



Freeman Flash

**NEWSLETTER of the FREEMAN FIELD
FLYING ASSOCIATION**

Volume XXIII, Number 8, **September 2021**

Larry Bothe, Editor

Website: www.freemanfield.org

Diane Schepman Retiring (but not right away)

After some 20 years as the secretary of the Freeman Municipal Airport, Diane is retiring. She will be with us probably through the end of March next year. Her exact last day will be determined by accumulated vacation days, maybe sick days, and other factors that it is necessary to get just right in order to not lose pay and benefits.

Don Furlow reported that the search is already under way for a replacement. The job had been posted for about a week, without much response, and then all of a sudden inquiries poured in. There were some 24 replies during the 2-week period of posting. Now the task of working through the resumé begins. Airport authority board members will help. Then telephone interviews, followed by in-person interviews. Job offers get made. A new hire will need to be in place well before Diane leaves, in order to make sure the smoothly-running operation has as few glitches as possible. Dealing with the FAA, State Board of Accounts, and local government (city & county) is not trivial. All the rules must be followed, and deadlines met. It will take a while for a new person to get his/her arms around all these things.

It was noted at the airport authority meeting that All Star Paving had not yet begun work on the trench drain repair/replacement on

the main ramp. That work will not cause very much inconvenience to aircraft operations, but it's going to take a while due to the several phases of construction. If they don't get started soon (first week of October?), they won't be able to finish in time to do the final paving before it gets too cold. We hope they start soon.

Finally, authority President Brian Thomson once again reiterated that he is still working on obtaining funding for additional T-hangars, and he will get it done.

FFFA News

At the September meeting we had a very nice presentation about the troop-carrying glider program in WWII. It was put on by Charlie Arrington, author and historian from Louisville (Bowman Field). He told us how it worked, and about the leader, Indiana native Michael Murphy. We invited members of the EAA chapters from North Vernon and Columbus. We had a pretty good group for both the dinner before the meeting, and the presentation itself. Thanks, Charlie, for coming up and doing the program.

For our October program, we'll have our usual gathering for dinner before the meeting, although it may be at a different restaurant. There's nothing wrong with P-St.,

but several regulars have told me they are getting bored with going to the same place every month. We're thinking of going to San Marcos at 5th & Ewing in October. We'll let you know the restaurant for sure in the reminder message we send out a few days before the meeting, which, by the way, will be on Thursday evening, October 14th (always the 2nd Thursday).

We don't have a formal program planned for the October meeting. However, because we don't usually run around in the museum building on meeting night, you haven't seen the major changes we have made in exhibits since July. After we discuss whatever is on your mind about aviation, we'll do a tour. And we may even have the full-scale Me-163 German rocket plane fuselage down in the annex by then.

The program for November will be another history program. During WWII in amphibious assaults, ships called LSTs (**L**anding **S**hip, **T**ank) were used to get heavy mechanized fighting equipment ashore. There are very few LSTs remaining, and only a handful that are still seaworthy. But guess what, there is one in Evansville, IN that is still operational, and sails the Ohio river several times a year. One of their tour guides recently contacted us, and wants to come to the museum to put on a program about LST 325. Mark your calendar for Thursday, November 11th, to come to the FFFA meeting and hear about the role LSTs played in winning WWII.

Dinner before the meeting: A group of us meet at a restaurant, probably San Marcos, located at the corner of 5th and Ewing (501 N. Ewing) in Seymour, at 5:00PM for a bite to eat before each FFFA meeting. Please join us for dinner. We talk about whatever has happened to us lately in the aviation world. Information flows. Lots of fun!

Medical Minute –

By Dr. Aaron Frey, MD, AME, 812-524-3333

Aaron's column will be back in October.

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.

As was mentioned last month, Joe Clegg walled over the 3 windows on the north side of the Map Room in the main museum building. Those windows had been covered over with vinyl siding on the outside years ago. However, the frames, trim and sashes on the inside 'broke up' the wall on the inside, and made display placement difficult. Joe fixed that, and while he was at it, he removed and covered over the large 4' x 6' ventilation opening in that wall. Now we have a continuous flat wall surface about 50-feet long to work with.

There were 3-1/2 displays along that wall; Daily Living, Women at Freeman Field, Tuskegee Airmen, and (the 1/2) Civil Air Patrol. CAP was a half because we had started it, but never really finished. During August and September all 4 of the displays were redesigned and put back in place. They have new signs, and Tuskegee and CAP have numerous new items.

In early summer the museum acquired a whole lot of new Capt. Freeman items from his nephew, who moved to Florida. Those things have been waiting in storage while the Map Room project was completed. On September 22nd, Dan Kiel and Larry Bothe started work to reorganize the entry room in the main building to accommodate all the new artifacts. Those items include Capt. Freeman's cadet uniform from West Point, his dress saber, a hunting rifle, his bible and rosary beads, and riding boots and breeches. We also now have the original oil-on-canvas painting of Capt. Freeman (size 3' x 4') that hung over the bar in the Officer's Club during WWII. Right now, it is at Artistic Impressions

(Kevin Greene) for repairs to the frame. We have determined a good place to hang it, and can't wait to get it back. The entry room reset is going to take about a month, working off and on, but we're doing it in a way that will not be unnecessarily disruptive to museum visitors.

Finally, Gayla O'Connor has said we can come get the full-scale replica of a WWII Me-163 German rocket plane her husband, Tim, was working on before he passed away last fall. We have already visited the workshop in Brownstown where it is located, and taken measurements. We hope to return to pick it up in early October. Receiving the Me-163 will require reorganizing the east end of the museum annex building.

After the Captain Freeman and Me-163 displays, we don't have any other major display projects in the works. That's a good thing, because by then we are going to need a break.

LSC Glider News – Pushing The Limits

By Steve Hayes

The Louisville Soaring Club based here at Freeman Field is anything but pushing the limits of aviation. Our fleet consists of four club gliders and twelve private gliders, most of which were built from the 1970's through the 1990's. Only three are legitimate 21st century ships. For most of us, pushing the limits means flying ten miles from Freeman. Some of us are happy with a compass, altimeter, airspeed indicator, variometer and handheld radio. We are even more enthusiastic if we have a GPS moving map, transponder and onboard radio. The really cool dudes have Flarm and/or ADS-B units onboard—they're loaded for bear! The hot-shot racers around the world in open class competition are generally flying true 21st Century ships.

There are several elite groups of aeronautical engineers, scientists and pilots in the glider

world truly pushing the limits of glider design and performance. Minden, NV (some might say the Mecca of U.S. soaring) is the home for two of these ships. Each group has designed, built and tested two very different gliders mastering the challenges of atmospheric conditions in which they perform.

Our first entry for "Pushing the Limits" is the Perlan II, a fantastic glider designed to fly at high altitude, ideally in Southern Argentina where mountain wave is lifted deep into the stratosphere by the polar vortex rotating off the south pole. Perlan's name was taken from rare Perlan clouds that appear in the upper stratosphere. Perlan, with pilots Jim Payne and Tim Gardner aboard, set the world altitude record for subsonic flight without an engine in 2019 (76,124 feet). Her service ceiling is 90,000 feet, which is the team's ultimate objective. Because of COVID-19, the project was placed on hold because of restricted travel; although, upgrades in scientific packages and sensors were installed and tested in preparation for her next record attempt—surely a candidate for Pushing the Limits.

Our second candidate is somewhat less esoteric than Perlan, but equally impressive. The Nixus Project has developed the first fly-by-wire (FBW) glider. Nixus is the brain child of Paulo Iscold, who grew up in a Brazilian glider family with a passion for aircraft and flight. He is an aeronautical engineer who previously designed record setting powered racing aircraft [CEA-308, CEA-309 (Mehari), CEA-311 (Anequim)]. He and his students have also participated in the Red Bull Air Race Championship, working on flight path optimization, aerodynamic modifications and flight simulation. His work led the British Team Bonhomme to a world championship in 2015.¹ He has come full circle, to his roots designing and building the "perfect" racing glider. Immigrating to the U.S. as Associate Professor of aeronautical engineering at Cal Poly, he and his students continue the work, refining Nixus and developing her software

platform. When asked why build a FBW glider, he responded, "because we can. It will be very fast, and it will break records."²

Nixus (Latin for pushing forward) is an open class glider with dual seats and a 93-foot wing span, designed to maximize lift and speed. It has the second highest aspect ratio of any glider, 53.3 to 1, with a long, narrow, thin wing. The wing is complex, transitioning through eight different airfoils to avoid lift plateau, an unwanted characteristic of modern sailplane wings that limits good performance while thermalling.² FBW is accomplished with four central microprocessors connected via a three-bus system to additional microprocessor-servo units in the wings. The electronics drive six flaps per side that act both as flaps and ailerons. The system is triple redundant. For added safety, the most outboard aileron has mixed control. Should the servo fail, mechanical connection to the stick provides about one-third roll capability. To improve laminar flow toward the outer wing, there is variation of the flap chord. This optimizes lift distribution and minimizes induced drag at all angles of attack. The wings are designed to accommodate six feet of flex along the outer eighteen feet of wing (scary just to look at) that could cause bending-torsion or twisting of the wing during flexion. To resolve this problem, the outer spar is swept forward to reduce bending-torsion, and the outer wing is built with inherent twist. Under load the airfoil remains aligned, which maintains optimal angle of attack for the flexed portion of the wing.^{2,3}

This baby is built for speed and endurance. It first flew March 2019. In 2020 it started breaking U.S. National records with guess who piloting? --Jim Payne and Alan Coombs.⁴

- Distance in triangular flight (636.9 miles)
- Speed in 1000 km triangle (90.26 mph)
- Distance in a free triangle (636.68 miles)
- Speed over an out-and-return (134.02 mph)
- Speed in 750 km triangle (86.44 mph)

Both of these aircraft fit the bill for Pushing the Limits of flight into new realms as does Jim Payne, test pilot for both aircraft. I think he is an example to all pilots of pushing oneself forward. He is as extraordinary as the two aircraft he flies.

As we watch for each other around Freeman, one day you may see a lowly glider pass you going in the same direction--now wouldn't that be something! *Keep Pushing Forward.*

References:

1. Iscold, Paulo. California Polytechnic State Univ. Dept. of Aerospace Engineering Faculty Biography, 2021.
2. Iscold, Paulo. Nixus Project Lecture, Facebook, October 18, 2019.
3. Iscold, Paulo and Amy. Nixus Project-Pushing the Limits, Soaring Magazine, Sept. 2019, pgs 10-15.
4. Bick, Eric. Record Flights in 2020, Soaring Magazine, April 2021, Pages 14-21.

FFFA Member Activities and Accomplishments

The Madison Air Show was this past Saturday, 9/25. You really should go every year; it's like Old Home Week. Larry Bothe, Steve Morse and Helmet Weislein (and Helmut's wife, Barb) were there. As usual, Helmut took some pictures. Here's Larry, and a guy Helmut knows from UPS, with his little Sonex kit-built micro-jet. It's a neat airplane, but he says its very squirrely to fly in any kind of wind.



Tom Hallow has been mostly busy shelling corn, and he sure hasn't flown into his grass strip lately. Here's a picture of it from this past Wednesday, 9/22 after all that rain we had. It's just a little wet; more like a long, skinny rectangular lake. But the geese seem to like it. You can see the gaggle in the middle.



Jan Sipes and **Dick Burton** have joined the museum as volunteer docents for the flight simulators. They will help museum visitors, especially young people, to have a good introduction to the realm of flight. We could still use one or two more people (hopefully, pilots) in that capacity. If you would like to help for a few hours, one or two days a month, call Larry at 812-521-7400.

Airline Perspective –

How Much Can Airline Pilots Fly?

By Adam Springmeyer

Hello to all! I started to write this article from Minneapolis-Saint Paul, Minnesota (MSP,) and now finishing it up in Charleston, South Carolina (CHS.) I can honestly say that the temperature went from 80 to 55 like it saw a State Trooper going the opposite direction on the highway. This was the case for here in MSP as well as Pittsburgh. We landed at 11:00 a.m. with a temperature of only 56° F.

A few months ago, we talked about where some pilots get to stay, but I never got back to how much we can fly. To help answer the question, we have to reference 14 CFR Part 117. This is a fairly new regulation that was created in the wake of the Colgan Air Flight 3407 crash outside of Buffalo, New York

(BUF.) Now, this crash though extremely tragic, had nothing to do with rest rules. You can ask many airline pilots, and they will give you more reasons than you can count about what this accident did to our profession. However, that can be discussed for a different article.

FAR Part 117 breaks down a pilot's day into two (2) sections; Table A: Total Allowable Flight Time, and Table B: Total Allowable of Duty Time. Both of the times listed in the chart of both tables is based upon when a pilot starts his/her day. This is called a Pilot's Report Time. Once this time is established, we then can figure out both the total amount of flight time allowed, and the total duty time allowed based on the number of legs assigned to a pilot for that day. Please look at the table to help solve the problem.

Let's say we have a pilot that shows up to the airport at 6:30 AM, and is assigned four (4) legs that particular day. We go down the side of the table and see that between 0600 and 0659 the pilot is allowed 9:00 hours of flight time. This is a hard limit and cannot be exceeded unless unforeseen circumstances occur. We then go over to the 4 legs / Number of Segments section and see that the pilot can be on duty for 12:00 hours of duty. This means the pilot has to duty-off at 6:00 PM.

This all seems simple enough right? However, the FAA likes to throw little "well, but..." into each of these regulations. Here are some exceptions:

If a pilot runs into any kind of delay, he can be extended for up to 30 minutes without special approval. That means he can fly until 6:30 PM. and not worry about a violation. If the delay is long enough, and the pilot agrees to an extension, the pilot can remain on duty for an additional 90 minutes beyond the 30. This is a total of 120 minutes (2 hours.) This total cannot be exceeded. This is a sore subject to pilots because we either fly the extension, or we call in fatigued. The FAA is

still reviewing this interpretation, but each airline is using their "interpretation" as law. The airlines love using the phrase, "Legal to Start. Legal to Finish."

Dead Heads (DH) don't count as an actual flight, and therefore will change the number of segments that he or she will fly that day. This then changes the amount of duty that they can be on. If the DH starts their day, or is in the middle of the day, their duty time starts when they first got to the airport. If the DH ends the day, they are off duty and does not factor into their time.

Should a pilot have to make a diversion to another airport other, than their intended destination, their total legs/Number of Segments will not change. In our above example, this would not change the overall numbers.

Once a pilot is completely done with their day, they must have 10 hours of rest, with 8

sure they have 8 hours of sleep opportunity before reporting for duty.

Report time is based on your anchor city, i.e. the city where you are based. Being that I am based in Pittsburgh, my anchor time will always be set on Eastern Standard/Daylight Time.

FAR Part 117 does not apply to pilots who operate cargo flights: UPS, FedEx, Atlas, etc. These operators are under a cargo cutout. The pilots of these carriers are subject to having a total of a 16-hour work day, with a maximum flight time of 8 hours. These carriers are governed by their own contracts with the pilots. Currently there is a 50/50 split on whether or not cargo carriers should be governed under FAR Part 117.

Here's an example of a UPS flight from Pittsburgh (PIT) to Louisville (SDF) to Kansas City International (MCI.) I know this schedule as I have flown on a UPS airplane on this

Scheduled Time of Start (Acclimated Time)	Maximum Flight Duty Period (hours) Limits for Lineholders						
	Based on Number Of Operational Flight Segments						
	1	2	3	4	5	6	7+
0000-0359	9	9	9	9	9	9	9
0400-0459	10	10	10	10	9	9	9
0500-0559	12	12	12	12	11.5	11	10.5
0600-0659	13	13	12	12	11.5	11	10.5
0700-1159	14	14	13	13	12.5	12	11.5
1200-1259	13	13	13	13	12.5	12	11.5
1300-1659	12	12	12	12	11.5	11	10.5
1700-2159	12	12	11	11	10	9	9
2200-2259	11	11	10	10	9	9	9
2300-2359	10	10	10	9	9	9	9

hours sleep opportunity, aka "behind the door." A pilot's rest time starts 15 minutes after the last flight has gotten to the gate. This is also a sore subject with pilots as we have to get off the plane, wait for the hotel shuttle, ride to the hotel, check in, and maybe get food or use the bathroom. The rest also applies to leaving the hotel back to the airport. It is always up to a pilot to make

exact route multiple times. The pilot's report time is 9:00 PM. (2100). This puts their Table A limit at 8:00 hours of flight time. As they are flying 2 legs, their Table B time limit is 12:00 hours. This means a pilot has to duty off at 9:00 a.m. In this example, this is perfectly fine as the flight gets to MCI around 4:30 AM the next morning. However, using the above table, and the knowledge that when a pilot gets to SDF, there is generally a 4 to 5 hour wait before the next flight. This example follows FAR 117, but if you were to operate another leg after MCI as they do during their Christmas Operations, then you can run into an issue. This brings the total duty allowed to

11:00 hours. So the pilot's in this example have to be done by 8:00 AM. Eastern Time.

I hope this gives you a better understanding of how a pilot operates on a daily basis. This regulation does not change the limit of a pilot flying a maximum of 100 hours per month, and 1000 hours per year.

Thanks to each and every member for reading these articles, and to the ones who send in requests for different topics. If you have any questions that you would like answered, please email me at adam.springmeyer@gmail.com. Fly Safe, and Blue Skies.

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, or call Mike Carlson, President, 502-321-6349.

FFFA Officers - Contacts

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

Local Event Calendar at a Glance

Local aviation events are about over for 2021. Here are some important dates for advance planning in 2022:

Sun 'n Fun 2022 April 5-10
AirVenture 2022 July 25-31

**** 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.**

Association & Meeting Information

Freeman Field Flying Association meets the 2nd 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 4th of July.

Airport Authority meets the 3rd Monday of each month at 7:15 PM, terminal building conference room.
Freeman Army Airfield Museum board meets the 3rd 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.

Sell – Buy

Have something you want to sell or buy? FFFA members get a free ad. Send an e-mail to LBothe@comcast.net to place an ad.

FAA Medical Examinations

Dr. Aaron Frey, AME 812-524-3333
2026 N Ewing St, Seymour
3rd & 2nd class medicals performed

Cherry Hill Aviation

Aircraft Maintenance & Annual Inspections
Tube & fabric work a specialty
Aircraft sales, rental & flight instruction
Lance Bartels 812-322-6762

Help the Museum Amazon Smile

Do you shop at Amazon? By going to smile.amazon.com/ch/35-2060830 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.

Eagle Avionics

Radio repair and installation, shop at BAK. Authorized dealer for Garmin, Aspen, Avidyne, Lynx (L3), Dynon, Stratus, and several others.

Contact [Eagle Avionics](#) for your ADS-B solution.

Transponder & IFR certification at your airport

Call Andy Zeigler, 812-344-0468

Cliff Robinson Aerobatics

Open cockpit bi-plane rides in 500HP Stearman.

Acro and tailwheel training in Super Decathlon.

Cliff Robinson, Madison, IN 812-701-9990

cliffrobinsonaerobatics.com

Larry Bothe, Certified Flight Instructor

Flight Reviews, Insurance Checkouts, Instrument Proficiency, Rusty Pilot refresher training, but no full certificate programs.

812-521-7400

The Engraver

Trophies Plaques Gifts Plastic Signs

Quality Gifts & Awards, Aircraft Placards

1520 Schleiter Rd, Seymour. 812-522-6181

www.engraverinc.com