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# News!

## October 2021

On the Web: [www.EAA80.org](http://www.EAA80.org)

Facebook: [www.facebook.com/eaa80](https://www.facebook.com/eaa80)

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### President's Corner

By Bruce Mundie



Where did the Summer go?!? As usual, it was fast and furious. We had multiple fly outs, Young Eagle flights, build sessions at the Oak View Mall, and the Chapter fly-in picnic at Plattsmouth. Almost too much to keep up with! October also be full of activities, with the addition of cooler Fall weather!

Now that we have the Mall Facility, ABLE ACE, up and running, and under the management of Hal Johnson, we have moved toward the 10-year plan to build a permanent home for EAA 80. I have contacted a friend who is an architect and he offered the following rendering:



The rendering will be used for briefings to the Omaha Airport Authority to introduce our desire for a permanent home at Millard or

some other near-by airport. If you would like to participate in any aspect of this plan, just let me know!

Enjoy the Fall weather and come learn, build and fly with EAA 80!

Thanks and fly safe!  
Bruce

## EAA 80 Calendar of Events

Oct 11, Chapter meeting, Oracle, Dave Greer presenting  
Oct 16, Young Eagles, Millard  
Nov 8, Chapter meeting, location TBD (perhaps at the Mall)  
Dec 13, Chapter meeting, Election of Officers  
Jan 29, Christmas Party, Anthony's Steakhouse

## Young Eagles

Chapter 80 flew 27 Young Eagles in September. The last event is October 17 at Millard. If you can fly or work as ground crew, your help is always appreciated! Many hands make light work. Contact Scott Pridie @ pridie@sbcglobal.net for more information.

## Miscellaneous

The chapter received a donation of aircraft grade aluminum. After the materials are inventoried, more information will become available. Stay tuned.

  
Anthony's Steakhouse.

The Christmas Party has been booked for January 29 at

## EAA Chapter 80 Meeting Minutes September 2021

The chapter meeting was held on September 13<sup>th</sup> at Oracle Aviation and called to order at 7 PM by President Bruce Mundie.

**Guests and New Members:** None

**Meeting Minutes:** The August 2021 minutes were approved as written.

**Treasurer's Report:** Steve Farner's treasurer report was provided for publication in the next Chapter newsletter. The opening balance was \$17,137.03. Chapter receipts totaled \$75.00 (dues). Chapter expenses were \$5,113.88 (mall Aug rent, trailer tires, Oracle EAA scholarship, food/drink). The ending balance is \$12,098.15.

**Membership:** Bob Condrey reported 110 members (91 paid). Pictures are missing for 38 members, emails missing for two members, and EAA membership numbers missing for 21. Another Email List is available for those that want to be signed up on the Zenith build (contact Bob).

**Scholarship:** Mike Howard mentioned that Patrick Stolinski has returned to school and not flying at as great a pace as this summer. He has used approximately \$5,000 of the \$10,000 scholarship thus far but must pace himself as he cannot get a checkride until May 10<sup>th</sup> next year - after his next birthday.

**Tech Counselors:** Mike Howard made a formal presentation after the break.

**Young Eagles:** At STEM last month forty students had signed up but only ten were flown due to weather restrictions. At the EAA Plattsmouth picnic last week no YE's were flown due to weather. The next YE rally is this Saturday, September 19<sup>th</sup>.

**Tools:** No change.

### Builder Reports:

- Bill Haas has the canopy electrically working on his Berkut and is working other software issues on the plane.
- Ken Bahr is looking for someone to purchase the Sonex build he has. Contact Ken if interested.
- Greg Ross, RV12, has the engine and prop now. The avionics package has been confirmed and is in Wisconsin for assembly. He is working on the wheel pants.

- Nathan Andrick has taken delivery of his Kitfox kit and found a way to get the fuselage into the basement. He is considering a Rotax 912is for the engine package.
- Bob Gilbert, RV10, is using a “large” amount of sandpaper to finish off the upper cabin layup. He is also looking for ways to get the project off the cart to put it on its gear.

**Builder Meeting:** Bill Haas offered to have a meeting at his hangar for the Berkut. It was suggested, and agreed, to allow fly-ins to his hangar at Eppley on October 23<sup>rd</sup>. Bruce Mundie is hangared nearby and agreed to co-host.

**Chapter Build:** Mike Howard reported that the Zenith project is off to a slow start with more help needed. He asked for specific help to draw up the electrical schematic. He found a very good buy on a Dynon HDX avionics system for the panel (25% off list). Bruce Mundie and Bill Haas offered to help with the schematic design. Build sessions are Tuesdays and Thursdays from 1-5pm. The project is expected to be completed in less than two years.

**Fly-outs:** Mike Howard had fly outs to Greenfield Iowa and Mankato MN. The Mankato fly out was the local EAA chapter with over 100 planes attending. Next up is Martin Field near Sioux City this Sunday.

**Social Coordinator:** Ed Kirker thanked all those that attended the EAA picnic last Sunday, especially Kevin Faris who hosted at his hangar and did a lot of the upfront setup and tear down work. A lot of

the chapter equipment for this event is spread out between Millard, Plattsmouth and now the Oak View mall. Ed was asking whether there should be some consolidation of our resources. TW suggested a small enclosed trailer for transporting this equipment (table/chairs, etc.).

**VP:** Dave Greer was to present this month but could not due to illness. Mike Howard stepped up and made the presentation tonight. Hope to get Dave next month.

**PRESIDENT:**

- Bruce highlighted the mall set up is going well with the Zenith project in work, a small library, a simulator set up, and more. Hogue Howie is working on an app to use for scheduling this facility. Any use of the mall space must be accompanied by an EAA member in order for our national insurance rider to be valid.
- STEM day on September 4<sup>th</sup> was a lot of work and went well, with lots of planes flown in for support.
- Bruce is less busy at work and will spend more time on the 10 year plan for proposing a chapter hangar.

**Calendar:**

Sept 17, YE flights, Millard  
 Oct 11, Chapter meeting, Oracle, Dave Greer presenting  
 Nov 8, Chapter meeting, location TBD (perhaps at the Mall)  
 Dec 13, Chapter meeting, Election of Officers  
 Jan 29, Christmas Party, Anthony's Steakhouse - *[Added for newsletter]*

**Old Business:** See president notes



<https://www.centralcylinder.com/>

**New Business:** No new business

**Announcements:** None

**Raffle Drawing:** No raffle drawing

**Presentation:** On short notice Mike Howard stood in for Dave Greer who was sick for the meeting. Mike gave a presentation on gasoline properties, and the differences and similarities of gasoline for automobiles versus AVGAS. A few nuggets of note:

- AVGAS is only 1/3 of 1% of all gas made worldwide – hence the high cost
- AVGAS cannot flow through the pipelines due to the lead content, must be trucked (>\$).
- AVGAS octane rating is calculated by the Motor method, which equates to a higher number than for auto gas (e.g. 91 Octane Auto is equivalent to 86 Octane AVGAS)
- Mike used auto gas in his RV6 or about 16 years with no issues (8.5:1 compression engine). The aircraft data plate should display the engine's compression rating.
- Ethanol absorbs water. Water and alcohol remain in solution in gasoline and provided the temperature does not drop. If there is a significant % ethanol and it absorbs an equal volume of water the water/alcohol will drop out of solution and the combination will not burn.

**Next Meeting:** The next meeting is October 11<sup>th</sup> at Millard Oracle Aviation, at 7pm.

## Technical Advisor

### Koehler's Korner



This month let's look at starter relays. You will probably have two relays (or solenoids or contactors). These devices allow remote control of your electrical system at

a location that is convenient and safer than bringing the associated big cables to the cockpit.

The simplest of these is the Master Relay, which connects the battery to the power distribution buss and the starter system. By tradition, one turns on a master relay by grounding it. On the other hand, the starter relay is activated by sending voltage to it. The starter motor on most aircraft engines pulls about 150 amps of current. If you were to use a manual switch instead of a relay, you would have something on the instrument panel that would look like it came out of a Frankenstein movie, not to mention that you would have to bring those big cables to the cockpit and back to the starter (weight).

The starter relay is lighter, safer, and easier to install than a manual switch. On most certificated aircraft, the starter relay will look something like the one pictured below. Note that there are two large lugs for the cable that carries the power to the starter, typically American Wire Gage (AWG) #2, about the size of one of your fingers. The two smaller lugs (usually 10-32 thread) are for the activation wiring. We typically use something like AWG #20 wire to control or activate the relay.



On a typical installation, power will be taken off the "gages" circuit breaker via an intermittent switch (push button or keyed intermittent) to one of the small lugs. The other lug is tied to ground, and as one can see in the picture above, it comes with a ground wire already supplied that will ground the relay via one of the mount bolts. This will work fine on a metal firewall, but on a composite aircraft, additional grounding may be required. This picture is of a Lamar Starter Relay and retails for about \$80.

On the other hand, for experimental aircraft, Spruce offers a much less expensive alternative starter relay. It is commonly called



a Prestolite Relay and comes from the automotive world. It retails for about \$13.50! At a glance, it looks like a PMA'd relay for a certificated aircraft, but it is wired a bit differently. The big lugs are still for the big starter cables, but the small posts are different. If you look closely, molded into the dark brown body of the relay there is an "S" next to the small lug on the right in the picture below. The other lug has molded next to the letter "I".

The "S" terminal is where you connect the power wire from your starter switch. The other side of the relay coil is internally grounded to the case of the relay. It's essential that the relay be mounted to metallic ground structure of the aircraft, or overtly grounded to battery ground on a composite aircraft. The other terminal, the "I" terminal is used on automotive applications to provide 12 volts directly to the coil. It's not used on our magneto ignition systems. Be sure it is insulated so that it doesn't short to ground and burn your starter circuit.

I've begun to see a lot of these inexpensive automotive starters recently on experimental and certificated aircraft. Last one was on a C182 where it was wired incorrectly! Of course, it's legal to use this relay on your homebuilt, but be sure to wire it correctly. Last one I saw had the power wire from the starter connected to the "I" terminal, and, of course, did not work.

One last thing on relays, they should be mounted with the big, or square, end down or sideways. Do not mount it with the big lugs at the top. Inside there is a soft iron core with the

on the other. The specification on most call for the spring to be able to resist up to 5 Gs of force before the spring collapses and the relay activates. I have seen some homebuilt kits that incorrectly show the relay mounted with the big end up.

Even if you do not plan to do acrobatics, it is possible to get 5+Gs in turbulence or during a hard landing. If you engage the starter under



these circumstances, you will probably damage the starter and ring gear on a Lycoming, and on a Continental, you may internally FOD the engine, leading to an early overhaul! Mount big end down or horizontally. I hope this little discussion of relays, and starter relays in particular is helpful to you. For more information, I suggest you look into attending one of the EAA SportAir Electricity Workshops. They should start again this fall.

Keep building, flying and maintaining.

Dick 09/2021

Re-published with permission of Dick Koehler, EAA 186

EAA 80 MONTHLY TREASURER REPORT  
Aug-21

<u>Checking</u>	
Opening Balance	\$12,098.15
<b>DEPOSITS</b>	
No Deposits	
<b>EXPENSES</b>	
July/September Rent ABLE/ACE	\$300.00
Food- Grand Opening	\$400.33
Postage	\$22.00
Signage- ABLE/ACE	\$155.15
EAA Liability Insurance	\$108.00
Donation- Jim and Bruce	-\$200.00
Total Expenses	<b>\$785.48</b>
<b>Ending Balance</b>	<b><u>\$11,312.67</u></b>

<u>Asset Accounting</u>					
<u>Date</u>	<u>Item</u>	<u>Value</u>	<u>Date</u>	<u>Item</u>	<u>Value</u>
6/17/2020	T-Shirts	\$125.00	5/22/2020	Zenith 750 Proj.	TBD
7/13/2020		\$100.00			
8/10/2020		<u>\$25.00</u>			
<b>Total</b>		<b>\$250.00</b>			

contact plate on one end, and a small spring

# Photos

## STEM Day photos and PIREPS article:

<https://jetlinx.photoshelter.com/galleries/C0000ltTiFyrJvV4/G0000jd1JmU9o7Pg/2021-Stemaha>

<https://dot.nebraska.gov/media/115739/august-september-2021-pireps.pdf>



Left: Pawnee City, Nebraska fly-in breakfast.



Right and below: a few Young Eagles from September 25.



# Upcoming Webinars

## [Rotax 912 Engine Installation & Operational Tips](#)

Homebuilders Webinar Series  
10/5/21, 7 p.m. CDT  
Phil Lockwood

## [Blowout!](#)

Qualifies for FAA WINGS and AMT credit.  
10/6/21, 7 p.m. CDT  
Mike Busch

## [The Grumman Duck](#)

Museum Webinar Series  
10/12/21, 7 p.m. CDT  
Chris Henry and Ben Page

## [Flying With Broken Flight Controls](#)

Qualifies for FAA WINGS credit.  
10/13/21, 7 p.m. CDT  
Gordon Penner

## [AeroEducate – EAA's Newest Youth Education Initiative For Chapters](#)

10/14/21, 7 p.m. CDT  
Justin Payton and John Egan

## [Preventing VFR Into IMC: Using Your Personal Weather Minimums](#)

Qualifies for FAA WINGS credit.  
10/20/21, 7 p.m. CDT  
Dr. Scott Dennstaedt

## [A Clue \(or Two\) For Your Next Flight Review](#)

Qualifies for FAA WINGS credit.  
10/27/21, 7 p.m. CDT  
Rod Machado

## [Building a Canard Aircraft](#)

Homebuilders Webinar Series  
11/2/21, 7 p.m. CST  
Mike Beasley

## [How Hot is Too Hot?](#)

Qualifies for FAA WINGS and AMT credit.  
11/3/21, 7 p.m. CST  
Mike Busch

## [The Autogyro](#)

Museum Webinar Series  
11/9/21, 7 p.m. CST  
Chris Henry and Ben Page

## [Where's My Oil Pressure? A Case of Maintenance-Induced Failure](#)

Qualifies for FAA WINGS and AMT credit.  
11/10/21, 7 p.m. CST  
Prof. H. Paul Shuch

## [Bravo Buster: Adventures In and Around the National Airspace System](#)

Qualifies for FAA WINGS credit.  
11/17/21, 7 p.m. CST  
Laura Herrmann

## [The Truth About Stalls](#)

Qualifies for FAA WINGS credit.  
12/8/21, 7 p.m. CST  
Tom Turner

## [The History of EAA's B-25](#)

Museum Webinar Series  
12/14/21, 7 p.m. CST  
Chris Henry and Ben Page

These are the current webinars listed on [eaa.org](http://eaa.org). Please check the site at: [www.eaa.org/en/eaa/news-and-publications/eaa-webinars](http://www.eaa.org/en/eaa/news-and-publications/eaa-webinars) to see if there are other webinars available.

*EAA Chapter 80 is classified as a Non-Profit Charitable Organization per section 501(c)3 of the Internal Revenue Code. As a result, we are eligible to receive tax-deductible contributions in accordance with Code section 170.*

*Your contributions will go towards such things as:*

- ✓ Aviation scholarships
- ✓ Scholarships to send kids to EAA's Air Academy in Oshkosh, Wisconsin
- ✓ Helping promote Young Eagles events and rallies for the community
- ✓ Many other events that promote aviation in the Eastern Nebraska and Western Iowa region.

*EAA 80 is a 100% volunteer organization, there are no paid members to the staff. Our only funding comes from chapter dues and occasional fund raising.*

*Please visit our website [eaa80.org](http://eaa80.org) or contact an office to inquire about making a tax free donation.*



Mail checks to:  
 Bob Condrey  
 1105 Kountze Memorial Dr.  
 Bellevue, NE 68005

## EAA CHAPTER 80 2021 APPLICATION FORM

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CONTACT INFORMATION			
NAME		EAA NUMBER	
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E-MAIL ADDRESS			
PROFESSION		RETIRED	

MEMBERSHIP PROFILE							
OWNED ACFT		N-NUMBER					
ACFT BUILDER		TYPE:		COMPLETE %			
PILOT LICENSE							
AIRPORT BASE		HANGAR #					
EMAIL GROUPS	FLY-OUT		BUILDERS		YOUNG EAGLES		
PUBLISH INFORMATION IN CHAPTER DIRECTORY			HAVE A NAME TAG		YEAR JOINED CHAPTER 80		
YOUNG EAGLE VOLUNTEER		YOUTH PROTECTION TRAINING CURRENT					

OFFICE USE: (DUES \$25 PER YEAR)									
2021		2022		2023		2024		2025	
PAYMENT	TYPE		AMOUNT		DATE				

Last updated: 1/3/2020