



May 2014

WHEN:	WHERE:	PROGRAM:
MAY MEETING The 8th at 7 pm	FISHER COMMUNITY CENTER	CFR PART 43 Lorin Miller

WHAT'S FLYIN' THIS WAY !!!

Lorin Miller will be the program speaker at our next meeting on Thursday, May 8th. He has a multi-media presentation on CFR Part 43, Maintenance, Preventive Maintenance, Rebuilding and Alteration. Lorin has a unique perspective with Part 43 as he is helping Dale Benskin rebuild a Piper Clipper.

We will gather at Taco Johns around 6 pm for the pre-meeting gab-fest.

WHAT FLEW BY !!!

Gary Nablo hosted our last meeting at his Taylor Monoplane shop. He has his fuselage on a rotating fixture ready to paint as soon as the weather cooperates. Les Risius and Gary are going to help each other paint their respective airplanes. There were project reports and news from the folks representing the Eldora airport, where there is urgency concerning new wind generators. See inside for details.

The core program was an audio tape presented by Paul Adams. This tape was recorded as Paul, his two sons, who, along with Doug Boyd flew into Oshkosh some time in the early 1990's. What was unique about their arrival into the Oshkosh area was as they were about to enter the approach from Ripon, as required by the NOTAM for arrivals during the Oshkosh event, the airport was closed due to commercial aircraft traffic. To hold due to an airport closure the NOTAM requires the pilots to circle a local lake. What was to be a non-busy arrival quickly turned into a very busy sky full of all types and speed of aircraft. On the tape behind the noise of the aircraft they were flying in, you could hear the ground controller provided by the FAA trying to sort out the ensuing gaggle of aircraft, including a couple of arrivals that appeared to be lost in the melee. Pilots were asked to hold where they were (we discussed how you do that in an airplane), some sent around the lake and some sent in the final landing pattern. All landed safely. The most poignant comment was made by the FAA controller on the ground when he stated, (over the radio I might add), "This is the most airplanes in the air at once I've ever seen!"

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CALENDAR

Saturday, May 17
Mason City Municipal Airport
Flight breakfast 7 a.m. – Noon
Open House until 5 p.m.
Website: www.northiowaair.com

Sunday, May 18
Cherokee Municipal Airport
Flight Breakfast 7 a.m. – noon

Sunday, June 1
Audubon Municipal Airport
Flight Breakfast 6:30 am – 10:30 am
Fly-ins eat free

Sunday, June 1
Denison Municipal Airport
Flight Breakfast 7a.m. - 11 a.m.
Fly-ins eat free

Sunday, June 1
Washington Municipal Airport
Fly-in Breakfast 7 a.m. – 11 a.m.
Pilots in command free

Various dates in June
Waterloo, Cedar Rapids, Ankeny
EAA B-17 Tour
Website <http://www.eaa.org/en/eea/flight-experiences/aluminum-overcast-eea-b-17-bomber-tour>

Friday, June 6
Waterloo Municipal Airport
Fly-in for Life (American Cancer Society)
Dinner and Music
5 p.m. - 9 p.m.
Pilots in command eat free
Email: Joel.harris@forbin.net

Saturday, June 7
Council Bluffs Municipal Airport
Great Plains Wing CAF Flight Breakfast
8:00 a.m. -11:00 a.m.

Saturday, June 14
Keosauqua Municipal Airport
Fly-In Breakfast 7:00 a.m. – Noon
Fly-in pilots eat free

Sunday, June 15
Spencer Municipal Airport
Flight Breakfast 7:00 a.m. – 11 a.m.

June 28 –29
FLY IOWA 2014
Iowa City Municipal Airport
Website: <http://www.flyiowa.org>
Phone: 319-356-5045 (Michael Tharp)
Email: michael-tharp@iowa-city.org

Friday, July 4
Iowa Falls Municipal Airport (IFA)
Windsockers EAA 1324 Omelet
Flight Breakfast 7:00 a.m. – 11:00 a.m.
PIC eats free
Phone: 641-648-3191 (Airport)
Email: fourwindsaviation@prairieinet.net

www.eaa.org/calendar
www.FunPlacesToFly.com
www.flyins.com
www.socialflight.com

MEETING NOTES

Roger Sutton, along with **Robert Richtsmeier**, brought up the issue of the new wind generators being proposed to be built so near the Eldora airport, it will effect airport flight operations. A local Eldora meeting will be held to discuss this proposal Monday evening May 5th at 6 pm at the Hardin County Engineers office. The address to the meeting is 708 16th street. It's to the north side of town and you have to take 15th or 17th to get there from the highway. Jog over a block to the north just before the Hy Vee store.

Here is a note from Marc Broer, the owner of the Eldora airport...

"I know this is the 11th hour, but I just want to follow up on Robert's email to you and the Marshalltown pilot population. Please pass the word to get as many people as possible to the May 5th Hardin County Variance board meeting 6:00 PM, Engineer's office to oppose the wind turbine proposed to go up 2.1 miles from the Eldora Airport. I plan to have the Marshalltown folks using the airport on a regular basis. It is now a public use airport. There is a courtesy car available there, and soon will be 2 cars to use. There is a safety issue with turbulence from the turbine that could affect us pilots."

Thanks,
Marc Broer"

Here is an interactive website for current and proposed wind generation sites across the US.

http://www.redding.com/databases/wind_farm_map/2011/

Zoom in on Iowa and manipulate the map with the 'hand' cursor. Get in close enough and you can change the hand to a finger which you can use to click on the spot on the map. It will give you all the information on that generator site. The distance to the airport is given in feet, so divide by 5280 for miles.

(I notice there are four towers going up right beside Paul Adams house!)

Dave McCurry talked about his time spent in Arizona this summer and later showed a video of a flight to Sedona with Gene Adkins in Gene's 1956 straight tail Cessna 172. The Sedona airport is located on top of a what looks like a typical Arizona mesa with high drop offs at three sides. Dave remarked that good old flat land Iowa provides an added level of comfort in the event of a sick engine as compared to the rough Arizona country side. Although, the scenic view while flying in Arizona was cool.

Ray Robinson got a call from Larry Lukehart about a sighting on the internet of a Scorpion helicopter for sale that is similar to Ray's. Ray bought it and plans to make one helicopter from the two including some upgrades that came with the new purchase.

From Harold Dirks
Quickie 2 N32DK

This article is about repairing the Revmaster engine on our Q2. In 2013, after 20 years and several hundred hours of flying, our Q2's Revmaster engine finally bit the dust. It developed a vertical, 7-inch crack in the right side front of the case below the oil pressure fitting. See picture 1. We decided the case was not reparable, which called for either a new engine or a new case. We knew the rest of the engine was in good shape, so we decided on a new case and ordered a new, completely-machined, magnesium case from Revmaster, along with a set of new crank, cam, and rod bearings.



Picture 1: Dye reveals extent of crack.

My partner in the Q2 and I discussed the repair job, and not having a repair shop in town that we felt would tackle the repair job, and me having a lot of experience in VW engine tear down and repair, we decided that we could do it ourselves. Although we share our hangar with a Cessna 150, the hanger is large enough to provide the needed work space.

While waiting for the ordered parts, we began the repair by removing the engine from the Q2 and mounting it on the portable, wooden engine stand I made for it as a part of originally building the plane. See picture 2. The crack is located in the case area directly behind the oil filter in the picture. The oil filter hides the lower half of the crack.

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www.eaa675.org



Picture 2: Engine on wooden stand.

Putting the engine on the stand gave us unimpeded access all around the engine and the capability to place it in any available space in the hangar without having to move the airplanes. With the engine on the stand, we removed the propeller, the shrouding, the exhaust pipes, the carburetor and intake manifold, the heads, pistons and cylinders, the oil cooler, and everything else exterior to the case.

After the engine was stripped, we unbolted and removed it from the X-shaped accessory case which contains the alternator, starter and magnetos. The accessory case remained bolted to the engine stand.

Next, we bolted the right half of the case to a yoke-shaped stand used for VW engine teardown. See picture 3. The yoke we used was fastened to a large square piece of $\frac{3}{4}$ -inch-thick plywood and was loaned to us by a fellow Q2 builder who has a hangar close to ours. The yoke allows the case to be rotated and locked in any position and it really eases the case-splitting job.



Picture 3: VW teardown stand.

We clamped the plywood and yoke to the top of a cabinet with castors on the bottom, which again continued the portability of our work space. Because the engine was cantilevered away from the cabinet, it was necessary to place enough weight on the top of the plywood and yoke to counter the engine weight.

We next removed all of the bolts holding the case halves together and carefully split the case. Then we removed the crankshaft, the cam shaft, the valve lifters, the oil pump, and all the bearing halves. Close inspection of the right case half revealed that the crack extended all the way through the case wall to the inside.

Inspecting all the case interior surfaces, we discovered several small pieces of rubbery, blue silicone RTV and a thin coating of this material on some of the mating surfaces of the case halves. When the engine was originally built the RTV was evidently used as a gasket for the case mating areas and to plug other areas from leaking oil out of the case. When we removed the connecting rods from the crank, we found that small pieces of RTV had gotten into the crank oil passages that fed the large ends of the rods. See pictures 4 and 5. These pieces have been in the oil passages for 20 years and they had to reduce oil flow to the rod bearings. I am not sure this contributed to the case cracking, but it might have.



Picture 4: RTV in oil hole 2.



Picture 5: RTV in oil hole 4.

We sprayed kerosene in all the crank oil passages, blew them out with air, and injected fresh oil, but we didn't find any more RTV pieces. We then inserted the new, large-end rod bearings and replaced the rods on the crank.

Upon receiving the new case from Revmaster, we removed the old case from the yoke stand and bolted the right side of the new case in its place. We then proceeded to mount the crank in the new case half. Unfortunately, the crank didn't fit. The #3 bearing saddle in the case was too wide to accept the bearing (#3 is the circular bearing to the left of the cam drive gear, see picture 6). We had no way to do the needed machining, so we sent the case back to Revmaster to get it fixed.



Picture 6: Checking the crank fit in the new case.

Revmaster narrowed the bearing saddle and returned the case in a short length of time and now the crank could be completely seated in the bearings. We then put the left half of the case in place and tightened the nuts down on the 6 main case studs and checked the revolution of the crank. Sadly, the crank turned a partial revolution and stopped. We turned it back the other direction and the result was the same. A close investigation revealed that the rod caps were binding on the case. See picture 7. This was happening on the caps of all 4 rods.



Picture 7: Rod cap and crankcase interference.

To repair this situation we could either grind down the ridges on the rod caps or grind down the case halves in the areas of interference. Revmaster had already ground down the case halves to provide clearance for their current stroker crank, so we decided to grind it further rather than weakening our rod caps. So, we dismantled the engine and provided more clearance in the offending areas of the case. Revmaster indicated to us that the case clearance was machined for the rod caps currently being used in new engines, which do not have the ridges that our rods have.

With the new case now having the proper clearance, we proceeded to a final installation of the internal parts of the engine. Notice that we used a very thin layer of red, high-temperature RTV to seal the two case halves. See picture 8. We also installed a new oil seal shown to the right of the flywheel in the picture.



Picture 8: Final installation of crank, rods, cam, and oil pump.

With the new case finally complete, we proceeded to install the pistons and cylinders. See picture 8. Notice a red color where the cylinders join the case. This is red RTV to seal the 60-thousandths thick spacer rings we installed to slightly reduce the compression ratio of the engine to better allow the use of auto gas of lower-octane than the expensive, 100-octane, low-lead gas we have been using.



Picture 8: Pistons and cylinders installed.

Next, we installed the heads and re-attached the completed engine back to the accessory case on the wooden engine stand. With winter upon us, and not having a heated hangar, we loaded the engine and stand on a pickup truck and moved it to my heated garage where the Q2 was originally built all those years ago. See picture 9.



Picture 9: Engine ready for new exhaust system build.

We are now in the process of building a new exhaust system to replace the old, worn-out original system, and the airplane will be flying again in the spring.

Waterloo Young Eagles Rally

Chapter 227 in Waterloo have been planning a Young Eagles Rally since last November. they went through many hoops and hurdles in order to fly Boy Scouts from the area. It was legally considered an EAA event, so experimentals and Sport Pilots could participate. They were originally planning on about 80 Boy Scouts. When the number got up to 175, the panic button got pushed and the call went out to EAA chapters around the state to help with pilots and ground runners.

Garry Brandenburg, Ed Boehm, and Corey Butcher flew up and helped where they could. Garry gave rides in the Cessna 172, and Corey gave rides in the Ercoupe, while Ed helped to keep the kids safe while moving to and from the, approximately, 10 airplanes.

Here is a note from the president of Chapter 227 the newsletter just received before press...

Corey,

We had a very successful Young Eagle Rally. We were concerned about the weather early in the week. At one point the forecast showed rain as a possibility for yesterday, but as you know we really lucked out for weather. Our other big concern was having enough planes and pilots to fly all the scouts that signed up for rides. We were very excited when we found out you were coming to help fly the youngsters. It was really above and beyond the call of duty for you to fly up and help us. With two planes unable to fly that we were counting on, we really needed the additional seat capacity. I want to personally thank you for lending a hand. Without you and the other out of town people that came in to fly, it would have been much more difficult to give rides to all those that signed up. We didn't want to have any disappointed youngsters that didn't get an airplane ride and we got it done! Thank you so much for taking the time to come to Waterloo and help us out. I hope we will be able to reciprocate when your chapter has a YE rally.

**Warren Brecheisen
President, EAA Chapter 227**



A VOISIN WHAT ?

One thing that is great about an interest in aviation is you can enjoy it in so many ways. Of course there is flying, building and flying what you built. But there are other ways to enjoy the interest. Like for me today. The wind is blowing close to 40 miles per hour and I have parts drying in the work shop. So I move to another form of enjoying aviation and that is reading. The interesting part of reading is I never seem to run out of things to read about, investigate or learn about.

Someone in the chapter helped me with today's adventure, Corey. Having a flyable homebuilt replica of a Voisin in a chapter is pretty unique in my book. At some of the previous meetings, Corey has kept the Voisin thing kindled in my mind as he develops plans and brings them to the meetings. So today it was "let's investigate the Voisin" day. I started with some books I have and then followed up with the internet. Here is some of what I found, again it was interesting and as you will see a little surprising, at least to me it was surprising. Gabriel Voisin first started an aircraft company in France in 1905. Soon afterwards he reformed the company as he brought his brother Charles into the business. Here are some notables about their accomplishments:

1. Their Type 1 was one of the most significant aircraft of the pre World War I era.
2. In 1908 Henri Farman, an early highly recognized aviator, was the first aviator to fly a 1 kilometer circuit in Europe and in so doing won a 50,000 franc prize. The aircraft he flew was a Voisin.
3. By 1912 the Voisin company had successfully produced 75 aircraft.
4. As World War I approached the Voisins produced a very successful line of early military aircraft. Corey's Voisin is a replica of these early designs. These aircraft were used in many roles by the military as the war progressed including reconnaissance, artillery spotting, training, day and night bombing and ground attack.
5. A Voisin scored the first aerial victory when on October 5, 1914 a Voisin 3 downed a German Aviatik B.1. The pilot used a machine gun.
6. Voisins were the first aircraft combined into a bomber unit.
7. Many other countries built Voisins under license including Britain, Russia, Italy and the United States.
8. This may be of no surprise but the aircraft was slow (Gabriel and Charles thus were working on the early Light Sport Aircraft market) and with the rear mounted engine the aircraft was vulnerable to an attack from the rear, a common tactic in aerial combat during World War I.

Now with all that said I found something that was truly interesting. There have been many really interesting twin fuselage aircraft. Ones that come to mind are the P38 Lightning (although some call it a twin boom). The beautiful P82, or as most of us know it, the twin Mustang. I read that the Twin Mustang was the first aircraft to down a North Korean aircraft in that conflict and the last piston engined type aircraft ordered by the US Army/Air Force. I saw some beautiful twin fuselage aircraft like the Savoia-Marchetti S-55 which made many early famous flights. A twin fuselage five engined Heinkel He. 111Z that was designed as a glider tug during World War II to tow the worlds largest cargo glider the Messerschmitt Me-321, Goliath, with a gross weight of 86,860 pounds. I previously talked about the twin fuselage Ercoupe and J3 cub in an earlier article.

But what I did not expect was a twin fuselage Voisin. Now if you have been around Corey you might notice he likes aircraft that, shall we say, have some uniqueness to them. Or maybe its just me seeing that in him because I am the same way. Building a Q2 as my first aircraft might be some proof of that.

Well Corey didn't get as unique as he could have, because yep, there was a twin fuselage Voisin of the same basic configuration as Corey's replica. It was called in the book by Pete Bowers, a "French Double Voisin of 1914". Apparently there was only one prototype built. Not a lot of information was provided, but they did have a picture. I might have figured out why the Voisin fellows didn't pursue it further. As I read about some of the earlier twin fuselage aircraft, I noticed the majority of them were slower than their single fuselage cousins. Can you imagine slowing down Corey's Voisin even more! Nothing intended but when Gary Nablo told me he like flying his N3 Pup with Corey and his Voisin because Gary was then no longer the slowest guy flying, that to me is a definition of slow, still enjoyable but slow. With all this uniqueness chit chat I've come up with a solution for what Corey can do with his Voisin. Corey, it is high time that we had a twin fuselage aircraft in the chapter and I can't think of a better starting spot than you and your Voisin. The way I see it, finish up those single fuselage plans and get on it. You can always come out with a plans change for the twin version later. My forward thinking simply amazes me at times!

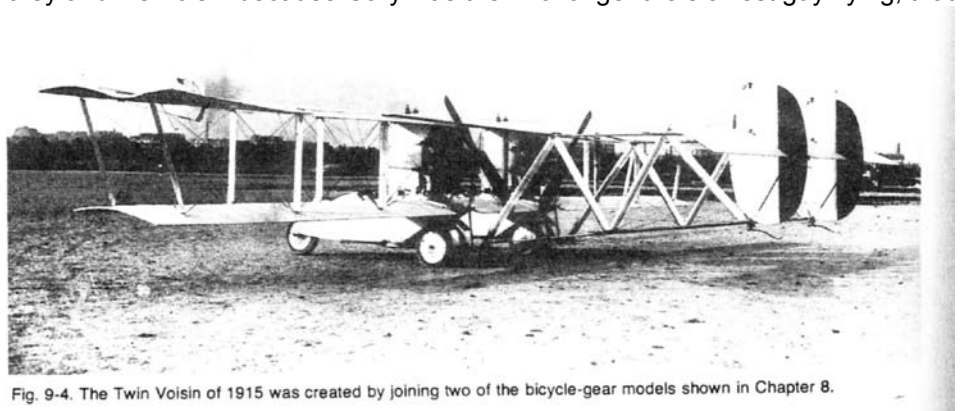


Fig. 9-4. The Twin Voisin of 1915 was created by joining two of the bicycle-gear models shown in Chapter 8.

MORE CHAPTER NEWS

Don Feld - Assembled the floor and the rudder pedals for his Rans S6ES.

Corey Butcher has his Voisin plans ready for sale after being sent out for a quality check. See his website for details...
<http://www.voisin35.com>

Paul Adams is nearing completion of the second wing for his Double Eagle. Next comes the center section. Lorin Miller and Dale Benskin picked up tubing for the Double Eagle fuselage at WagAero while they were their buying materials for their WagAero replica.

September 20 will be the date for the Marshalltown airport flight breakfast. More details to follow.

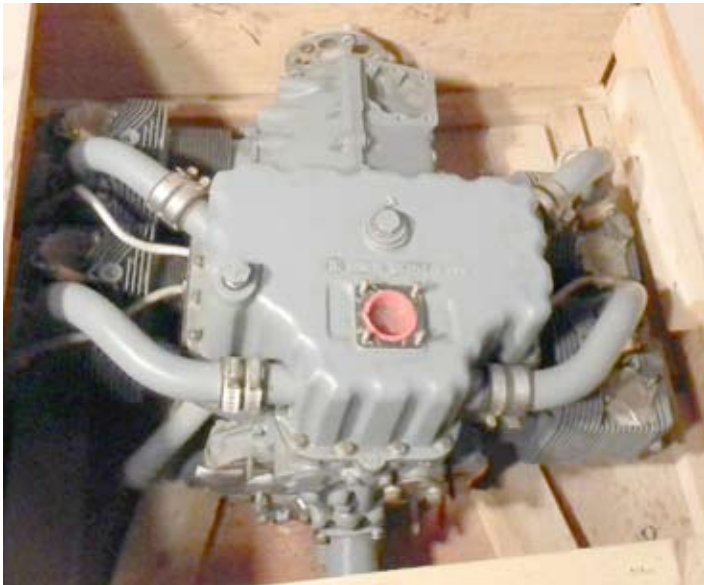
Mke Hargrave plans to fix up the Moni Motorglider which includes an engine run and check, a canopy repair and some fiber-glass work on the cowling.

Websites of the Month

http://www.redding.com/databases/wind_farm_map/2011/

FOR SALE

FOR SALE Lycoming O290G. Engine was zero timed in March of 1988 by Empire Aviation Service and has been pickled ever since. The original Bendix magnetos have been replaced by two new Slick magnetos and a new harness. Slick magneto SN's 90030012 and 90070236 both manufactured in 1990. Both magnetos and the harness have not been installed on the engine and have been stored in their original boxes in the owners home. Included is a Marvel Schebler MA3SPA carburetor, SN 3971436A, a Delco-Remy starter Model 11109657 SN 121031 and an alternator all of which were overhauled with the engine. Included is a new gasket sets for mounting the accessories, part numbers M3426, M3411 and M 3412. A check of the FAA AD listings showed no applicable AD's for any of the listed items. Price is \$4700 FOB Marshalltown, Iowa plus freight if applicable. Pictures are available on request via email. **Call Paul Adams at 641-753-6222 or email at dlpradams@gmail.com.**



Pickled, Zero time O-290 above and all accessories on the right