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EAA Chapter 569 Newsletter

Lincoln, NE



EAA 569 Contact Information

President

Tom Trumble
C: 402-540-6089
ttrumble@windstream.net
5545 N 17th St.
Lincoln, NE 68521

Vice President

Don Osborne
C: 402-300-0493
osbornewelding@yahoo.com
70225 Yale Ave
Fairbury, NE 68352

Secretary

Jerry Mulliken
C: 402-720-0125
jmulliken@speednet.com
118 S. 52nd St.
Omaha, NE 68132

Treasurer

Cristi Higgins
H: 402-217-9763
higginschristi@msn.com
PO Box 335
311 South West Ave.
Western, NE 68464

Tech Counselors

Erick Corbridge
402-499-1039
Corbe99@Yahoo.com

Tom Henry

H: 402-791-2116
W: 402-479-1540
TomHenry3@aol.com

Young Eagles Coordinator

Cristi Higgins
H: 402-217-9763
higginschristi@msn.com

Newsletter and Web Editor

Doug Volkmer
C: 402-890-2818
rv7doug@gmail.com
3720 Stockwell Circle
Lincoln, NE 68506



Meeting Announcement

Date: Tuesday, June 1st

Time: 6:00pm ← note the time

Place: Nebraska Innovation Studio

Address: 2021 Transformation Dr
Suite 1500 – Entrance B
Lincoln, NE 68508

Topic: Tour of Nebraska Innovation Studio. More info here:

<https://innovationstudio.unl.edu/>



President's Message Tom Trumble

Our meeting on May 4, 2021 was at Performance Aviation at the Lincoln Airport. Mark Gaffney presented an FAASteam safety program. Thanks so much to Mark for presenting and Performance for providing the venue.

Doug Volkmer was presented an award for the first flight of his recently completed RV-7. Congratulations to Doug for the years of building and Doug Roth – (first flight test pilot).

We have completed YE flights for: St. Patrick's 8th Grade, St. John's 8th grade, Waverly Middle School and David City Scouts. One more event is scheduled for May 22nd in conjunction with the Beatrice Airport Open House.

Janice Fix has [donated a leather jacket](#) that belonged to Jim. The jacket was used very little (as new). It is autographed by John

Glenn. We are raffling it at the September Picnic September 12 at 4:00pm which will be at Shoemakers airstrip and hosted by Holly (Shoemaker) and Jon Dixon. The drawing will be from the names on our current chapter membership roster. If you haven't paid dues for 2021 or are unsure, please check with Cristi or Jerry Mulliken. If you want a chance on the jacket our dues are \$20/yr.

Several discussions were had at the last business meeting held on May 19. Please read the minutes for the details.

Some bullet point items –

- Our next meeting is on June 1, 6:00pm at Nebraska Innovation Studio. The Program will be in introduction to the facility, and information on how to access and use the available resources. David Martin will be our host. Innovation Studio is located on the site of the old Nebraska State Fairgrounds (see meeting announcement). Generally located on the southwest corner of the complex. We can park in the large lot just to the north and the lot north of Transformation Drive.
- The July meeting will be at the Duncan Aviation Engine Shop. With a tour of the engine test cell facility provided by Lanny Renshaw. This is the same location of our traditional meeting room at 5000 NW 44th St. Lincoln, NE.
- August – No meeting
- September – Shoemaker's airstrip (NE40) hosted by Holly and Jon Dixon, Sunday Sep 12 @ 4:00pm.
- The next business meeting will be a Zoom meeting, Wednesday June 16 @ 7:00pm.

Building the Engine

By Harold Bickford

With the Bolkow air-frame largely complete the matter of building up the engine became a factor in the process of building. At least that was our thinking in the latter part of 2019. Herewith is a description of some of our adventure and thinking in Building an Engine.

After the Zenith Open House in September of 2019, we sent some Corvair engine parts and a core with William Wynne of FlyCorvair to his air park facility in Florida near Jacksonville. We chose this path because any missing parts needed would be readily available and for the opportunity to thoroughly test the engine. Our planned time was March of 2020; decent flying weather out of Nebraska being a consideration along with our schedule. Of course, that was also the time that Covid 19 hit along with the ensuing lock downs and restrictions. Scratch 2020 for lots of activities.

Fast forward to April 2021. Credit for last year's canceled flights, check. Engine awaiting build-up, check. Schedule clear, check. All systems are go, we are ready for launch. So off Edi and I went.

Upon arrival at William's, we got settled in and set up our schedule for the five days we planned to be in Florida. The goal was to make the engine for the Bolkow flight ready. In this case we were looking at changing cylinder heads, thoroughly checking and verifying internals of a partially built-up engine, adding

new fittings, reassembly and test running. If one has done a couple of these Corvair conversions the labor work can be done in a day. The test running could be accomplished on a second day.

Edi and I spent a couple days on the learning curve. It is one thing to read about procedures; another to actually perform them. Yes, Edi turned the wrenches too! As an example, torquing the cylinder heads is done in three steps with a particular pattern of tightening. The rationale behind this is that between cold and hot the cylinder head studs stretch .007 of an inch along with thermal expansion of the engine parts. The heads must stay firmly attached, thus the sequence and steps of torquing the cylinder heads assure this. It is not a hard process to learn yet reading and doing together ensure competency. And yes, it does vary slightly from the procedure in the Corvair engine shop manual as aircraft use is not automotive use.

A further example of this aircraft vs. automotive approach shows up in setting ignition timing. For flight use the timing is set to 28 degrees before top dead center. This provides enough spark advance for power and also helps to prevent detonation, especially at full power settings, which can be catastrophic in a flight engine. Compare that number with a Continental or Lycoming; very similar. Additionally, forged pistons are used in flight engines rather than the cast pistons used in cars as forged pistons can survive detonation. Of course you're going to land if that happens but the engine will likely continue running.

Fast forward to test running. Using an instrumented test rig allows a full check of the power band and an opportunity to troubleshoot any issues. Our first run showed that these engines do start and run within two seconds on the starter. After thirty minutes the camshaft (not a stock item) is broken in and power runs of the engine can commence. The testing is done with a 62 inch low pitch test prop. This is used to allow any engine to run freely up past the power peak so the full range of engine speed can be had.

In our case the initial runs indicated a slight rough running. This was diagnosed as a rocker arm slightly misadjusted and resulting in effectively running on five cylinders as a valve was not fully seating. Pulling the valve cover and isolating the rocker and readjusting resulted in a positive fix. Thereafter the engine ran smoothly and turned past the power peak to 3470 rpm. Of note is that now the engine is set for its operational life which should be in excess of 1500 hours based on operational experience of other users. Even at that point a top overhaul would be the norm. In any case rather than a TBO requirement we are looking at ongoing condition. 25 hour oil changes, checking/changing the oil filter and oil analysis are the key aspects here along with normal condition inspections. The recommended oil is Shell Rotella, 20/50.

As to the choice of an engine it is partly personal preference. In the case of E-AB aircraft we all have

(continued on page 3)

particular choices. Some are plans built, others kit built. Some are fast, some slow and very much a reflection of our desires, perceptions or mission planning. In the matter of engines part of the equation is whether one wants to build an engine. For the Bolkow an O-200 would be a logical choice. It turns out the Corvair weighs the same and has equal power. The key is to understand how to properly set up the engine and follow the norm of what has been proven to work. Operate outside of that and problems will occur as is the case with any engine. A key consideration is that with the Corvair conversion we know the engine inside and out as well as how and why it all works. The builder is

the constructor of the air frame, why not build the engine as well?

Though nominally 100hp, the Corvair on the dyno has been measured at 105hp for the 169 cubic inch version (.060 overbore). The 3 liter version (92mm cylinders) develops 110 hp and the 201 cubic inch version (3.25 inch stroker

crank and 92mm bore) 120hp with greater torque in the mid-range. Power peaks are around 3200rpm while the normal operating range is 2800-2900rpm. The camshaft is designed to develop peak torque at the normal rpm range. A commonly used propeller for the Corvair is a



Harold with his running Corvair engine.

Warp Drive composite at 66”-68” diameter.

So now we have a flight ready engine for the Bolkow which will be finished on Tuesday. Or it could be used for the Pietenpol which will be finished on Wednesday. One is fast(er), one is slow(er) but either way we have an engine! (And enough parts and pieces

Waiting for Santa in May

By Tom Winter

“Tommy!”

I’m coming, Mom!”

“So’s Christmas!”

Christmas in childhood was always forever away, though one knew it would get here some day, and “So’s Christmas!” was the saying when anything was not approaching fast enough. This whole month has been me waiting for Christmas. And here, a day after our editor wants newsletter copy, I’m expecting Santa any minute now! Why? Here in the month of May?

Why? The Bluebird of Happiness is sitting forlorn in the hangar, waiting on a back-ordered part.

It was the end of April, and the scariest mag check ever. I’m used to a bigger-than-normal drop in RPM — ages ago Jeff Clausen told me “Nine times out of ten it’s plug fouling.” So. You rev and you lean for a moment or two and you’re good to go. But not this time! The engine shook! The shake called to mind a wet dog!

Scrubbed the flight and wired Paladin (Alan Weigle). Paladin soon checked out The Bluebird of Happiness and reported “there’s nothing left of the lead contact at the top #1 cylinder.”

Thus instructed, I ordered a shielded ignition harness. The AS said it was out of stock until May 5. When I placed the order, they said May 14. It has shipped and should arrive today, May 22.

Life has been very different for me for all of May so far: in retirement, I make the “Shall I go fly today?” decision every day. Is the weather good enough? What about the wind? If it is a beautiful day, I feel almost obliged to escape to the airport and fly somewhere, and then more time is spent deciding where, and what to do when I get there.

For three weeks, my life has been simplified: No decision to make. That has not been a welcome liberation. I need to fly. As the song goes in South Pacific (There is Nothing Like a Dame) “There’s not a thing that’s wrong with any man here, that wouldn’t be cured by putting him near” — his Cessna! I’m an addict going cold turkey. And as I send this off, I’m still waiting...



Harold Bickford
President, IAC/MAC 80

When you receive the newsletter we will be rapidly approaching our contest, the Western Regional Aerobatic Championship at Seward (KSWT) Nebraska. The 2021 dates are June 24-27. The event starts with arrivals, sign-up of competitors and set up for the event on Thursday June 24th. Friday the 25th at noon and through Saturday the 26th is the competition with Sunday as a follow up/rain day along with departures.

Saturday the 26th is also National Aerobatics Day so this makes for an excellent opportunity to highlight aerobatic flying for both competition and fun. As well aerobatic flight serves to instill confidence in flying by reinforcing the skill-sets needed to both avoid and exploit upset maneuvers dependent on aircraft capability and pilot skill. It is all about exploring that three-dimensional arena we call flying! This could open up new vistas to you that might not have been considered.

Specific to the contest we always welcome volunteers to help with the various parts of putting on a contest. This can involve helping with scoring, tabulating, physically running score sheets to the scoring station; more than one competitor started out this way. Similarly competitors often help with the various ground functions when not flying.

Why not give the event a try,? Call me at 402-274-7530, text or voice. We can find a place for you!

Minutes of the Club Meeting

The May 19, 2021 EAA 569 board meeting was called to order at 1902 hours by President Tom Trumble.

Attending remotely were Doug Volkmer, Jerry Mulliken, Harold and Edith Bickford, Cristi Higgins, Lori Oliveros, Dennis Crispin and Wayne Woltd.

President Trumble reported that the EAA Ford Trimotor could visit Lincoln next spring if a hangar can be found. Silverhawk and Duncan have suitable hangars if Tom can persuade them to help.

Harold moved, Dennis seconded a motion to approve the minutes of the previous board meeting. Motion carried.

Doug reported that Butch Lottman has posted an update to the Builders Corner on his Zenith CH701 project. He may be able to demonstrate STOL at the Crete breakfast soon. Doug is transitioning to flight in his new RV-7 with the help of Doug Roth.

Treasurer Cristi reported \$1524.28 in the breakfast account, and \$2935.11 in the general account. Breakfast donations range from \$200 to \$500 per event. Cristi stated that new chairs are needed. Tom encouraged her to submit a proposal.

Young Eagles Coordinator Cristi reported on the preparations for the upcoming Beatrice event. Banner

has been hung, and the public is invited. There are provisions for Flying Start persons. North Star High School in Lincoln has started an aviation program.

Midwest Aerobatics will have a play day June 12 at 9 AM in Seward. The annual competition will be held June 24-27 in Seward. Volunteers are needed.

Don Osborne has offered to work on removing chapter property from Dean Hoy's hangar. He will need help.

EAA has sent an RSVP for the memorial wall plaque ceremony August 1st at Oshkosh. Tom responded that 4 will attend.

The next member meeting will be June 1 at Innovation Campus in Lincoln. The July meeting will be at the Duncan Engine shop.

The EAA 569 picnic will be on September 12th, 4pm at the Shoemaker airstrip. Tom will offer an advance party to prepare.

Dennis moved, Harold seconded a motion to adjourn at 1936 hours.

Respectfully submitted,
 Jerry Mulliken Secretary

For Sale

- 25% share in a beautiful RV-9A
 - [IFR equipped including ILS EFIS with synthetic vision and highway in the sky](#)
 - 6 GPH cruise at 150MPH
 - And more! \$18,500

Contact Tom Henry. His contact information is on page 1.

Young Eagles Update

By Cristi Higgins

We did two Young Eagle events in May. We went to Seward to fly St. John's 8th graders on the 11th and our annual rally in Beatrice on the 22nd. So we added another 80 kids flown by our Chapter 569! Great year so far!

We always have to deal with weather and this last one had a pocket of ok weather in Beatrice but most all our pilots were holding in various locations. Except new to the program is Corina Lottman with her little Cessna 150. Planned a nice briefing and some advice from the regulars for her but instead just threw her right in alone. As a flight instructor this was easy for her and she rocked out a busy day for her first rally.

Jeff Engles was there to help out and we really appreciate that along with Bill Stelling providing an airplane on the spot! Those two are part of The Flying Conestoga's along with Diana Smith and her husband Jim Smith. They all are a tremendous help and the staff at Beatrice airport makes this one easy every year. Thanks for providing food Diana!

Seward airport hosted our St. John's event and what a perfect place for 7 aircraft to fly the big group. Jerry Ebke joined us there for his first Young Eagle experience! Long time member but now retired, we shall see him more. So, if you are keeping track like I am, ok that's my job, but we have 3 NEW Young Eagle pilots! That's amazing and a far cry from me begging and bribing to get kids a ride! Tom Trumble, Keal Bockelman, George Carr,



Corina Lottman and an excited passenger!

Jerry Clinch and Don Osborne flew for us in May along with Jerry Mulliken. I want everyone to high five Jerry Mulliken when you see him! He flew IFR from Fremont to get to our little pocket of VFR in Beatrice! He was a very happy sight for the waiting crowd and the kids cheered when we heard his radio call as he was approaching! Wow Jerry thank you!!!

Soon to arrive was Keal Bockelman and Jerry Ebke as well and all waiting kids flew! Patience is probably what we teach most doing these. We had press in Beatrice and she asked how I know which kids have flown and which are waiting. I told her very easily because an airplane ride is better than Grandma's sugar and they'll be wound up like that for days talking about their flight!

Thank you everyone that helped especially our Paige Higgins for really taking control of the dreaded paperwork!! No more rallying until Fall now but I can bridge kids and pilots whenever so if you have a Young Eagle candidate call me!



Jerry Ebke along with his Young Eagle.

And finally ...

Mark Novak's T-6



Mark Novak's T-6 on the ramp at Crete (KCEK). "Rugged", "sturdy", "tough", "easy to maintain" were some of the words [an Air & Space column](#) used to describe the T-6. Around 17,000 were built. According to the North American Trainer Association, at least 500 T-6s are still flying today in the U.S.

John Cox
2279 County Road 2425
DeWitt, Nebraska 68541-2518

Events

Jun-Jul, EAA Webinars. [Click here for more information.](#)

Jun 19-20, Nebraska State Fly-in, Hastings, NE (KHSI) [Click here for more information.](#)

Jun 24-27, Midwest Aerobatic Championship, Seward, NE (KSWT). If you would like to volunteer, contact Harold Bickford @ 402-274-7530.

Jul 26 – Aug 1, AirVenture, Oshkosh, WI
<http://www.airventure.org/>