

LEADING EDGE



REACHING NEW HORIZONS



RAD AEROSPORTS MODERN DAY BARNSTORMING

A Hartzell interview with Jarrod Lindemann



RECREATIONAL AVIATION FOUNDATION SUCCESS STORIES

Backcountry Access and Amenities



Read about exciting new
developments at Hartzell!

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BUILT ON HONOR

HARTZELL AVIATION

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HARTZELL FAMILY OF BRANDS
INTRODUCING
HARTZELL AVIATION



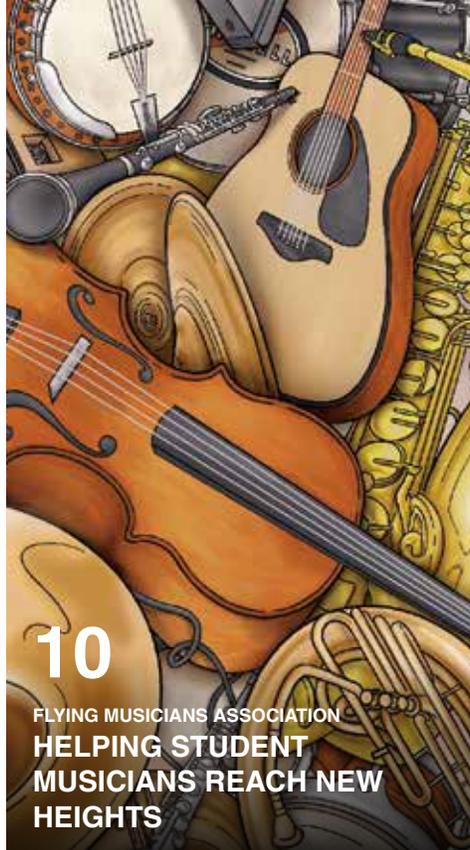
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Sharing Our Honor

Look closely at any Hartzell propeller, and you'll see the words "Built on Honor" proudly emblazoned on each blade. More than a slogan, Built on Honor is our founding principle, core value, and brand promise. Built on Honor doesn't just describe our propellers; it's a reflection of the care and respect we have for our customers and one another. We often describe ourselves as a family at Hartzell Propeller, because we have cultivated such a strong culture of teamwork and personal dedication to quality, service, and support. I believe this is what has set Hartzell Propeller apart for over a century, and as you'll read in the pages to follow, the best is yet to come.

In our eighth edition of Leading Edge, we expand into new horizons of the aviation world with fascinating stories of aerospace leaders, airplane builders, professional pilots, and advocates from across the general aviation community.

*First and foremost, we're excited to introduce **Hartzell Aviation**, which brings together industry-leading general aviation manufacturers, suppliers, and service providers with the shared purpose of enhancing the freedom of flight and powering the future of aviation. You'll learn more about the companies that make up the Hartzell family of brands, including Hartzell Engine Tech, Hartzell Aerospace Welding, and of course, Hartzell Propeller.*

Next, we provide an update from the Recreational Aviation Foundation (RAF) and their efforts to preserve, improve, and create airstrips for recreational access. Be sure to take advantage of our special backcountry propeller discount for RAF members — now extended through the end of 2022!

We also catch up with several friends in the kitplane community, who share the unique challenges and rewards of building an airplane. Finally, you'll learn about Hartzell Propeller's innovative partnerships with advanced air mobility and electric/hybrid aircraft development projects around the globe.

At Hartzell, aviation isn't just our industry — it's our community, our family, and our legacy. Thank you for sharing our love of flight and celebrating the bright future of aviation.



JJ Frigge
President, Hartzell Propeller

P.S. For more photos, videos, and articles, check out the online edition of Leading Edge at [HartzellLeadingEdge.com](https://www.hartzellpropeller.com/LeadingEdge).



INTRODUCING



POWERING THE FUTURE OF AVIATION

With a history dating back to the Wright Brothers, Hartzell has been innovating and improving general aviation with our products for over a century. As one of the most trusted names in aviation, we're proud to bring together industry-leading general aviation manufacturers, suppliers, and service providers under one unified brand: **Hartzell Aviation**.

Meet the Hartzell Aviation Family of Brands

Hartzell Aviation is made up of independent operating companies with the shared purpose of enhancing the freedom of flight and powering the future of aviation. Together, as a family of brands, Hartzell Aviation invests in world-class processes and leading-edge technologies to deliver uncompromising quality, performance, and support for today's aircraft owners and operators.



HARTZELL PROPELLER

Founded in 1917 and headquartered in Piqua, Ohio, Hartzell Propeller is the global leader in advanced aircraft propeller design and manufacturing technology for general aviation applications — both piston engine and turboprop — as well as custom propulsion solutions for electric, hybrid-electric aircraft, and advanced air mobility programs. In 2021, Hartzell Propeller acquired Tanis Aircraft Products, expanding Hartzell's heating products to include systems for propeller deice, piston engine preheat, turbine engine preheat, helicopter preheat, battery, avionics, and cabin preheat.



*Scan to Learn More
about Hartzell Aviation's
Family of Brands!*

“The independent operating companies and products under the Hartzell Aviation banner will carry on a strong and rich tradition, with a history dating back to the Wright Brothers when Orville encouraged his neighbor Robert N. Hartzell to begin manufacturing airplane propellers.”

– James W. Brown III, President, Tailwind Technologies

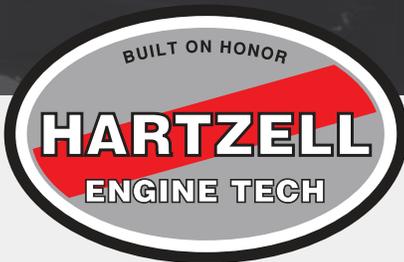
Aviation is in Our DNA

Each of the companies in The Hartzell Aviation family of brands is united by the same core value: **Built on Honor**, reflecting a collective commitment to uphold the highest standards in quality, performance, and support.

“This newly christened organization, with its iconic Hartzell companies and brand names, is guided by the overriding principle of Built on Honor, which reflects our commitment to quality, performance, and support in everything we do.”

– Joseph W. Brown, COO, Tailwind Technologies /
Chairman, Hartzell Propeller

Photo by Taylor Kim – TBM 930



HARTZELL ENGINE TECH

Hartzell Engine Tech is a leading OEM supplier and aerospace technology company that includes branded components from Janitrol Aero, Plane-Power, Aeroforce Turbocharger Systems, Sky-Tec, and Fuelcraft, providing engine accessories and heating solutions that meet the demanding challenges of today’s aircraft systems. Quality Aircraft Accessories (QAA), an FAA Part 145 Class 1 and Class 2 Repair Station for piston engine and airframe accessories and an online distributor of new, rebuilt, and overhauled engine accessories, offers full product life-cycle support of Hartzell Engine Technologies manufactured products.

HARTZELL AEROSPACE WELDING

Hartzell Aerospace Welding provides quality aviation exhaust systems and custom metal fabrication, backed by the expertise of trusted aviation companies, including Aerospace Welding Minneapolis, Inc. Minneapolis, Inc (AWI) and Aerospace Manufacturing, Inc. (AMI). AWI specializes in welding, bending, and fabricating sheet metal and tubing, as well as the manufacturing, repair, and overhaul of piston aircraft exhaust and engine mounts. AMI specializes in machining and welding, with a focus on bending and welding tube assemblies for jet engines and airframes. AMI also handles metal details for AWI’s exhaust and engine mount business.

MODERN DAY

BARNSTORMING

What started life as a classic 1929 Taperwing Waco biplane — the aircraft of choice for 1930s and 1940s-era barnstormers — was radically transformed into the jet-powered “Jet Waco,” a staple at air shows around the country since 2014. Now operated by **RAD Aerosports** of Valley City, North Dakota, the Jet Waco is still dazzling fans and performing maneuvers that would amaze its original pilots of the barnstorming era.

We caught up with RAD Aerosports owner, **Jarrold Lindemann**, who shared more about his air show company and the one-of-a-kind Jet Waco.

Hartzell: Many air show fans are familiar with the incredible sights and sounds of the Jet Waco. Can you share more about the aircraft's technology and capabilities?

Jarrold Lindemann: We're proud to fly the one and only jet-powered Waco in existence today. Our Jet Waco is powered by dual power plants: a Pratt & Whitney 985 radial engine and a General Electric CJ610 (J85) jet engine with 3,000 lbs. of thrust. Total thrust of the combined engines is rated at 4,500 lbs. A three-bladed Hartzell propeller is used to harness the power of the 985 radial. This system allows the plane to achieve feats most other aircraft are unable to do, along with reaching speeds up to 250 mph. Snap rolls, spins, barrel rolls, and the hover are among the list of maneuvers this aircraft can perform. And because the airplane has a thrust ratio of greater than 1 to 1, it's able to accelerate in a vertical climb going straight up!

H: Aviation is clearly a big part of your life. Tell us about your background and how RAD came to fruition.

JL: I grew up immersed in aviation and was interested in flying from a very young age. Since becoming a pilot, I've accumulated thousands of hours in aircraft ranging from small pistons to corporate jets — anything I can get my hands on! I eventually took over the family business with aircraft maintenance and aerial ag application, building new facilities and expanding the business alongside my brother.

The idea for RAD came about after I met Dell Coller, an accomplished pilot, mechanic, and one of the original builders of the Jet Waco. We started to talk about a future vision of the air show world, and in 2019 the opportunity arose to purchase the Jet Waco (then known as "The Screamin' Sasquatch") from air show industry icon John Klatt, who has been a longtime friend and mentor to us throughout our air show careers.

Dell is now the Chief Mechanic and Head Pilot of the Jet Waco for RAD Aerosports. Together, we are continuing the Jet Waco's journey with the goal to showcase and share our love of aviation with the next generation.

H: What's next for RAD Aerosports and the Jet Waco?

JL: After completing our first full calendar year of air shows, our powerhouse team is ready to kick off the 2022 season! We have seven air shows scheduled for the Jet Waco and two for the Red Baron Super Stearman, with dates continuing to book up. We started our 2022 Aerial Spraying Season as well as practicing our new routine and sequence for our aerobatic aircraft.

RAD Aerosports is actively seeking primary sponsorship for the Jet Waco to continue building a unique and exciting brand of entertainment that blends old technology with new. Our vision is to help people of all ages develop lifelong skills of craftsmanship and work with their hands while learning about aviation. We're also excited to give back to the community and are in the process of starting an outreach program for veterans or people struggling to find work or balance in their lives.

View the **RAD Aerosports Air Show Schedule** at [Radaerosports.com](https://radaerosports.com)

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**RAD
AEROSPORTS**

RadAerosports.com | @RADAerosports



Recreational Aviation Foundation Delivers Backcountry

by Carmine Mowbray, RAF Publicity Liaison

Access and Amenities

Imagine planning to land on the turf and camp at Isle Airport in Minnesota. Maybe you anticipate a hearty dinner at one of the nearby restaurants, then a short hike to Mille Lacs Lake. But you discover the airport was closed by the city because of encroaching trees. Now you have to disappoint your family, all looking forward to the weekend camping together.

The Recreational Aviation Foundation (RAF) became aware of the situation, and thanks to a \$14,000 RAF grant, the trees were removed in cooperation with the Isle Airport Association, and the airport was saved. To celebrate, Association volunteers hosted a fly-in last July. Eighty airplanes arrived, many camped, and 800 folks enjoyed breakfast at the airfield. “The future of Isle Airport is bright,” RAF Minnesota Ambassador Amy Gesch said.

The Recreational Aviation Foundation marks another year of collaborative successes – like Isle – from Alaska to Florida. Throughout its 19 years as a 501(c)3 nonprofit, the RAF has depended on donations and the efforts of

volunteers to carry out its mission to preserve, improve, and create airstrips for recreational access.

Headquartered in Bozeman, Montana, the RAF operates coast-to-coast with only three paid staffers. Volunteer state liaisons identify projects, assisted by volunteer state ambassadors. The RAF engages with state aviation groups, aeronautics departments, AOPA regional managers, local EAA chapters, and type clubs for the best ways to enhance recreational aviation opportunities and preserve access. “The nearly ten thousand folks who support us appreciate the way we do things,” RAF Chairman John McKenna said. “Volunteers step up because they are passionate about what we do.”

The creation of a new airfield in the Ozarks on land managed by The Nature Conservancy is just one example. Trigger Gap is a beautiful airfield that the RAF helped create with Fly Oz. “We have the full support and involvement of The Nature Conservancy in being good stewards of their lands,” RAF Arkansas Liaison Dave Powell said.



The RAF grants funds for projects that fit the RAF mission. “Our volunteers multiply the power of our monetary resources. It’s leverage in its truest and most enjoyable form,” McKenna said. Picnic shelters, toilets, shower facilities, WiFi, and weather stations are going up; trees and brush are removed, making fields safer for more types of aircraft. Here are just a few cooperative successes since July 2021, typically involving RAF grants for all or part of projects:



Success Stories by State

- AK** Campaign to preserve USFS wilderness cabins accessible by air on the Tongass National Forest; work party at May Creek.
- AR** Completion of pavilion at Trigger Gap; continued improvements there and at Richland Creek, with Fly Oz.
- CA** Cooperation with owners to retain and improve Las Trancas airstrip on Pacific Coast.
- CT** Camping improvements at forest-lined Waterbury, a turf field just 80 miles from NYC; continued support of Goodspeed, after saving it from closure through a grant for the down payment enabling purchase by local airport group.
- FL** New picnic tables, windsock, markers, and general refreshment of Blackwater and its amenities.
- ME** Parallel turf airstrip improved in central Maine at Norridgewock.
- MA** RAF grant for Katama Airfield facility for visitors to gather, picnic, and enjoy direct access to the Atlantic Ocean.
- MI** Major lengthening project at Two Hearted in Michigan’s UP; continued maintenance at North Fox Island.
- MT** RAF grant toward mule-driven maintenance at Schafer Meadows, within the Bob Marshall Wilderness; RAF and Montana Pilot Assoc. volunteers refurbished, delivered, and re-assembled a mule-drawn mower for use there; RAF volunteers helped MPA members with maintenance at Meadow Creek, Spotted Bear, and airstrips within the Missouri River Breaks Monument; irrigation was installed at Ryan Field and Ryan barn improved.
- NM** RAF was the first of 13 parties to sign the New Mexico Airstrip Network MOU renewal, a shared stewardship and advocacy organization; RAF grant provided new tires for Amigo Del Cielo’s surface roller; cooperated with New Mexico Pilots Assoc. on Me-Own Airstrip.
- NY** Second successful cooperative project between the RAF and Town of Keene at Marcy Field. Trees and brush removed with volunteers from Adirondack Aviators Group, and safety signage was installed.
- OR** Picnic table and fire ring were installed at Toketee; RAF volunteers helped improve McKenzie Bridge airport, receiving praise from Oregon’s Dep’t of Aviation and USFS; RAF cooperates with the Hells Canyon Recreation Collaborative (HCRC) to protect and improve access to six Hells Canyon airstrips.
- TX** RAF restored aviation access to riverbeds; a new formal agreement regarding airstrips in Texas State Parks was signed. “This is far more than an agreement to provide volunteers and RAF grant money for projects in Texas,” McKenna said. “The state of Texas is looking to the RAF for expertise and guidance on managing aviation assets in their parks while identifying new opportunities to provide additional recreational access.”
- WI** Cornucopia, near the Apostle Islands Nat’l Lakeshore, continues to exemplify RAF-Community partnership. A pilot shelter and bicycle shed have been cooperatively built, with donated bicycles. A volunteer has fabricated and provided a turf roller to smooth the airfield seasonally.



Part of the RAF success story is due to its partnerships with aviation goods and service providers like Hartzell Propeller, who extended their offer of a \$1,000 discount on popular backcountry propellers to RAF supporters through the end of 2022. In addition to the benefit to the buyer, Hartzell has pledged \$250 toward the RAF mission for each of these sales. “This demonstrates Hartzell’s dedication to backcountry aircraft safety, performance, and noise reduction – features RAF members really appreciate,” McKenna said.

The RAF assisted the Tailwind Aviation Foundation on the Airfield Guide, in response to requests for a listing of recreational places to fly. Currently, it lists over 300 airfields across the country – more are being added all the time.

Continued dialog with the FAA resulted in official acknowledgment of turf aircraft operating areas adjacent to paved airports – another form of advocacy. “This win represents a great collaborative effort between the RAF, EAA, and AOPA. It’s a huge win for recreational aviation. These turf operating areas are valuable for training purposes, to prepare pilots without practicing in the backcountry,” RAF Director Jeff Russell said.

Become a member at theraf.org

Also at the national level, the RAF secured budget allocations from the US Forest Service for use on backcountry airstrips. The RAF has a renewable MOU with the USFS, the Bureau of Land Management, and the National Park Service that authorizes RAF volunteers to provide maintenance on airstrips on these lands.

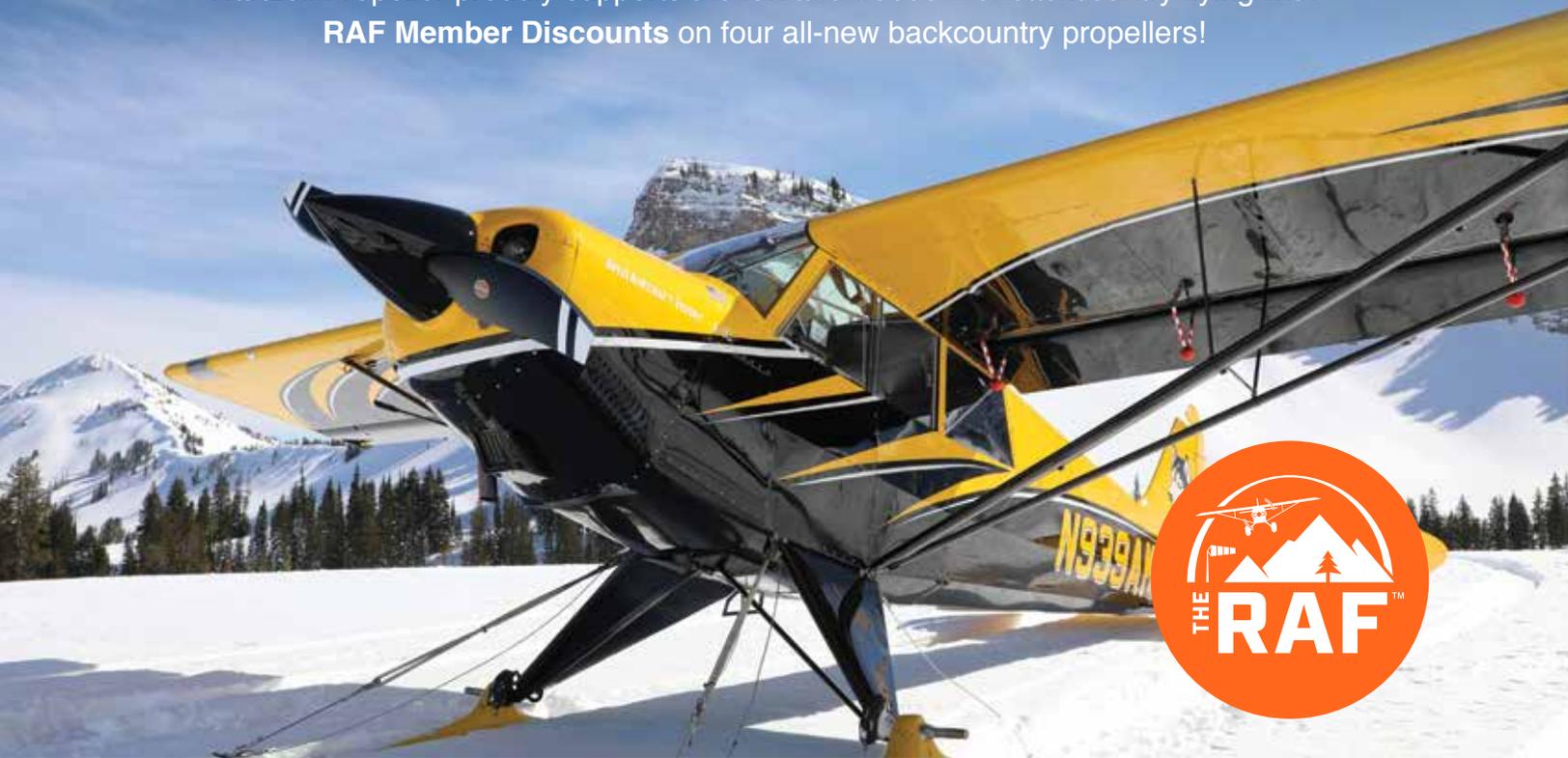


This relationship came about only with the commitment to connect with Washington, DC policymakers on their own turf. McKenna manages about four trips per year to DC. Counting other RAF representatives’ trips, he says the tally is over one hundred visits to meet face-to-face with Congressmen, relevant cabinet members, and staff. He often cites the adage, “If you’re not at the table, you’re on the menu.”



Save on a Backcountry Prop. Support the RAF Mission.

Hartzell Propeller proudly supports the fun and freedom of backcountry flying with **RAF Member Discounts** on four all-new backcountry propellers!



\$1,000 Discount on Backcountry Propellers for Recreational Aviation Foundation (RAF) Members.



The Voyager

3-blade metal scimitar propeller for the Cessna 180, 182, 185 and 206 fleet



The Trailblazer

2-blade composite prop for Aviat Husky, American Champion Scout, Maule M-7-235 and experimental aircraft



The Explorer

3-blade composite prop for a number of experimental aircraft



The Pathfinder

3-blade composite prop for Cubcrafters X-Cub and Carbon Cub FX, and experimental aircraft

Hartzell Propeller will make a \$250 contribution to the RAF mission for every member who buys a new Hartzell backcountry prop through 2022.

Visit [HartzellProp.com](https://www.hartzellprop.com) to learn more.



With this in mind, it's not surprising to learn that many musicians go on to become exceptional pilots. And, there are many pilots who love to play music! Recognizing the correlations between music and aviation, the Flying Musicians Association (FMA) was formed to further growth and interest in both.

Founded in 2009, the FMA is a 501(c)(3) nonprofit corporation that brings together anyone who shares a passion for both music and flying, from all proficiency levels and genres. Through performances, presentations, networking, and scholarships, the FMA inspires, educates, and assists youth and adults in the science and art of aeronautics and music.

"The Flying Musicians Association is a network of over 800 like-minded people from all walks of life," said John Zapp, President and CEO of FMA. "Some members have reached the pinnacle of both aviation and music, and others are just learning to fly or perform professionally. It's a unique opportunity for pilots who are also musicians to be a part of a supportive community that encourages them to enhance the pursuit of their passions, whether as a vocation or as a hobby."

FMA members around the country frequently gather for hangar jams and concerts at aviation and music functions ranging from local fly-ins to national and even worldwide events. Hartzell Propeller is a proud sponsor of the FMA's mission and the exceptional live music entertainment provided by its talented members.

"Hartzell Propeller's valued support of our mission continues to propel the Flying Musicians Association's programs into the future," said Zapp.



FMA SOLO SCHOLARSHIP PROGRAM

In an effort to inspire the next generation to grow and sustain their interest in both music and aviation, the FMA Solo Program was developed in 2014. This unique program is designed for high school student musicians who excel in music and have a strong desire to learn to fly. Recipients will receive a scholarship to assist them in their flight school training and help them realize the dream of going from zero time to solo.

"We've now awarded fifteen Learn to Fly scholarships and assisted numerous young student musicians in their pursuit to fly," said Zapp. "Over the years, the FMA Solo Program has brought hundreds of student members into our network of pilot musicians, which is an invaluable lifeline to anyone aspiring to excel in academics, music, aviation, and life in general."

Do you know a talented student musician who has an interest in learning to fly? Tell them about the FMA's annual Solo Scholarship!

The FMA Solo Scholarship Program accepts nominations from music teachers or music directors. Candidates must be a junior or senior high school music student with a passion for music and aviation. All nominees will receive a sponsored FMA student membership, including an FMA shirt and other items donated by FMA members and sponsors.

To find out more about the Flying Musicians Association and get involved, visit FlyingMusicians.org.



Jovencia "Jovie" Webbeking
2022 FMA Solo Recipient



AEROBATICS

IN A BEECHCRAFT BONANZA?



How **JIM PEITZ** Makes It Possible

Jim Peitz doesn't remember the exact moment he decided to become a pilot. Growing up in a family of aviators, taking to the skies came naturally — and he hasn't looked back since.

"My father was a pilot. My older brother was a pilot. So, it was just kind of a given that I was going to learn to fly," said Jim, a native South Dakotan from the capital city of Pierre.

After his father taught him to fly in the 1970s, Jim was bitten by the aerobatics bug and began aerobatic training in 1992 in a Christen Eagle.

"I'd flown aerobatics before, but never really owned a true aerobatic airplane," said Jim. "With the Christen Eagle came the opportunity to really perfect my craft and get into the air show and aerobatics side of aviation."

Jim flew aerobatics in the Christen Eagle for about eight years, followed by a 14-year run in an Extra 300L. Today, the primary airplane Jim performs in — a certified aerobatic Beechcraft Bonanza (F33C) — consistently takes air show fans by surprise.

"The Bonanza is best known as a four or six-place family airplane, so folks don't expect you to jump into a full aerobatic routine in one," explained Jim. "At some of the larger air shows where you're marshaled to and from the air show site, I've even had people try to peel me off thinking I'm just someone who fell into the wrong line."

Once in the air, Jim's specialized Bonanza is capable of a wide range of aerobatic maneuvers, including loops, point rolls, barrel rolls, snap rolls,

Cuban eights, and hammerheads. As one of the few aerobatic Bonanzas ever built, Jim's airplane is true show-quality and equipped with a head-turning smoke system.

"That surprise factor is really fun," he said. "When I'm coming around the corner close to 200 knots and go vertical in a Bonanza, everyone kind of flips out because they don't think that's supposed to happen. So from there on, you've got their attention through the rest of the routine."

Flying a surface-level aerobatics routine in the F33C Bonanza requires precise handling, performance, and efficiency. It wasn't long before Jim decided to swap the airplane's standard propeller for a three-blade aluminum Hartzell scimitar prop.

“After making the switch to a Hartzell propeller, the performance was night and day,” said Jim. “My Hartzell prop does a really nice job of providing the energy that I need at the top of a maneuver or a precarious position in a specific sequence of the routine.”

“Especially when conditions are severe and density altitude is high, I really lean on the performance and efficiency of my Hartzell prop,” he added. “It delivers every time and gives me the margin of safety I need.”

In addition to his successful air show career, Jim owns and operates Mustang Aviation, a full-service FBO, charter company, and maintenance facility, as well as an aviation sales company, Alliance Aircraft Sales.

Conveniently located at the Pierre Regional Airport (KPIR) in South Dakota, Mustang Aviation’s maintenance facility specializes in Beechcraft, Piper, and Cessna aircraft, offering airframe and powerplant inspection, repairs, aircraft and engine modification, and parts sales.

“In our maintenance facility, we’re proud to put Hartzell props on airplanes at every opportunity,” said Jim. “We believe in the efficiency and quality of their product and the company’s promise of Built on Honor. It’s more than a slogan, it’s something that everyone at Hartzell lives by, and I really respect that.”

When he’s not dazzling air show crowds or flying for business, you can

find Jim flying just for fun. He enjoys taking his Cessna 180 out to the backcountry for fishing or pheasant hunting in the expansive countryside of South Dakota. Over his nearly 50-year flying career, he’s amassed more than 20,000 hours in the cockpit.

“I fly a lot, probably 500 to 600 hours a year at least,” said Jim. “I’ve flown between 140 and 150 aircraft types, mostly through our airplane sales company, but also through charter and freight services and the flight instruction side of our business. I’ve been blessed to have opportunities to fly everything from Piper Super Cubs

to jets to some of the World War II vintage airplanes.”

When asked to sum up what aviation means to him, Jim said, “I believe that general aviation is one of the greatest freedoms we enjoy in this country, and we need to not take it for granted. We need to protect and preserve it because it’s pretty special.”

You can catch Jim performing in air shows around the country, including EAA Airventure Oshkosh. And if you find yourself in central South Dakota, whether you’re just passing through or planning a pheasant hunting trip, be sure to visit Mustang Aviation to enjoy the FBO’s many amenities.



POWER UP:

How a Powerplant Upgrade Can Improve Aircraft Performance

Since the dawn of flight, people have dreamed of ways to push airplanes to fly higher, faster, and farther while carrying more. In response, aviation designers, engineers, and manufacturers are constantly seeking ways to “build a better mousetrap” and improve existing aircraft with a variety of after-market upgrades.

Airplane engine and propeller conversions are among the most sought-after modifications in general aviation. Replacing an older aircraft engine and propeller with a more powerful, reliable, and modern powerplant combination can dramatically transform the performance of a legacy airplane, making the flying experience that much more enjoyable.



Are you thinking about upgrading your airplane’s powerplant? Here’s a look at some of the top reasons to consider a conversion:

More power and performance from the same airplane

One of the most appealing reasons to choose a powerplant conversion is to gain more power and performance without having to buy a new aircraft. In some cases, an STC conversion can open the doors to safer, more confident performance for specific applications like backcountry flying or floatplane operations. Rather than transitioning to an entirely different aircraft, investing in a new powerplant conversion allows owners to get even more value from the airplane they already know and love to fly.

Better efficiency

With the rising cost of avgas, aircraft owners everywhere are looking for ways to improve efficiency in flight and

reduce the sting at the pump. Upgrading to a more powerful aircraft engine is one way to help save fuel at the same airspeed. Switching to an advanced constant-speed propeller may also help improve efficiency by allowing for lower RPM operations that can result in reduced fuel burn.

Improved maintenance costs

If your aircraft engine and/or propeller is reaching the manufacturer’s published TBO limits, it’s a good opportunity to run the numbers and weigh your options. Overhauls are a major investment, and if you’re looking for more power, performance, and efficiency, it might make more sense to consider upgrading instead. The price difference between an engine or propeller overhaul and conversion may not be as significant when you consider the long-term benefits of enhancing your airplane.

New, modern engines and propellers can also offer longer maintenance intervals compared to legacy versions, allowing operators to reduce flight downtime and save on maintenance costs over the long run. At Hartzell Propeller, our Top Prop propellers are backed by our industry-leading warranty through first overhaul up to 6 years or 2,400 hours.

Choosing the Right Mods

There are countless modifications and upgrades you can make to squeeze more performance, efficiency, longevity, and, most importantly — fun — out of your airplane. Take your time and appreciate every step of customizing your airplane to make it uniquely yours!

Ready to swap your prop?

Hartzell Propeller’s Top Prop STC propeller conversion program offers options for leading aircraft brands, allowing owners to upgrade to innovative new propeller designs featuring scimitar propeller blades, blended airfoils, and dependable structural composite materials.

Visit [HartzellProp.com/TopProp](https://www.hartzellprop.com/TopProp) to learn more.

Hartzell is a proud sponsor of

MICHAEL GOULIAN

Pilot, Performer, and Athlete



"I have made a living flying Hartzell props in aerobatic shows and very competitive air races for years."

2022 AIRSHOW SCHEDULE

EAA AirVenture
July 23 – July 31
Oshkosh, WI

Garmin KC Air Show
September 3 and 4
Kansas City, KS

NAS Oceana Air Show
September 17 and 18
Virginia Beach, VA

MCAS Miramar Air Show
September 23 – 25
San Diego, CA

Pacific Air Show
October 1 and 2
Huntington Beach, CA

High Sierra Fly-In
October 15 and 16
Dead Cow Lake, NV

Orlando Air & Space Show
October 29 and 30
Orlando, FL



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Built on Honor for over 100 years, Hartzell propellers are backed by our industry-leading warranty through first overhaul up to 6 years/2,400 hrs.

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CATCHING UP WITH FLIGHT CHOPS



Steve "Flight Chops" Thorne



Check out the
Flight Chops YouTube channel.

After just over two years of building, **Steve Thorne** — the pilot and host behind the popular aviation YouTube channel "Flight Chops" — debuted his completed RV-14 aircraft at EAA AirVenture Oshkosh 2021 to an eager crowd of aviation fans. We recently caught up with Steve to learn more about his latest flying adventures in the official Flight Chops airplane.



Build Status: **Finished!**

From the start of his RV-14 build project, Steve has filmed, documented, and published all the major steps in the process. His immersive videos have covered everything from constructing the airframe and choosing the airplane's components to test flying and keeping up with preventative maintenance. His goal has always been to fly for fun and help other pilots or aspiring aviators by sharing his real-life experiences.

The Hartzell Propeller team was excited to work with Steve to select the right propeller for his mission and goals: our three-blade scimitar

Do you have questions about choosing the right propeller for your experimental airplane?
The Hartzell Propeller team is here to help! Call us at +1 (937) 778-4200 or visit HartzellProp.com.

composite “Explorer” prop, which is available for kitplanes powered by select Lycoming 320, 360, and 390 series engines.

“The Explorer ticked off all the boxes I was looking for—to have a solid prop for cross-country to go fast and far, but

restriction (an initial step in the aircraft certification) was lifted. Then, Steve worked with his longtime mentor Dennis to get up to speed on flying IFR behind the automated Garmin Aviation panel in preparation for his IPC (Instrument Proficiency Check).

on his aircraft, which is another stage of the experimental certification process in Canada. Steve also completed the first night flight with the RV-14 and received training to maximize the aerobatics capabilities of the aircraft safely.

“It’s super exciting that one aircraft can effectively cover so many aspects



also to be able to do aerobatics and have fun with it,” said Steve.

He added, “Having logged over 100 hours flying the airplane now, I’m still impressed each time I add power for takeoff. The prop responds right away with very little torque due to how light it is, and the acceleration is awesome. Climb out is often approximately 2000 FPM — even near max gross weight. It’s not uncommon to be off the ground in less than 8 seconds!”

Still Working on His Chops

So far in 2022, Steve has “unlocked” several major aspects of flying for the aircraft. First, the VFR-only

Steve’s first IFR-filed mission in the RV-14 was a solo flight to Hartzell Propeller’s headquarters in Piqua, Ohio, to have his propeller serviced, including static and dynamic balancing. The Hartzell team was also happy to provide a behind-the-scenes tour of our manufacturing facilities for the Flight Chops channel.

“It was really cool to see all that goes on at the Hartzell factory,” said Steve. “I knew that propellers were complicated, but it’s truly mind-blowing when you see what actually goes into making them.”

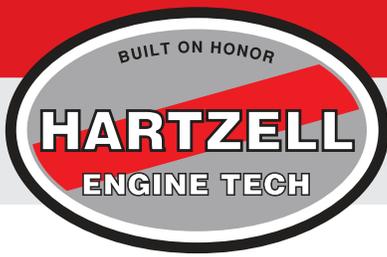
Steve’s next achievement was the removal of the aerobatics restriction

of general aviation,” said Steve. “It’s truly the Flight Chops business travel machine. Now that I’m able to fly IFR and aerobatics in the aircraft, it’s all about flying it to its full potential.”

Right Prop. Right Performance.

When asked about the Explorer propeller’s performance in aerobatic flying, Steve shared a glowing review. “The prop really shined when I started exploring the aerobatic envelope. The airplane holds a vertical line for what feels like more than five seconds!”

He added, “On top of the awesome performance, the ramp appeal of the 3-blade composite propeller is outstanding.”



Firewall Forward Focus

Q&A with Keith Bagley, President of Hartzell Engine Tech

Hartzell Engine Tech (HET) offers aircraft engine accessories and cabin heating solutions to meet the demanding challenges of today's aircraft systems. Hartzell Engine Tech President, Keith Bagley, shares how the company continues to improve upon performance, quality, and support.

Hartzell: You have extensive experience in commercial aerospace manufacturing and operations. What drew you to general aviation?

Keith Bagley: After earning my undergrad degree in mechanical engineering, I had a couple of job offers. One was with a roofing shingle manufacturer, and the other was with Pratt & Whitney as a manufacturing engineer. When I imagined telling people I help to manufacture shingles versus jet engines...let's just say it was a pretty simple decision. I held several positions at Pratt & Whitney's facilities in Maine and Connecticut and served as the General Manager of their OEM operation, Columbus Forge, in Georgia. Then, after over 13 years in the commercial aerospace industry, I received a call about a position at Hartzell Engine Tech. I hadn't even heard of general aviation at the time, but going from a big corporate environment to the autonomous, family-like atmosphere at Hartzell was very appealing.

H: Since joining HET, you've earned your private pilot's license and instrument rating. Why did you want to become a pilot, and how does it inform how you approach your role?

KB: Joe Brown really encouraged me to pursue flying because he believes it's important to have aviators in the business. So I jumped in with both feet, earning my PPL in 2018 and instrument rating in 2019. This year, I transitioned to flying a TBM and have over 1,100 flight hours now. Becoming a pilot has absolutely changed my perspective on everything we do at HET. It raised the significance of delivering the highest quality products and getting it right

the first time. Plus, I'm that much more connected to our customers and end-users. When someone calls us because they're stranded on the ground with a bad starter, I know exactly what that feels like. I want to do everything to help them because it's not a business transaction at that point; it's personal.

H: HET has built a solid foundation of industry-leading aviation brands. Can you share more about the types of products you offer?

KB: Our portfolio consists of Janitrol Aero, Fuelcraft, Plane-Power, Sky-Tec, and AeroForce Turbocharger Systems. With the product lines we offer, anything that's firewall forward in reciprocating engines falls into our realm of possibility. Our focus is completely on engine accessories — if it's bolted onto the engine, it's something we would consider making at some point in time.

Quality Aircraft Accessories (QAA), also part of the Hartzell Family of Brands, enhances HET's aftermarket presence by providing an e-commerce platform and full product life-cycle support for HET products.

H: What's on the horizon for HET?

KB: We're always going to work on being the best at what we do, constantly improving our products and expanding our current product portfolio. Our focus has been predominantly on piston engines, but we also see growth opportunities for engine accessories in the turboprop market. The demand for private business travel and general aviation as a whole has undoubtedly spiked in the wake of the pandemic. Add to that the pilot shortage, and we're seeing increasing demand from the flight schools who use our products on their trainers.

H: 'Built on Honor' is the guiding principle for the Hartzell Aviation Family of Brands. What does it mean to you?

KB: To me, Built on Honor means doing the right thing, whether it's the right thing for a customer, an employee, or a colleague. It's about taking a person-first approach and acting with integrity — doing what's right even when no one is watching. Built on Honor solidifies the strong culture at the heart of all the Hartzell Aviation companies.

Learn more about Hartzell Aviation's Family of Brands at [HartzellAviation.com](https://www.hartzellaviation.com).

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ONLINE EDITION



Share the 2022 online edition featuring the Hartzell interviews, news, and highlights found in this print edition with your friends!

hartzellleadingedge.com



**READY TO TAKE
YOUR CAREER
TO NEW HEIGHTS?**

Join the Hartzell Propeller team and advance the future of aviation!

Explore opportunities in manufacturing, engineering, sales, and more.

View our current positions and apply online at

HartzellProp.com/Employment

Equal opportunity employer M/F/H/V.

Introduce a child to the joy of flying!

"Without the guidance of the mentors I had at EAA, I wouldn't be who I am today. I, along with 42,000 other pilots, are now helping light that same spark for kids through EAA's Young Eagles program. Since 1992, volunteer pilots – my personal heroes – have flown more than 1.8 million kids as part of the program. The Young Eagles program has had a huge impact on general aviation."

– Sean D. Tucker
Hall of Fame air show performer,
National Young Eagles Chairman

Visit YoungEagles.org to locate a Young Eagles Coordinator in your area.

COME Fly THE SOCIAL SKIES

Photo courtesy of
Jim Stevenson @js170b

Hartzell propellers are the prop of choice for thousands of pilots around the world, and nothing makes us happier than hearing feedback from our satisfied customers.

Share your stories, photos, and videos with us on Facebook, Twitter, or Instagram – **@HartzellProp**. Your testimonial could be featured on our website and social media!

A NEW ERA

ELECTRIC AND ADVANCED AIR MOBILITY AIRCRAFT



[THE ALICE]

EVATION

The past few years have seen promising strides in the electric aviation and Advanced Air Mobility (AAM) movement, with technological advances bringing the future of air travel closer than ever. Hundreds of AAM programs are currently in development, driven by the common goal of making flight more sustainable, efficient, and attainable while connecting businesses, people, and communities.

Taking this new era of aviation from a vision to reality will depend on innovations in electrification, materials, manufacturing, and more, with solutions that focus on safety, reliability, and performance. With over a century of experience in advanced propeller design, certification, and manufacturing technology, Hartzell Propeller is up for the challenge.

CUSTOM SOLUTIONS FOR ADVANCED AIR MOBILITY

As the most trusted name in propellers, Hartzell Propeller is uniquely qualified to assist in the creation of custom solutions for electric, hybrid-electric, and alternative propulsion aircraft.

Since our founding in 1917, Hartzell Propeller has pushed the boundaries of flight to redefine propeller performance, safety, and quality. We specialize in using an innovative blend of sophisticated certification skills, engineering analytics, and world-class manufacturing technologies to produce a wide range of products that utilize lightweight, advanced structural composites.

Today, Hartzell is proud to partner on some of the most promising electric aircraft and AAM development projects around the globe, working closely with several OEMs to fine-tune their propeller applications. One of these key partnerships is with Eviation and their all-electric Alice aircraft.

As of summer 2022, The Alice is undergoing its technical demonstration phase and has recently completed many preliminary milestones, including initial taxi and flight test preparations. Featuring custom-built, 5-blade structural composite Hartzell propellers, the first-of-its-kind electric commuter aircraft was designed from the ground up to make flight the more sustainable, affordable, quiet solution to regional travel.



AVIATION'S FUTURE: POWERED BY INNOVATION, BUILT ON HONOR

Since 2019, Hartzell Propeller has dedicated tens of thousands of engineering hours to electric and hybrid aircraft. We continue to make advancements in tooling, manufacturing processes, and materials to help bring the future of Advanced Air Mobility aircraft more quickly and safely to the skies.

For even more insights on Hartzell's custom propeller solutions for electric and AAM aircraft, read our whitepaper at HartzellProp.com/advanced-air-mobility.

WORKING ON AN ELECTRIC AIRCRAFT OR AAM PROJECT? TURN TO THE PROPELLER EXPERTS.

We'd love to hear about your project, whether you're working on an all-electric airplane, a hybrid-electric retrofit, or an eVTOL advanced air mobility design.



As Director of Business Development and New Technology, **Mitch Heaton**, furthers Hartzell Propeller's strategy and initiatives involving Advanced/Urban Air Mobility, eVTOL/eSTOLs, and electric/hybrid/hydrogen-powered aircraft. With experience in the design of connection systems for aircraft, growing unmanned aerial ecosystems, and collaborating with leaders of global aerospace and defense companies and organizations, Mitch specializes in advancing the future of air travel and aircraft through innovation and technology.

Connect with Mitch today — email mheaton@hartzellprop.com or call +1 (937) 778-4200.



MYTHS VS FACTS

COMPOSITE AIRCRAFT PROPELLERS

Although composite propeller designs have been around for decades, some aircraft owners and operators are still unsure about the difference between composite and metal propeller options. Here's a look at the facts behind a few common misconceptions about composite propeller blades:



MYTH: Composite propeller blades aren't as strong as aluminum

Those unfamiliar with composite blade technology may believe that traditional aluminum blades are stronger. The truth is that composite blades are actually much tougher than aluminum blades, especially in unforgiving flying environments like the backcountry.

MYTH: All composite propeller blades are alike

Although various propeller manufacturers create their own versions of composite blades, the specific construction techniques and technology behind their products are vastly different.

Hartzell Propeller uses both precision machining and human expertise to produce our next-generation composite props. Unlike some other composite blades, our advanced structural composite propeller blades utilize a true composite structure to gain their strength and form.

MYTH: There's no big performance difference

Switching to a composite propeller can result in significant performance advantages for your aircraft. Because composite propellers are so lightweight and strong, it's possible to shape airfoils that are thinner, wider, and overall more aerodynamic than traditional aluminum blades.

Hartzell's composite props are engineered to deliver performance enhancements such as shorter take-off distance, better ground clearance, increased climb rate, increased cruise speed, and smoother operation.

MYTH: Composite props are difficult to maintain

Composite propellers are highly durable, which makes them less likely to require repair. With aluminum blades, repairing minor damage such as nicks and gouges requires filing down permanent material to smooth out the airfoil. With repeated repairs, an aluminum prop will become thinner and thinner until it's eventually deemed unairworthy.

Composite blades, on the other hand, are able to be repaired over and over again without adversely affecting the airfoil shape. Instead of filing or grinding the blade to remove material, composite blades are repaired by replacing the lost material. Hartzell's composite props are certified for unlimited life and can easily be returned to factory specifications even after multiple overhauls. Additionally, minor repairs to composite blades can often be made with only an A & P license. While it's true that composite blades may require a higher initial investment than metal blades, they offer exceptional value for aircraft owners over the long term.

Choosing composite propeller blades

There's more to composite propeller blades than enhanced ramp appeal. From weight savings to optimized performance to low life cycle costs that provide better value for the investment, it makes sense that composites are the prop of choice for many aircraft owners and OEM manufacturers.

To learn more about Hartzell's advanced structural composite propellers, call +1 (937) 778-4200 or visit HartzellProp.com.



Welding Wonders

Q&A with Ryan Latham, President of Hartzell Aerospace Welding

Hartzell Aerospace Welding provides quality aviation exhaust systems and custom metal fabrication, backed by the expertise of trusted aviation companies, including Aerospace Welding Minneapolis, Inc. Minneapolis, Inc (AWI) and Aerospace Manufacturing, Inc. (AMI). We sat down with Hartzell Aerospace Welding President, Ryan Latham, to learn about his background and vision for the company.

Hartzell: You have an impressive leadership background, especially in aerospace manufacturing. How did you get into the industry?

Ryan Latham: Coming from a military family, I joined the Army right after college and completed ten years of active duty, including deployments to Iraq and Kosovo. When I decided to transition to civilian life, I realized there were many opportunities in manufacturing. I was fortunate to be connected with Pratt & Whitney, where I led a team of jet engine specialists and supervised numerous production processes. From there, I gained even more manufacturing leadership experience with Howmet Aerospace before joining AWI-AMI (now Hartzell Aerospace Welding) as President in 2021. With its smaller, family-like environment, Hartzell Aerospace Welding is a great fit for me.

H: What do you enjoy most about aerospace manufacturing?

RL: I think I gravitated towards manufacturing because I'm naturally a bit competitive. I played college basketball and look at manufacturing like a competitive sport, too. It's deeply rooted in teamwork and process improvement. I'm constantly thinking about what we need to do to catch up and stay ahead of the competition.

H: Can you share more about Hartzell Aerospace Welding, the company's areas of expertise, and the customers you serve?

RL: AWI focuses on three key areas in the general aviation market: aircraft engine mount overhaul and repair, exhaust system overhaul and repair, and FAA PMA (part manufacturing authority). We take direct orders from customers on repairs and ship them a quality product back as fast as possible. As the world's largest overhaul repair center for aircraft engine exhaust systems, our customer base is very broad. We serve around 9,000 customers made up of individual pilots, flight schools, and more.

On the AMI side, we specialize in precision machining and welding, with a focus on bending and welding new accessories and tube assemblies for large aerospace OEMs. AMI also handles metal details for the exhaust and engine mount side of AWI's business.

Overall, the key strength we bring to the market is our certified welding competency. We currently have over 40 skilled welders, and we're always looking for great welding talent.

H: What's your vision for the future of Hartzell Aerospace Welding?

RL: First, it's about finding smart ways to grow the company by increasing capacity and having the best-trained workforce to meet the high demand within the aerospace and general aviation industry. I see our business growing two and a half times in the next four to six years, which is very exciting. In fact, we're already expanding with the recent acquisition of Acorn Welding, Canada's largest aircraft exhaust and engine mounts repair company.

H: As part of the Hartzell Aviation Family of Brands, what does 'Built on Honor' mean to you?

RL: What's really special about Built on Honor is that the Hartzell Aviation leadership team really believes it and lives it, and that frame of mind cascades throughout the entire company. As we're rebranding ourselves as Hartzell Aerospace Welding, we're proud to embrace the Built on Honor philosophy that originated with Hartzell Propeller. It's important to us to show respect to this company that's over a century old and one of the cornerstones of general aviation.

Learn more about Hartzell Aviation's Family of Brands at [HartzellAviation.com](https://www.hartzellaviation.com).

PIEDMONT PROPULSION SYSTEMS

Hartzell Propeller is proud of our strong and growing global network of Recommended Service Facilities (RSF), which guarantees our customers always have access to the finest propeller repair, maintenance, and overhaul services available on Hartzell products. We're also proud of the deep-rooted relationships we've established with the leadership teams and skilled technicians behind these exceptional independent repair stations, who share our commitment to quality, safety, and excellence.

One of Hartzell's longest-standing RSFs is Piedmont Propulsion Systems (PPS), based in Winston-Salem, North Carolina. A member of the First Aviation Services Inc. family of companies, PPS provides industry-leading propeller maintenance, repair, and overhaul services for major airlines, cargo operators, military fleets, governments, and private operators worldwide.

Since the prop shop was founded in 1948, it has earned a reputation across the industry for quality, efficiency, and customer satisfaction. PPS's modern 66,000+ square-foot facility includes state-of-the-art temperature and humidity-controlled composite repair shops, non-destructive test and inspection capabilities, and multiple paint booths, all with numerous health, safety, and environmental protections in place.

In the early 1970s, PPS formed a trusted relationship with Hartzell Propeller and soon became a Recommended Service Facility, a designation the company has maintained ever since.

"Being a Hartzell Recommended Service Facility is invaluable because it's a complete partnership," said **Sammy Oakley**, Vice President and General Manager of Piedmont Propulsion Systems. "I've enjoyed working with the Hartzell team through the years because they treat their Recommended Service Facilities like family.

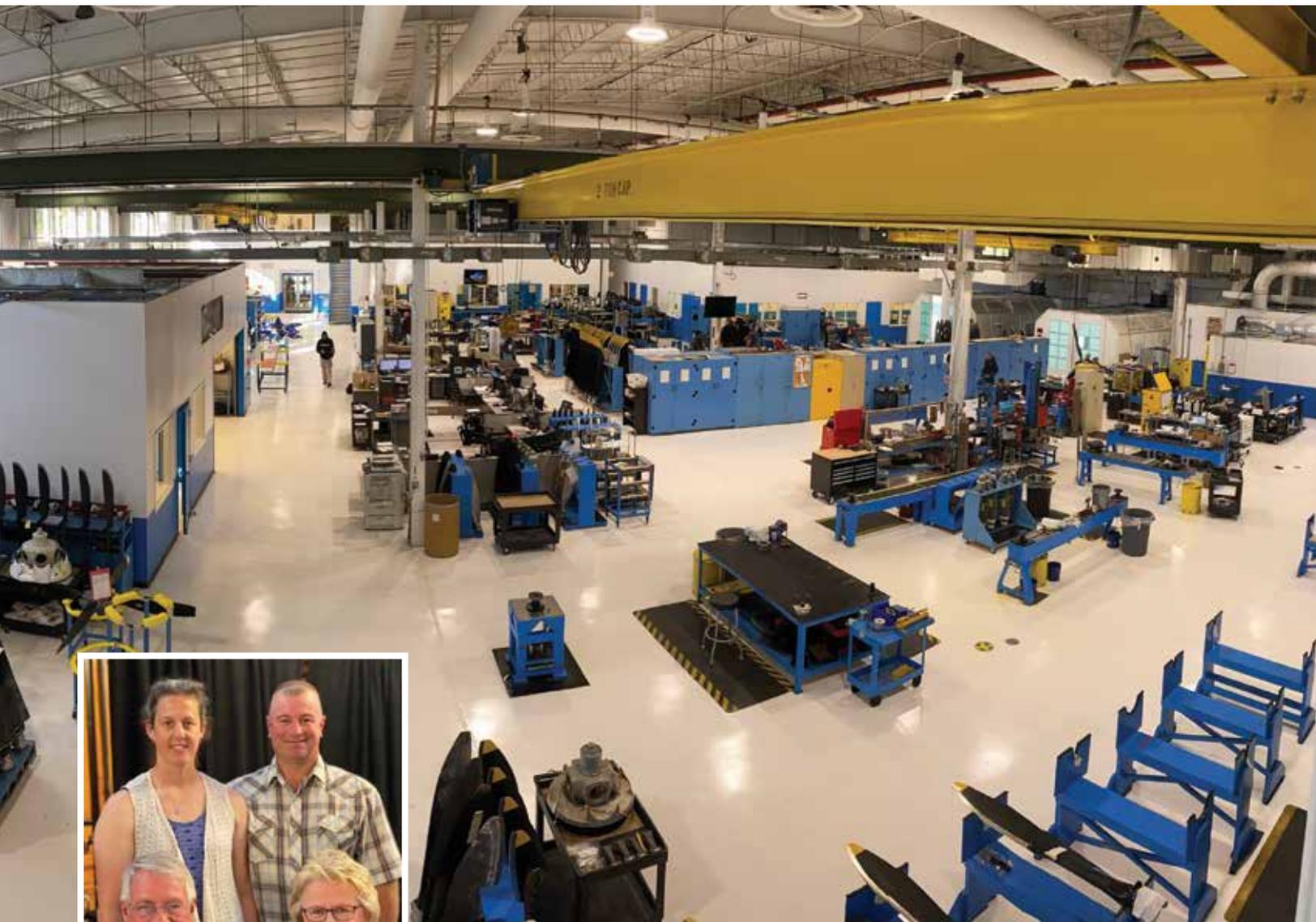


Whenever we need any kind of product support or had technical questions, they have always been very responsive, which helps us provide the highest quality for our customers."

Oakley retired in January 2022 after 35 years of service with Piedmont Propulsion Systems. Looking back, he says



The Hartzell team presenting a wooden propeller to Sammy



Sammy with family

PIEDMONT
PROPULSION SYSTEMS, LLC

First Aviation Services Inc.®

some of his fondest memories were visiting Hartzell's headquarters in Piqua, Ohio for training sessions.

"Hartzell has always been at the forefront of propeller technology, especially when it comes to next-generation composite blades," said Oakley. "It was always a highlight to learn how to maintain, repair, and overhaul composite blades from the industry leader."

"My first-ever flying experience was actually for a trip to Hartzell in 1987, not long after I started with the company," added Oakley. "The warm welcome that Hartzell showed

me that week has stuck with me throughout my entire career. Our partnership started out fantastic, and it still is today."

Several members of the Hartzell team recently joined Piedmont Propulsion Systems in Winston-Salem to celebrate Oakley's well-deserved retirement and thank him for his years of service, support, and friendship.

If you're near North Carolina or just passing through, be sure to visit Piedmont Propulsion Systems for any propeller service needs. To learn more, visit piedmontpropulsion.com.



PROPELLER SERVICE & SUPPORT FROM THE SOURCE:

THE HARTZELL SERVICE CENTER

When your prop is due for routine maintenance, an unexpected repair, or a complete overhaul, you may be wondering where to turn for the best service and support.

If you have a Hartzell propeller, you have options! In addition to our global network of Recommended Service Facilities, we're proud to offer comprehensive propeller services at our factory-owned and operated Hartzell Service Center, located in Piqua, Ohio.

Our on-site Hartzell Service Center is an FAA-Certified Repair Station (SJ3R843L) focused exclusively on our product line, providing repairs and overhauls in short lead times at a competitive price.

So, what can you expect from the Hartzell Service Center? Here's an inside look:

SUPPORT FROM HARTZELL PROPELLER EXPERTS

At the Hartzell Service Center, our highly skilled and trained propeller technicians average 19 years of experience exclusively with Hartzell propellers. We specialize in servicing both aluminum and composite propeller blades, with the capability, experience, and state-of-the-art equipment to execute even the most difficult repairs. Customer service is our top priority, and our understanding of all things Hartzell is unparalleled.

FACTORY SURFACE TREATMENTS

When you send your propeller to the Hartzell Service Center for an overhaul, you can expect your finished prop

to be returned in "like new" condition. That's because we use the same inspection techniques and surface treatments as the factory where your airplane propeller was originally manufactured.

EXTENSIVE PARTS INVENTORY

We understand that many of our customers' flight schedules can't be delayed by waiting for a spare part to arrive. The Hartzell Service Center's proximity to our manufacturing facility ensures that needed parts are available quickly, without the added time and expense of shipping.

ABILITY TO FLY IN OR SHIP YOUR PROP

Pilots are invited to fly into the Piqua Airport/Hartzell Field (117) to have their propellers serviced at the nearby Hartzell Service Center. Customers may also choose our convenient pickup and delivery services, and we're happy to ship to customers around the world.

DEMAND THE BEST FOR YOUR PROPELLER

Whether you choose our Hartzell Service Center or one of our Recommended Service Facilities, you can be confident that your airplane propeller overhaul, maintenance, or repair will be prompt, professional, and performed with the utmost safety and quality.

Get in touch with our Service Center experts at [HartzellProp.com/Contact](https://www.hartzellprop.com/contact).



FIND YOUR

RECOMMENDED SERVICE FACILITY

In order to provide the highest quality service to our customers, Hartzell has assembled a worldwide network of **Recommended Service Facilities (RSF)** or **Support and Service Centers (SSC)**. Do you know where your nearest Hartzell RSF or SSC is?

Piqua, OH – USA

Hartzell Service Center
One Propeller Place
Piqua, OH 45356
Phone: 1-937-778-4201

Minneapolis, MN – USA

Maxwell Aircraft Service
Crystal Airport
Minneapolis, MN 55429
Phone: 1-763-533-8611

Winston-Salem, NC – USA

Piedmont Propulsion Systems, LLC
440 Lansing Drive
Winston Salem, NC 27105
Phone: 1-336-776-6260

San Antonio, TX – USA

Jordan Propeller Service, Inc.
103 East Rhapsody
San Antonio, TX 78216
Phone: 1-210-344-3064

Pearland, TX – USA

Texas Aircraft Propeller & Accessories
1711 County Road 130,
Pearland TX 77581
Pearland Regional Airport
Phone: 1-800-580-7767

Phoenix, AZ – USA

Ottosen Propeller & Accessories, Inc.
105 South 28th Street
Phoenix, AZ 85034
Phone: 1-800-528-7551

Puyallup, WA – USA

Northwest Propeller Service, Inc.
16607 103rd Ave. Ct. E
Puyallup, WA 98374
Phone: 1-253-770-7400

Lantana, FL – USA

Palm Beach Aircraft Propeller, Inc.
2633 Lantana Rd.
Suite 23, Bldg. 1501
Lantana, FL 33462
Phone: 1-800-965-7767

Opa Locka, FL – USA

Aviation Propellers, Inc.
12970 Port Said Road
Opa Locka, FL 33054
Phone: 1-305-688-9439
Phone: 1-305-688-6030

Tulsa, OK – USA

Intercontinental Jet Service Corp
3322 North 74th East Avenue
Tulsa International Airport,
Hangar #27
Tulsa, OK 74115
Phone: 1-800-349-6827

Winnipeg, Manitoba – Canada

Canadian Propeller Ltd.
462 Brooklyn Street
Winnipeg, Manitoba R3J 1M7
Phone: 1-800-773-6853

Mississauga, Ontario – Canada

Hope Aero Propeller & Components, Inc.
7605 Bath Rd.
Mississauga, Ontario L4T 3T1
Phone: 1-800-268-9900

Portsmouth, Hampshire – UK

Proptech
Spitfire way, Solent Airport,
Lee-on-the-solent,
PO13 9FY, UK
Phone: +44 (0)2392 657770

Biggleswade, Bedfordshire – UK

Brinkley – Propeller
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Montgomery Way
Stratton Business Park
Biggleswade, Bedfordshire
SG18 8UB
Phone: +44(0)1767 314954

Oslo – Norway

Norronafly Propeller & Parts
Stromsveien 344
NO-1084 Oslo, Norway
Phone: 47-67539066

Egelsbach – Germany

Roder Praezision GmbH
Am Flugplatz
D-63329 Egelsbach
Phone: +49-(0)6103-4002-950

Manosque – France

Technic Aviation
1113 Boulevard Saint Maurice
Z. I. Saint Maurice
04100 Manosque
Phone: 33-(0)492 72 66 48

Lodrino – Switzerland

RUAG Switzerland Ltd.
Via Aeroporto 14
6527 Lodrino, Ticino
Phone: +41 91 873 41 54

Goiana GO – Brazil

Diamond Aviação Ltda
n. 1317 Setor Santa Genoveva
74672-420 Goiana, GO
Phone: 55 62 35159900

Buenos Aires – Argentina

Helices Clerici
Santa Maria De Oro 3061
1712 Castelar
Buenos Aires, Argentina
B1712KTL
Phone: 54-11-4623-5754

Dubai, United Arab Emirates

Segers Aviation SA
PO Box 712023
Office 21-23
FC6
Dubai Logistics City
Dubai, United Arab Emirates
Phone: 971 50 189 8696

Blenheim – New Zealand

Airbus New Zealand Ltd.
PO Box 244
Blenheim Airport
Blenheim, New Zealand 7240
Phone: +64 3 572 8416

Johor – Malaysia

C & A Aviation SDN. BHD.
Lot AP5, Senai Aerospace
Park 1
Sultan Ismail Int'l Airport
81250 Johor Bahru, Johor
Phone: (607) 5992895

Sydney, New South Wales – Australia

East Coast Propellers PTY. Ltd.
Building 641, Klemm Street
Bankstown Airport
Sydney, New South Wales
2200
Phone: 61-2-9791-0246

Dingley, Victoria – Australia

Airbus New Zealand
(Australia) Pty Ltd.
7 Planetree Avenue
Dingley, Victoria 3172
Australia
Phone: 62-3-8587-6256

Willetton, Western Australia

West Coast Propellers P/L
Unit 6/10 Whyalla Street
Willetton, Western Australia
6155
Postal Address:
P.O. Box 3111
Success, Western Australia
6164
Phone: 61-8-9354-4113

Nan Chang Lu Si Duan, Guanghan City, Sichuan Province – China (Hartzell SSC)

Aircraft Repair and Overhaul
Plant of Civil Aviation Flight
University of China
No. 91 Nan Chang Lu Si Duan
Guanghan City,
Sichuan Province, China
618307
Phone: 0838-5182874

Hunnan New District Shenyang, Liaoning Province – China (Hartzell SSC)

Wuhan Hangda Aero Science & Technology Development Co., Ltd.
No.12 Jinyinhu Nansan Street,
Dongxiyu District
Wuhan, Hubei, P.R. China
430040
Phone: 027-68853833

West Bengal, India (Hartzell SSC)

Arrow Aviation Services
PVT LTD
67/2, Sarat Chandra Dhar
Road, Baranagar
Kolkata - 700 090
West Bengal, India
CTC NO.-
M- 91 99995 96943
M- 91 70440 86883

Dream. Build. Fly!

Ken Rieder's Homebuilding Journey

As a teenager, **Ken Rieder** never imagined he'd build one airplane, let alone fly his own homebuilt aircraft as a professional airshow pilot. Today, Ken pushes the Van's Aircraft RV-8 to its limit as the lead pilot of Redline Airshows — and he's building his fifth RV kitplane in his spare time.

Dreams Take Flight

Like many kit builders, Ken's homebuilding dream started at an early age. In particular, he was inspired by an advertisement for the RV-3, RV-4, and RV-6 on the back of a mid-1980s Kitplanes magazine.

"I remember tearing off the cover and hanging it on my wall, telling myself, 'I'd like to build one of these someday,'" Ken said. "When the time came, I narrowed it down to the RV-8, which was Van's newest kit at the time."

Ken started building his first RV-8 — kit #252 — in 1997. When he completed the aircraft in three years, he was told he was likely one of the first 25 builders in the country to have it finished.

"I loved that airplane," Ken said. "But about a year later, I ended up selling it for about twice as much as I had in it. As soon as I sold it, I decided I was going to build two more."

Ken built his next two RVs as an identical pair. He sold one and flew the second for a while before setting out to build a

fourth RV-8 stressed for aerobatics, which he currently flies in a dynamic two-ship formation performance alongside his longtime friend Adam Baker (flying an Extra 330) at airshows around the country.



A Family Affair

Experts say the best way to build an airplane is with the support of family and loved ones. That's why Ken chose to build his fifth RV-8 with his middle son, Austin, who also enjoys flying formation aerobatics.

With four RV builds now under his belt, Ken says the process is much easier than when he first started homebuilding. The biggest challenge is finding time in his busy schedule to work on the airplane between airshow





performances, flying as an airline pilot, and running a construction business. With help from his son, Ken expects to complete the current airplane project in less than three years.

“We’re putting together a slow build kit, which means nothing comes pre-assembled,” he explained. “But everything is pre-punched, so you can literally put the airplane together on a table. It’s unbelievable how well the parts fit together. The engineering is just incredible.”

Initial assembly of the airplane’s individual components will take place in Ken’s detached garage near Cincinnati, Ohio. Then, he plans to put the airframe on a trailer and complete the final assembly, including the engine and propeller installation, in his hangar at the nearby airport.

Hartzell’s advanced structural composite propellers are Ken’s prop of choice on his RV-8s, not only for the precision and control needed in formation aerobatics but also for fast, efficient cross-country cruise performance. “I’ve been flying with Hartzell propellers for ten years now, and I look forward to adding one to this latest RV,” he said.

When asked what advice he would give to first-time kitplane builders, Ken explained, “The completed airplane looks complex to build. But actually, each component of it is a simple job. There’s just a lot of simple jobs to finish the airplane.”

Most importantly, Ken enjoys the building process. He added, “I find that I have almost as much fun building the airplanes as flying them!”

The Redline Airshows team, made up of Ken Rieder and Adam “Shakenbake” Baker, is coming to an air show near you! As a



longtime sponsor of Redline Airshows, Hartzell Propeller is proud to provide propeller support for Ken’s 200-hp RV-8, helping him accomplish daring aerobatic maneuvers safely and effectively.

Upcoming 2022 Air Shows

EAA AirVenture

Oshkosh, WI | July 25-30

NAS JAX Air Show

Jacksonville, FL | October 22-23

NAS Pensacola Blue Angels Homecoming Show

Pensacola, FL | November 11-12



Smart Reasons to Preheat Your Aircraft Engine

Preheating your aircraft engine — it's a hot topic!

Just one cold start without proper preheating can cause more wear on a piston engine aircraft than 500 hours of normal cruise operation. In extreme cases, a cold start can even result in engine failure after takeoff.

The good news is that with an effective preheating system you can make it through cold-weather flying conditions while protecting your valuable powerplant — and your safety.

Why preheat an airplane engine?

Proper preheating is about more than simply bringing the oil up to temperature. Here are several smart reasons to preheat the entire engine:

1 Prevent premature engine wear and tear
Aircraft engine components are made up of different types of metal, usually aluminum and steel, which expand and contract at different rates in cold weather.

When the temperature drops, the clearances between internal components (pistons, cylinders, crankshafts) can shrink down beyond safe limits. During a very cold startup, this can force moving parts to grind together. Thoroughly preheating the entire engine will allow internal components to reach normal operating temperatures at the same time, preventing unnecessary wear and tear and extending the life of your engine.

2 Smoother starts
The warmer your airplane engine, the easier it will be to start up. Being able to start your engine on the first try helps reduce the chance of frosting on the spark plugs, which can occur when moisture is created as part of the combustion process. Smoother starts will also help to increase the longevity of your starter and battery.

3 Reduce run-up time
When your engine is properly preheated and prepared for flight, you can reduce run-up time on the ramp and take to the skies that much sooner. As an added bonus, less run-up time will help to conserve fuel, saving you time and money.

4 Ensure proper oil flow
Cold weather can change the viscosity of the oil in your engine, causing it to flow more sluggishly. By properly preheating your engine inside and out, you'll help ensure oil is flowing smoothly where it's supposed to.

5 Increase safety
Takeoff is the first critical phase of flight and one where the engine uses most of its horsepower. Even if your engine starts while cold, it could perform poorly or even fail soon after takeoff. For peace of mind alone, it's worth taking the time to fully preheat your aircraft engine so you know it's ready for a cold-weather flight.

Choosing an aircraft preheating system

Not all aircraft preheating methods are created equal. Most FBOs in cold climates have forced-air carts, which can effectively warm up the cabin, but tend to heat aircraft engines unevenly. A more effective and convenient option is an electric aircraft preheating system installed directly on the airplane. To evenly heat and protect your engine, it's important to choose a system that delivers multi-point preheating, meaning it brings all critical engine parts to the ideal temperature range from the inside out.

Multi-point preheating is standard on all Tanis preheating systems, heat-soaking the mass of the engine all the way into the center crankshaft to fully preheat in a much shorter time than forced-air heat application. Tanis preheating systems are also designed to be safely left on for extended periods of time and allow for rapid starts.

Ready to Beat the Cold?

At Hartzell Propeller, we support pilots around the world who fly in all types of climates. We know that with the right equipment, flying in cold weather can be safer, more effective, and more enjoyable. Our heated products include systems for propeller de-ice, as well as piston engine preheat, turbine engine preheat, helicopter preheat, battery, avionics, and cabin preheat systems available from Tanis Aircraft Products.



Learn more at TanisAircraft.com
or call 1-800-443-2136.



Catch the latest from the **hartzellprop** Instagram feed





Proper lubrication is just one aspect of overall maintenance for your propeller, but it's an important one. Here are some tips and guidelines to keep in mind before lubricating your Hartzell propeller:

WHEN TO LUBRICATE YOUR PROPELLER

Much like propeller overhauls, the interval for lubricating your propeller is defined in terms of operating hours and calendar time intervals. Remember, even propellers with low operating hours are subject to degradation and the breakdown of internal lubricants over time.

Hartzell Propeller has published specific intervals for propeller lubrication in our Hartzell Owner's Manuals. How often you need to lubricate your propeller varies based on a few different factors, including:

- Your propeller model
- Aircraft application
- Aircraft use
- Propeller mounting position (tractor vs. pusher)

Additionally, if your propeller is operating with an "active" grease leak, it will need to be lubricated more frequently.

HOW TO LUBRICATE YOUR PROPELLER

Lubricating your propeller may seem simple in concept, but it's extremely important to follow the specific practices published by your propeller manufacturer. At Hartzell, we have clearly defined lubrication processes for our propellers listed in our Hartzell Propeller Owner's Manuals. Failure to follow these instructions can result in a number of issues, such as external grease leaks, internal grease leaks that may affect the propeller's ability to change pitch, propeller imbalance, or corrosion and wear of internal components.

One of the biggest concerns is over-servicing your propeller by applying excessive amounts of grease. This may lead to the displacement of internal or external grease seals, pitch control difficulty, or propeller imbalance which can cause unnecessary wear on the engine and propeller. If this happens, the propeller must be disassembled to remove the excess grease.

WHICH PROPELLER GREASE TO USE

When it comes to lubricating your airplane propeller, not just any grease product will do. At Hartzell, we have researched, tested, and approved specific brands and types of grease for our propellers. If you have a Hartzell prop, use only Hartzell-approved greases as defined in the Hartzell Standard Practices Manual and Hartzell Service Letter HC-SL-61-366 found on our website..

Hartzell Propeller Grease Type Label

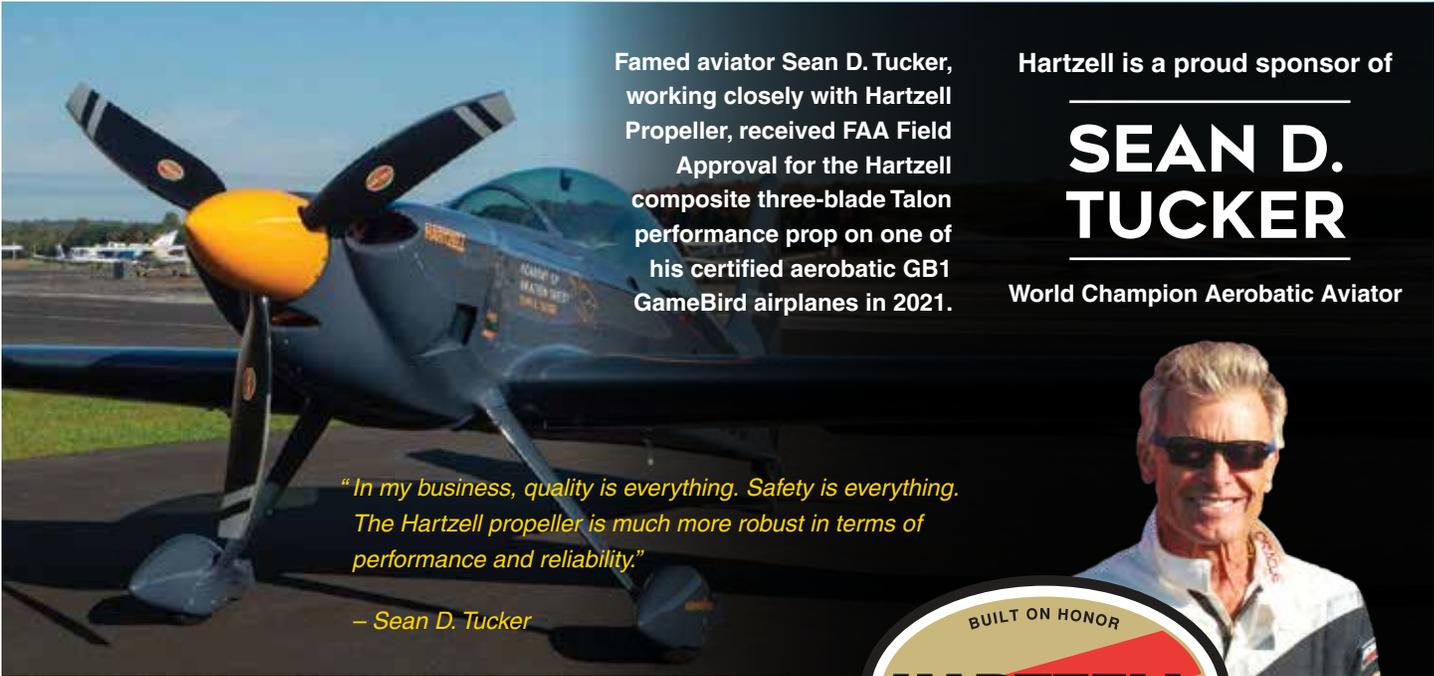


Your propeller should have a label (like the example above) that identifies the type of grease that was applied when the prop was last lubricated. Use the same grease type as listed on this label to re-lubricate the propeller, unless the propeller has been disassembled and the old grease removed.

Mixing different specifications and/or brands of grease is generally not permitted and may require your propeller to be disassembled and serviced by a certified propeller repair station. After your propeller has been lubricated, be sure the appropriate entry is recorded in the logbook, noting the date of service and the type of grease used.

DO YOU HAVE QUESTIONS FOR HARTZELL'S TECHNICAL TEAM?

Our team of experienced technical specialists is standing by to answer your propeller questions and provide exceptional support for our products. Email techsupport@hartzellprop.com or call +1 (937) 778-4200 to get in touch with our propeller experts.



Famed aviator Sean D. Tucker, working closely with Hartzell Propeller, received FAA Field Approval for the Hartzell composite three-blade Talon performance prop on one of his certified aerobatic GB1 GameBird airplanes in 2021.

Hartzell is a proud sponsor of

SEAN D. TUCKER

World Champion Aerobatic Aviator

"In my business, quality is everything. Safety is everything. The Hartzell propeller is much more robust in terms of performance and reliability."

– Sean D. Tucker



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Pilot, Athlete, and Airshow Performer



2022 AIRSHOW SCHEDULE

EAA AirVenture
July 25 - 28
Oshkosh, WI

Dayton Air Show
July 30 - 21
Dayton, OH

KC Air Show
September 2 and 3
Gardner, Kansas

Central Coast AirFest
October 15 and 16
Santa Maria, California



"The new Hartzell Talon propeller has literally changed the aerobatic game. Everything about it has increased the aerobatic capability of not only my airshow airplane, but also the two-seat certified Extra. I never expected that a propeller could increase the performance the way that the Talon has. This is definitely the future of aerobatic airplanes!" – Kevin Coleman



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Dedicated to Performance.
Driven by Innovation.
Built On Honor.

