

EAA CHAPTER 770



UPCOMING EVENTS

EAA AIRVENTURE
VMC/IMC Club
SAA 75th Anniversary
Chapter Meeting

JUL 24-30
AUG 1
AUG 5-6
AUG 17

UPCOMING EAA WEBINARS

Homebuilt Highlights from AirVenture 2023
Unbelievable Compressions (WINGS)
Vintage Aircraft Parts Substitutions (WINGS)
Swift Fuels Unleaded AVGAS (WINGS)

AUG 8 7:00pm
AUG 9 7:00pm
AUG 16 7:00pm
AUG 23 7:00pm

Register for upcoming webinars at:

www.eaa.org/eea/news-and-publications/eea-webinar

VMC/ IMC CLUB QUESTIONS OF THE MONTH

When arriving at an uncontrolled airport that uses the standard left hand traffic pattern, can a pilot of an airplane decide to use the right hand traffic pattern in order to improve safety? An example might be where there are low clouds adjacent to the airport that would potentially raise a safety concern for aircraft making a left hand turn but the other side of the airport is clear with 10 miles visibility.

Ayden took his first Young Eagle passenger on July 10th. He was set to fly the previous Saturday during the rally, however low clouds didn't burn off until late in the day causing the chapter to scrub that day.

The chapter hosted students from the Salvation Army day camp recently. They visited the Charlie Ramp hangars seeing several aircraft and talking to chapter members about different aviation topics.



The weather forced the cancellation of the Rally in April, and using the rain date. The METARs finally cooperated July 15th.

The derecho that hit the Springfield area June 28th caused the wing on the F-4D gate guard at SPI to fold along the hinge. The F-4 was designed with folding wings to save parking space on aircraft carriers. The winds that day jarred the wing tip and it folded over. As an interesting side note, look up F-4's flown with their wings folded. It has happened. I guess the F-4 was built with retractable winglets, just keep that airspeed up.



John with a Young Eagle in the gyro. 15Jul.



It's Pronounced Gyro

by Eric Fromm

Have you ever been minding your own business flying your sim, and someone comes in the room (which is always when you're setting up for an instrument approach or landing) and you hit pause because you're on the numbers, the needles are in the circle, the airspeed is right there? What if I told you there is a way to recreate that view in real life? How would that make a fixed wing pilot feel? Just sitting there looking at the runway, the world around you just standing still and you're just hanging there.

John said one day, "Hey lets go fly the gyro" . I said, "well yeah duh, lets go!" . We got strapped in after a thorough preflight. We were decided to go over to the practice area and he'd demonstrate some of the capabilities of the Xenon. Meanwhile, I'm trying to figure out the physics of it all.

I mean in my fixed wing experience taught me, airspeed over the wings equals lift which means get up, you've got that thing in back to help push the tail down for a better angle of attack to get more lift, those little ailerthingy's on each wing move up or down and opposite to push a wing down and the other up to turn and the standup fin in back has something similar to help push the tail up in the turn so the nose is level to the horizon. Pretty simple.

A helo, although I'm not experienced in it makes a bit of sense, little long wings above you spin and you get lift, they move so you can change the amount of lift and turn and then you have this fan thing vertically mounted on the tail that pushes your tail left or right to assist in turning and moving the nose in the hover..

But this thing, it almost has a wing, it has those little wings that spin on top but they're not connected to a shaft that gets a whole lot of power

from the engine like a helo. It does have a rudder like an airplane, but nothing spinning like the helo does... so what am I in for here?

As we taxied out, John held a brake handle located on the cyclic to keep the rotor from spinning while taxiing. I wasn't completely accurate a minute ago, I was just explaining my thought process, the rotor above is actually connected to the engine in that it has a prerotator that is connected via a flexible rotorshaft. When engaged the prerotator spins the rotor up to an acceptable RPM to create lift once the aircraft is on its takeoff roll. The prerotator is disengaged and the rotor is now spinning via momentum and airspeed from the forward movement.

So now with the rotor spinning above us we get airspeed via the propeller behind us. Quickly the rotor is spinning fast enough we get lift and become airborne. Now its starting to feel like an airplane except the nose is coming forward... WAIT.. PROPSTRIKE.. no that's behind us... but nose... no we're airborne now and climbing, this attitude though is a little unnatural.

If you've ever watched a helicopter takeoff you've probably noticed the nose down attitude as it first gets lift, this is giving the pitch of the rotors a positive attitude and biting into the air. After that initial nose down attitude though it was much like an airplane. Forward motion and slight nose up attitude in the climb. We turned out to the west via the rudders which are located on twin booms that extend from the cabin of the aircraft to the tailplane which features two vertical stabilizers and a horizontal stab connecting the two. The rudders are getting airflow from the pusher propeller.

We set out for the practice area, outside air temp was low 70s, and quickly determined I had a few too many slices of pizza the night before. My heavy frame was almost too much for the Rotax to keep up with and we headed back for SPI.

With a minor modification we decided this time we'd remain in the pattern, which I wanted to see anyway. How does this thing take off and land?



We did another takeoff and again I was a little white knuckled as the nose came forward, because after all, unless its a taildragger first getting light in the tail, airplanes and forward nose movements on the runway don't go together very well. Once in the climb it feels about the same though. It's still stick, sorry cyclic and rudder in the turn, although the rudder is your sole source of turn. You're maintaining pitch with the cyclic but using the rudder to turn the aircraft.

We ended up sharing the pattern with a Luscombe who was pretty close to matching our speed in the pattern, so it worked out well, as we were downwind he was on the runway and vice versa. In the first pattern we did a "normal" (normal to gyro pilots) approach where we descended on to the runway in final. But that slow airspeed will catch a fixed wing pilot off guard. I caught myself a couple times saying "John we're getting a little slow here" .

Our second approach he demonstrated a vertical approach and landing. That's where it got really weird! The simulator pause scene I was talking about, this was it. We flew downwind to base, but on final , at pattern altitude still, we turned final and

stopped any forward airspeed. The aircraft autorotated down (the same maneuver a helo uses in the event of an engine failure) in which the rotor is spinning and keeping us from dropping like a rock, but it's just the airflow over the rotors keeping us aloft (which is true of forward flight as well) no engine power from the propeller. As we got close to the runway at almost no forward airspeed I started to cringe at the site picture and habitually look at the airspeed indicator with fear, and John added power to the prop so that we could grease in and land as we were over the numbers.

We went back for a few more circuits. I tried my hand at it on downwind. It's weird getting used to not having lateral control with the stick. It's cyclic and nothing more. Up and down, not left or right. In an airplane you fly it to where you want it, trim it out and its almost hands off, but in the gyro its much more hands on.

Gyros are another exciting form of flying. I've been in balloons, gliders ,helos and of course many different types shapes and sizes of airplanes, and this was definitely a unique form of flying that is fun in its own way!



A GLIDER WAS THE STEMME OF THE MEETING

I pulled in to the lot between Stellar and the terminal on a Wednesday afternoon. We've all seen the most of the spectrum of aircraft on that ramp over the years, all the GA traffic, the medivac helos, corporate jets, military fighters, transports, even tiltrotors, heck recently I even helped ground handle a Polish Air Force 737, but I can't say I've ever seen a glider. Naturally I had to go take a look.



The 75ft wing span made the Canadair Challenger behind it look more like an F-104. This wasn't the Schweizer SGU2-22 I flew and soloed in , this was a powered glider that was built for performance (even the powered performance is quite impressive). As I arrived at the aircraft the pilot was already talking to a guy and girl who had just purchased a Cessna 150 and were enroute home with it. They were as impressed with this thing as I was. (Their 150 was remarkable too, it was a 66 I think they said, and it had the original twin striped Cessna factory paint in a dark maroon.

They set off for home and I started talking to the pilot of this incredible sailplane. He explained he developed engine trouble about 50NM out (what is that like? I'd be happy with 5nm in such a situation in a Hershey Bar Piper). He asked if I knew anyone who had any Rotax oil. I'm sure you all know who I called.

He started throwing out performance numbers and I stood in disbelief. "It has a ceiling of 31,000" , "I typically cruise around 17,000" , "It gets about 130kts TAS" , "with a tailwind I can get about 200kts GS out of it" (quotes paraphrased, but numbers accurate). It all makes sense, it's a pretty low drag smooth skinned sailplane, so add a little thrust to pull it and at high altitude, absolutely. Of course the intent of an aircraft like this is to soar. Ridge soaring, thermals, with a properly trained pilot it could fly for hours without burning a drop of avgas.

I felt bad, I had no way over to the Charlie Ramp, as I was on a tug without a beacon and I had a flight to work relatively soon, so I could only helplessly watch John who was at one of the west hangars on Charlie ramp without transportation walk all the way down to the east side of Charlie. I figured he was getting his van to drive over, but why do that, fight traffic on Veterans Pkwy and all, when you can just hop in your gyro and taxi over. 'If you have the means..' - Ferris Bueller.

John taxied up with a quart of Texas gold made for Austrian engines and I unfortunately had to split to get ready for a flight I had to work. I kept looking down at the Stellar ramp to see if any progress was made but eventually they folded the wings on the Stemme, and pulled it in the hangar for the night.

Little did I know that the next night, the Stemme and pilot Jerry Hain would be guests at our

chapter meeting the next night. I guess John said if you're still in town tomorrow night, come on out. It sat on the ramp across from the hangar and drew a couple curious visitors throughout the meeting.



(the solar panels assisted a battery located in the tailplane that gives power to the aircraft's electrical system)

Jerry gave an excellent presentation and Q&A session about the Stemme. He was a salesman and demo pilot for the company and was very well versed in all aspects of the aircraft.



Does a retractable prop make it complex? After a powered takeoff and climb, the propeller folds up and the nose cone closes improving the aerodynamics as it soars)

After the meeting adjourned, Jerry invited members to assist him in folding the wings back up so that he would fit down the row between the hangars and back over to Stellar for the night.



The next day (Friday) he went on several short test flights. It was pretty impressive to see those massive wings takeoff, and the silhouette of a glider here at SPI. It's obviously something you don't see very often. (The only time I remember seeing a sailplane here would've been at one or two Air Rendezvous' that featured a sailplane demo. He was able to continue on to his destination with maintenance being successfully completed later Friday evening.

It was unfortunate that he was stuck on the ground for a couple days with a mechanical, but selfishly it was perfect timing being meeting week, it was really neat getting to know the Stemme a little more.