



# ***Freeman Flash***

**NEWSLETTER of the FREEMAN FIELD  
FLYING ASSOCIATION**

Volume XXIV, Number 2, **February, 2022**

Larry Bothe, Editor

Website: [www.freemanfield.org](http://www.freemanfield.org)

## **T-Hangars for SER a Reality**

We mentioned in the December edition of the *Flash* that the airport was seeking funding to build T-hangars, and had engaged our engineering firm, BF&S, to begin preliminary design work. Now, 2 months later, it was announced that with the availability of nearly \$800,000 in federal infrastructure money over a 5-year period, they will go ahead with the project. The hangars will be designed and bid out in 2022, and constructed in 2023.

In order to build the kind of T-hangars prospective tenants want, the authority has created a survey form of basic hangar attributes. This form will be sent to all the people on the T-hangar waiting list, as well as to current hangar tenants. In order to get as much feedback as possible, a copy of this form is attached as a separate file, along with the newsletter. If you would like to weigh in with your preferences, please complete and return the form, per the instructions at the bottom. Note that during the airport authority meeting last evening (a week earlier than normal), President Brian Thompson said respondents are encouraged to write in any comments or request additional features that are not mentioned in the 3 choices. .... Ed. note: Regardless of how spartan or basic the new hangars are built, it is very unlikely that they will rent for the same cost as spaces in the legacy T-hangars today, \$100 per month. Modern-day construction costs simply prohibit renting new hangars that cheaply.

### **Other Airport News**

**Airplane Ride Day to be June 4<sup>th</sup>:** The Freeman Army Airfield Museum has selected Saturday, June 4<sup>th</sup> for the 2022 Museum Airplane Ride Day. The airport authority has once again generously agreed to provide a large tent in support of this fund-raising event. Note that this is a corrected date. For a brief period we thought it would be on June 11<sup>th</sup>, but that turned out to not work well for several people key to the event.

An email has been sent to the people who helped in prior years, with a request to save the date. ARD is the primary fund-raising event for the museum each year. We surely could use a few more planes and pilots. If you have a few hours to fly for us that day, your help will be greatly appreciated. Contact Larry Bothe at [LBothe@comcast.net](mailto:LBothe@comcast.net)

**Taxiway out to T-hangar Bldg A:** It was mentioned that a decent taxiway was needed, but no specific plans were in place to make that happen.

**New runway lights for runway 14-32:** The old lights are in bad shape, difficult to maintain, and need to be replaced. However, for some complicated reasons to do with grants and sequencing, new lights are not included in the plans to rehab that runway in 2024. New lights will have to wait until 2025.

**Airport authority to meet a week early again in March:** In order to accommodate the travel plans of authority members, the March meeting will be held a week early, on Monday, March 14<sup>th</sup>, 7:15PM, in the terminal building conference room

## FAA Wright Brothers Master Pilot Awards

In the last issue we put out a call for pilots who have been flying for 50 years or more (since date of first solo). Your editor reaches that milestone this August. Gregg Pardieck is qualified. Surely there must be some more of you out there. The FFFA would like to sponsor you to receive this really nice award from the FAA. The documentation is easy, and we'll help you. Please contact me if you have been flying for 50 years or more; Larry Bothe, LBothe@comcast.net.

## FFFA News

**2022 dues status:** The dues reminder message that was sent out only about a week ago yielded pretty good results! 7 more members paid their dues right away. Now we're down to only 9 people who still owe for 2022. Hopefully, they will send along a check by the end of the month. Thanks for that.

**February meeting, on 2/10:** After our usual dinner at San Marcos, we moved to the museum so we could have internet service with the overhead projector. There, we discussed the current 5G cell phone signal interference with radio altimeters in airliners. With the help of the internet, and some very new information on the subject from the FAA, we think we now have a better idea of what is going on. While it is true that these 5G problems do not affect small General Aviation airplanes, it is good to keep up with all things that affect our air commerce industry.

**Next meeting, March 10<sup>th</sup>:** We'll start out at San Marcos for dinner at 5:00PM. After that we're off to the museum for the formal meeting at 7:00. The discussion will be to review the notes we made after Airplane Ride

Day last year. Penny Litz was kind enough to provide a written list of problems and suggest things we should do in the future. Mark Bowling didn't submit anything in writing, but he recalls several areas of concern that he observed in his capacity as a loader. We need to put all this together so we can have a better experience for both the riders and our volunteers. And we need to do it in March so we can decide on how to implement changes in an economical way. The goal of ARD is to raise money for the museum. We can't afford to simply throw money at our problems.

## FFFA Member Activities & Accomplishments

Helmut Weislein flew up to French Lick from Breckinridge County, KY, and Larry Bothe and Steve Morse flew over from Seymour. We had lunch at Legends Sports Bar on Monday, 1/31. Helmut took the pictures, so he's not in them.



Larry Bothe (left) & Steve Morse having lunch at Legends in French Lick on Jan. 31.



Larry fueling up at French Lick.

**Zack Grant** is selling his Twin Comanche (it's under contract of sale) and bought a 1976 PA-31-325 Navajo C/R. The Navajo needs some immediate avionics work; then Zach

will fly it while he decides on other up-grades. He says he bought it so his wife could have a bathroom.



Zack Grant's 1976 Piper Navajo.

## Museum Archives

### News of the Freeman Army Airfield Museum



*The Freeman Army Airfield Museum is a completely separate entity from the Freeman Field Flying Association. Some of our board members (L. Bothe, K.*

*James) overlap. The FFFA on occasion supports the museum with gifts of money for worthy projects.*

FMI [www.freemanarmyairfieldmuseum.org](http://www.freemanarmyairfieldmuseum.org).

After our banner year of 2021, in which we acquired several new major exhibits, we're starting out on a much more mundane note. We're cleaning. The annex building is about 2/3 done, and the main building is next.

Cleaning the floor in the annex pointed out that we had some artifacts very poorly displayed, just sitting on the floor. Our two wing ribs are now up on the wall, adjacent to the Link Trainer, and we're building a stand to properly display the Spitfire main landing gear doors.

We do have one new display already this year. It is a lower wing panel from a German Bf-109. It is significant because it includes the mount for the 20mm MG-151 cannon on the outside (below), and the ammunition drum, which was up in the wing. We have actually had the panel since it was dug up in 1997, but for many years didn't know what it was. David Gray identified it for us in 2015. Since then, until late last year, it has been moved around, but always displayed vertically, leaning against a wall or table. It

was very difficult for visitors to understand the item. Late last year Joe Clegg decided to further clean it up, and suspend it from the wall in a horizontal position, as it was on the real airplane. Here's the result.



Wing panel from German Bf-109, with 20mm cannon mount below & ammo drum above.

**New museum membership program:** The museum has rolled out a program for interested people to join us in our effort to bring more and better exhibits to the Freeman Army Airfield Museum. Please visit out newly-revised website (thanks, Steve), and click on the Membership tab at the top of the home page. There you will see the various levels of memberships you can buy, and the thank-you gift you will receive. Please purchase a membership; help the museum. Thank you.

## Interesting Aviation Links

**How a P-51D works:** Tom Miller sent along this 18-min. animated illustration video of how the major component groups of the Mustang work. <https://youtu.be/hjsrqMe0B3s>

**Wanna fly a P-51, P-40, or a Spitfire?** How about all 3? Trip to England? Buy some tickets in the American Heritage Museum fund-raising raffle. <https://www.tapkat.org/american-heritage-museum/o58G79/>

## LSC Glider News –

Coordinated by Bob Walker ("UPS Bob")

### Manipulating Air

Written by John Uhl, LSC

Sharp eyed observers at Freeman Field will have noticed that several of the locally based sailplanes sport winglets. How is it that a device that arose from the pursuit of

efficiency for large, high-speed, high-altitude aircraft found its way onto sailplanes? And if they are so great, why aren't all sailplanes, or all aircraft for that matter, equipped with them?

Winglets date back to the 1970s from the fertile mind of Richard Whitcomb, "the man who could see air". While Whitcomb did not invent winglets (the credit for their origination goes to a British aerodynamicist from the late 1800s) Whitcomb, while working for NACA, did the heavy lifting required to develop winglets into effective devices for improved aerodynamic efficiency.

Propelled by the quest to increase the cruise efficiency of large transport aircraft, driven by the increasing price of fuel, Whitcomb went to work to find a drag reduction solution to the induced drag produced by the large, energy-wasting vortices at the wing tips. Using wind tunnel test data, Whitcomb realized that the simple flat wing tip plates investigated by previous engineering efforts were not effective at the job.

Inspired by nature (bird wingtips), Whitcomb initiated research and wind tunnel testing



into the design and implementation of small tip-mounted wings that he ultimately named "winglets".

With NACA's focus on exploring efficiency solutions for large, fast, heavy aircraft, how did small, light-weight, and comparatively slow sailplanes enter the picture? With the small frontal area and smooth, streamlined shape of sailplanes, a larger proportion of a sailplane's total drag is from induced drag, the direct product of lift generation. If a

method can be found to modify the airflow at the wing tips so that the induced drag is reduced, while still sustaining lift, we boost performance efficiency, a most desirable attribute for an unpowered aircraft.

Aerodynamicists have long known that increasing the aspect ratio of a wing (longer wings with a narrower cord) increases a wing's efficiency. So, if one wants to increase the performance of a sailplane, why fool around with winglets? Why not simply make the wings longer? There are two basic drawbacks that discourage installing longer wings. The first factor is that higher aspect wings require more structure to make them resistant to twisting and flexing. And the increased length and weight of the wing places additional bending loads on the wing and its fuselage connection, thus requiring additional counter-productive structure (weight). The second factor is the practical reality of dealing with a longer wing span - avoiding taxiway and runway lights, maneuvering through and into hangar openings and enclosures.

An alternate approach to increasing wing efficiency is by taming wing tip vortices through the application of Whitcomb's winglets. The beauty of properly designed winglets is that they make the wing perform as though it is longer than it actually is by controlling the higher-pressure air under the wing that is trying to find its way to the area of lower air pressure above wing, creating drag in the process. Winglets alter the airflow by displacing and weakening the drag-generating wingtip vortex.

Winglet design and implementation is a decidedly complex process. Winglet design is part theory, part analysis, and part art. Once computers have completed their theoretical analysis, design verification in a wind tunnel is an advisable next step. But these steps only take winglet design so far. In the end, it is necessary to build and attach a prototype winglet to a baseline aircraft, and go fly. Design variables include winglet height,

airfoil camber, twist, sweepback, angle of incidence, and cant angle.

For sailplanes, it is critically important that winglets contribute throughout the normal flight envelope. They must work effectively at both the upper and lower ends of the speed range. It is not acceptable to have a design that works at one speed end to the detriment of the other end. Cross country performance requires an aircraft that performs just as well during high-speed cruise as it does while thermaling at airspeeds just above stall. Typically, perfection of this balance requires many hours of trial-and-error adjustment and tweaking of the design variables.

Additional side benefits of winglets are typically improved roll control, increased steep turn stability, and that while working to alter the wing tip vortices, the winglets are operating in the wing tip's cross flow, redirecting vortex energy into forward thrust.

So why aren't winglets found on all aircraft? Winglet negatives include extra weight, additional bending moments on the wing, increased wetted area, the potential of flutter, and they are expensive.

What does all of this effort provide in the way of a performance gain over the baseline wingletless sibling aircraft? Overall improvements tend to be relatively small, with the greatest gains occurring at low (thermaling) airspeeds. But, that extra margin of performance may be just what is needed to successfully complete the day's flight task.

Plus - at the end of the flying day, back on the ground, they look cool!

### **Airline Perspective –**

Due to a late decision by your editor to publish the newsletter very early this month, our airline columnist, Adam Springmeyer, didn't have an opportunity to write a column. He'll hopefully be back next month.

## **Aviation Humor**



Picture sent by Tim Sparks, 2/4/2022

**Crypto Currency Explained:** Well, OK, this isn't aviation-related, but it's good enough that I couldn't resist printing it. Sent to me by FFFA member Dan Kiel.

Not long ago a merchant found a lot of monkeys that lived near a certain Village. One day he came to the Village saying he wanted to buy these monkeys! He announced that he would buy the monkeys at \$100 each. The Villagers thought that this man must be crazy - How can somebody buy Stray Monkeys at \$100 each? Still, some People caught some monkeys and gave them to this merchant, and he gave \$100 for each monkey. This news spread like wildfire and People caught monkeys and sold them to the merchant. After a few days, the merchant announced that he will buy monkeys at \$200 each. The lazy villagers also ran around to catch the remaining monkeys! They sold the remaining monkeys at \$200 each. The merchant then announced that he will buy

monkeys for \$500 each! The villagers started to lose sleep! They caught six or seven monkeys, which was all that were left, and got \$500 each. The Villagers were waiting anxiously for the next announcement. Then the merchant announced that he is going on Holiday for a week, but when he returns, he will buy monkeys at \$1000 each! He also said that his employee will be in charge and would take care of the monkeys he bought pending his return. The Merchant went on holiday. The Villagers were frantic and very sad as there were no more monkeys left for them to sell it at \$1000 each as was promised by the Merchant. Then the Merchant's Employee contacted them and told them that he would secretly sell them some monkeys at \$700 each. The news spread like wildfire. As the Merchant promised on his return that he would buy monkeys at \$1000 each, they would achieve a \$300 profit for each monkey. The next day The Villagers queued up near the Monkey Cage. The Employee sold all the monkeys at \$700 each. The Rich bought monkeys in large lots. The Poor borrowed money from money lenders and bought the rest of the monkeys! The Villagers took care of their monkeys & waited for the Merchant to return. However, nobody came. Then they ran to find the Employee. However he was not to be found! The Villagers then realized that they had been duped into buying the useless stray monkeys at \$700 each and were now unable to sell them! This Monkey Business is now known as Bitcoin! It will make a-lot of People bankrupt, and a very few People filthy rich in this kind of Monkey Business.

## Museum Airplane Ride Day will be Saturday, June 4<sup>th</sup>, 9AM to 4PM

## Sell – Buy - Announcements

### Seymour Glider Operation Information

The Louisville Soaring Club would like aircraft flying at SER to know that the gliders almost always operate off runways 14/32. However, that does not mean that the wind favors 14 or 32. The gliders and tow plane use 14/32 because it is convenient to where the gliders are stored. ... All the gliders have radios. When approaching the field, especially on weekends, call addressing *Seymour Glider Operations* and ask where the gliders are; they will tell you. It actually works best, when glider operations are in progress, for power planes to use 5 or 23. FMI [www.soarky.org](http://www.soarky.org), or call Mike Carlson, President, 502-321-6349.

### FFFA Officers - Contacts

**Karen James**, President, 812-498-4482  
[Flygirl172@me.com](mailto:Flygirl172@me.com)  
**Jan Sipes**, Vice President, 812-522-9446  
[sipesj@hotmail.com](mailto:sipesj@hotmail.com)  
**Brett Hays**, Secretary, 812-528-2186  
[brett@bretthays.law](mailto:brett@bretthays.law)  
**Larry Bothe**, Treasurer/Membership, 812-521-7400  
[LBothe@comcast.net](mailto:LBothe@comcast.net)  
**Barty Moffett**, Board, 812-528-0012  
[barty@barty.com](mailto:barty@barty.com)  
**Tom Hallow**, Board, 812-569-4293  
[hallow1950@gmail.com](mailto:hallow1950@gmail.com)  
**Zach Grant**, Board, 317-201-4293  
[L1011jock@sbcglobal.net](mailto:L1011jock@sbcglobal.net)

### Local Event Calendar at a Glance

**FFFA March meeting, March 10<sup>th</sup>**, 7:00PM, at the museum. Dinner before the meeting at San Marcos, 5:00PM

Apr 5-10, Sun 'n Fun 2022, LAL  
**Jun 4, Airplane Ride Day, SER**  
 Benefit Freeman Army Airfield Museum  
 Jun 18, Flapjack fly-in breakfast, OVO  
 Jul 19, Hagerstown (IN), Flying Circus, I61  
 Jul 25-31, AirVenture 2022, OSH  
 Sep 3-5, Red Stewart fly-in, 40I  
 Sep 8-10, Midwest LSA Expo, MVN  
 Sep 19-25, Triple Tree fly-in, SCoo  
 Sep 24, Madison Air Show, IMS\*\*

\*\* Two asterisks mean Cliff Robinson will be performing an air show at that event; \*one asterisk means Cliff will be there offering Stearman rides, but no air show. If you want to see world-class aerobatics with no admission charge, attend one of the shows.

### Cliff Robinson Aerobatics

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### Cherry Hill Aviation

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**Lance Bartels 812-322-6762**

### Association & Meeting Information

**Freeman Field Flying Association** meets the 2<sup>nd</sup> Thursday of each month, 7:00 PM, at the Freeman Army Airfield Museum. No meeting in July. Christmas dinner in December. **Join FFFA:** Dues are \$10 per year. Send a check, payable to FFFA, to Larry Bothe, 1082 Governors Ln, Seymour, IN 47274-1135. Include e-mail address and phone number. ½ price after the 4<sup>th</sup> of July.

**Airport Authority** meets the 3<sup>rd</sup> Monday of each month at 7:15 PM, terminal building conference room.  
**Freeman Army Airfield Museum** board meets the 3<sup>rd</sup> Tuesday of each month, 6:00 PM, main museum building, Map Room.

**Freeman Flash** issues going back to 1999 are available if you contact the editor.

### **Help the Museum Amazon Smile**

Do you shop at Amazon? By going to [smile.amazon.com](http://smile.amazon.com) to place your order, you can help the museum. Amazon will give ½ of 1% to the museum, at no cost to you. Thanks for helping us this holiday season, and all year long.

### **Kroger Community Rewards**

Kroger Foods (includes Jay-C Stores) has a program similar to Amazon. Most Kroger shoppers have a Kroger "frequent shopper" card. Go to <https://www.kroger.com/i/community/community-rewards> and register your card, Kroger will donate ½ of 1% to the museum, just like Amazon. You only have to register once; after that it's all automatic when you show your card at checkout.

### The Engraver

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## **For Sale – Piper L4H “Grasshopper”**

US Army Air Corps took possession of this airplane Aug. 26, 1943. After the war it went to the Civil Air Patrol in Kansas. **230 hrs since complete restoration in 2002.**

Engine: Continental C90-8 (90 hp), hand-prop  
(usually starts on the first blade!)

Aluminum propeller

Hydraulic disk brakes (heel actuated)

800-6 tires and wheels (better on grass)

Hangered at owner's grass strip "Green Acres",  
about 5 mi. NW of Seymour, IN

NDH This airplane is a "10" throughout

\$55,000

Call owner Brian Thompson at 812-521-0038



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