but west of our own position … and he is complaining of the strong headwind that he’s been fighting! “What?! How can that be? But if it’s true, then maybe the average wind forecast is not as messed up as we think it is!”

Sure enough, in the next hour, without penetrating any obvious weather front, the wind does a tremendous shift of nearly 180 degrees and turns into a strong tailwind. Now the calculations indicate we can indeed make Honolulu with a comfortable fuel reserve. Nick and I both breathed sighs of relief and began to think that our decision to press onward perhaps wasn’t the most conservative course of action but at least this time it appeared to be leading to a successful outcome.

I mentioned earlier about the tendency of the VLF navigator to go into DR (Dead Reckoning) mode whenever it saw a cloud. This primitive system was “position tracking” not a “position finding.” When working properly, it knew your track and speed over the ground but it had to know your starting point. In our case that was KOAK. When it went into DR mode, it retained the same track and speed information based on where you were when it lost a navigable signal. When the signal returned, it would become the new starting point from which it continued its position-tracking. All told, I estimate that it was in DR mode for at least three hours.

When we finally got line-of-sight reception of a VORTAC on the islands, it was with relief that we realized we were quite close to where the VLF thought we were. As we shut down on the Honolulu ramp, the VLF had a position error of 6 nautical miles. Guess what? We considered that absolutely fantastic! How stunningly amazing is the accuracy of the modern GPS system to us old-timers who flew for so long without it! Our total flight time was 10:41.

The California-Hawaii leg is the longest overwater crossing there is. Our next legs were Honolulu to Majuro, Majuro to Port Moresby, then Port Moresby to Kota Kinabalu. Unlike the leg we had just completed, not only were these upcoming legs a little shorter, but also there were some alternates within range – a comforting thought. In addition, strong headwinds were unlikely.

When we started up the next morning – following a nice dinner, a good night’s sleep, a hearty breakfast and a refilling of all the tanks – we encountered a surprise: The right generator would not come on. It had just worked in its starter mode so the unit was not completely shot but no matter what we tried, we had no generator function. Darn! We told ATC to put our departure on indefinite hold because we had a problem and would not be taxiing out at this time.

We shut down, opened the cowling, visually confirm that the starter/generator seemed fine, and made a call to maintenance back at Beechcraft West in Hayward, California. We agreed that the GCU (Generator Control Unit) was the most likely source of the problem.

Four days later, we finally departed Hawaii. “Oh sure!” my friends say. “The generator just happened to fail,
forcing you to spend four extra days enjoying the sun and sand on Waikiki!” If that were only true! Instead, with no King Air maintenance at the airport and under the guidance of the pros at Beechcraft West, I spent most of that time stretched out in the narrow King Air aisle, wedged between the ferry tanks, rolling back the carpet and removing the access panel to reach the side-by-side GCUs, swapping them to see if the problem followed – which it did – ordering a rush delivery of a replacement, then installing it when it arrived. (OK, I admit that there was one day at the beach while waiting for the unit to arrive!) Can you guess how hot and stuffy it gets while working for hours in a parked 200 in the heat of Honolulu? I was very happy when that repair was finished!

The next two legs – Honolulu to Majuro in the Marshall Islands, then Majuro to Port Moresby, New Guinea – were respectively about 2,100 and 1,800 nm. The wind was very light so we calculated the total flight time would be about 17 hours. Nick wanted to do this in one day, using Majuro as a lunch and fuel stop, then continuing to New Guinea for the night. With that in mind, we filed for a 4 a.m. local time departure. He showed me an amazing thing after we started up on the ramp at Honolulu. He tuned the ADF receiver to the AM radio station at Majuro and I’ll be darned if the needle didn’t immediately come alive and point right to our destination! We could even hear a bit of the radio show. Nick said that this tremendously long AM range was very common to experience at night but never in daylight. He was certainly correct about that on this leg. The ADF needle lost its hold as soon as the sun came up and did not start pointing correctly again until about 100 miles out.

We landed on the one runway at Majuro, on the atoll with ocean water on both sides. Fueling went quickly and we had a tasty lunch in the small terminal building. We were off again within an hour and enjoyed another uneventful flight to New Guinea.

Ah, New Guinea. Nick had a contact person there who promised that our overflight permit for crossing Indonesia – which we had not yet received – would be “no problem!” with his help. Two days later we were becoming quite certain that there was indeed a problem and that this handling agent was not being very helpful at all in resolving the issue. Finally, we all drove to the Indonesian consulate, our agent told us to wait outside while he entered, and within a few minutes he returned with a big smile and saying “It’s all OK! You are good to go!” He never gave us any paperwork at all, not an overflight permit number. To this day, I don’t know if he really arranged the permit for us or if he just knew we probably would not be asked about it anyway!

We departed early on the following morning for the 1,800 nm leg to our final destination, Kota Kinabalu, the capital of the Malaysian state of Sabah. Weather was fine and, for a change, we had lots of islands to view as we crossed a lot of Indonesia instead of just miles and miles of ocean.

We taxied to the Sabah flight department’s hangar to shut down and were met by an enthusiastic crowd of pilots and maintenance personnel. At long last – nearly a month behind schedule – their new BE200 had arrived! The next day Nick got on an airliner to start his return to the states. I, on the other hand, began a four-month stay as I flew the airplane for the State while providing additional flight training and line experience for the two Malaysian pilots who had previously attended King Air 200 Initial Training at the Beechcraft Training Center in Wichita. What an interesting four months it would be! Maybe I should tell you more of those tales sometime. Would you like that?

King Air expert Tom Clements has been flying and instructing in King Airs for over 46 years, and is the author of “The King Air Book.” He is a Gold Seal CFI and has over 23,000 total hours with more than 15,000 in King Airs. For information on ordering his book, contact Tom direct at twcaz@msn.com. 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 editor@blonigen.net.
By 1927 the commercial aviation industry in the United States was still in its infancy. By contrast, cars and jazz music were fast becoming “all the rage” as millions of Americans accelerated a never-ending romance with the automobile. Although it had been nearly 10 years since the end of the Great War that made “aces” and their airplanes front page news, as the “Roaring Twenties” entered its last three years the flying machine still was largely regarded as a novelty – a mysterious contraption that few people believed would amount to anything useful.

In May of that year, a young airmail pilot changed that misguided perception forever. Charles A. Lindbergh’s solo, eastbound flight across the Atlantic Ocean from New York City to Paris, France, firmly demonstrated the airplane’s potential as a vehicle for long distance travel. A few decades and another world war later, the airplane eventually brought the glory days of transoceanic travel and transcontinental railroads to an ignominious end. As pioneer aviator Clyde V. Cessna said in 1911, “Speed is the only reason for flying.”

A few years before Lindbergh’s epic trek above the treacherous North Atlantic, Wichita, Kansas, had earned a reputation as one of the first, if not the first, city in the United States to embrace the mass manufacture of airplanes for commercial sale. Before “Lucky Lindy” (a term that Lindbergh hated) chose a Ryan monoplane for his flight, he had contacted Walter H. Beech, president of the Wichita-based Travel Air Manufacturing Company, in February 1927 about building an airplane suitable for the journey. His telegram is quoted here in full:

“New York-Paris flight under consideration. Requires Whirlwind plane capable of 45 hours flight with pilot only. If you can deliver, state price and earliest delivery date.”

Mr. Beech knew the company could custom-build a monoplane to Lindbergh’s specifications, but that would mean delaying for weeks the production of airplanes already on order. It was with a sense of regret that Beech telegraphed Lindbergh that the company could not delay production and delivery of customer airplanes. Walter did, however, send a hearty congratulations to Lindbergh before he landed at Le Bourget Airport on the night of May 21. The lanky airmail pilot quickly sent Beech a telegram thanking him for expressing confidence that the flight would be a success. Apparently, Walter had faith in Lindbergh and never doubted that the Spirit of St. Louis would land in Paris after more than 33 hours in the air.

Lindbergh’s flight ignited America’s zeal for aviation, and only four days after Lindbergh’s arrival in France, James D. Dole, the wealthy owner of Hawaii’s pineapple empire, offered a prize of $25,000 for the first airplane
to fly nonstop from California to the United States Army’s Wheeler Field near Honolulu, Territory of Hawaii. The second-place finisher would receive $10,000. The only stipulation was that the flight had to be nonstop and completed within one year after the date of Aug. 12, 1927.

When Lindbergh landed in France, Dole was in San Francisco, California, reading the newspapers about “Lucky Lindy’s” triumphant flight. After considerable thought and discussion, Dole had the following statement printed in the Honolulu Star Telegram for May 25, 1927:

“James D. Dole, believing that Charles A. Lindbergh's extraordinary feat in crossing the Atlantic is the forerunner of eventual transpacific air transportation, offers $25,000 to the first flyer and $10,000 to the second flyer to cross from the North American continent to Honolulu in a nonstop flight within one year after the year beginning Aug. 12, 1927.”

In the wake of Dole’s challenge, air racing fever reached a near fever pitch. By late June the Travel Air company had received 17 orders for specially-modified monoplanes to compete for the prize, but these were rejected when it became clear that the pilots lacked not only the money necessary to build such an airplane, but the qualifications and experience to fly it halfway across the vast Pacific Ocean.

Meanwhile, north of downtown Wichita, 54-year old Jacob “Jake” Moellendick was facing a major decision that he knew would either “make or break” the Swallow Airplane Manufacturing Company. The business had begun in 1919 when Jake and E.M. “Matty” Laird teamed up to produce the Swallow – a double-bay, three-place biplane powered by the ubiquitous, war-surplus Curtiss OX-5 engine. By late 1923 about 40 had been sold before Laird resigned and relocated to his hometown of Chicago, Illinois, where he became a successful builder of custom biplanes.

In early summer 1927 a Texan named William P. Erwin had placed an order for a cabin monoplane specially designed and equipped to compete in the Dole race. Time was short – only two months remained before the Aug. 12 deadline. Jake’s chief engineer, Waverly Stearman (brother of Lloyd C. Stearman) was in the process of completing the engineering drawings and plans to build the ship to Erwin’s specifications.

For years Moellendick had been a gambler, betting that his oil fields in Kansas would strike black gold (and they often did). Customers for the Swallow were becoming impatient to take delivery of their airplanes, the backlog already was more than the small factory and workforce could cope with, and dealers were becoming angry as delays continued. Jake, however, made up his mind to build Erwin’s airplane. The production line screeched to a halt and all resources were directed to building the monoplane Erwin called Dallas Spirit.

By early August, activity at the Swallow facilities had reached a frenetic pace as workers scrambled to complete Erwin’s ship in time for the race. The rules of the race required that each pilot have a navigator, and Erwin signed up Alvin Eichwaldt who was soon familiarizing himself with the airplane’s navigator compartment. Unfortunately, the Swallow monoplane missed the entry deadline, but an agreement was reached that delayed the takeoff date to Aug. 16.

As with his old friend Jake, Walter Beech also was willing to take a risk. The board of directors authorized him to negotiate with only two pilots desiring to place orders – Arthur Goebel and Bennett Griffin – to custom-build Type 5000 monoplanes for the race. Goebel was a well-known pilot and respected businessman based at Clover Field near Santa Monica, California. He learned to fly in 1920 and had flown many stunt scenes for National Pictures, Inc. Walter Beech received his order June 17 and Goebel arrived at the factory for five days of interviews and questions about his flying abilities. Finally, he signed a contract and plunked down the required $5,000 deposit to begin construction, with the balance $15,000 due upon delivery early in August.
The second order received by the Travel Air Company came from Griffin and navigator Al Henley. After the usual interviews and questioning about their experience in the air, they signed a contract and handed Walter Beech $15,000 to have their airplane ready by August. Griffin had flown French-built Nieuport bombers during the war, and Henley had 10 years of flying under his belt and learned aerial navigation in the U.S. Army. Their money came from four businessmen in Oklahoma therefore the ship was named “Oklahoma” in honor of the state.

Goebel still needed a navigator. His good friend and naval aviator D.W. Tomlinson recommended Lieutenant William V. Davis. He was a graduate of the U.S. Naval Academy (Class of 1924), was trained in celestial and marine navigation and was an expert with radio communications equipment. The Navy granted the young lieutenant temporary leave to fly with Goebel.4

As the time for delivery of both monoplanes approached, Goebel could not pay the balance due. Fortunately, oilman Frank Phillips, who had agreed to help sponsor the Oklahoma, decided to fund Goebel’s airplane, too. Phillips’ only request was that the Travel Air be named in honor of his grand estate near Bartlesville known as Woolaroc – a blend of the words Woods, Lakes and Rocks. Both Griffin and Goebel flew their airplanes to Bartlesville so Phillips could see what he was paying for – $30,000 – worth of flying fuel tanks. Each ship carried more than 450 gallons of Nu-Aviation fuel, recently developed by the Phillips Petroleum Company for the aviation industry.
Time was running out for entrants to arrive at Oakland, California, for inspections prior to race day, and both Griffin and Goebel flew west, the former arriving Aug. 6 and the latter Aug. 9. Of the original 15 contenders, only eight remained. Three aircraft had been wrecked and one was disqualified as totally unsuitable for a transoceanic dash. The other three withdrew because of funding, construction issues or second thoughts about flying to Hawaii.

Race officials emphasized that a navigation error of only two or three degrees across a distance of 2,500 miles would result in missing the Hawaiian Islands entirely, with certain death awaiting in the cold depths of the Pacific Ocean. A few of the airplanes were poorly equipped to undertake the flight, with only two magnetic compasses to guide their brave airmen, but others, including the three ships built in Wichita – Oklahoma, Woolaroc and Dallas Spirit – were equipped with state-of-the-art earth inductor compasses developed by the Pioneer Instrument Company.
Both Erwin and Eichwaldt had finished their tests and were found qualified to take off for Hawaii, as were Goebel and Griffin.

As race day approached, final preparations were completed by each crew and their airplanes fueled for takeoff the next morning. A signal code was transmitted to any ships plying the sea lanes between Hawaii and California during the race. In addition, 10 commercial merchant vessels and eight U.S. Navy destroyers would be cruising the same area and were instructed to fly signal flags in a code that would indicate their distance from San Francisco along a Great Circle Route. That would allow airplanes to swoop low over the ships and verify their position. As a final measure, ships were given descriptions of each airplane in the race and the order they would depart Oakland Airport. If pilots saw a ship at night, they were to signal their race number in Morse Code and the ship would transmit the sighting to San Francisco and Honolulu.

The stage was set to begin the great aerial trek to Oahu. The next day, at precisely high noon in Oakland, the first airplane would take off into the western sky to be followed by seven other ships and their intrepid crews. Before them lie 2,500 miles of empty, unforgiving ocean and a black night fraught with hazards. The Dole Race

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Aerial view of the Oakland airport taken by the Aerograph Company that documented the pilots, airplanes and hectic activities that preceded the Dole competition. The nine contestants on race day were the Oklahoma (at the starting line), Aloha, Dallas Spirit, Miss Doran, Woolaroc, El Encanto, Golden Eagle, Miss Peoria and the Pabco Pacific Flyer. (Frank Phillips Foundation, Inc., Bartlesville, Oklahoma)
was never intended for the faint of heart, the fearful or the weak. It was both an enormous gamble and an exciting adventure, with either glory or death awaiting them all.

Notes:

1 It is important to point out that development of the static, air-cooled radial engine during the early mid-1920s made many long-distance flights of the late 1920s possible. Lindbergh had specified that a Wright Aeronautical, nine-cylinder J-5-series Whirlwind engine power his Ryan Spirit of St. Louis monoplane. Water-cooled piston engines of the time had reached a high degree of development but were heavier and more vulnerable to systems failures on long flights.

2 The first airplane to make a nonstop flight to Hawaii was a U.S. Army Fokker monoplane named the Bird of Paradise piloted by Lieutenants Lester Maitland and Albert Hegenberger. They departed California June 28, 1927, and landed at Wheeler Field the next day. The first commercial airplane to complete a nonstop flight to Hawaii was a Travel Air Type 5000 cabin monoplane dubbed City of Oakland, flown by Ernest Smith. The first attempt in June had to be aborted, but in July he was ready for a second attempt. After flying for more than 25 hours, Smith and his navigator, Emory Bronte, made a forced landing on the island of Molokai after the Wright radial engine suffered fuel exhaustion. Unfortunately, their flight has been largely forgotten. It was, however, well planned and carefully executed and made an important contribution to the advancement of aeronautics and long-distance flying.

3 Erwin had been a captain in the Great War and despite being shot down six times in combat, managed to shoot down eight of the enemy. He was awarded the Croix de Guerre for his feats in the air.

4 In the author’s opinion, Davis ranked as one of the most competent navigators enlisted by Dole race competitors, and Goebel was glad to have him on the Travel Air Woolaroc’s team. Later, Goebel would praise Davis for his performance during the long overwater flight that kept them safely on course all the way to the island of Oahu.

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.
Blackhawk Receives FAA Approval of New Engine Upgrade Program for KA300

Blackhawk Aerospace announced that the Federal Aviation Administration (FAA) has issued a Supplemental Type Certificate (STC) for the XP67A Engine+ Upgrade for both the 14,000 and 12,500 lb. gross weight versions of the King Air 300. This upgrade removes the standard 1050 shaft horsepower (SHP) PT6A-60A engines and Hartzell 4-blade metal propellers and replaces them with factory-new 1200 SHP PT6A-67A engines and Hartzell 5-blade composite propellers.

The company says the advantages of the upgrades are more available power from the PT6A-67A engines and more available thrust from the advanced shape and aerodynamics of the Hartzell 5-blade composite propeller for superior performance, noise abatement and weight reduction. The results from combining these two products delivers the best performing King Air on the planet.

From the first flight test to the receipt of the STC, Blackhawk’s engineering team completed the task in just nine months and flew 80 hours of certification flights. During flight testing, the power pairing delivered maximum cruise speeds as high as 343 knots true air speed (KTAS) with an initial rate of climb up to 4,000 feet per minute (FPM). This results in a time to climb from SL to FL350 is 19 minutes – cutting the time to climb by more than half over the stock King Air 300. Other benefits include a net gradient of climb at 4.2
percent (a 100% improvement), and single engine climb of 740 fpm (an 80% gain).

The company also states that performance benefits of the XP67A also help to improve the bottom line. Flying in Reduced Vertical Separation Minimum (RVSM) airspace can extend range and endurance, which may also lower total fuel consumption, and reduced block times will lower operational costs. Specifically, an operator flying 300 hours a year can expect to save about 50 hours, or $75,000 USD in operating costs.

Blackhawk will be offering a $100,000 discount as a special. Orders placed before Sept. 31, 2019, will qualify.

For more information about the XP67A Engine+ Upgrade for the King Air 300, visit www.blackhawk.aero or call +1 (254) 755-6711.

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ForeFlight 11.6 is available now at the App Store and also includes Map Annotations, Checklist Speak, Logbook Instructor Tools allowing flight instructors to send endorsements remotely, and more.

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At Elliott Aviation, we are Garmin’s #1 King Air G1000 NXi retrofitter and we’ve completed more Garmin G1000 installations than all other dealers in the world COMBINED! For current G1000 owners, the NXi gives you a cost-effective, plug-and-play solution that can be completed in as little as two days. As a Factory Authorized King Air Service Center, Elliott Aviation offers on-site training to make sure you are comfortable with your system before you leave.

The Garmin G1000 NXi Features the Following Upgrades over the Standard G1000:
- SurfaceWatch Runway Monitoring Technology
- Optional Cockpit Connectivity Including Automated Database Transfer
- MFD Display-Like in the HSI on the PFD (Can Include SafeTaxi, Flight Plan, METAR’s and More)
- Greater Display Resolution and Brightness
- Improved Map Performance
- Many More Improvements!