

The Raisbeck Wing



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Editor: Dan Adams

Leadership Message

The Transition: Best of Both Worlds, Past and Future

In late 2016, following 35 years of significant contributions to both the general and commercial aviation industries under the guidance of founder James Raisbeck, Raisbeck Engineering Inc. (REI) was acquired by Acorn Growth Companies (AGC). We are happy to announce the ownership transition has been smooth and that the state of the company is solid as we enter an exciting new phase of change and development in our ever-changing markets.

Over the years, Raisbeck has developed a proven capacity to invent, engineer, certify and successfully sell, distribute and service products in general aviation and commercial aircraft sectors as both an OEM and after-market provider for many aircraft platforms including Bombardier Learjets, Boeing 727s, and deHavilland Twin Otters as well as highly regarded product contributions to the entire Beechcraft King Air line from the C90 to the B200GT/250 and the 350/300 series.

At a recent King Air Nation fly-in, a large group of King Air owners and operators in Henderson, Nevada, Jim Allmon, President and CEO of Blackhawk Modifications—a

highly valued partner of Raisbeck Engineering—could not have said it better when he stated, “If you do not have Raisbeck products on your aircraft, you need to install them because, very simply, they work!”

As part of the AGC family, REI is continuing to develop its reputation for quality performance and post-sale service by exploring new platforms, new products and new business relationships. Raisbeck is reinventing itself and it is exciting as well as challenging.

So what does the future at Raisbeck hold? Where is the company going? What is the encore to its prior success?

Very simply, it is growth. Exciting growth, based on new product development, new product platforms and new business relationships as well as growth in our legacy products. REI values its global Authorized Dealer Network comprised of highly qualified MROs, FBOs and propeller shops as well as our OEM partners including Hartzell Propeller, Textron Aviation, Ikhana and Nextant, and we are implementing changes and improvements to assist our partners to

“Raisbeck is reinventing itself and it is exciting as well as challenging.”



Tony Armstrong, CEO & CFO

be more successful in their businesses.

The future that we see is exciting, encouraging and challenging. As they say, if we can see it, we can seize it! Bring it on! ➔

Hartzell marks 100th Anniversary—and new chapter in partnership with Raisbeck

Hartzell Propeller is celebrating 100 years of designing, certifying, manufacturing and supporting propellers for tens of thousands of aircraft customers over ten decades.

In a March 27, 2017 press release, Hartzell Propeller President Joe Brown said, “Built on Honor’ has been our mantra for a century, and plan to continue setting the industry’s very best propeller design and manufacturing standards into the future. Our individual customers and aircraft manufacturers have come to anticipate the ultimate performance from us and we will strive to keep exceeding expectations in the decades to come.”



To date, Hartzell has manufactured more than a half million propellers for piston and turbine powered aircraft across the spectrum of aircraft types.

Through investments and innovation, Hartzell Propeller has become the global leader in advanced technology aircraft propeller design and manufacturing for business, commercial and government customers. Eschewing wood blades years ago in favor of aerospace grade aluminum and structural composites, the company designs propeller systems with innovative “blended airfoil” technology and manufactures them with revolutionary machining centers, robotics and custom resin transfer molding curing stations.

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A large number of those propellers are Raisbeck Engineering designs, with the first Raisbeck Quiet Turbofan Propeller System certified in 1982 for 200 series Beechcraft King Airs.

In 2013, Hartzell and Raisbeck teamed to develop the world's first Swept Blade Propellers for business aviation—the technology being formerly limited to military aircraft—that are now available for C90 series, 200 series, 350 and E90 King Airs in 4-blade aluminum configurations. The Swept Props enable larger diameter propellers which provide greater thrust while reducing noise, thanks to Raisbeck's Swept Technology mitigating the transonic speeds encountered at the blade tips.

Now in 2017, Raisbeck and Hartzell are poised to enter a new chapter in their 35 year partnership marked by a comprehensive co-branding and co-marketing program along with a robust schedule for developing new products in tandem.

Indeed, the first offspring of the program will be unveiled at EAA AirVenture in Oshkosh, Wisconsin, July 23-30, 2017. See the top of page 3 for a sneak peek! →



An impromptu gathering at Hartzell Propeller's 100th Anniversary celebration in Piqua, Ohio, included (left to right) Jerry Seay, retired Hartzell VP of Quality Assurance; JJ Frigge, Hartzell Executive VP; Keith Anderson, Raisbeck VP of Engineering; Tony Armstrong, Raisbeck CEO/CFO; Art Disbrow, retired Hartzell President; Lynn Thomas, Raisbeck VP of Sales and Marketing; Joe Brown, Hartzell President; Jeff Slattery, Hartzell Manager Global Sales and Service, and Bill Lally, Raisbeck VP of Customer Support.

Celebrating Worldwide Dealer Network on our 35th Anniversary

We salute our worldwide network of Authorized Dealers for their unparalleled professional support, expertise and dedication in the sales, installation and maintenance of Raisbeck Systems. The following alphabetical list—current as of the date of this newsletter— includes dealers with multiple locations, and serving both King Air and Learjet owners and operators:

Absolute Aviation
Advantech Aircraft Maintenance
Aero Air
Aero Baires SACI
Aero-Dienst
Aircraft Turbine Works
AirResource Group
Air Works India
ALE Service Center
American Aviation
American Propeller Service
AMK Aviation
Apex Aviation
Augsburg Air Service
Avcon Industries
Aviaservice C.A.
Aviasur
Ballard Aviation
Banyan Air Service
BAS Tucson Service Center
Beechcraft Guatemala
Blackhawk Modifications
Bromma Air Maintenance
Business and Commuter Aircraft
CammAir
Capital Aviation
Central Flying Service

Commuter Air Technology
CONAL
Cutter Aviation
Deer Horn Aviation
Duncan Aviation
Dynamic Aviatiob
Eagle Aviation
Elliott Aviation
Emery Air
Executive Aircraft Maintenance
Fargo Jet Center
Fast Air
Field Aviation Sales
Flightcraft
Florida Jet Center
Flying Colours
Gama Aviation
Gantt Aviation
Haggan Aviation
Hampton Aviation
Hawker Pacific
Hillaero
INAER Maintenance S.A.U.
International Propeller Service
Japi Aeronaves
L-3 Vertex
Lider Aviação

Mather Aviation
MCA Aviation
Mountain Aviation
National Flight Services
North Texas Aircraft
Pollard Aircraft Sales
Precision Jet Service
Premiair Aviation
Premium Tec Aviação
Pro Star Aviation
Quick Aviação
Rose Aircraft Services
Scan Tech
Searca S.A.
Signature TECHNICAir
Stevens Aviation
Summit Aviation
TAM (Aviação Executiva)
Textron Aviation
Tulsair Beechcraft
Turbo Air
Turboprop East
Valair Aviation
West Coast Aviation Services
West Star Aviation
Western Aircraft
Winner Aviation
Yuba-Sutter Aviation

5-Blade composite King Air 350 prop to debut at EAA AirVenture

The latest progeny of the Raisbeck-Hartzell partnership will be displayed on a King Air 350 at Oshkosh July 23-30, 2017: five-blade composite Swept Blade Turbofan Propellers which increase thrust while dramatically reducing noise.

How does that happen? Using as an example a typical turbofan propeller tip Mach number is over 0.9 at cruise. This same high-Mach phenomenon is also very much present during takeoff at low forward airspeeds but higher prop RPM.

These takeoff, climb and cruise conditions are encountered on almost every 200 series and 90 series King Air flight, and they push the propeller blades significantly into the transonic drag rise for airfoils and unswept wings.

With a propeller blade, Mach numbers increase the farther out on its diameter. Adding additional diameter to a propeller adds to its tip Mach number, which in turn adds undesirable additional transonic drag and noise.

Air passing over an airfoil doesn't know whether that airfoil is part of a wing going straight through the air, or a propeller blade being whirled around in a circle. The air reacts the same with regard to the increasing Mach number.

Merely adding propeller diameter does not necessarily add proportionate performance improvement—and it can be measurably noisier because of high-Mach effects at the outer parts of the blades.

Introducing sweep to the blades overcomes these drawbacks. Blade sweep allows one to increase diameter and performance while simultaneously reducing noise.

Hartzell's proven advanced composite material allows for large blade sweep—and the design gives King Air 350s eye-catching

ramp presence. Having five blades also allows a smaller propeller diameter with performance equal to the Raisbeck/Hartzell 4-Blade aluminum Swept Prop, while shifting blade-passage frequencies upward, reducing noise energies in some ranges by more than 50%. The result? The quietest King Air 350 ever flown.

Flight testing on these new Raisbeck/Hartzell 5-Blade Swept Props has been completed, with FAA certification expected later this summer. ➔



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TECH TIP: Textron Aviation issues Service Bulletin for Super King Air B200GT, Serial Numbers BY-11 and BY-128 thru BY-278

Textron Aviation issued a service bulletin in March 2017 which applies to certain Super King Air B200GT (250) aircraft equipped with factory-installed Raisbeck Ram Air Recovery Systems. Textron Aviation encourages the owners of these aircraft to inspect the Raisbeck STC SA3366NM installation to verify that parts were installed and rigged properly per STC Installation Document 93-1021. Misalignment of the particle separator and fixed turning vane can cause chafing, and there may also be rigging issues.

The equivalent of this service bulletin has been incorporated on production airplanes BY-279 and subsequent for the brush issue and BY-222 for the remainder of issues.

Compliance is recommended within your next 200 flight hours or 12 months (March 2018), whichever occurs first.

A service bulletin published by Textron Aviation may be recorded as "completed" in an aircraft log only when the following requirements are satisfied:

- 1) The mechanic must complete all of the instructions in the service bulletin, including the intent therein.

- 2) The mechanic or airplane owner must use the technical data in the service bulletin only as approved and published.
- 3) The mechanic or airplane owner must apply the information in the service bulletin only to aircraft serial numbers identified in the *Effectivity* section of the bulletin.
- 4) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Textron Aviation is authorized to make or apply any changes to a Textron Aviation-issued service bulletin, service letter, or flight manual supplement without prior written consent from Textron Aviation.

Textron Aviation's service bulletin recommends that the mechanic or airplane owner refer to current Raisbeck Engineering installation documentation available at raisbeck.com. You can use this link to access the applicable Raisbeck document directly.

For the entire communication, go to txtavsupport.com.

If you have any issues or questions, please do not hesitate to contact us by phone or email (see contact information below). ➔

If you can't find something, give us a call! Our Tech Support Team is ready to help.

Phone (206) 723-2000 • Email techsupport@raisbeck.com

Get to know the Raisbeck Team

David Bay, Quality Assurance Supervisor

David Bay has been Raisbeck Engineering's Quality Assurance Supervisor since 2005, ensuring that every product shipped meets all engineering specifications and the highest finish quality standards in the industry.

"I follow my own very particular unwritten rules," David says. "I'm looking out for the customer. Everything has to be right, not just technically perfect but looking good."

On any given day, David might be inspecting larger assemblies at a supplier's location, as well as their equipment and manufacturing processes—and, if he finds any issues, stays on site until they're corrected. Or he can be found in Raisbeck's operations center, inspecting every detail of products received from suppliers; nothing gets shipped to dealers without his sign-off.

David explains that his meticulous—you might even call it obsessive—attention to detail can be traced to his personal passion for creating lifelike drawings (see the drawing reproduced at right). He recalls sitting on his mother's knee in church, sketching an eagle in pencil on the (sermon sheet). "You couldn't keep a pencil out of my hand," he remarks. "I was always doodling."

David's path to his current career was anything but typical. After high school, he joined the U.S. Navy and was assigned to the Public Affairs Office. Posted on the U.S.S. Enterprise aircraft carrier during its refit in the Bremerton, Washington, shipyard, he worked as the ship's newspaper artist. He also built a detailed scale model of the ship's flight deck and

superstructure, which earned First Place in that year's Armed Forces Day competition.

After three years in the Navy, David aspired to work as a professional artist. But, like most young artists, he also had to earn a living working at assorted jobs in the retail and service sectors.

In 1985, he applied for a job at Heath Tecna in Kent, Wash. Heath hired him and for the next 10+ years, David worked as an assembler of precision structures. It was a perfect training ground for quality assurance (QA). David found that he enjoyed the challenge of precision work, and persuaded the company to improve its tooling to the standards he believed their customers expected. No surprise that he was promoted to Quality Assurance Inspector for his last year at Heath Tecna.

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its tooling to the standards he believed their customers expected. No surprise that he was promoted to Quality Assurance Inspector for his last year at Heath Tecna.



Boeing was his next stop where he thrived until an economic slowdown resulted in mass layoffs, including his. David returned to the aerospace industry soon after, working in QA for four years before being enticed to join Raisbeck Engineering.

David recognizes his father as the source of his deep-seated work ethic. "He always insisted that I finish what I started."

Regarding his time at Raisbeck, David says, "I like it here. I like the work. I like the people. This is the best place I have ever worked—which is why it's worth the daily three hour commute time."

David looks forward to resuming his artistic endeavors after retirement—in the distant future—and traveling to take photographs for inspiration. Meanwhile, he loves accompanying his wife Jodi on her antiquing forays, working around the house and spending time with his two daughters and four grandchildren about whom he exclaims, "They're awesome!" →



David's artistic talent, technical skill and meticulous attention to detail is evident in this colored pencil drawing.



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