King Air

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

JANUARY 2022 • VOLUME 16, NUMBER 1 • $6.50

Essential Element

Advanced Air puts King Air 350 into EAS & charter service

MORE THAN JUST ANOTHER AIRFRAME. IT'S IN OUR BLOOD.

It's one thing to know every square inch of an airframe. It's another to truly appreciate what it stands for and what it means to the thousands who love to fly it. Stevens has been a trusted resource for the King Air series following the very first flight in 1964. Today, we bring unsurpassed maintenance, avionics, engine, interior and paint support to King Air owner/operators from around the world. Technical expertise with a uniquely personal touch. That's the Stevens difference.

STEVENS AEROSPACE AND DEFENSE SYSTEMS
EST.1950

Scan the QR code to see Charles Parish discussing the Beech Heritage Museum, along with his newly refurbished King Air C90.

StevensAerospace.com | 800-513-9164 | 24/7 AOG - 833-4AOGHELP | Greenville SC | Nashville TN | Dayton OH

King Air

January 2022 Volume 16 / Number 1

A MAGAZINE FOR THE OWNER/PILOT OF KING AIR AIRCRAFT

Contents

EDITOR
Kim Blonigen

EDITORIAL OFFICE
2779 Aero Park Dr.,
Traverse City MI 49686
Phone: (316) 652-9495
E-mail: editor@blonigen.net

PUBLISHERS
Dave Moore
Village Publications

GRAPHIC DESIGN
Rachel Wood

PRODUCTION MANAGER
Mike Revard

PUBLICATIONS DIRECTOR
Jason Smith

ADVERTISING DIRECTOR
Jenna Reid
King Air Magazine
2779 Aero Park Drive
Traverse City, MI 49686
Phone: 1-800-773-7798
Fax: (231) 946-9588
E-mail: jenna.reid@vpdcs.com

ADVERTISING ADMINISTRATIVE COORDINATOR AND REPRINT SALES
Betsy Beaudoin
Phone: 1-800-773-7798
E-mail: betsybeaudoin@villagepress.com

SUBSCRIBER SERVICES
Rhonda Kelly, Mgr.
Kelly Adamson
Jessica Meek
Jamie Wilson
P.O. Box 1810
Traverse City, MI 49685
1-800-447-7367

ONLINE ADDRESS
www.kingairmagazine.com

SUBSCRIPTIONS

King Air is distributed at no charge to all registered owners of King Air aircraft. The mailing list is updated bi-monthly. All others may subscribe by writing to: King Air, P.O. Box 1810, Traverse City, MI 49685, or by calling 1-800-447-7367. Rates for one year, 12 issues: United States $15.00, Canada $24.00 (U.S. funds), all other foreign $52.00 (U.S. funds). Single copies: United States $6.50, Canada/Foreign $9.00.

COVER PHOTO

Courtesy of Advanced Air, LLC

King Air (ISSN 1938-9361), USPS 16694 is published monthly by Village Press, Inc., 2779 Aero Park Drive, Traverse City, Michigan 49686. Periodicals Postage Paid at Traverse City, MI. POSTMASTER: Send address changes to King Air, Village Press Inc., P.O. Box 1810, Traverse City, MI 49685. Telephone (231) 946-3712. Printed in the United States of America.

ADVERTISING: Advertising in *King Air* does not necessarily imply endorsement. Queries, questions, and requests for media kits should be directed to the Advertising Director, King Air, P.O. Box 1810, Traverse City, Michigan 49685. Telephone 1-800-773-7798.

MANUSCRIPTS: *King Air* assumes no responsibility for unsolicited manuscripts, photographs, or art work. While unsolicited submissions are welcome, it is best to query first and ask for our Writer's Guidelines. All unassigned submissions must be accompanied by return postage. Address queries and requests for Writer's Guidelines to the editor.

Advanced Air's home base is at Hawthorne Municipal Airport, where the company owns Jet Center Los Angeles and manages the airport's long-term property lease.

Levi Stockton, founder and president of Advanced Air, LLC.
(Photo by Heather Leven Photography)

Controlling Destiny

Pilot Levi Stockton is building a West Coast aviation empire

by MeLinda Schnyder

From flying and managing one Beechcraft King Air in 2005 to directing a fleet of 23 aircraft and the operations of the flourishing Hawthorne (California) Municipal Airport, Levi Stockton is skillfully navigating his career and the growth of a company he convinced four real estate investors to support when he was 23 years old.

The pilot-turned-entrepreneur is the founder and president of Advanced Air, LLC, which formed in 2005 and is now considered to be one of the fastest growing business aircraft operators in the country while operating among the largest managed aircraft fleets on the West Coast.

"The first full year after we got our charter certificate we flew 125 hours total, and today we probably fly at least that many hours on a holiday weekend," Stockton said. "When we started, I quoted every trip and flew every trip single pilot; we really didn't have any other employees. Now we have a team of 130 employees and 60 pilots, and every flight has a crew of two."

Advanced Air owns or manages 23 aircraft and counting; in addition to seven King Air 350 models, the company's roster includes Pilatus PC-12 single-engine turboprops, Learjet 75 light jets, Bombardier Challenger 300 nine-passenger jets and 30-passenger Dornier 328 regional jets.

Launching in 2005, Advanced Air is now considered to be one of the fastest growing business aircraft operators in the country while operating among the largest managed aircraft fleets on the West Coast.

The company's services have grown from aircraft management and charter to also include corporate travel, supplying flight crews, property management services and, since 2015, regional commercial service through the U.S. Department of Transportation's Essential Air Service (EAS) program. EAS subsidizes a minimal level of scheduled air service in small communities that were served by certificated air carriers before airline deregulation.

While Stockton is no longer the chief pilot, he remains an active line pilot flying King Air 350 aircraft. He still considers the King Air to be the core of Advanced Air's operations and representative of why the Los Angeles-based company's business model works. Of Advanced Air's roughly 10,000 hours flown in the past year, about 4,000 were flown in King Air aircraft, half scheduled service and half private charter. Having scheduled service in the mix, he said, allows the company to consistently fly a customer's aircraft six hours a day versus six hours a week, if that's their desire. That adaptability and scalability allows them to grow in different directions simultaneously or move in a new direction with an existing resource.

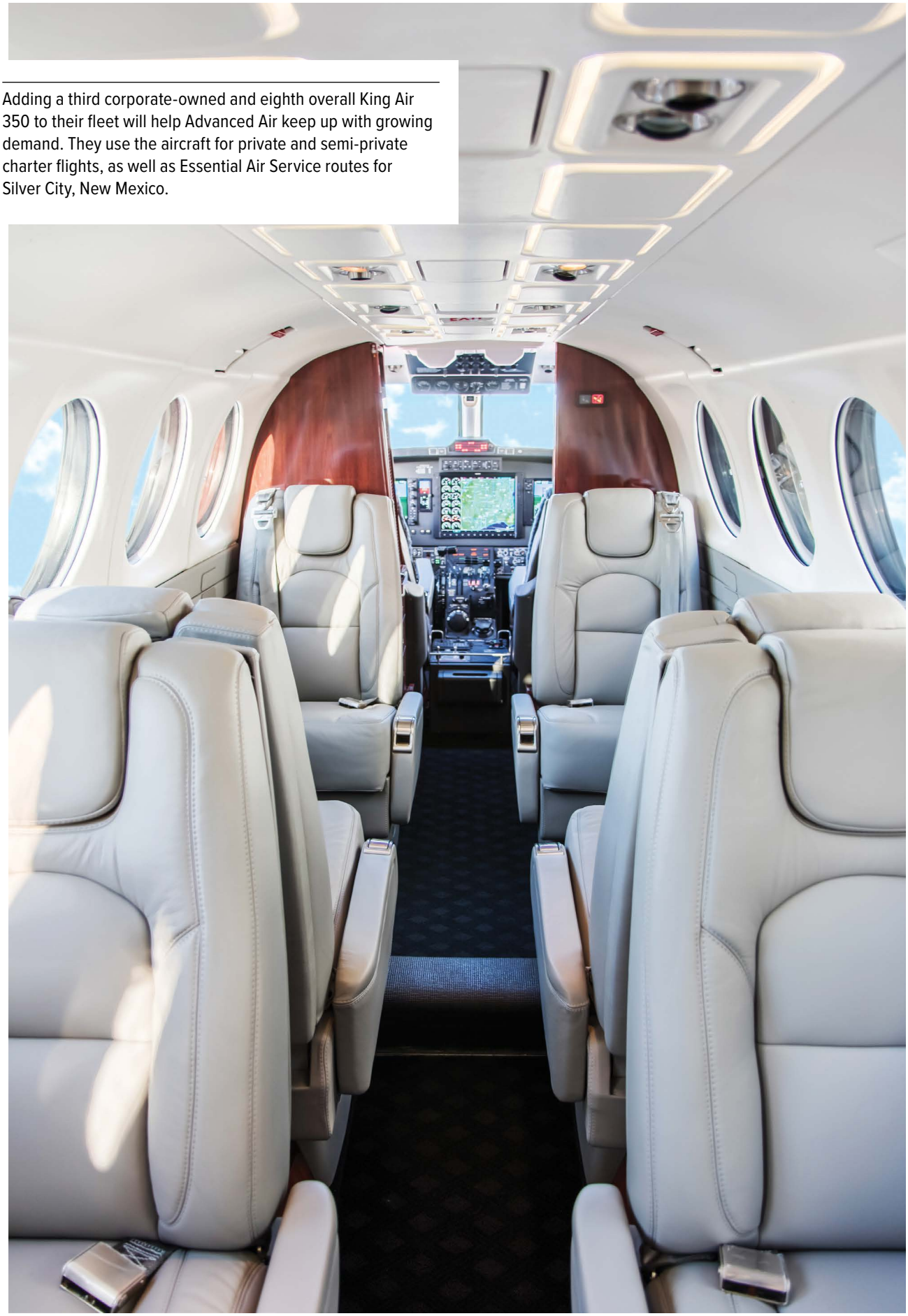
"The key to Advanced Air's success has been taking the assets we have and finding opportunity with them," Stockton said. "Our core has always been that we're an aircraft management company that can offset owners' costs with charter. Where historically charter has been hard to work around schedules, we now have the availability to take a King Air 350 and plug it into our scheduled service network, meet the owners' budget and pull it back out and have it ready for them where they need it. This model allows us to increase utilization across the fleet in a very unique way."

How it Started

Stockton knew from an early age that he wanted a career as a pilot. He grew up in Washington state with his mom and he and his sister often flew commercially to Alaska to visit their dad. As unaccompanied minors, they regularly were invited to visit the cockpit. His father purchased a Piper Pacer when Stockton was 12 years old, further fueling his interest in aviation.


SPEED
SAFETY
SAVINGS
XP67A ENGINE+ UPGRADE
FOR THE KING AIR 300/350
Factory-new PT6A-67A engines from Blackhawk deliver better-than-new performance, increased reliability, higher safety margins, and a significant return on investment. Call today to see what you've been missing.
BLACKHAWK
AEROSPACE
+1 (844) 832-4456 + blackhawk.aero

Adding a third corporate-owned and eighth overall King Air 350 to their fleet will help Advanced Air keep up with growing demand. They use the aircraft for private and semi-private charter flights, as well as Essential Air Service routes for Silver City, New Mexico.



His flight career started at Sierra Aeronautical Academy in the Bay Area right after he finished high school. After flight training, he worked as a flight instructor in the academy's Air China and Korean Air training programs. He earned his first type rating at the age of 20, flying cargo in the Fairchild Metroliner SA227. He next moved to a regional airline on the East Coast and then in 2005, the 23-year-old Stockton accepted a job as captain of a King Air 350 owned by four real estate developers in Southern California.

He flew the airplane and coordinated with a local charter and management company that the owners were using to manage the King Air. His entrepreneurial spirit emerged quickly, though, and he wanted to do more than just fly the airplane.

"I reached out to my bosses, who are now my partners, and proposed starting our own charter company," said Stockton, now 40. "The original response I got was no. So I said we can either start the company or consider this my letter of resignation and I'll go fly for the airlines. They responded back, 'Well, it looks like we're starting a new charter company.'"

"The key to Advanced Air's success has been taking the assets we have and finding opportunity with them."

Advanced Air launched in 2005 and in November 2007 was issued a Part 135 Air Carrier Certificate. As they started to grow their fleet of managed and owned aircraft,

Part of Advanced Air's continued growth included purchasing Jet Center Los Angeles at Hawthorne Municipal Airport (HHR).

SoFi Stadium, home of the NFL's LA Rams and LA Chargers, is hosting Super Bowl LVI scheduled for Feb. 13. Opening during fall 2020 in Inglewood, 2 miles from HHR, resulted in increased flights at the Jet Center by 30% on game days.

"... as you grow, you build relationships and see opportunities."

Stockton said they opted for a philosophy of operating at least three aircraft of the same make and model to improve efficiency and ensure safety.

"For years we only did on-demand charter and that's still a huge piece of our business," he said. "But as you grow, you build relationships and see opportunities."

Among those opportunities was operating flights for app-based air travel membership services considered the "uber of private aviation," including Surf Air and the former JetSmarter (acquired in 2019 by XOJet, now XO).

"Instead of flying an aircraft maybe six hours for a weekend golf trip, we could fly an airplane six hours a day or more with scheduled service," Stockton said. "We were flying West Coast routes and it was adding up to about 40 hours of flying a week consistently. Having that kind of set amount of flying was interesting to us as a company because it allowed us to go and get more aircraft. We could sit in front of an aircraft owner and show them how much we could use their plane."

That led to another big step for Advanced Air.

"We were limited to four and a half round trips per week between city pairings unless we got our Commuter Air Carrier authorization from the DOT," he said. "So we went through that process and became a commuter airline, and now we can operate between city pairings as many times as we want."

In addition to more work with Surf Air (a relationship since 2018) and Taos Air (since 2019), Advanced Air began bidding on EAS contracts. Their first win was Silver City, New Mexico, and they recently announced a second EAS contract for Merced in Northern California. The operations started Jan. 1 with 24 weekly roundtrip flights to LAX and 12 weekly roundtrip flights to Las Vegas.

"You look at different operators in the Essential Air Service world and for the most part they are using Cessna Caravans, Pilatus or in some cases regional size jets. We knew the King Air very well and felt this was a great opportunity to enter the EAS market with the King Air 350," Stockton said. "It's been three years now that we've had the Silver City contract and we do it solely with the King Air 350, flying from Silver City to Albuquerque and Phoenix. Our reliability has been 98%, so the King Air 350 has proven to be a great asset on these routes."

In total, Advanced Air provides semi-private scheduled service in 12 regions – Arizona: Phoenix/PHX; California: Los Angeles Hawthorne/HHR, Mammoth/MMH, Carlsbad/CLD, Burbank/BUR, Merced/MCE, Thermal (Palm Springs)/TRM; New Mexico: Silver City/SVC, Albuquerque/ABQ, Taos/SKX; Texas: Austin/AUS, Dallas/DAL.

Advanced Air participates in the FAA's Aviation Safety Action Program, employs a modern safety management system and operates all flights with two pilots who have had full crew resource management training.

Passengers flying on an Advanced Air managed aircraft get the same experience whether they are a charter customer or flying a semi-private scheduled flight, "which has brought a high-end product to Essential Air Service," Stockton said.

For Advanced Air, the majority of the King Air 350's operating ring is from LA over to Denver, then up to Vancouver and down to Cabo San Lucas.

"That half-circle is all nonstop in the 350 so it covers a huge area on the West Coast," Stockton said. "There are a lot of mountainous areas, especially going into ski destinations, and a lot of people like a twin-engine for that. The King Air checks so many boxes, from going into short runways to having proven reliability. It will take eight people and all their luggage and gear pretty much anywhere you want to go in that half-circle."

King Air aircraft in the fleet all have wing lockers, renewed interiors including center aisles outfitted with a dark, durable material, and updated paint, including a dark color behind the nacelle to help minimize the visibility of exhaust streaks.

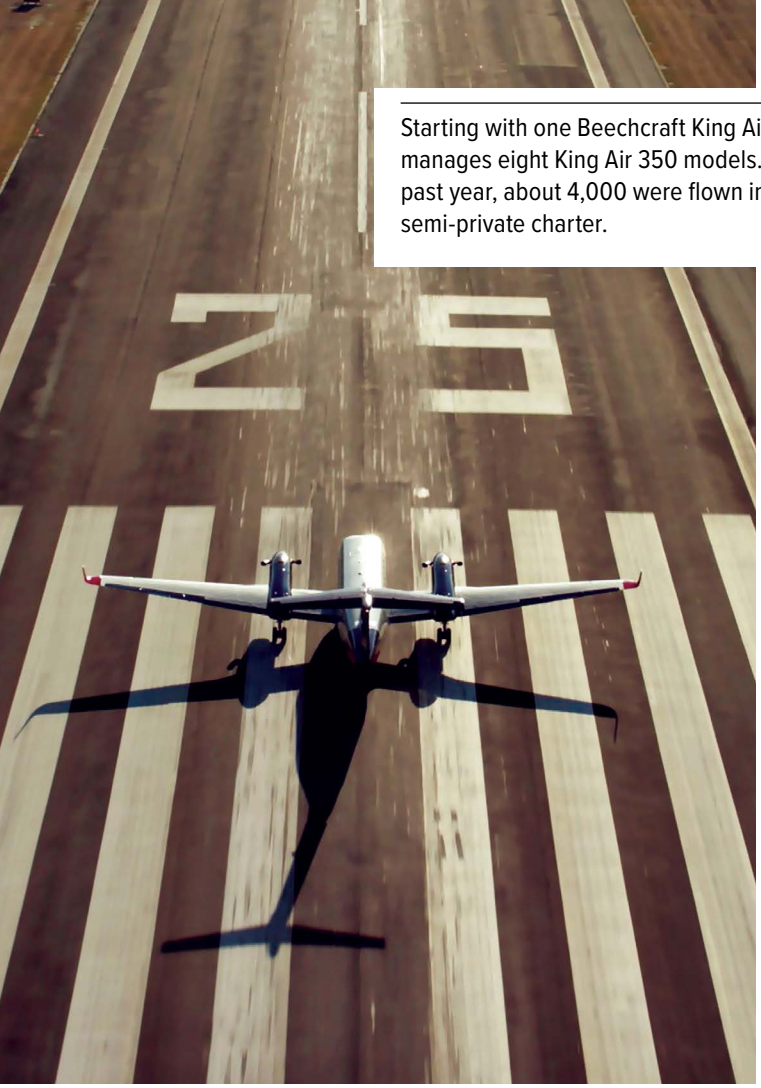
Advanced Air is in the process of purchasing a third company-owned King Air 350 (they still own the original King Air 350 that launched the company and Stockton

CHANNEL YOUR AIRFLOW FOR IMPROVED DIRECTIONAL STABILITY

Improve your King Air's directional stability with **RAISBECK'S DUAL AFT BODY STRAKES** for proven better pilot control and handling during takeoff, climb, cruise, and landing. By channeling airflow directly under the aft fuselage, Raisbeck's Dual Aft Body Strakes decrease drag, resulting in better cruise and climb performance, more comfort for your passengers, and reduced stress on aft fuselage stringers. Isn't it time for an upgrade and to add some stability to your investment?

(800) 537-7277 | sales@raisbeck.com | www.raisbeck.com

RAISBECK ENGINEERING
AN ACORN GROWTH COMPANY



Starting with one Beechcraft King Air 350 (which it still owns and operates) Advanced Air now owns or manages eight King Air 350 models. Of the Los Angeles-based company's 10,000 hours flown in the past year, about 4,000 were flown in King Air aircraft; half via scheduled service and half private and semi-private charter.

has about 2,000 hours in it). He said they look for aircraft with G1000 avionics or an aircraft that makes sense to upgrade to the G1000.

"The King Air 350 off the shelf pretty much covers everything you need," Stockton said. "We've found that the sweet spot is looking for serial numbers around 560 and above; the air conditioning system has been upgraded and there is a quieter cabin with no maintenance issues around the sound dampening system."

What's Next

Adding a third corporate owned and eighth overall King Air to their fleet will help Advanced Air keep up with growing demand in both private charter and semi-private scheduled service. Stockton said they are seeing business returning to pre-COVID numbers and better, in some cases.

"It's been fascinating to watch what's happening," Stockton said. "Airlines are coming back with higher prices and less frequency in certain areas. Business travel hasn't yet scaled back up so it'll be interesting to see when and how that comes back. Overall, we are seeing customers who now feel they can justify the price of chartering or customers who maybe didn't realize this was an option and now they are hearing about private aviation and semi-private options and realizing it's feasible and makes sense."

In December, Stockton said the company is close to launching a program under the Advanced Airlines umbrella that will make it more accessible to book private and semi-private charter flights. Their program will use a proprietary algorithm to optimize the private flying experience. His vision is that you'll be able to crowdfund to meet a minimum passenger number to make the charter cost-effective, buy empty seats or sell empty seats on platforms like Expedia and Travelocity.

"We're rolling out a tool that will change how you search, book and save on your next charter flight," he said.

Advanced Air's home base is within its own FBO at Hawthorne Municipal Airport. Stockton oversees the Jet Center Los Angeles and is the managing partner of the many properties the Advanced Air partnership has at HHR, including the airport's long-term property lease.

In recent years, they've recruited new tenants from Santa Monica Airport, scheduled to close at the end of 2028, and built more than 200,000 square feet of hangar space.

The transformation of what was once a sleepy airport with no new construction since the 1970s into what Stockton calls the Los Angeles area's premier aviation destination will take center stage next month.

SoFi Stadium, home of the NFL's LA Rams and LA Chargers, is hosting Super Bowl LVI scheduled for Feb. 13. The sports and entertainment complex that opened in fall 2020 in Inglewood is 2 miles from HHR and Stockton said it has increased flights at the Jet Center by 30% on game days.

Stockton said investments in facilities combined with the airport's convenient location, 4,884-foot runway and lack of noise restrictions make it a popular option in the LA basin. He anticipates at least 100 airplanes coming in the weekend of the Super Bowl, with departures around the clock.

The airport and the Jet Center have been planning for a year for a safe event and will use the experience to help prepare for LA's hosting of the 2028 Summer Olympics. Stockton is looking forward to showcasing the capabilities of the company his partners and team have grown over the past 17 years.

"Building Advanced Air into the aviation entity it is today has been one of the most fulfilling experiences of my life," Stockton said. "What started as a pipedream has become more than I ever imagined. I can only see us continuing to soar from here." KA

THE KING AIR 200 IS A GREAT AIRPLANE...

...MAKE YOURS EXCEPTIONAL

HALO 250

KING AIR 200, 250 & 260

13,420 POUNDS

MAX TAKEOFF WEIGHT

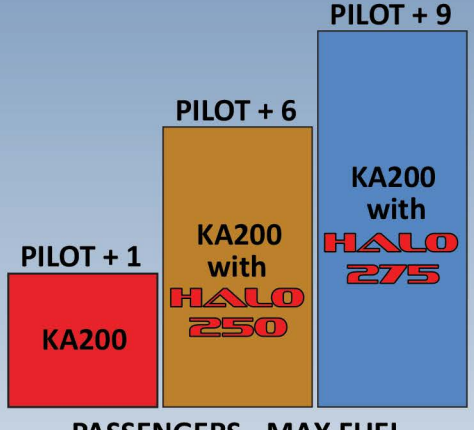
HALO 275

KING AIR 200, 250 & 260

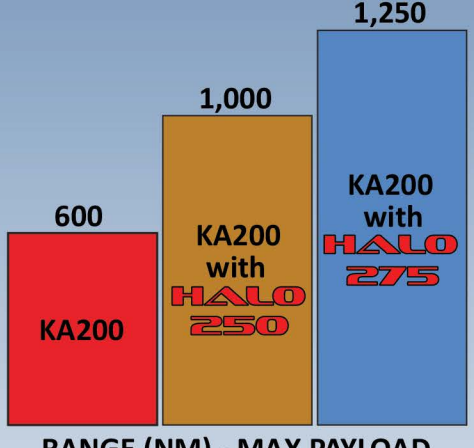
14,000 POUNDS

MAX TAKEOFF WEIGHT

THE HALO ADVANTAGE



PASSENGERS - MAX FUEL



RANGE (NM) - MAX PAYLOAD

IN GOD WE TRUST

CENTEX

AEROSPACE INCORPORATED

"Making Aviation Better!"

254-752-4290 • www.centex.aero

The State of Aviation Insurance

by Kyle White

As 2022 begins, inflation is a recurring conversation topic. It has become impossible to ignore the increased expenses associated with everyday goods, services and commodities. As aviators, we are mindful of the expenses associated with operating our aircraft. The King Air community, as with all turbine aircraft, has seen an increase in their insurance premiums. The aviation insurance market has been in a hard state for nearly three years. The premiums have been increasing, while ancillary coverages have been decreasing or eliminated altogether. Within the industry, it is a constant discussion of what has caused the increases in hull and liability premiums and when it may peak. Finally, we have reasons to believe the aircraft insurance market may be improving in 2022 or at least be "less bad."

Before 2019, King Air premiums were at all-time lows with unbelievable coverages included. Annual full-motion, simulator-based training wasn't necessarily a firm requirement and ancillary coverages were broad, offering higher liability limits that were easily obtainable for single pilot operations. Insurance carriers also didn't cringe when you signed an FBO hangar lease waiving their rights to subrogate for damage that may have been caused by a line attendant.

A strong attribute to the soft market was an abundance of supply. By some measure, there were three times as many companies writing King Air insurance in 2018 as

there were in 2002. The competition for your business sent rates plummeting. This cycle lasted for over a decade as carriers entered the aviation sector and earned business by offering the lowest quote. Many of these companies ended up incurring substantial losses and abruptly left the aviation sector. But as one carrier left, another was entering, keeping your premiums low. However, by mid-2019 the market changed. As one insurance company exited the aviation market, there wasn't one lined up to replace it. Essentially where supply had once been abundant, it was now suppressed.

The discussions about what was, or is, driving the premium increases vary. While in the FBO at my local airport I overheard a group of pilots discussing their insurance rates and one gentleman said, "The insurance company told me they are in the business to make money so they had to raise their rates to offset the losses." While everyone understood the logic, the group still smelled greed from the carriers. But when you look at the news headlines over the past three years it's difficult to argue their point. Consider all of the factors that trickle down to affect your rates: The Boeing 737 MAX, multiple hurricanes with massive losses, the tornado that ripped through Nashville and the hangar collapse in Dulles from a massive snowstorm. Additionally, there were several rotor wing fatalities with large losses, including the crash that killed Kobe Bryant and eight others. In 2021, we also witnessed Citation, Challenger and Gulfstream crashes, just to name a few. While the hulls will be paid quickly, the reserves for liability won't be paid out for quite some time and will most likely result in tens of millions of dollars, if not over $100 million for each of those business jet losses when they eventually settle.

Multimillion dollar lawsuits, followed by significant jury awards, have a meaningful impact on the aviation insurance industry. The insurance companies invest the premium dollars they collect. When $1 billion of premiums are paid into the system and investments turn it into $1.2 billion, but third party liability payouts, in addition to totaled aircraft hulls, equate to $1.4 billion, the deficit determines that premiums must increase.

Our aviation insurance industry is a tough puzzle to solve. We have attritional losses nearly every day and, unfortunately, the occasional catastrophic loss.

Capitalism is attracted to cash flow, and there is a lot of it in aviation. In some cases, it simply comes down to luck of the underwriter. Every carrier is one major loss away from either making money or losing it during their fiscal year. It is hard to argue the basic economic principle of "supply and demand" and the impact it has on your insurance premiums.

> **"Capitalism is attracted to cash flow, and there is a lot of it in aviation. In some cases, it simply comes down to luck of the underwriter."**

As 2021 concluded, we saw record demands for insurance coverage. As hull values and hours flown increased paired with a tight supply of aviation insurance companies offering coverage, we saw rates continue to increase as the demand for coverage exceeded the market supply. Compounding the limited supply was the buyers' demand to have every carrier quote their renewal in hopes of reduced rates. Aviation underwriting in the turbine market is manually processed. One underwriter can only handle so many submissions each day, in addition to servicing their current client needs such as issuing certificates, reviewing hangar leases, etc. To alleviate their workload, they must decline new submissions, increase rates on existing

An Upgrade Like No Other

ThrustSense®

Autothrottle with LifeGuard™ Protection

From takeoff to landing and through all phases of flight including go around, the IS&S ThrustSense Autothrottle provides the highest standard of protection.

- VMCa protection down to stall warning utilizing maximum safe power on operating engine
- Over-Torque protection
- Over-Temperature protection
- Under & Over air speed protection
- Reduced cabin noise due to smooth changes in engine power and strict adherence to speed targets
- Short installation downtime

Standard on Beechcraft® King Air® 260 and 360 aircraft
Available for retrofit on the 200/300 through authorized service centers

Innovative Solutions & Support
www.innovative-ss.com

For ThrustSense Autothrottle information contact Tom Grunbeck at 484.502.6658 or tgrunbeck@innovative-ss.com

For sales and events contact Larry Riddle at 610.646.0340 or lriddle@innovative-ss.com

clients or both. This overload also puts time constraints on the buyer, as they may not see their renewal proposals until just before their current policy expiration date. In December 2021, *www.NBAA.org* published an article, "Experts Offer Aviation Insurance Best Practices," which included some good pointers about how to get the most attention from underwriters and make them want to insure your aircraft. Joe Williams was quoted saying, "… underwriters can recognize patterns of professionalism from seemingly small variables, such as the neatness and completeness of your application or renewal and pilot history forms." The current market is tough, and this is an easy step to increase your appeal to the underwriters.

As I mentioned earlier, there is hope for 2022. History has shown that the general aviation market traditionally follows the airline insurance market. Airline renewals are a good indicator of what is coming to the GA industry. As 2021 closed, the airline sector had more capacity for their renewals moving into 2022 than in previous years. It is reasonable to hope your upcoming policy will bring a flat renewal, which is an improvement from significant increases of previous years. Adding to the supply is a new carrier, Applied Underwriters Aviation. This group is comprised of aviation underwriting veterans who left a leading aviation carrier to compete specifically in the turbine market. Their former employer is fighting back by recruiting some top talent from other carriers to hold their market share. This competition could yield the King Air community some much desired relief. Applied Aviation Underwriters informed me they intend to insure King Airs, as well as other turbine aircraft.

Typically, soft markets last longer than hard markets, and the indications in the aviation industry are that the hard market may be coming to an end. Applied Aviation Underwriters has already put business on their books and will continue to expand their offerings in the market. Depending on the state you are located, you may start seeing Applied Aviation Underwriters' quotes from your broker as early as March or April. Hopefully by the fourth quarter of 2022, you may start seeing the decreases. In the meantime, watch for the wild card that could derail this prediction, or cause it to be short-lived: The increasing cost to adjust claims, combined with the appreciation of used aircraft and the record number of business aircraft utilization.

If general aviation remains strong through increases in number of aircraft movements and increased hull values, two things will occur. There will be more claims and the costs to fix aircraft will be higher. Adding fuel to that flame would be the economic cycle of not enough people to repair the airplanes and parts availability. That's a concern worth noting, which would read as an inflationary hard market for objective reasons and not just a carrier supply and market demand relationship. Turns out, it's not just a pilot shortage, but a shortage of aviation professionals in all areas of our aviation ecosystem that is adding cost to our passion for flying. KA

Kyle P. White is an aviation insurance specialist for a global insurance brokerage company. He has professionally flown King Air 90s and B200s and holds an ATP and multi-engine instrument instructor license. You can reach Kyle at *kpwhite816@gmail.com*

Are You Up for a Challenge?

by Tom Clements

This month's article will cause you to put on your thinking caps and consider some King Air systems questions that you probably haven't seen or heard before. I am going to present six questions to have you ponder for as long as you need, then I will provide my answers … the correct ones, I hope! Good luck … and have fun!

1. **The Py line** – the air-filled tube connecting the Fuel Control Unit (mounted on the aft accessory case) to the Fuel Topping Governor (mounted on the nose case) – becomes entirely blocked. This renders the Fuel Topping Governor (FTG) totally inoperative. (The over-torque limiter also, for the 200-series.)
   A. **What effect will this have on your next normal flight?**
   B. **How would you discover that the FTG is inoperative?**
2. **You are preparing to enter visible moisture** during steady-state cruise flight with an IOAT of -20°C so you turn on Engine Anti-Ice (extend the ice vanes). Will propeller blade angle (A) Remain the same; (B) Decrease, go to finer pitch; or (C) Increase, go to coarser pitch?
3. **After turning on Engine Anti-Ice** as in the above question, what have you done to your fuel efficiency? Has Specific Range – the distance traveled while consuming 1 pound of fuel, expressed in units of nm/lb and calculated by dividing ground speed by

fuel flow – (A) Remained the same; (B) Decreased; or (C) Increased?

4. **You started the right engine first** and you blew the right Current Limiter (CL) during the generator cross-start of the left engine.
   A. **When you check Generator bus (Main bus)** voltage after both starts are completed and before turning on the left generator, what will they read?
   B. **Extra Credit Question:** Which is the only King Air model that specifically prohibits generator cross-starts?
5. **True or False:** You must always close the cabin door, with the handle rotated to the locked position, before moving the airplane with a tug.
6. **While descending on the final segment** of a precision approach, with flaps at Approach and landing gear Down, the right engine flames out due to fuel starvation. What, if anything, must the pilot do to allow Autofeather – whose switch is in the up, Arm position – to operate?

Answers on page 30.

"This … will cause you to put on your thinking caps and consider some King Air systems questions that you probably haven't seen or heard before."

Goebel's Deadly Gamble

In 1928 pilot Arthur Goebel attempted to transform the Travel Air Type 5000 "Woolaroc" from a mild-mannered monoplane into a high-speed, cross-country racer with near fatal results

by Edward H. Phillips

Arthur C. Goebel was a well-known pilot in California who often flew "stunts" for Hollywood moviemaker National Pictures, Inc., and other studios in addition to operating a flight school at Clover Field near Santa Monica. (Edward H. Phillips Collection)

In the wake of Charles A. Lindbergh's epic solo flight from New York to Paris in May 1927, Hawaiian pineapple king James Dole offered a $25,000 first prize for a nonstop flight from California to the Territory of Hawaii. The event was limited to commercial-built airplanes and was scheduled for August of that year. Of the eight entries, only two aircraft succeeded in flying the 2,400 miles from Oakland to Honolulu – the winner, a Travel Air Type 5000 monoplane named the "Woolaroc," flown by Arthur C. Goebel and navigated by U.S. Navy Lieutenant William V. Davis and the Breese monoplane "Aloha" flown by Martin Jensen with navigator Paul Schluter (awarded $10,000 second place prize money).

Unfortunately, three of the five airplanes that managed to take off from Oakland disappeared over the vast Pacific Ocean, including the Swallow "Dallas Spirit," the Lockheed "Golden Eagle" and the Buhl "Miss Doran." The missing included six men and one young woman. At least 60 U.S. Navy and merchant ships searched the ocean for two weeks without result.

As for Art Goebel and his airplane, the Travel Air was disassembled and shipped back to California aboard the freighter "Monoa," and soon after Goebel flew the ship on a victory tour of cities within the United States. In November, oil magnate and sponsor of both Travel Air ships in the Dole race, Frank Phillips, sought more publicity from Goebel's victory. He also saw an opportunity to further advertise Phillips Petroleum's "Nu-Aviation" fuel.

Goebel proposed an idea that sounded good to Frank Phillips – a transcontinental speed dash using the "Woolaroc." Art envisioned transforming the famous

monoplane into a highly-modified speedster capable of setting a new coast-to-coast record. At that time, the record stood at 20 hours, 48 minutes, flown east-to-west by U.S. Army Lieutenant Russell Maughan in a Curtiss P-1 "Hawk" pursuit ship (1924).

Goebel tentatively planned to make the flight in November 1928 flying in an east-to-west direction. First, however, he had to convince Walter H. Beech and the Travel Air Company to tackle the task of making major alterations to the airframe and engine of the Type 5000. Beech's initial reaction was one of deep skepticism – a viewpoint that was shared by chief designer Horace Weihmiller and his staff.

After further discussions, however, Beech agreed to make the modifications specified by Goebel, and in January 1928 the "Woolaroc" arrived at the Wichita factory and disappeared into the workshops. A small group of skilled craftsmen soon descended upon the blue and orange monoplane and during the next 10 months slowly began to incorporate the changes required by Goebel. He was hoping for a completion date of Nov. 20 – an ambitious goal given the amount of work required in addition to the crew's obligations of day-to-day aircraft production at the factory.

The primary change to the airframe centered on removing the existing cockpit and controls and building a new cockpit and instrument panel in the center of the fuselage where Lt. Davis had sat during the Dole race. A complete set of "blind flying instruments" were installed to help Goebel maintain control of the airplane in clouds. Control cables for the ailerons, elevator and rudder, as well as throttle, mixture and spark advance/retard controls and new fuel selector valves, had to be rerouted and evaluated for safe operation.

The cockpit canopy was removed and the nose section covered with wood and fabric to present a smooth aerodynamic surface. Engineers stuffed fuel tanks into the empty cockpit and forward fuselage area, and additional tanks were installed in the wing panels, bringing the airplane's total fuel capacity to six hundred gallons; more than enough, according to Goebel's calculations, to make the coast-to-coast dash nonstop. The main landing gear was reinforced to withstand the weight of Nu-Aviation fuel and the heavier engine.

The "Woolaroc" was completed during the first week of August 1927. Note the cockpit cupola and sliding window; nine-cylinder Wright Aeronautical J5 static, air-cooled radial engine; exhaust collector ring and the Pioneer Instruments drift indicator mounted on the cockpit door. (Edward H. Phillips Collection)

Goebel addressed the crowds after landing at the U.S. Army's Wheeler Field near Honolulu, Territory of Hawaii, claiming first place in the Dole Race and a check for $25,000. His navigator was U.S. Navy Lt. William V. Davis, whom Goebel praised for his excellent navigation on the long flight from the West Coast. (Edward H. Phillips Collection)

Because the cockpit was so far aft it was nearly impossible for Goebel to see ahead during takeoff and landing operations. The large wing and its supporting struts seriously reduced forward visibility, and this disadvantage was repeatedly explained to Goebel by the engineers, but he insisted that the aft cockpit location would be adequate. In an effort to improve visibility from the cockpit, a special seat arrangement was designed and installed that would allow the pilot to raise the seat high enough to see forward over the wing through a small hatch in the upper fuselage. Although engineers and Walter Beech were concerned that the cockpit arrangement was a bad idea, it met Art's requirements and work continued at a leisurely pace as the months went by.

The second major change was installation of a nine-cylinder, Pratt & Whitney "Wasp," a static, air-cooled radial engine in place of the "Woolaroc's" original 200-horsepower, Wright Aeronautical J5 powerplant. The Wasp, rated at 400-horsepower, featured velocity exhaust stacks and turned an adjustable-pitch, two-blade propeller.

Finally, November 24 the ship was rolled out for initial engine testing and other preparations for first flight. Goebel inspected the airplane and approved of all the modifications that included reducing drag by slightly downsizing the main landing gear and streamlining wing struts. Art climbed aboard through the cabin door and started the Wasp. It quickly settled into a noisy idle as the "bayonet-type" exhaust stacks barked their load reports.

The first takeoff quickly proved how dangerous the aft cockpit position could be without raising the seat. Peering out of the large windows on each side of the cockpit, Goebel struggled to keep the ship pointed straight ahead until airborne. Visibility during the climb to altitude was nonexistent as Art tried to locate and fly loose formation with Walter Beech flying chase in a Type 4000 biplane.

Anxious to find out how fast the reborn "Woolaroc" could go, Art eased the throttle forward and checked the indicated airspeed when full power was applied – only 160 mph! Fast, but not fast enough to clinch a transcontinental speed record. Reducing power to the planned cruise setting of 1,900 RPM, Goebel was further disappointed to see an airspeed of only 135 mph. He knew the Travel Air needed to cruise at a minimum of 160 mph to have any chance of setting a record.

Returning to Travel Air Field, Goebel managed to line up the ship with the broad, grass-covered runway, but when he tried to land, he had his hands full of the wild, wandering "Woolaroc." Art could not see forward, and as the airplane hit the runway hard and bounced back into the air, he fed in bursts of throttle in an attempt to keep the monoplane under control. Realizing that he was quickly running out of runway, he plopped the ship down, cut the throttle, rolled to a stop, and went

On Nov. 24, 1928, Walter Beech (far left) and Art Goebel (in flying suit) posed with a group of local pilots and the reborn "Woolaroc" before Goebel departed for St. Louis, Missouri. The monoplane quickly proved to be too dangerous to fly safely, chiefly due to the aft cockpit location that severely limited forward visibility for the pilot. (Courtesy Mary Lynn Oliver)

to find Walter Beech. Based on Art's recommendations, Beech ordered workers to enlarge the side windows and lower the seat position further, hoping a "quick fix" would suffice for Goebel to depart for New York City before sunset.

Undeterred, Goebel took off and headed east toward St. Louis, Missouri. In the gathering darkness he searched in vain for Scott Field where he hoped to pause for the night. Flying blind with near zero forward visibility, as darkness enveloped the airplane Art realized he was dealing with an airborne version of Russian roulette; he knew nothing of what lay ahead of him. Moments later he spotted lights at another airport and, despite having no landing lights in the dark of night, he landed safely but the "Woolaroc" struck a ditch that Art could not see. The airplane lurched one way then another before coming to an abrupt stop.

The landing gear on one side was damaged, but repairs were made and three days later he departed, not eastward toward New York but westward toward Travel Air Field.

In January 1928, Goebel returned the Woolaroc to the Travel Air factory for a series of major modifications aimed at transforming the Type 5000 into a cross-country speedster. The cockpit was moved aft and a new, 400-horsepower Pratt & Whitney "Wasp" radial engine installed in place of the Wright J5 powerplant. Note the bayonet-type exhaust stacks. (Edward H. Phillips Collection)

Flying at low altitude in a foggy mist on the west side of St. Louis, Art was terrified to see a water tower flash by the cockpit window only a few feet from the wingtip! For Goebel that near brush with certain death was the last straw. He bravely flew on, landing safely at Travel Air Field December 1.

Goebel confessed to Walter Beech that the airplane was not safe to fly, and that he had decided to make no further attempts to set a transcontinental speed record with the dangerous monoplane. In addition to Beech, Frank Phillips heartily agreed and immediately retired the ship. Realizing that the airplane was historically important, Phillips ordered that it be returned to its original configuration for the Dole race before placing on static display outside in an open pavilion at Frank Phillip's ranch near Bartlesville, Oklahoma, where it remained for the next 55 years.

During the early 1980s the "Woolaroc" was restored a second time and in 1985 a special exhibit hall within the Frank Phillips Museum and Wildlife Reserve was created specifically for displaying the winner of the Dole competition. As of 2022 the Travel Air remains suspended from the ceiling on a magnetic heading toward Honolulu – a fitting tribute to a famous airplane, its pilot and navigator as well as the people and the company in Wichita that built it. KA

After Goebel's failed attempt to transform the Woolaroc into a cross-country racer, the ship was retired by Frank Phillips and restored to its appearance during the 1927 Dole Race. As of 2022, the famous Travel Air is on permanent display at the Frank Phillips Museum and Wildlife Reserve in Bartlesville, Oklahoma, suspended from the ceiling on a magnetic heading to Honolulu.
(Courtesy Frank Phillips Museum)

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, Kansas. 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.

CORPORATE ANGEL NETWORK

Cancer Patients Fly Free

Filling Empty Seats With Hope

Corporate Angel Network arranges free travel on corporate aircraft for cancer patients traveling to and from treatment. Business jet travel makes it possible for patients, especially those in locations with minimal airline access, to travel to specialized medical centers.

Contact us today to learn more about patient travel services or to donate space on your aircraft.

"It's wonderful that organizations like the Corporate Angel Network are able to help connect those most in need of flights to those who are flying."

-Henry Maier, President and CEO, FedEx Ground

corpangelnetwork.org | Westchester County Airport – White Plains, NY | (866) 328-1313

Flight Testing Begins for Centex Halo 350 Conversion

CenTex Aerospace recently announced the start of the flight test program for its increased gross weight conversion for the Beechcraft King Air 350 and King Air 360 models. The milestone first flight was conducted at the Waco Regional Airport by company president Gregory Barnes and test pilot David Rogers. It was completed as planned and included initial testing of new systems designed to enhance flight operations and increase safety.

The Halo 350 conversion will allow the King Air 350 to carry an additional 900+ pounds of payload. Converted aircraft will have a maximum takeoff weight limit of 15,950 pounds, up from the standard 15,000 pounds. The conversion increases empty weight by less than 20 pounds and does not change the main landing gear.

Barnes said the airplane with the new systems performed very well and the Halo 350 conversion will provide safer operations during takeoff and in icing conditions. He also added that project completion is in sight, and the company will soon be able to provide operators with low-cost, increased gross weight conversion kits.

Also announced are the list of compatible avionics and the new safety systems added during the conversion. Compatible avionics includes Collins FIS 85, EFIS 85, Pro Line 21, Pro Line Fusion and Garmin G1000. The safety systems are an "Ice Mode" enhancement for the stall warning system and a takeoff trim warning system.

For more information, contact CenTex Aerospace, Inc. at (254) 752-4290 or go to: *centex.aero/contact/*

PWI Receives FAA PMA Certification for LED Ice Light and LED Right Angle Reading Light

PWI recently announced that the Federal Aviation Association (FAA) has given PMA approval for their LED Ice Light and Right Angle Reading Light for use in a wide variety of aircraft including King Air models (specified below).

The company says their **LED Ice Light** provides 100,000 hours of life compared to only 165 hours of life available with bulbs. Also, when measured up to other replacement LED ice lights, the PWI Ice Light provides 210 more lumens providing better contrast, which aids in the visibility of ice formation. It is designed to be much more efficient and effective, as well as a benefit to overall safety by also providing situational awareness when on the ground. PWI's LED Ice Light is a powerful alternative to factory installed bulbs. Regardless of outside temperatures, the Ice Light is perfect for use in dusk and night flights or when taxiing and during takeoff and landing.

PWI's LED Ice Light Part No. 7310009-000 is a bayonet mount that is a direct drop-in replacement for bulbs A7079B24, MS25338-7079 and WA7079B24, and **is approved for the King Air 90 series, 100 series, 200 series and 300 series aircraft.**

PWI's Ice Light

For more specific information on the Ice Light, go to: *https://pwi-e.com/product/ice-light-led-upgrade-pn-7310009-000/*

PMI's **LED 303R Right Angle Reading Light** is a direct replacement for their 303 and the MS15570-303 bulbs. The new right-angle design directs light at a 90-degree angle from the socket base and directs the LED toward the area that needs illumination, instead of brightening the area directly above the socket.

The 303R LED is approved for King Air 200 series aircraft and the company says it's compatible in many places where directional lighting is useful like cabins, cockpits, behind backlit signage and even cargo compartments. It also offers more than 33,000 hours of life and very low power draw, making the 303R a more energy efficient light compared to incandescent bulbs.

For more specific information on the Right Angle light upgrade, go to: *https://pwi-e.com/product/303r-led-reading-light/*

PWI is the OEM for most King Air interior lighting and is the designated OEM for fluorescent lighting for business jets. Aviation products can be purchased through their growing authorized dealer network. For more information on all products, you can contact PWI at +1 (316) 942-2811 or contact sales at *sales@pwi-e.com*.

The 303R Right Angle Light installed: It directs light at a 90-degree angle from the socket base.

Answers to Quiz Time Questions from Page 20:

1. **A. Absolutely no effect whatsoever.** For the FTG to be needed in flight the Primary Propeller Governor (PPG) must fail in such a manner that the propeller speed increases. Also, once the propeller levers are advanced fully forward – Power, PROPS, Flaps, Gear; remember? – then the Overspeed Governor should prevent the FTG from ever being reached. PPGs are one of the most reliable of all systems.

   In the event of using Maximum Reverse and with some mis-rigging of the engine controls, then there is a chance the FTG would activate. But since this is "your next NORMAL flight" that won't be happening.

   B. Surprisingly, there is no check the pilot ever makes of the FTG. Even during the routine maintenance Phase checks it is never examined. Yes, there is a way to test it from the cockpit but that is very rarely done and merits its own discussion at a later date.

2. **The answer is B:** The blade angle will decrease slightly, moving to a finer pitch.

   Since the activation of Engine Anti-Ice causes a power reduction and that in turn causes an airspeed reduction, both results would cause a fixed-pitch propeller to slow down. Hence, our Constant Speed propeller governor – the PPG – will decrease the blade angle to allow less rotational resistance and keep the propeller speed from decreasing.

3. **If you have read "The King Air Book"** you know the mind-boggling answer: (C) It has increased. Since the FCU is merely an N_1 governor, it will reduce fuel flow in reaction to the thinner air that is providing less rotational resistance to the Gas Generator portion of the PT6. Airspeed will also decrease due to the decrease in power. Surprisingly, however, the reduction in airspeed is a smaller fraction than is the reduction in fuel flow. Does that make you feel any better about the loss of airspeed the Ice Vanes cause?

   I need to say one more thing. Although this increase in Specific Range occurs in almost every situation, there is one exception. If you are at very high altitude while using Best Range Power instead of Normal or Maximum Cruise Power, then the loss in power caused by vane usage can send you to "the backside of the power curve" and cause Specific Range to decrease. I bet none of you routinely fly this way, right?

4. **A. You should see normal voltage** on the right Generator Bus. Some POHs state the normal range as 27.5 to 29.0 volts. The voltage regulator portion of the GCU (Generator Control Unit) should be set for 28.25 ± 0.25 volts and the gauge can have up to a 0.5 volt error and still be within specifications. This combination leads to the stated allowable range of readings.

   The left Generator Bus should read slightly less, around 24 volts, since it is only "seeing" the battery's voltage. I find that many pilots think the voltage would be zero with a failed CL. Without a generator operating – before start and after shutdown – then a failed limiter is obvious because the voltmeter reads nothing on that side. But the after start CL check … different story!

   B. Although I personally do mostly generator-*assisted* starts, not actual *cross*-starts on *all* King Air models, the only POH that requires this is for the 200s and B200s prior to BB-1444. Beginning with 1444 a cross-start current depression system was included in the GCU but previous 200s do not have that. The load required to turn the small-core PT6 starters very rarely causes a CL failure, although it happens at times. The larger core PT6A-41s and -42s (200 and B200 engines) leads to more starter load and quite a rash of blown limiters. That's why leaving the operating generator on while activating the opposite start switch is a No-No.

5. **False**. The King Air fuselage is strong by itself with a closed door not being necessary for added strength. Of course, it is fine to close it and there is no chance of hitting some object on the tarmac with it closed.

And by the way, I suggest not rotating the handle to the fully locked position when towing the airplane or leaving it in a secure hangar. Only move the handle to the Locked position when you plan to use your key to truly lock the door. This puts less stress and strain on the latch bolts, J-hooks and door seal … at least I think so. Just turn it far enough – maybe 45° – to keep the door from dropping open.

6. **Autofeather can only operate when** (1) the switch is in Arm; (2) both power levers are well-advanced, in the range of 90% N_1 or above; (3) the torque on one side is above about 400 ft-lbs or 17%; and (4) the torque on the other side is below about 200 ft-lbs or 10%.

   The power setting for a two-engine ILS or LPV won't have the power levers advanced far enough. Thus, the first step – Power! – is to double the torque on the remaining engine by pushing BOTH power levers forward. If you push only one forward, you have moved step 5, Identify, to step 1 of the "Suspected Power Loss" drill. That's bad!

   As a piece of trivia: The bottom position of the Autofeather switch – TEST – eliminates the need for BOTH power levers to be advanced. In this scenario, holding it down would cause feathering of the flamed-out engine. But you'd still need to add power on the other side sometime!

How did you do? Did I make you think? Answering all questions correctly does not mean you are necessarily a "better" pilot. However, I strongly believe that the more we understand our airplane's systems the easier it is to become the pilots we want to be.

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" and "The King Air Book II." 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 books, 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*.

ADVERTISING INDEX

ELLIOTT® AVIATION

GARMIN®

OUR G1000 NXI NUMBERS PROVE WHY WE'RE #1

380+ G1000/G1000 NXI INSTALLS

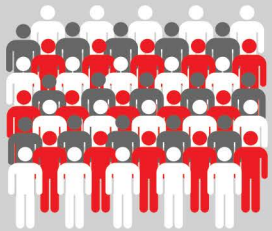
MORE THAN ALL DEALERS IN THE WORLD **COMBINED**

130+ LEGACY G1000 TO G1000 NXI UPGRADES

3-WEEK GUARANTEED DOWNTIME ON STANDALONE INSTALLATIONS

13 YEARS OF INSTALLATIONS

50+
SKILLED AVIONICS TECHNICIANS



WITH OVER 500 YEARS OF COMBINED EXPERIENCE

2
INSTALLATION LOCATIONS

MOST IMPORTANTLY

WE'RE **#1** BECAUSE OUR CUSTOMERS ARE OUR **#1**

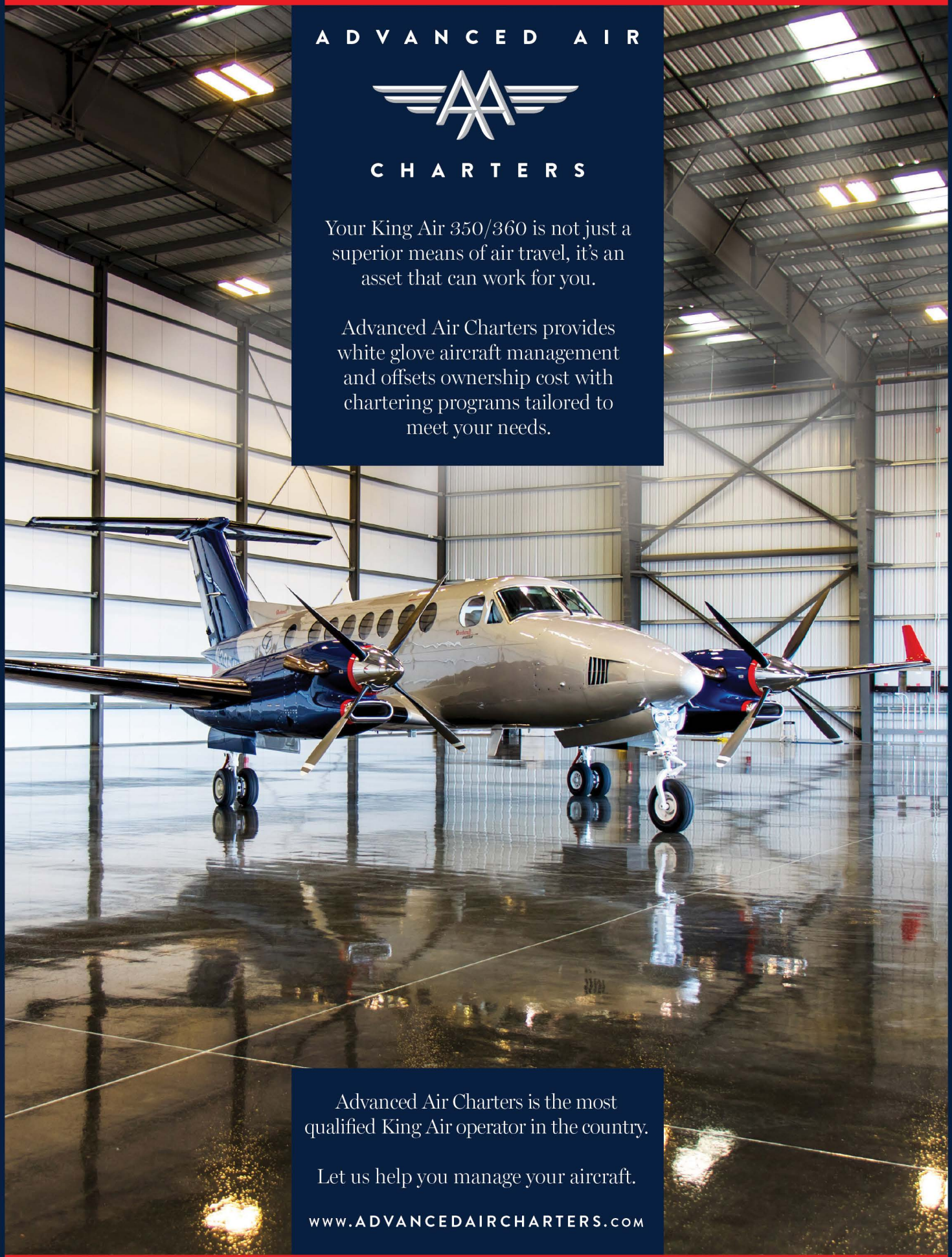
PRIORITY

CELEBRATING OUR 85TH YEAR

TRUST YOUR G1000 NXI TO THE INDUSTRY LEADERS!

ELLIOTTAVIATION.COM 800.447.6711

CELEBRATING OUR 85TH YEAR


ADVANCED AIR
CHARTERS
Your King Air 350/360 is not just a superior means of air travel, it's an asset that can work for you.
Advanced Air Charters provides white glove aircraft management and offsets ownership cost with chartering programs tailored to meet your needs.
Advanced Air Charters is the most qualified King Air operator in the country.
Let us help you manage your aircraft.
WWW.ADVANCEDAIRCHARTERS.COM