

# The News Supplement

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## **About the Cover Photo**

Our birds don't need airports with paved runways. They can land almost anywhere. I once flew out to a sporting clay shooting range, looked down and landed in an unimproved, somewhat rocky, gully. Not a good idea, but it worked. After shooting, the gully was a short takeoff at 6300 feet altitude, but the Tripacer did it with no problem. Our planes are amazing...but be careful...you're on you own in places like this. The cover photo shows the grass (mostly dirt) ranch strip I (your Editor) used to fly from. Bet lots of you have pictures of the same (or more interesting) sorts of places like this. The Idaho back country/wilderness strips that Dave Hedditch talks and writes about are great examples.

## **About the Supplement**

The Supplement is just that...a supplement. It's not meant to replace our official SWPC publication, the News. We publish the Supplement about halfway between issues of the News. I've said many times that the Supplement is eclectic. It contains stories on lots of different things. It's not entirely relevant to our aircraft and Club. But, a lot of it is. I find things wherever I can find them. Hopefully, you'll find the Supplement at most, informational, at least, entertaining.

# President's Report

## 2022 Grand Glaize Convention

Having never hosted a SWPC convention before it was a total unknown and a true adventure. Like many of you, I kind of always wondered what the fees are for and how that amount gets set. I know before it was mentioned to me that our convention fees are high compared to some other organizations. Without looking at what those fees are for or cover, I would agree that they seemed a little higher than some. So, we will take a walk through the planning of a convention and hopefully we will all understand the cost and fees associated with the convention.

Let's start at the beginning. First, we need to find a location that is accessible for our membership, by our airplanes, commercial planes and of course by car. We try to move our conventions around so members from all over the country can attend. The majority of our conventions seem to be in the middle to the eastern part of the country. That creates a problem with the members that live on the west coast and their accessibility to the conventions. With 2021 being in Lock Haven, this year we went to Osage Beach, MO, and it looks like next year will be on the east coast of North Carolina.

When a location is selected, we have to consider the members and the things they might want to see or do while attending the convention. This presents one of the greatest challenges next to food choices, but I am getting ahead of myself. Our membership is very diverse, so finding something that will appeal to the majority is difficult. As with this convention, we were pretty sure that most everyone would like the Warm Springs Ranch tour. That is the Anheuser-Busch Ranch where they breed, raise, and train the Clydesdale horses for the Budweiser brand. While this was a great tour it was only a small part of the day, so we need something else to fill the day. This is when things start to get hard. We need to find a venue close enough by, but something that will interest everyone. Along with a day trip comes food and again trying to make it close to our locations.

To make matters more interesting, the convention venue and where I live were not close to each other. So, trying to make plans and reservations either online or over the phone when you aren't yet sure how many people we will have at these events. To add to the confusion, we can add the Covid protocol and the lack of employees at most businesses. Then the issues of timing and schedules becomes another problem along with diet. This too will come into play a little later. The next issue, with things like the day trips, is transportation.

Usually, our conventions are held in smaller outlying communities to avoid the commercial air traffic. This is nice because it gives us the abilities to come and go as we see fit, but there usually are fewer options available as we move further away from the population centers. So, we have a double-edged sword with the more remote locations. All of these things combined tend to make planning difficult when you cannot just walk into someone's office, sit down and talk to them. To make arrangements you call and hopefully talk to the same person, or you are starting over and everything gets delayed. But this gives you an idea of just some of the issues that one faces trying to plan a convention.

Once the venue has been chosen, things get started. We have to kind of guess on how many rooms we will have to block for our members. The hotel wants a commitment for a number of rooms

if we are asking for a better rate, so we sign a contract guaranteeing a set amount of income and if we don't sell that many rooms, we pay the difference. The next thing that happens with the hotel is the hospitality suite, and the question remains is will they charge us for that room? With some hotels if we guarantee the rooms the hospitality suite is no charge to us, while other hotels will charge for those rooms. Beyond the hospitality suite we need to have a location for the meet and greet and once again food is involved.

After that planning is done, then we need a banquet room for the Board of Directors meeting, the membership meeting, then our closing banquet. Those events also include food and that brings us back to we don't know for sure how many people we will have until much closer to the convention. So, we have to make some educated guesses based on the years past. What makes that so difficult is the total unknown of so many variables. Things like the cost of fuel will determine whether people fly or drive or if they will attend at all. Then we always have to be concerned with the weather and will the people flying in be able to make it?

So now that we know what is involved in planning a convention, what are the fees for and how are those determined? Let us list everything first then talk about cost.

Registration

Meet and Greet

Hospitality

Membership luncheon

Trips

Banquet

Speaker at the banquet

Starting with Registration, we need to purchase bags with the convention Logo imprinted on them. We have to produce a registration form and spreadsheet. We need to purchase name tags and holders, along with raffle tickets.

Then for the Meet & Greet we need a location and food and drinks for that. This year because we did not have a nice building, we rented a 20' x 30' tent, tables, and chairs. We purchased foam coolers and ice to keep the drinks in. We purchased 12 large pizzas and 7 salads, plus a case of Coke, Diet Coke, Pepsi, Diet Pepsi, Sprite, and water along with a couple bags of ice. We also had to purchase paper plates, and plastic wear and napkins.

For the hospitality room, we used the same coolers and once again kept drinks on hand for the members to gather and socialize. We also provided cookies and chips as well as had several people make snacks for the hospitality room. So, everything covered here comes from the registration fees. That is the Location and tent for the Meet & Greet, all of registration, food and snacks along with drinks, and of course the name tags and associated items.

The membership luncheon and banquet are usually done in buffet style because the options are better for a menu. We get more options at a better price. The luncheon is directly funded, so the price for the luncheon and the final banquet includes the menu items, tax, and gratuity. So, these

items are directly covered by the attendee and no further cost is associated with these things. The room is usually provided if we meet a certain number of attendees.

Again, the side trips are usually directly funded with the attendees paying for the price of admission and an additional cost for transportation. The biggest problem with this is knowing how many people there will be in advance, because a lot of the locations want to be paid in advance. Transportation also becomes an issue with ever changing fuel prices and again, just not knowing how many people we will have on the given day.

Then of course we have the shirts and hats that are sold at cost, so there is no profit made on any of this stuff. Then there are the awards that are given out and those come out of the registration fees. So, as you can see, there is a lot of planning and schedules that need to be met and some careful oversight with finances so we can get together and have our Short Wing family reunion. I hope this gives you a small look inside of what it takes to host a convention and why the cost is what it is.

See ya next time,

**Steve**

## Fixing Rough Field Landings

*We've all bugged a few (many?) landings. I (your editor) flew from grass/dirt strips in Colorado for 15, maybe 20 years. As the bumper sticker (sorta') says, "Things happen."*

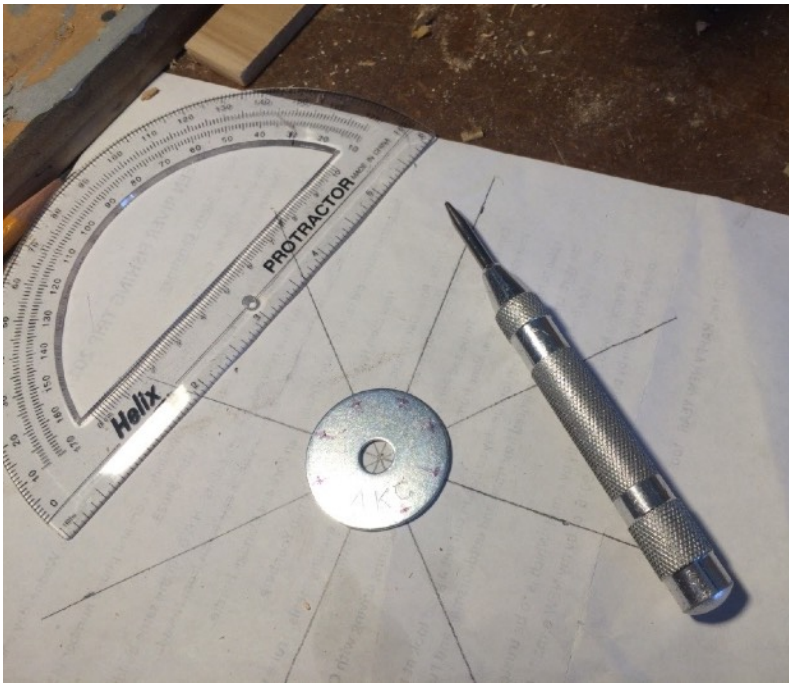


The ground in our semi-arid plains is dry...hard, often lumpy and rough. Good, smooth landings are certainly possible, and I sometimes/often made good ones. But, I bugged some, as well, and fiberglass fairings can only take just so much abuse. If you fly from good surfaced runways, you likely don't have these problems. If so, just skip on down to another article below. As the first photo shows, the fairing bolt beat up and eroded the fairing. The loads on the bolt were concentrated fore and aft, as you might expect for bumpy landing loads: the bumps jerked the fairings forward and aft and the fiberglass wore/failed.

What to do?

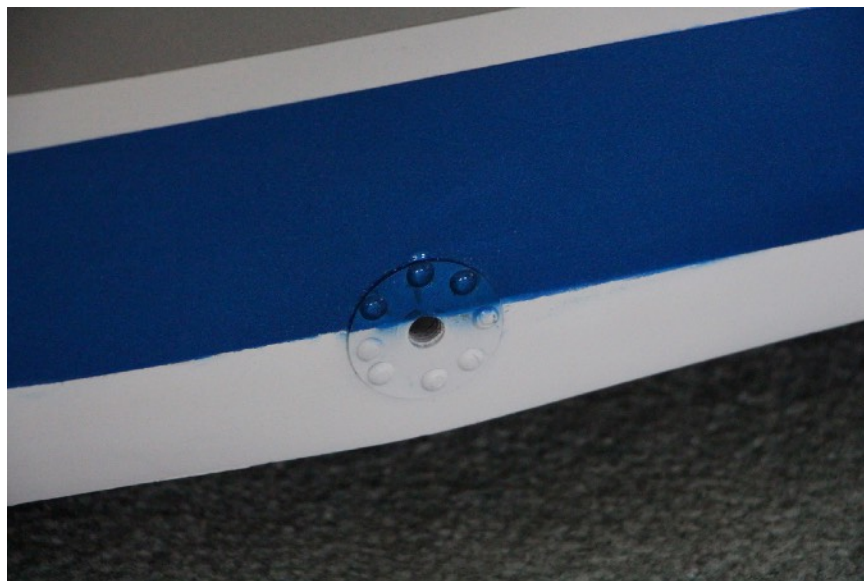
Distribute the loads...spread them out.





Here's a way to do it...and it's what I did on *Headwinds* (Hank Canup...you'd likely be interested, since you now own my bird.)

Use two large washers. One goes on the outside of the fairing, one on the inside. Drill holes in them as shown in the photo, being sure not to hold anything with your fingers.



before.

Go make a lot of better landings than I did.

Drill holes in them as shown in the photo, being sure not to hold anything with your fingers. The eight holes aren't a perfect solution but, though the rivets are a pretty small diameter, but they still spread the loads out. Of course, you need to repair the hole for the main attachment bolt, which, except for dirt fields and my lousy landings, was the villain in the first place. Use layers of fiberglass and re-drill the hole. Paint the repaired fairing area and the washer to make things look right. As the final photo shows, mine isn't totally perfect and nicely faired, but it's certainly much better than it might have been.

And, it's finished: stronger than

## Purchasing a Tripacer

*I (your editor) was sent the following note. I wrote some of the response. The sender of the note wrote the rest.*

Jan:

Thank you for your question and interest in purchasing a PA-22 Tri-Pacer. I hope you are successful in becoming a Tri-Pacer owner. I am referring your request to Kent O'Kelly, who lives in Castle Rock. Kent is very knowledgeable in TriPacers having completed a rebuild on his TriPacer. Please feel free to contact him. I recently received a very similar query to yours and I will provide some of the content of my answer to help you as you look at these airplanes. If either airplane is in suitable condition you will be very happy in owning one.

Short Wing Piper airplanes are advertised to be among the family of airplanes known as "most affordable flyers". You get the best operational costs and maintenance simplicity with Short Wing Pipers compared to the more expensive newer airplanes. Short Wings were and still are premier training airplanes, very easy to fly and fall in love with. The airplane has much milder stall characteristics compared with Cessna 150/172s. It has cross connected control surfaces, e.g. the rudder and ailerons are interconnected which makes the controls much smoother and more stable, at the price of being a little stiffer, compared with Cessna's quick controls that aren't cross connected. Some people poor mouth Short Wings for using hand operated brakes as opposed to foot pedal breaks. This is not a problem, it's just a matter of opinion. The Johnson bar brakes work very well. (Editor's note...I REALLY liked the Johnson bar. It does the brakes, while everything else still flies/controls and lands the airplane. I once ran a C-140 with toe brakes around the landing lights on a runway. I was doing my usual heavy footed push on the rudder pedals to steer the airplane and pushed a foot pedal brake as I did so.

The real condition of the airplane depends on how it has been maintained and flown and/or if it has an accident record. All this information is (hopefully) included in the log books. A review of the log books during a pre-buy inspection by an independent A&P is a good idea. Has the airplane ever been recovered? The fabric will last several decades, especially if it has been kept in a hangar. (Editor's note: Mine was always under cover. Like the old oil filter commercial...pay me now or pay me later. You may have to leave your bird tied down outdoors, but you'll pay for it later.)

The fabric undergoes annual punch tests (depending on your A&P/IA) to ensure its airworthiness. A new fabric job will increase the value of the airplane.

How much calendar or engine time has passed since the engine overhaul?

Our engines can reach or exceed the advertised 2000 hour TBO. But, look at the flying log. If it has been flown regularly, that's good, If it has sat for long periods in the hangar, (no entries in the logbook) as many of our birds have, that's a different indicator. The story is that oils gather/contain acids and the protective oil film on the piston and walls weeps down with time. All in all, a very high time engine will be getting near overhaul time...expensive if you can do it yourself...VERY expensive if you need to have someone else do it.

Be sure to have compression checks run and look for any engine oil analyses the owner has recently done. Buy an airplane with a mid-time engine and good compression readings? No guarantees, but it's a good idea and you should have a LOT of good flying time.

You should inquire of a mechanic to insure that all the ADs have been complied with: proper log book entries, especially the right door frame corrosion AD. Short Wing airplanes in high humidity climate are prone to corrosion of the tubes in this area of the fuselage. The fuselage tubing covered by the AD can be a structural issue. The door frames themselves (not the fuselage tubes around them) aren't carrying fuselage structural loads and therefore aren't structural issues.

Rust isn't a great problem in a Colorado-type climate, but if you can, determine where the airplane has spent most of its life. Best place to buy a Shortwing?...in the US semi-arid west or someplace elsewhere like it...assuming that it has lived there for a lot of its life.

Other areas that could be expensive if they have not been maintained over the years include replacement of the unsealed wing struts with sealed struts, upgrading the aluminum battery cables with copper cables, old starters and generators, old radios needing to be replaced with modern ones, and whether ADS-B capability been installed. Finally here, look for a couple of very popular upgrades including replacing the brake master cylinder with an improved brake booster design and installation of an oil filter.

k Thanks very much for your advice. Seems like the Pacers and Tripacers are even more in demand these days than last year when I bought mine. I got my instrument rating this year.....and am considering upgrading my plane to have IFR capability, but I know the cost will approach \$20,000. I will take it slow in approaching this upgrade. I am still learning about the Tripacer. Being an engineer I really want to know as much about the plane as I can. I purchased the set of 4 "Tips and Technique" books and the Piper drawings from the SWPC.

I still don't know if I will keep the Tripacer a long time, or upgrade to an all metal plane such as a Piper Warrior. Buying airplanes is not fun, so my inclination is to hang on to the Tripacer for a few years or longer. If hangers were not so hard to find and expensive, it would be (and is) tempting to buy a second airplane or start a kit plane while keeping the Tripacer to fly during the build.

Will let you know how the brake project goes.

Thanks, Jan

## **Headwinds and Hank Canup**

Something special happened for your editor at our Convention.

I sold my Tripacer, *Headwinds*, a couple years ago. It was a sad sale for both the buyer and for me. Long story for another time. The second sale was a delight for both the second buyer, Hank Canup, and for me. "My" airplane is now in good hands in a humidity controlled hangar near Houston. She's in better shape now than she was when I sold her, due in part to the first buyer's expenditures, and to further improvements by Hank.



Hank says he's owned 56 airplanes and 6 helicopters. I told him that I thought he must be demented. Turns out that Hank buys both good airplanes and basket cases, restores them, and sells them. He's not "flipping" the airplanes to make a quick buck. He doesn't want to see them parted out or junked. These aren't all Shortwings. All aircraft are about equal in Hank's book.

OK...so what happened? Here's the picture. We're at our Lake of the Ozarks convention. Hank flew



"my" airplane, *Headwinds*, from Houston to Missouri... about six hours. He joined us at our opening night "Meet and Greet" at the airport, joined us for ice cream that eve, and stayed overnight. Thursday morning, he let me fly *Headwinds* around the area for about an hour. We made three landings. He signed my biannual flight review and flew home to Houston. I'm now good for two more years. I'll pass my medical, but there's a problem.

Aircraft insurers mostly/all won't insure pilots of my age, even though we've never had an accident. A thought, which I've mentioned before. If you're approaching or over 80 and are insured, be very careful in dropping or trying

Your editor (left) with Hank Canup and "my" airplane, which Hank now owns. Hank flew 12 hours to give let me fly "my" airplane: what a pleasure and compliment. Hank is a Southwest Airlines pilot and admitted aircraft addict.

to change your insurance coverage. You might not find another company that will insure you. If my insurance company was being honest, they were the only ones who would insure me and *Headwinds*, continuing my coverage. They raised the price, but didn't drop me.

Back to the story: Hank flew 12 hours to let me fly "my" airplane. I was pleased, flattered, and nearly overwhelmed. To make it even better, Hank says that, if he comes to our next convention, he'll give BFR rides to any of us who wants them. You might not be due for your BFR, but with this ride, you'll be good for another free two-years from that date.

By the bye...Hank says that almost every time he gives somebody a ride in "my"/his Tripacer they want to buy one. He's looking for three or four Tripacers for friends and reports that they've REALLY escalated in price: doubled in the last year. He was offered \$45000 for *Headwinds* and turned it down. A message? Sometimes we have to sell our airplanes. Be careful. Don't ask too little, especially if you have a mid-time engine and a decent fabric cover. Price it high to start.

Think our Club and members like Hank are important to us? You bet. Many thanks, Hank.

# Left Seat Commentary

[Why Join the Buckeye Chapter?](#) By Ralph Widman

Every journey has a beginning. If you'll humor me, here's my journey! In the beginning, I had a burning desire for Short Wings but had no money. So I joined the National Club, read the SWP News cover to cover and built 2 Monogram, plastic models of Tri-Pacers. At the time I was working on my friend's C- 172 and I flew it to the Buckeye meetings. First meetings were at Alvie Eichmeir's retired dairy farm strip. Its above Bluffton and involved finding a farm strip using a Loran to seek a certain latitude and longitude. GPS wasn't around then.

Then my friend sold the C-172 and bought a PA-18. A long wing Piper. The wife and I flew it to our first convention at Smoketown, PA: (Lancaster area). The ground crew tried to park us in a small Tri-Pacer spot but our wings were too long to fit the spot. It was our first real long cross country. We were excited. That year there was a bus trip to the Silverhill, Maryland remote storage hangars of the Smithsonian. It was hot and fascinating. I recall seeing parts of the Enola Gay B-29. They were working on a Japanese sea plane that could fit onto the deck hangar of a WW2 Japanese submarine. Ok, you get the picture.

At the La Crosse, Wisconsin convention, I had my first poker run in the right seat of one of our Buckeye member's Tri-Pacer. The exhaust studs on one cylinder came loose. But we got it fixed and flew on to La Crosse. We wound up going to dinner with the same guy whose Tri-Pacer I flew the poker run with. Our wives connected and we had friends forever: (Jim Freeman). That was my first Tri-Pacer flight. Plus, over the years we made many friends in the Short Wing Piper Club and became part of the family.

I'll never forget the thrill when my first Left Seat Commentary was printed in the News. I loved to write but never was able to "go public". So, the Club opened new doors for Jan and me. She, the English major, became my proofreader and typist. Now I have a whole coat filled with sewn convention Patches from all around the country. Plus, I got to talk about my favorite second love, airplanes. I continually learned new maintenance procedures and other facts. At the Grayling, Michigan convention we watched two A-10s working on the bomb range. They dropped concrete bombs.

I was pretty much a loner in those days: to my detriment. But slowly other people helped me to feel part of the family. Almost forgot the fabulous flight of a lifetime to Alaska and back in 2001. I never would have attempted such a feat without the Buckeye Chapter.

I have flown places I would have never flown before. Broadened my horizons. And, when our wives got together, the club worked and hummed (if mama ain't happy, we ain't happy!). And, they are good cooks! Sometimes we flew to closer meetings that would have been quicker to drive--but it wouldn't be half the fun. It also gets you flying at least one flight a month. So, break out of your old habits. Try something new...come to our Buckeye Chapter meetings. (The value of our planes only increases as we use them!). This is what the Buckeye Chapter and the National has done for me and Jan.

Let me encourage all you Ohio Short Wingers to join the Buckeye Chapter. We really need you uncommitted SWPC members to come to the monthly get togethers in Ohio.

**BONUS – a chance to help others** – Being a Club member and participating in our events ensures our Vintage aircraft are actively maintained and improved, because we share our hard-won maintenance and flying knowledge. So, when you purchase a "Type" Club aircraft, you ensure our travel machines stay young.



**Ralph Widman (L) with Tom Anderson (R)**

**GO FLYING!**

## **Rejoining the Club**

*There're good reasons for being in or rejoining the Club. Here's one.*

Hello Kent,

I just read the latest Supplement and it is extremely well done and fun to read. The reason that I was able to access it is because I have rejoined the SWPC. And the reason for rejoining the SWPC is that last December I purchased a 1956 PA-22 150 project. I am absolutely delighted. The deceased previous owner purchased it in 1981 with original fabric. He proceeded to disassemble it, did some work but never covered it. The airframe is extremely nice with no rust or any cobbled modifications. It only has 2200 hours TTSN and 1000 on an engine major overhaul in 1963. Obviously it needs to be majored and the parts have been sent in. Day one logs and original paperwork. Very excited to being the restoration and delighted to be back in the SWPC. Dan Knutson

## Sometimes things aren't the way they appear

This note from President Steve Carruthers.

In the last issue of the News, I talked about the NTSB recommendation for Piper rudder part number 40622. Tim LeBaron, who is a club member sent me an email addressing and correcting some of the things I said. Tim is active in general aviation and has a couple short wing Pipers as well as a homebuilt, and is also active with the EAA. Along with his experience with General Aviation, Tim is also employed in the Aviation world. Some of you might recognize him as the Director, Office of Aviation Safety with the NTSB.

Tim and I had a nice phone conversation so we could clarify some of the finer points of NTSB recommendation dated January 10, 2022. Here is the link to the NTSB report so everyone can read it for themselves. <https://www.nts.gov/investigations/AccidentReports/Reports/AIR2202.pdf>. The thing to remember here is this is a recommendation by the NTSB to the FAA! It is up to the FAA to decide what to do with this recommendation, and if it is to ever become an AD, we will get the chance to comment. So, it is not something to panic about, but an alert to us as owners/ operators of airplanes with this part number installed.

Let's take a look at the five documented failures. Of the planes with rudder failures, they all had a beacon mounted on top of the rudder. Why is this important? Because of the additional weight mounted well above the upper hinge and the vibration mode imparted, this will increase the cycles on the rudder post. Now, one of the issues I found in the report is the lack of recorded hours of service on the failed rudders. It would be really nice to know the number of hours on each rudder at the time of failure, but the information isn't available.

What else do we know about these rudders that have failed? We know that none of the failures have occurred on a short wing Piper. That does not mean that none have failed, just that there have not been any reported. So, if not on a short wing what were these rudders installed on? There have been three reported on PA-12, one PA-14, and one PA-18. There are differences between these planes and ours, but they are all the same rudders. The one thing I found of interest is all of these planes had a larger engine installed than factory original. Of the PA-12's they were one each 150 hp, 160 hp, and 180 hp. The PA-14 was 160 hp and the PA-18 was 180 hp. Both the PA-12 and -14 were 160 hp and on floats, while the other planes were on either wheels or skis.

Of the rudders documented in the report, both of them failed by folding to the left. Failing in that direction does make sense considering that we usually need right rudder on takeoff and climb out, putting considerable load on the top of the rudder. Now the airplanes that have seen failed rudders, have a longer tail moment than all of the short wing series of Pipers, and we also have the lowest amount of total travel stop to stop. These things all play into our favor, but that does not mean we cannot have a failure just like the other models.

In the end, what does all of this mean? As the Type club, we need to look out for these planes and owners and we all need to be as safe as possible. Does that mean we all replace our rudders with new ones? No, it means we develop tests to ensure that we do not see failures inflight. Above all else, safety is our goal and making sure we are all around for a long time to enjoy our airplanes! Please go to the link and read the report and let's move forward with inspections and load tests to identify any potential problems before we see a failure. Rest assured if the FAA does act on this we



will be educated and be able to offer some real-world tests and inspections to ensure we have a safe method and procedure going forward.

On another note, I have been informed one of our own members has had an accident. Clyde Smith Jr. fell hitting his head hard on the concrete. The following day he wasn't feeling well and went to the hospital, and was admitted. It was discovered that he had a brain hematoma. He had surgery and his recovery is going well. He is restricted in what he can do, and the road to recovery will be a long one. He was doing well and was released from the hospital, and his daughter is helping look after him. The last I have heard is he was taken back to the hospital with chest pains and details are few right now. So please take a minute and offer your thoughts and prayers to Clyde.

**Steve**

## **Headwinds and More**

*Here's something about my airplane...now owned by Hank Canup...I'm delighted that Hank now owns her.*

Hi Kent. Just wanted to let you and the club know that i passed my cfi check-ride yesterday. If anyone needs an insurance checkout or flight review in a Tripacer, i would be happy to help out. I am not doing full private pilot training. I just don't have the time. Located at K3t2 on the south side of Houston TX.

Thanks  
Hank Canup  
706-319-7969

## **Southwest Regional**

*Last call for the Regional in Kansas City September 14-18*

We're still headed for Kansas City. We figure that it's near the center of gravity of our membership, so it's maybe??? easier for more of y'all can attend if it works for you. Our events haven't changed from those reported in the May issue of the supplement. Howsomeever, we've made a change in our hotel accommodations. We decided to change our hotel to the Comfort Inn in Grain Valley, Missouri, 816-847-2700. The hotel has better accommodations for those of us who need better handicap/ accessibility. It also has more choices in terms of beds. Our investigations showed that the breakfast is better than our former selected hotel and there is plenty of space to gather and chat. And, not a big difference, but it's a little closer to the airport.

So, join us. We're the same group of good folks that always gathers, and Rule Number One always applies. In case you don't know, Rule Number One means that there are no rules...you join the group or go do your own thing and we'll see you for supper. If it's too far for you to fly your bird, let us know (contact info below) and we'll pick you up at Kansas City International.

For flyers, our fly-in airport is East Kansas City Grain Valley 3GV. We have no registration or other fees. We each pay individually as we go for whatever we want to do.

For questions, call Tom Gifford, 918-906-3521, Anna Gifford, 806-433-2235, Kent O'Kelly, 720-339-3410, Cliff Van Vleet, 520-508-0238, Dan Miller, 816-438-2238.



Come by RV, if you'd like. Trailside RV Park is a couple minutes north of the airport. Rates are around \$48.

We have so many things we can do. They may change some, but here they are presently.

**Remember that Rule Number One always applies...there are no rules. Do whatever you want, then join us for lunch or supper later.**

Wednesday is arrival day. We'll for sure have supper together somewhere: likely some good Kansas City Barbecue. We'll socialize some and figure out what we want to do. The SW Regional is laid-back: not a formal, event-driven happening. We have things planned but can change the things we do.

Thursday, we're headed for the Arabia Steamboat Museum, which was described in the February Supplement. (Past Supplements are in the members-only section of our website.) We have a guided tour scheduled for 10:30 am. Takes about 1 1/2 to 2 hours. If you're a US history buff, like steamboats, or just want to see a wonderful collection of mid-nineteenth century goods (See Cliff Van Vleet's story below), this will be a good one for you. (It's my hands-down, all time favorite collection of pioneer goods - Ed.) After lunch, we'll attend the Nelson-Akins Museum of Art or the Kaleidoscope museum. We plan to do Lunch at Joe's Kansas City BBQ.

Or, you can make your own schedule for the afternoon. Remember Rule Number One.

Friday, we'll attend Truman's home and/or library. Whatever your political persuasions, Truman was a remarkable American president. You'll enjoy it.

Or, ladies: shopping at old town plaza: Lots of historic shops in an area that was considered by somebody as the first shopping mall in the US. Guys will also enjoy the plaza.

Guys (and ladies if they'd rather), will do the Aviation Museum, TWA and Airline History museum, and WWI museum. No, we won't likely do all three. We'll do what we have time for and decide what we think is best. We'll have lunch at a most well known and famous BBQ restaurant: Arthur Bryant's BBQ. Other later possible activities for Friday: New theater dinner and show, with a comedy show for Friday night at 7:30. This is at the Big Bird Comedy theater.

Saturday, Dan Miller's Hangar tour. Dan is putting something together for us.

We don't normally have seminars at our SW Regionals, but bet we could. You've doubtless noted or guessed that we aren't staying at a Convention-sized hotel. But, we can "wing it". There's always someplace that we can project a presentation on a wall and make it a seminar. Things are easy and simple at our SW Regionals. If any of us has something like a seminar or slide show presentation to share, bring it on.

This all sounds a bit chaotic...but it's what we do. We figure things out: sometimes as we go, and always have another wonderful time.

We'll conclude our Regional as we always do on Saturday evening. We'll hold our annual business meeting at our "banquet" in a restaurant we'll find. Not to worry...There's only one business meeting agenda item...where do we go next year?

Our hotel has a Hot Breakfast, let's try to meet there: 7 to 8:30 am for schedule changes as well as breakfast.



A partial view of the Truman library. Lots of good things to see here.

Above: Truman's home, built in 1867, modified in 1885 and owned by Bess (Wallace) Truman's family. Lots of interesting history here.

Guys (and ladies if they'd rather), will do the Aviation Museum, TWA and Airline History museum, and WWI museum. No, we won't likely do all three. We'll

Thanks  
Tom Gifford

# Frontier Technology

Cliff Van Vleet

July 20, 2022

Kent did an excellent job in the February 2022 Supplement promoting our visit to the Steamboat Arabia at this year's Southwest Regional. He illustrated the story with several pictures of the Steamboat and its grave.

We visited the Steamboat Arabia on our way home from attendance at the Southwest Regional in Eureka Springs, AR in 2019. I write this to emphasize that one of the reasons we attend conventions and regionals and far away fly-ins is to take advantage of seeing new and interesting things. We arrive early to investigate local attractions, then celebrate the gatherings with our Short Wing Friends as the final purpose.

To further tweak your curiosity and encourage y'all to come to the Regional in September I want to drill down in more detail with pictures of the Arabia's cargo showing what was involved in the settlement of our country in the 1800's. The Arabia sank so fast and the bottom of the Missouri River was so soft and muddy that the steamboat over night sank too deep to be secured so as to enable the salvage the cargo, especially the barrels of spirits! Sinking fast entrapped the contents in soggy/wet mud that left no oxygen to attack the materials. This resulted in the pristine preservation of the artifacts; but they did require considerable cleaning and fluffing and buffing before being



Look at the wide variety of hardware store items. If you can , widen your screen and see them more closely. These are the things that folks wanted/needed in 1856.



displayed. Items like the dishes would resist decomposition, but decomposable items like leather shoes and boots and clothespins and assorted hand manufactured metal hardware were also



I remember hanging things on the clothes line with my mom. The clothes pins looked just like these.



This is pretty fine looking porcelain tableware. The sellers must have thought there was a lot more money and desire for nice things than I would have thought about for 1856.

perfectly preserved. Even canned foodstuffs survived intact, however, I don't remember reading if the salvors felt the need to taste or eat the canned food, but I do think I remember that they sampled some of the spirits!

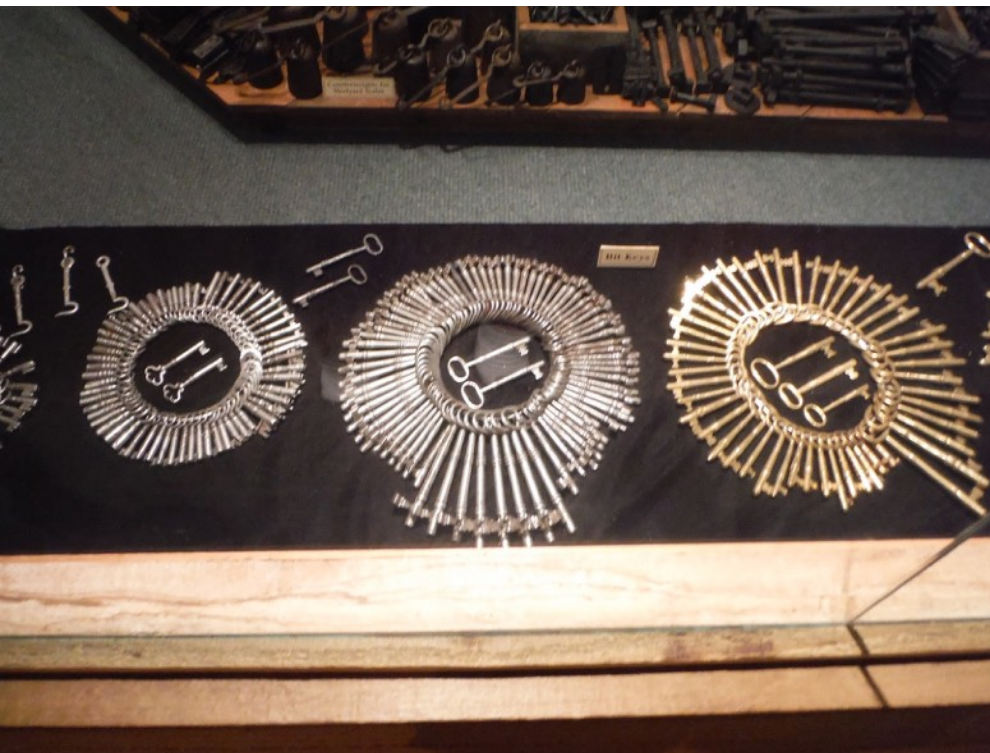
What is most educational





is learning what settlers needed to conquer and settle this new territory and what the business people, store keepers and trades people planned and executed to send these cargo ships up the river, including all the things hardware stores and department stores needed for sale as well as pleasantries for the ladies (and Indians?) such as buttons and baubles. The cargo constituted the most complete picture of the inventory of things needed to settle a frontier and, wonder of wonder, mother nature saw fit to preserve it all by sinking it into a wet muddy anaerobic river bottom.

The footwear here looks rather stylish for 1856. I'd have expected more work boots. Only a sampling? Look at the condition of the shoes after over 100 years under water.



As Kent has written, there are lots of other things we want to see this year to include the Truman Library, a museum or two, some antiquing and some great Kansas City BBQ plus listening to and telling our aviation stories and bragging about our airplanes. Flying, Family, Fellowship, Fun, Food.

All you "local" mid-westerners have a great opportunity to meet and greet our cadre of SW Regional attendees. Even if you can't stay for multiple days, come for single days as your schedules permit.

See you soon,  
Cliff Van Vleet

Some of us remember keys like these...I do. Keys weren't too secure, since you can't make too many different shapes on the small end and sides of keys like these...and there was always a "skeleton" key that would unlock any door.



## Making Parts: Never Throw Anything Away

*We can make parts for our airplanes as long as they're as good or better than the original parts and approved by an A&P/IA.*

I write these stories knowing that many of Y'all are MUCH better craftsmen and mechanics than I. Yes, I'm a graduate Aeronautical Engineer, but that doesn't make me a craftsman. Skip on down if you're one of the good craftsmen and get bored.

We have a LOT...did I say a lot? of metal parts on our so-called fabric airplanes. Here are two photos showing many or most of them, spread out on my downstairs room floor. All but two of



our sheet metal parts are simple, one bend parts: no compound curves. These are easy to make. The other two?...the nose bowl and the chin piece under the engine. Unless you're a genius with an English wheel, you need to find, steal, trade for, or buy these two. They're NOT easy to make.

OK...you have a bunch of sheet metal parts that are dinged, the attachment holes stretched. Some are cracked or broken. Maybe they're corroded...(yes,

aluminum does corrode, but not like steel).

Don't never ever throw away the old parts you even think you might want to replace/make, including the fabric you tear off for replacement. Everything's a pattern.





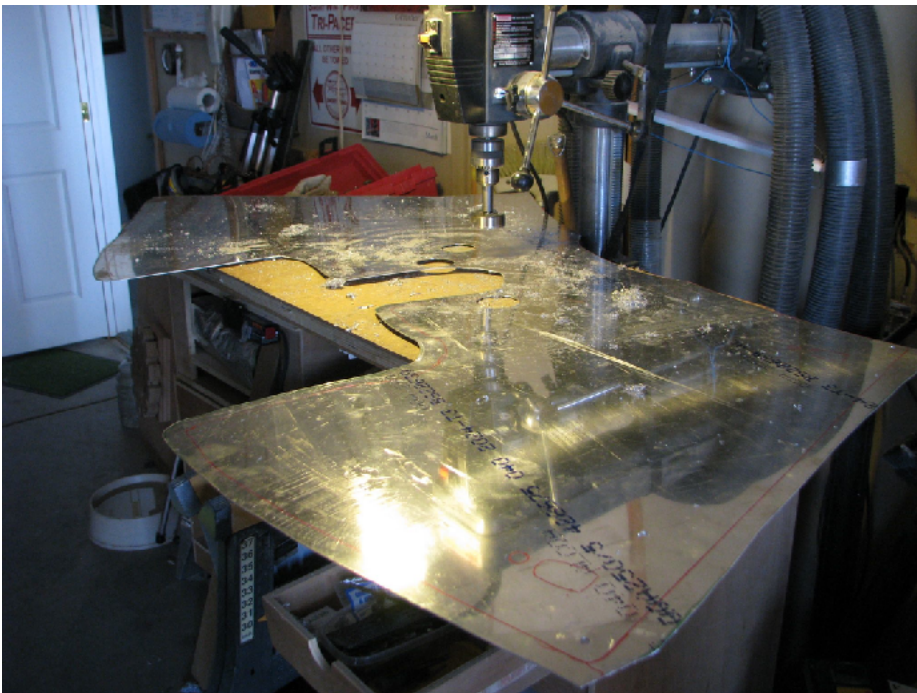
Look how grubby the old part was...worthy of the Utilitarian (Ugly) Award I received for *Headwinds* years ago. Makes a good pattern, though.

## Shortwing Safety Report

*An article in the September 15, 1985 issue of Aviation Safety (yes, this is old news)*

*compared the safety of some of our birds to those of some of the other name brands. The conclusions weren't exactly complimentary to us.*

"Our study of NTSB accident records for the years 1980-1981, a representative period, showed the PA-22 to be rather accident-prone, whether the measure be the total or fatal accident rate, or whether the comparison group be all of general aviation, all fixed-gear fourplace aircraft, or even all members of the Piper tribe in this class."



Here comes the new part. Notice the Forstner bit. Drills 2024-T3 sheet aluminum just fine.

Some of the big problems? ... Fuel mismanagement, ground looping, and overshoot on landing were the main ones. Stalls were also significant, in spite of the fact some say that TriPacers don't stall. A little under half of the stalls were stall-mush, the rest were stall-spins. The only aircraft system failures listed were engine failures, with the biggest single problem being fuel systems, closely followed by ignition system failure.

Arkansas chapter member Frank Sperandeo obtained NfSB safety reports from the AOPA Safety Foundation on accidents from 1988 to 1996. I think you'll be interested in the results. As you read, you'll be able to quickly spot the trend in the NTSB data and figure out what the primary cause of accidents of our breed is. Here're the reports, word for word as printed in the AOPA safety report.

"A Piper PA-20-135 Pacer collided with terrain while maneuvering roughly nine miles southeast of Fort Bidwell, California, at about 0945 PDT on Sunday, August 16, 1992. VMC prevailed for the local personal flight that took off from Cedarville, California, at about 0940 PDT. Firemen investigating the cause of a brush fire found the wreckage. The pilot told them that he had been searching for a hunting spot in the area when they saw a large herd of antelope. He turned the airplane to track the herd but then stalled. The airplane hit the ground with its right wing first, followed by the right main landing gear and then the propeller spinner. It slid roughly 90 feet before coming to rest, right side up, about 180 degrees from its original flight path direction. The airplane was destroyed by fire and the two passengers were fatally injured while the pilot/owner was seriously injured."

Think about it for about 10 milliseconds and decide what the cause was. O.K.? ... on to case 2.

"A Piper PA-22S-135 (The PA-22S is float-equipped model ... ed.) Tri-Pacer struck a tree while maneuvering over Butte Falls, Oregon, at about 1945 PDT on Wednesday, August 10, 1994. VMC prevailed for the local flight that took off from Prospect, Oregon. According to the owner of a private airstrip near the accident site, the airplane flew over his grass runway at least three times just before the accident. After circling overhead at an altitude of 500 feet AGL it was seen flying away from his house at a lower altitude. The airplane then banked to the right and descended into a valley. According to the airstrip owner its engine noise sounded "clear and strong". He lost sight of the airplane as it flew behind trees and heard the sound of a loud "whack" about three seconds later. The airplane hit the top of a 100-foot tree and then fell to the ground and burned. Examination of the wreckage did not reveal any pre-collision discrepancies. The airstrip owner stated that the pilot was an acquaintance who had flown over his house before. The airplane was destroyed and the private pilot/owner and the passenger were fatally injured."

Take about five milliseconds this time. Got it? O.K. ... on to case three.

"A Piper PA-20 Pacer collided with the terrain while maneuvering near Greenville, Michigan, at 1122 EDT on Tuesday, September 20, 1994. VMC prevailed at the time of the local flight. The airplane was destroyed and the non-rated pilot was fatally injured."

"A Piper PA-22-150 Tri-Pacer collided with terrain while maneuvering near Staley, North Carolina, at about 1635 EST on Saturday, March 18. VMC prevailed for the local flight that took off from Greensboro, North Carolina, about 16 minutes earlier. A witness stated that he was building a barn next to his house when he heard an airplane descending in a dive estimated to be about 45 degrees nose-down. It began a right spiraling tum at treetop level but its nose pitched down vertically. The airplane then disappeared from view below the tree line and collided with the ground. The airplane was destroyed and the commercial pilot/owner was fatally injured."



This one's a little tougher, but you'll probably reach the same conclusion that the NTSB did.

Were the problems related to strut failures? Failure to comply with an Airworthiness Directive? Rust? Poor paperwork in the airplane? Of course not. If these are the only Shortwing accidents between 1988 and 1996 and supposedly they are, then we don't have much to worry about in or on our planes from mechanical, electrical or avionics systems. The planes themselves show a super safety record.

The problem in all the above cases was between the pilot's ears. He didn't fly the airplane. We owe it to ourselves, our passengers, and our dwindling breed of aircraft to pay attention and take advantage of the marvelous observation platforms we fly; and to fly our airplanes.

## Our Favorite Scotsman

Our favorite Scotsman, Robert, is a direct descendant of the Scottish leader, Robert the Bruce (1298), as is our member of the Club Board of Directors, Will Bruce. Unlike most Scotsmen, Robert dresses mostly in green...maybe a little Irish creeping in somewhere?

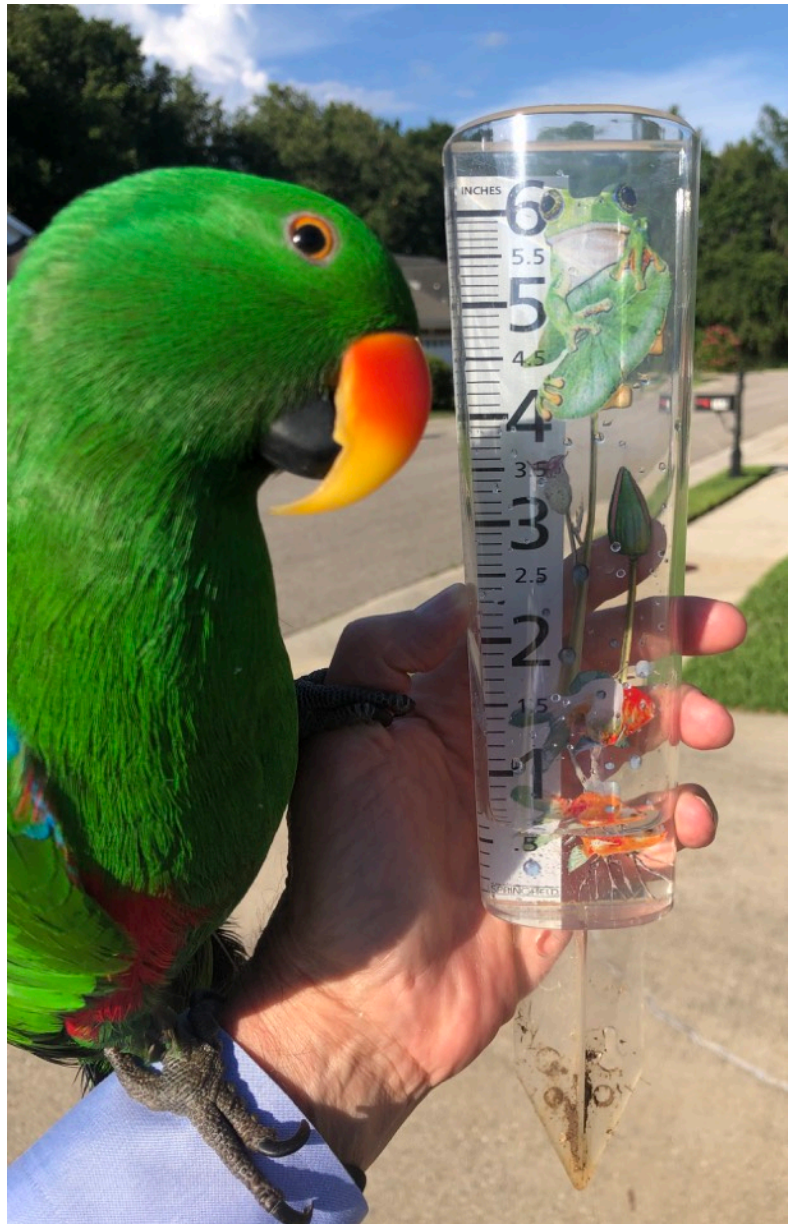
Well, well, well...what's going on here? A rain gauge...Hmmm. Gardening today? Not bloody likely. Can't fly today because of the weather? Nah...it's sunny. OK, we get it. It rained yesterday and they were grounded. They'll fly today.

## Minimum Altitudes

*How many of us would say "1000 feet" as the answer to the question, "What's the legal minimum altitude over a city"? Would we be correct? Well ... maybe.*

Suppose you're flying over downtown Denver, or worse, over Los Angeles. One of the FARs with a whole bunch of digits says: you can fly at "any altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface". Can you imagine trying to climb a Shortwing to an altitude that would meet that little requirement jewel over Los Angeles? On the other hand, if you're over the middle of Lake Michigan, you can be legally on the deck, a potentially chilling idea.

You can operate at low altitudes when necessary for takeoff and landing, but this



doesn't mean that you can descend to 800 feet over a city while still 10 miles out. If air traffic control gives you a lower altitude than you feel is legal, tell them and get an amended clearance. Remember who's always responsible ... you ... and if they tell you to go lower, and you do, you can be violated, hopefully not in any physical sense.

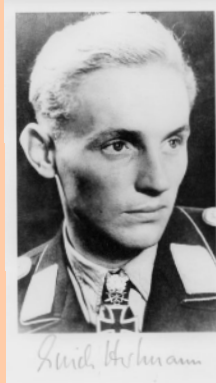
Well, since we can't do too much about reaching a high enough altitude over a large urban area, I think that this little piece just says to use your head and your best judgment. I try to go around small towns rather than over them, but can't always avoid large cities and towns on a cross country. I flew over Dubuque, Iowa at about 2000 feet AGL and probably violated FAR something or other. Maybe parks and golf courses make low altitude flight closer to legal???

## The #@x! FAA ... Not!

Folks like we are often have unkind thoughts about the FAA. I'd confess to being one of them when I think of the class III medical which proves little or nothing...you know...the public thinks it's a good idea. "I sure don't want somebody who's not healthy flying over my head," they might say. Then, they get in their cars and miss oncoming traffic and collisions by about four feet by somebody who may really not be healthy. They, and we too, wouldn't want to have to take a physical to drive a car, which we all know is more dangerous to members of the public than light aircraft overhead. Ah well.

Who was the greatest air ace of all time in terms of number of kills?

Yeah, you knew it right off... Eric Hartmann of Germany's WWII Luftwaffe. He claimed 352 aerial victories (of which 345 were won against the [Soviet Air Force](#), and 260 of which were fighters) in 1,404 combat missions. He engaged in aerial combat 825 times while serving with the [Luftwaffe](#). During the course of his career, Hartmann was forced to crash land his damaged fighter 14 times.



However. I'd like to throw a bouquet to the FAA for two incidents that occurred on the way to and from LaCrosse/Oshkosh.

Jim and Donna Lambert were flying wing on *Headwinds* en-route to LaCrosse. (Remember, the slow guy flies lead or togetherness disappears.) We hit some descending rain clouds just south of Algona, Iowa and, as we descended from 7500 feet to about 1500 feet with the prospect of going

lower, we diverted and landed at Algona.

I called weather and asked the briefer if we could get to LaCrosse by going north about 40 miles, then following Interstate 90 on in. The briefer put it on the line for us, saying that we should be able to do it and telling us what to expect...no trough aloft stuff, no high or low pressure systems extending from who-knows-where to who-knows-to... no mumbo-jumbo, just information that we could use. Yes, it would be possible to fly VFR from Algona to LaCrosse and here were the ceilings to expect on the way.

Nice going, FAA briefer. That's what we pay you for. I suspect that the mumbo-jumbo stuff is to avoid making a potential liability-producing statement. or not giving a complete briefing...all the information we can gather to make a decision. Maybe somebody really wants and understands it. I don't. Perhaps the idea is that the pilot is forced to interpret the facts (if he/she even understands them) and make the decision, so the briefer isn't liable. In a more perfect world, the nearly endless "information"



given us by many briefers would be replaced by simple statements telling us whether the weather data show that we can legally go from point A to Point B based on weather considerations.

The second thing happened on the way home from Oshkosh. I was approaching Sioux City and wanted to overfly the airport. I called the tower and was told to contact Minneapolis Center, which I did. They gave me the transponder code, then asked me if I wanted flight following. I said, "affirmative".

Center periodically checked back with me, and there was no traffic intersecting my path in mid-Nebraska. I flew on, and noticed that I hadn't heard from Center for some time. Out of the blue came the call, "Piper one-niner zulu, this is Bonanza three-five sierra. Do you read me?" I replied, "affirmative, loud and clear". The voice said, "Minneapolis Center lost contact with you and would like you to contact them on 124.8." I replied, "Roger, Bonanza ... Thanks for the relay."

Either my radio or its installation (or both) was sort of average, and I was out of range for Center to contact me. I called 124.8 and found that they were patching me through Grand Island, which I could reach with my one-lung radio set-up. I thanked them for the relay and continued on my way. They handed me over to Denver Center and followed me to North Platte, where I requested a frequency change and descended for fueling.

The thing that I appreciated here was that I was in a small light plane in the middle of Nebraska, and the FAA went out of its way to find me and follow me on. Just part of the job they're paid to do? Hope so...and, I appreciated it. They could have just thought that they were too busy to fool with a little guy, or that he had changed frequencies or some such, and gone about their business. I think that we abuse the FAA but not always with a good reason. Most of the people on the line really do care and want to do a good job.

## Quiz of the Quarter

Ice pellets encountered during flight normally are evidence that:

- a) a cold front has passed
- b) there are thunderstorms in the area
- c) freezing rain exists at higher altitude.

## The Best Aircraft Covering System

At our 2022 convention, several of us talked about aircraft covering systems. We had our preferences and biases. Some of us have restored/recovered and painted beau coup aircraft. Others, like I, are less experienced. That doesn't keep us from having favorites.

With the "vast" experience of restoring one airplane, I used the Stewart Systems process and liked it for several reasons: 1) No MEK or other volatile compounds that can nearly kill you, 2) no odor, 3) no quick drying times...you can brush on the glue and go away for a week if you want to. It's heat activated. Come home and heat it with the family iron and it works, and 4) the painting process is extremely simple.

So, is this the absolute winner? Not so fast...

A member said that he uses the Polytone/polyfiber process and has for years. He tried the Stewart Systems process and had problems applying the paint. He was/is experienced in spraying polytone. He said that it works. And, it does.

Others brag about other systems. So, is there a winner?

My opinion: there really isn't a "best" system. The best one is whatever you're accustomed to and that works for you. They all provide show-winner results. OK...I guess that was an obvious answer. I still have my favorite.

## **Wash & Wax Your Airplane**

Remember when you were a kid and Saturday was the day you washed and waxed the family car? I do. It's a good idea to do the same for our birds now and then. I often washed and waxed *Headwinds* and found it tiring but instructive. The tiring part is that the job is about like washing and waxing a small house. When you know that the wings are 150 sq-ft and two-sided, then add a four sided fuselage, tail feathers and landing gear, you come to something like 800 sq ft, give or take. The instructive part is that a wash/wax job forces you to look over and rub on every square inch.

While doing the washing and waxing job I once found a small tear on the bottom of the horizontal stabilizer plus lots of places that things were getting a bit unkempt, such as paint peels, missing screws etc...nothing un-airworthy, but things that needed fixing. Now, I realize that we should find these things during a preflight. But, we're almost forced to look real closely at everything when we have to rub and scrub on it. Besides, at the ranch, the view while I was rubbing on the airplane didn't have a single house in view. Those were happy days ...

## **Feeling Low?**

*Here's a little piece, excerpted from the book, Chicken Soup for the Soul, that has nothing at all to do with aviation ... but I thought you'd enjoy it, especially if you're going through some sort of mid-life "success crisis". Do you know who the man is?*

Born into poverty, he was faced with defeat throughout his life. He lost eight elections, twice failed in business, suffered a nervous breakdown and had only three years of education: in grade school. Here's a sketch of his road to the White House. With this hint, you already know who he is.

1816 His family was forced out of their home. He had to work to support them.

1818 His mother died.

1831 He failed in business.

1832 Ran for state legislature - lost.

1832 Also lost his job - wanted to go to law school but couldn't get in.

1833 Borrowed some money from a friend to begin a business and by the end of the year he was bankrupt. Spent the next 17 years paying off his debt.

1834 Ran for state legislature - won

1835 Was engaged to be married: sweetheart died and his heart was broken.

1836 Had a total nervous breakdown and was in bed for six months.

1838 Sought to become speaker of the state legislature: defeated.

1840 Sought to become an elector: defeated. 1843 Ran for Congress - lost

1846 Ran for Congress again - This time he won: went to Washington and did a good job.

1848 Ran for re-election to Congress: lost

1849 Sought the job of land officer in his home state: rejected.

1854 Ran for US Senate: lost

1856 Sought the vice presidential nomination at his party's national convention: got less than 100 votes

1858 Ran for the U.S. Senate again: again he lost.

1860 Elected president of the United States.

Who Was He?

Of course you knew who it was all along ... Abraham Lincoln.

## Check Your Elevator Angle

Some of you may have no problem at all in flaring your airplane into a nose-up attitude for landing. If that's the case, skip this little piece and go on to the next one.

Years ago, I was talking to then-CO/WY Pres. Bill Brooks about my landing technique at Wolf Creek Ranch. I told him that I came over the fence at 80 mph indicated and, just before I flared, I'd hit the throttle to blow some air over the elevator, enhancing control. This is true and it became a standard landing technique for me on uneven strips at high altitudes (read 6000 feet and above). Bill was bothered by my standard landing technique and said that it was wrong, or at least unnecessary. I filed this away for later thought. My friend, Mel Kuethe, who is an A&P and who went out to the ranch every Wednesday with me, said that he thought that we should check the up-elevator angle.

So, as *Headwinds'* annual was underway, I posed the thoughts to Lonnie Barlow, my A&P/IA. He had two ideas. The first one was to trim the entire horizontal stabilizer for landing, which Lonnie said would provide more control authority. Sounded reasonable to me, since the entire stabilizer/elevator surface would be providing a "down" force at landing, instead of just the elevator. His second

thought was to check the max-“up” elevator angle, which is supposed to be 26 degrees. He did, and it measured 16 degrees. We fixed the angle. Bill, Mel, and Lonnie were all correct and I went back to using more normal and certainly better landing techniques ... better for timing of the flare, easier on the tires, easier on the bungees, easier on the oleo strut, and probably a heck of a lot safer all around.

## Speaking of Annuals ...

During an annual inspection, Lonnie Barlow and I found that Headwinds had two wings. This shouldn't surprise you ... what I mean is that the Tripacer had two different wings. The port wing was covered with ceconite, the starboard one with cotton, a fact that we didn't really know until Lonnie saw some funny looking (broken/loose) rib stitches, then saw that the fabric was somewhat fuzzy-looking on its underside, a sure sign of cotton. He got out the Maule tester, pushed on the top surface just forward of the aileron and the cotton broke at a reading of about 46. He remembered that the minimum reading was 56, and after checking in the manual, found out that his memory was correct.

I said, "Let's push a few more times, just to be sure that the first failure wasn't a fluke." I took the tester and pushed on the lower surface which, being shaded from the direct sun over the years, should have been stronger. Three out of four times, the fabric failed near a reading of 46. (It passed once at a reading of 56, the minimum.)

So ... recovering one wing was required. But how much fabric, cement, tape, etc. etc. does one wing require? And, that's the point of this piece. I called Univair to see if they handled Stits, my covering system and company of choice at the time, and they didn't, so I called Alexander. The sales lady and I worked out the quantities and I said that I'd get back to her. I then called Aircraft Spruce and the sales lady there said that she really didn't know how much was required, but if I called Poly-Fiber (originally Stits), they could tell me. I reached a man named John, who was very knowledgeable. He told me exactly what I needed and gave me some tips on how to get a better finish that would be close to the Randolph butyrate dope used on the rest of the airplane. Note...the airplane, now in the hands of Hank Canup, of near-Houston, TX, (for which I'm grateful) now has a totally Stewart Systems fabric restoration.

Finally the punch line: If you don't know just how much fabric or parts or ??? you need for your restoration project, call folks who know: folks who sell or manufacture things, or our Technical Counselors whose addresses etc. are given in our official publication, the Short Wing Piper News.

## Synthetic Oil

From Shell Oil Company, as published in Team News, the USA Aerobatic Team newsletter.

Q: Will the synthetic portion of semi-synthetic Aeroshell Oil W 14W-50 harm an aircraft engine?

.A: The answer is a definite no.

When Shell began evaluating multi-grade aviation piston-engine oils over 25 years ago, testing proved that multigrades formulated only with mineral base oils lacked adequate base oil viscosity to properly lubricate all high load points in the engine.

Then we tested a formulation made with all-synthetic base oils. It had excellent anti-wear characteristics in all tests run. However in flight evaluations, some engines reached 600-900 hours, then lost oil consumption control and/or compression. When the engines were disassembled, we found that the piston rings were covered with a gray tacky substance primarily made up of the lead by-products of combustion. (from the use of leaded aviation gasoline).

Although synthetics are excellent lubricants with good high temperature stability and very good low temperature flow characteristics, they are relatively poor solvents. In an aircraft engine, the lead byproducts must be dissolved by the base oil so they can be carried away from the ring belt area and then removed from the engine when the oil is changed.

Anti-corrosion, anti-wear AEROSHELL Oil W ISW-50 is formulated with 50% synthetic base oils to give it the excellent low temp flow needed for quick lubrication during cold starting. The synthetic base oils, along with the unique anti-wear additive system, give it anti-wear protection unequaled by any other product on the market. In addition, its mineral base oils provide lead absorbency to guard against ring sticking and excessive sludge.

## **Answer to the Quiz of the Quarter**

Ice pellets encountered during flight normally are evidence that c) freezing rain exists at higher altitude. If you didn't know the answer, you'd have guessed answer "c)" anyhow, right? I've told you and told you that c) is the most likely answer in any multiple guess test.

## **Fuel Storage in Non-Flying Aircraft ·**

An engine overhaul shop expressed concern about the condition of several aircraft carburetors it had serviced. The carburetors had been removed from an aircraft which had been using auto fuel and which had not been flown for over a year. The auto fuel had broken down and left a gummy residue in the carburetor bowls. The needle valves were gummed into their seats so tightly that pliers had to be used to remove them. The metal floats, up to the fuel level, were covered in a black residue. Above the fuel level, corrosion on one float was serious enough to necessitate replacement. This resulted in a three-month wait for parts and a repair cost of over \$600 for each carburetor.

There have been several other less severe examples of this problem reported, likely due to shorter storage times. The amount of gumming may depend on the type of auto gas used and will definitely depend on the length of time that the aircraft is in storage.

Auto gas dealers state that auto fuel should be used within six months. So, if you have been using auto fuel and intend on storing your aircraft for an extended time, switch to avgas before putting the aircraft away. A few liters ( or gallons) of avgas are cheaper than carb repairs or an accident. The problem can also occur with avgas over an extended period of time, but the deterioration is much slower.

(I was drawn to this report because I've seen lawn mower gas sitting under the work bench from the last mowing in the fall to the first mowing in the spring. Lots of varnish type deposits on the bottom of the fuel container. And, sloshing the gas in the jug doesn't make the varnish go back into solution either. -ed)



# Old Hoses

*From EAA Chapter 648's Newsletter*

There was an instance of a MIL-H-6000 hose that was 3 years old that swelled almost shut, causing a power loss and engine overhaul. MIL-H-6000 hose does not seem to work well with auto fuel. The article didn't say whether fuels containing alcohol/ethanol were used. (Sounds like alcohol to me: Ed.) Somebody may not have admitted to use of ethanol-laced fuel for the hose that failed. The EAA Chapter article said that three years are too long to leave hoses in an airplane with today's fuels, auto or avgas. A new hose is a lot cheaper than an engine \ overhaul or worse.

But, many of us haven't changed hoses for many years with no noticeable problems.-ed.

A related item from 101 + Ways to Extend the Life of Your Engine: Yeah...these are old news.

1) Fly often. One of the most important things an owner can do to extend the life of his/her engine is to fly the aircraft often. Rust, corrosion, and oil runoff can occur when an engine sits for weeks. Oil runoff promotes corrosion and advanced wear during start-up.

2) Flying can also extend the life of your engine and airplane by helping keep you competent. And, flying often will also give your insurance agent a warm and cozy feeling. Do some touch and gos or other sort of flight that warms both the engine and you up each month. A half hour or better, an hour, is better than nothing.-ed)

## Culver Props

*You'll see extensive coverage of our Lake of the Ozarks Convention in the next issue of our official publication, The News. Here's a story from our Convention that hopefully doesn't steal anything from the News.*

Our conventions feature trips to local points of interest. 2022 was no different. One of these tours was to and through the Culver Prop facility near Rolla, Missouri. Here, Alaina Lewis builds wooden propellers for all sorts of aircraft: many, but not all of them for vintage/antique aircraft. She and her dad are carrying on the building of wooden propellers started by her grandfather. But, she's the prime mover of the operation. She runs the place and builds the propellers.

Our Convention group drove to the Culver Prop facility. Some got there earlier, but Cliff, Carole, and I got lost. OK, we have cell phones. We can find just about anything we want. Really? Well, sorta'.

We drove (wandered) around for a while and found ourselves in the place where Culver Prop Company originally migrated from Pennsylvania to Missouri. Cliff and I encountered a rather salty fellow with lots of tattoos, who said, "Who are you?" I told him who we were and what we wanted. He said, "Alaina works alone. We don't give her address or location to anyone that we don't know". Good on him. He called Alaina's dad, who said that folks from our Short Wing Piper Club were indeed at her facility. He then put the directions to Culver Props in my iPhone.

More wandering, but finally we turned right from a narrow paved road onto a single lane dirt road in the woods to Culver Props. Without any insult intended, Culver Props is straight out of Americana. Here's a propeller building facility, at the end of a one-lane dirt road, that makes absolutely perfect wooden propellers for all sorts of aircraft.



Ah, good...we found the place. And, it was a great place to see: essentially, a four car garage with a high ceiling. But, this is where these wonderful, exactly correct propellers are being made...by one lady, Alaina Lewis, carrying on her family tradition. She has patterns for many types, lengths, and shapes of propellers. The pattern piece is put in a pantograph cutting machine. (President Thomas Jefferson had a pantograph he used to make copies of whatever he was





Alaina cuts the ends off the propeller on a bandsaw. The prop looks larger than she. Club Secretary Fred Mayes looks on.

writing.) The pantograph follows the pattern and a cutter below carves the exact shape of the new propeller, made from three or more pieces of absolutely perfect maple or birch (or both). The picture shows the machine.

After the propeller shape is cut, the ends of the propeller are cut off on a bandsaw. Then the propeller is sanded. Here's Alaina sanding the hub section of a propeller on a drum sander. No wonder she's in good shape. Sanding by hand using a palm sander smooths the



Alaina sanding a propeller. It's lying on the sanding table, but much of the sanding is done by lifting and holding the propeller while sanding it freehand. Alaina isn't a large lady, but she gets a workout and must be plenty strong.



Here's the winter heating system. This isn't an air-conditioned, central-heated Ford or General Motors factory. There's no criticism intended here...only admiration for simplicity and functionality in what we think is a classic small American company. The important thing is that things should work. And, they do.

prop out. A few more steps plus varnish finishes the propeller.

Oh, what about winter?: the factory heating system in a photo below.

One of our members said quietly, "Where in America could you find a place like this in 2022?" Not many places, for sure: pure craftsmanship in a simple setting.

There are many YouTube videos on how Alaina makes propellers. Type "Culver Propellers" into your browser. You'll see much more than I can tell you about how it's done. Or, here are three links, provided by Cliff

Van Vleet.

[https://www.youtube.com/watch?v=42QC8C0CS\\_I](https://www.youtube.com/watch?v=42QC8C0CS_I)  
<https://www.youtube.com/watch?v=jSFltOJiBUU>  
[https://www.youtube.com/watch?v=0X\\_7yyjrC4Q](https://www.youtube.com/watch?v=0X_7yyjrC4Q)





Here's most of our group listening to Alaina. You can get an idea of the size of the shop/factory from the picture. In the foreground is her propeller balancing station. She balances a prop to less than the weight of a Post-It note stuck near the propeller hub.

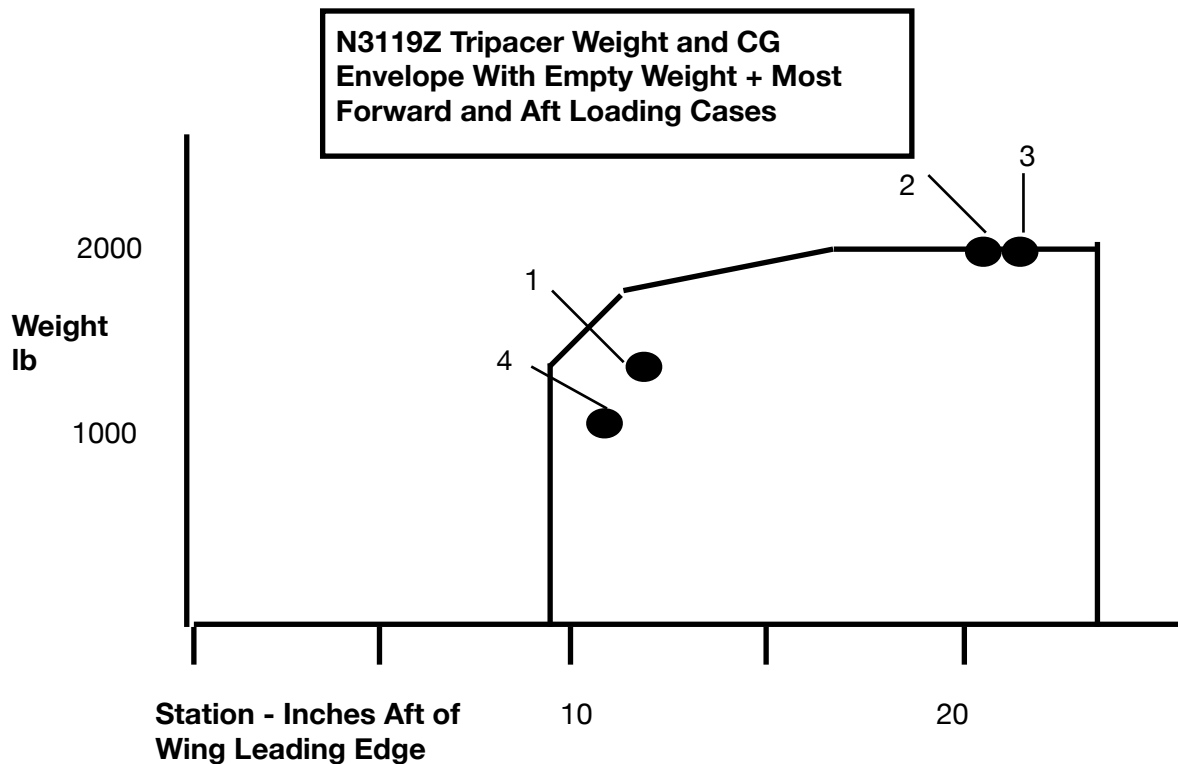


# Center of Gravity Calculations

Here're calculations I did early in my ownership of *Headwinds*.

We can bust the aft-most cg location, which as you know is the worst case scenario: the most likely way to have a stall-spin and maybe worse. But, we really have to work hard to do it...maybe tossing the family anvil in the baggage compartment? Don't even think about it. But, under most of our loading conditions, it's tough to violate our cg envelope. Having said these things, you're on your own. This is for one airplane. Yours may be different. Hate it, but I have to say these things because of liability suits.

Loading my airplane was always within the extremes of the four calculations below. I never worried about cg as long as I followed the rule to stay within the extremes.



1) Most Forward CG: 130 lb pilot, No Fuel, No passengers, No baggage. CG: 11.52; Weight:1350 lb

2) Most Aft CG: Case 1: 170 lb pilot, 2-170 lb passengers in rear seat, Full Fuel, 55 lb baggage. CG: 20.95; Weight: 2000 lb

3) Most Aft CG: Case 2: 130 lb pilot, 2-200 lb passengers: in rear seat, Full Fuel, 35 lb baggage. CG: 21.33; Weight: 2000 lb

4) Empty Aircraft. CG: 10.51; Weight: 1219.5 lb

## Private Aviation Struggles to Move Past Leaded Fuel - WSJ

*This from Will Bruce, a member of our Board of Directors. He found it in the Wall Street Journal (WSJ).*

The limited availability of unleaded avgas has until now kept Mr. Wien, who prefers unleaded and makes the trip a few times a month in his sporty two-seater, an outlier among pilots. Now, growing opposition from airport neighbors on both coasts may help spur a broader transition away from leaded fuel that has been in a holding pattern for years.

The battle has already caught up with pilots in the San Francisco Bay Area, where Santa Clara County this year banned the sale of leaded fuel at two small airports. The airport in East Hampton, N.Y., which bustles with jet-setters over the summer, has also considered a ban.

If rules like those proliferate around the country before unleaded fuel becomes more widely available, private flying—known as general aviation—could be badly hurt, according to the Aircraft Owners and Pilots Association, an advocacy group. “General aviation would really struggle if we lost our ecosystem of public-use airports supplying fuel,” its president, Mark Baker, said.

Greg Spades, a flight-school manager at Reid-Hillview Airport in San Jose, Calif., said the Santa Clara ban has added hundreds of dollars in costs to some of his company’s lessons. Its high-performance planes now must make trips to other airports to refuel.

Mr. Spades said the rule is onerous and feels like deliberate interference by politicians. “They knew it would severely impact our business,” Mr. Spades said.

Total avgas consumption has tailed off over the years, tracking a broader decline in general-aviation flying. In the mid-1980s, airports pumped more than 30,000 barrels of avgas a day. By last year, consumption had fallen to about 12,000 barrels a day, according to the federal Energy Information Administration. Airliners with jet engines, like the [Airbus](#) models Mr. Wien flies at work, use a different unleaded fuel.

Studies have linked pollution caused by leaded fuel to chronic illness and developmental problems. In the Bay Area, a county-commissioned report found that banning lead from avgas would improve childrens’ health. For much the same reason, lead’s use in automotive gasoline began fading during the 1970s and was finally banned in the U.S. by the Clean Air Act in 1996.

“We’ve made it clear that we don’t sell leaded avgas, and it’s incumbent upon pilots to plan accordingly,” said Sylvia Gallegos, a deputy county executive for Santa Clara. She said the county is proud that its leaded-fuel ban has raised awareness nationally.

Many pilots, too, are wary of leaded fuel. Mr. Wien hates getting it on his hands and believes leaded fuel is worse for his plane’s engine and the environment. But technical and business challenges have confined the unleaded alternative he uses to a small niche.

Engineers have been working for years to develop an unleaded fuel that burns smoothly in even the most demanding aviation engines. Adding lead to fuel boosts its octane rating, which can help prevent combustion problems in some engines. Many high-performance propeller planes need a higher-octane formulation.

Two companies, Swift Fuels and General Aviation Modifications Inc., are among those trying to roll out alternatives.

Swift's 94-octane unleaded avgas is on tap at about 70 small airports across the country, including the fields in California where lead is now banned. Still, that is a fraction of the more than 5,000 public airports in the U.S., most of which still sell leaded avgas exclusively.

Expanding further is slow because most airports don't have spare tanks ready for the unleaded product, said Chris D'Acosta, Swift's chief executive. And the fuel doesn't have a high enough octane rating to replace standard 100-octane avgas for high-performance planes.

Mr. D'Acosta said the company is working on a 100-octane unleaded fuel that could be ready within three years.



The airport in Great Barrington, Mass., is the only one in the area that sells lead-free avgas.

PHOTO: MATT GROSSMAN/THE WALL STREET JOURNAL

The Federal Aviation Administration has yet to grant any such product its approval. Earlier this year, the agency launched a partnership with trade groups and fuel makers aimed at what then-FAA Administrator Steve Dickson called a "safe and practical path to lead-free aviation." The group's goal is to transition to lead-free fuel by 2030.

Meanwhile, some unleaded fuels can work in some propeller planes. But even where it is available, getting pilots to accept unleaded avgas is a challenge.

On a recent Saturday morning, Mr. Wien had little company when he reached for the unleaded pump at the Great Barrington airport's filling station. More recently, some of his flying buddies have made

the switch, but buying unleaded still requires regulatory paperwork and a scavenger hunt for the few airports that sell it.

Pilot education is another hurdle. Many have been taught that avgas contains lead for good reason, and no one wants to experiment and risk a mid-flight engine failure. “There are a lot of old-wives’ tales floating around,” said Mike Busch, a mechanic and piston-engine expert. “Aviation is remarkable in the resistance to change, particularly on the maintenance side.”