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# News!

## November 2020

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

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

Twitter: [https://twitter.com/eaa\\_80](https://twitter.com/eaa_80)

### Notes from the President

By Bruce Mundie



Politics! I'm pretty sure I'll be ok if I don't see another attack advertisement or a Facebook rant. Seriously, I hope you took time to cast your vote. I sincerely believe voting is one of our top civic duties.

Speaking of politics, we will be having chapter elections soon. If you are interested in taking a leadership position in the chapter, please let me or Bob Dyer know. It does not even need to be a position in 2021, I am willing to discuss 2022 or later for leadership positions in EAA 80.

With the increase in COVID-19 cases in the mid-west, I would like to poll the chapter on the status of our annual Christmas / New Year's party. With the help on Anthony's Steak House, I am confident that we can host a party that is relative safe and still be fun to attend. The best test might be to see if we have enough members willing to attend with the current level of risk.

It is scholarship season and Mike Howard is busy working with UNO lining up potential students. EAA national will not be able to match funding this year and we are just starting work on EAA Ray Aviation flying scholarship funding. Our plan is to roll out the

Ray Scholarship plan in order to provide applications before the 2021 deadline.

I want to personally thank all of those who helped run chapter business while I was in Arlington, Texas for the past month. EAA 80 is a team sport, and I left the chapter in very capable hands!

Bruce

## EAA 80 Calendar of Events

November 9  
Meeting (and pizza!) at Central Cylinder  
6315 Lindbergh Drive Please  
Please RSVP to Bruce @ [reccefaip@aol.com](mailto:reccefaip@aol.com)

5:30 start, 6:00 **PIZZA!**

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.

## EAA Chapter 80 Meeting Minutes October 2020

The chapter meeting was held on October 15<sup>th</sup> at Oracle Aviation. The meeting was called to order at 7 PM by Vice-President Bob Dyer.

One recently new member, Michael Stahl was introduced. Michael has 3500hrs, is a KC135 boom operator at Offutt, and is building an RV8.

**Meeting Minutes:** The September 2020 minutes were approved.

**Treasurer's Report:** Bob Cartwright's treasurer report was presented for October. The opening balance was \$14,188.81. Chapter receipts totaled \$225.00 (dues). Expenses were \$484.77 (picnic and borescope). The ending balance is \$13,929.04. The report was approved.

**Membership:** Bob Condrey provided a slide listing 97 total members, with dues paid by all but one for 2020. Those that were contacted and did not pay their dues for this year were removed from the membership. Thirty-three members have not had their pictures taken for the directory, sixteen have not provided their EAA membership numbers, and three have not provided their email addresses.

**Tech Counselors:** Mike Howard mentioned the purchase of the borescope for the chapter. EAA National has a program to reimburse certain purchased tools at 30% (which this qualified for) and entered us for a chance to win a TIG welder.

**Young Eagles:** Scott Pridie indicated our last YE rally will be this weekend, and will likely be the largest this year at fourteen. Starts at 8:30am at KMLE and he's looking for volunteers.

**Tools:** Jerry Ronk indicated no change. The status of the trailer is that Eric is fixing it, but no one was sure of the status.

**Builder Reports:**

- Brad Safford's Zenith CH750 is completed and awaiting the FAA. He has a (heavier than expected) Viking Honda 130 engine installed.
- Jerry Ronk reported that Ken Shoemaker is building an RV-7A that has the panel installed, wiring is in work, and the wings have been on and off.
- Reportedly the FAA is doing inspections again (post Covid).
- Jim Beyer reported that the Aviation Nation RV-12 has the panel in and powered up, and the acceptance checklist from Mike Howard has started in preparation for a flight perhaps by the beginning of next year.

**Builder Meeting:** The next builders meeting is TBD.

**Chapter Build:** No status on the EAA80's Zenith CH750 project.

**Fly-outs:** Mike Howard reported there were three flyouts: Auburn IA on Oct 7<sup>th</sup> with 7 aircraft and 8 people attending; Anita IA this Saturday; and in the future Stearman Field KS in late October or early November (tentative Oct 31<sup>st</sup>).

**Social Coordinator:** No status reported.

**VP:** Bob Dyer reported that Don Bacon is speaking tonight.

**Calendar:**

- YE, Millard, Oct 17th
- EAA80 Meetings:
  - Monday, Nov 9<sup>th</sup> Central Cylinder at 5:30, pizza at 6pm
  - Dec 14<sup>th</sup>, Millard, Oracle Aviation, 7pm
- Holiday party, January TBD, Anthony's Steak House

**Old Business:**

- Tom Wieduwilt has the old PA system and has not gotten rid of it yet.
- Bob Condrey is still seeking the chapter desire for a builders clinic.

**New Business:** The officer election will be held at the December meeting.

**Announcements:**

- Jim Beyer received two kids STEM kits from EAA Headquarters. Each kit includes a dozen projects with slide shows to interest the youth (8-17 years old) to get involved in aviation. Some items in the kit include a wing rib building project, an airplane controls workbook, EAA name tags to assemble, and a Sporty's Sectional Charts workbook. Jim is looking for mentors to help run this program.
- Brent Smith has sold his Cirrus and has a contract on an RV6 (however, he does not have a tailwheel endorsement).
- Jim Beyer spoke briefly on the EAA IMC club that has meetings each month on the 2<sup>nd</sup> Thursday. There is also a VMC club.

**Raffle Drawing:** No raffle this month.

**Presentation:** Don Bacon provided a brief summary of Congressional projects affecting Nebraska and the nation. He then relayed several big challenges he faced while in the Air Force as a young Captain, a Combat Squadron Commander of an EC-130 unit in Iraq, and as a 1-star General. He was a Commander five times during his career, and apparently didn't care for working at the Pentagon. There was a lively Q&A afterwards covering such subjects as: chances for a tower at KMLE, how the airlines are being affected by Covid and the resulting status of the Civilian Air Reserve fleet, and his leadership thoughts.

**Next Meeting:** The next meeting is Monday, November 9<sup>th</sup>, 5:30pm, at Central Cylinder (pizza at 6pm). *[Please RSVP for pizza to Bruce @ reccefaip@aol.com]*

## Technical Advisor

### Koehler's Korner

I have been back in the DC area the last week of September to do some more annual inspections. One was on a PA-28-161 Warrior with a 160 horsepower Lycoming O-320 engine, which is probably the most common engine on homebuilts. Part of all inspections is to check the tension on the generator/alternator belt, which goes around the starter ring gear plate just behind the propeller and

down to the gen/alt below and to the right of the prop. On the opposite side of the engine below and to the left is the starter and both of these accessories are tied together with a thick steel bar strap to stabilize them. At a glance, it appears that Lycoming over-engineered this area, but there is a reason for all the metal used.

Let's step back and look at what is really going on with the belt driven alternator or generator. I am going to use the term "alternator" from now on, since that is what most of us have. If you have not converted the generator to an alternator, I highly recommend you do for the increased reliability. Anyway, on a four cylinder four-stroke engine like our Lycomings, a cylinder fires every 180° of crankshaft rotation, or put another way, only twice per full rotation. When that cylinder fires the piston is driven down with tremendous force (in this case, 40+ horsepower) and this energy is transferred to the crankshaft as a pulse of power that quickly peaks and dies off in less than 90° of shaft rotation. The crankshaft then transfers energy to the next cylinder in firing order to compress the fuel/air charge in that cylinder. So, the crankshaft is continually being hammered forward part of the time and being retarded the other half of the time. The propeller and rotating mass of the crank, cam and gear train tend to smooth out these pulses, but they are far from being eliminated. Your mags are subjected to this herky-jerky motion, but the relatively small rotating mass of the magnet and distributor system is designed to handle the loads. However, this is one of the reasons for the 500-hour magneto inspections we should all do. The much bigger rotating mass of an alternator is a more difficult engineering problem.

Lycoming chose to solve this rotational vibration problem by driving the alternator with a belt. The belt with its inherent ability to slightly stretch and slip actually absorbs a significant amount of the vibration before it gets to the alternator.

As an aside, Continental solves the problem with a belt, also, on some models, but also uses a special elastomeric transfer gear assembly when mounting a direct drive alternator to the engine gear train. These gears have a sleeve within a sleeve bonded

with a rubber elastomeric and are quite expensive. October 2020 EAA Chapter 186 Stick & Rudder Page 4 Web site: [www.eaa186.org](http://www.eaa186.org) Facebook: <https://www.facebook.com/eaa-186> Think in terms of \$1000 to \$1500 for an overhauled gear (\$3000 new) versus \$40 to \$80 for a new belt! Note also that a six-cylinder engine will smooth out the power pulses by having three per crankshaft rotation (each lighter for the same horsepower, and having some overlap). For an amazing demonstration of this, compare a Continental IO360 (six-cylinder engine) of about 210 horsepower to Lycoming IO-360 (four-cylinder engine) of about 200 horsepower. The difference is dramatic.

Back to the annual inspection on the Piper, I reached behind the cowl at the right engine cooling air inlet opening and grabbed the alternator belt. I have been doing this for years and have a calibrated qualitative feel for what tension should be about right. You can look up actual deflection angles in a maintenance manual, but for the average plane, you can just feel it. Well, in this case the belt was loose! We removed the lower cowl and found the whole alternator was loose in its mount. On this plane the alternator mounts with a long and large pivot bolt to a massive U-shaped bracket that mounts to the crankcase. The alternator was moving because the U-bracket was loose at the case. Also, the bracket that ties the pivot bolt to the starter to stiffen the structure was also loose. I looked closer and noted that the entire lug on the side of the starter was broken in two. Unfortunately, we failed to take pictures until after removing all the parts. The following photo shows the broken lug on the starter.



The bolt is a 5/16-18 drilled-head Lycoming

bolt costing about \$5 each. The two that mounted the U-bracket and one in the starter lug were all damaged, so besides needing a new starter we also needed three special bolts.

It is unclear to me whether this failure was started by the lug on the starter breaking and the resulting vibration loosened the U-bracket, or the other way around with the U-bracket coming loose and the resulting vibration breaking the lug on the starter.

To make a long story shorter let me wrap this up with the owner being able to purchase both a new starter and the bolts at the parts dealer at the airport and two hours later, we had replaced the defective parts and the plane was airworthy. Cost the owner about \$600, but we caught it before any other major damage occurred and all was fixable. This is a classic case of why we do annual inspections. Hope this story both amused and educated you a bit, and that knowledge will save you some money and frustration in the future.

Now, go out to your favorite bird and tug on its alternator belt (like every preflight)! Keep building, flying and maintaining. Dick

Re-published with permission of Dick Koehler, EAA 186

*From Oshkosh*

## **A Challenge to Members to Share the Gift of EAA**

By: David Leiting, EAA Lifetime 579157  
Vice President of EAA Chapter 252  
*EAA Membership Development Manager*

The past 10 months have flipped the world upside down for many of us, but they have also allowed us to spend more time focusing on our families and our passions. For all of us, the shared passion is aviation. It is what brought us together, and has been the one constant we can look to when the days get rough.

The flying club I am a member of shut down operations for 90 days as we evaluated how we could safely operate amongst the COVID-19 pandemic. It pained me to stay out of the cockpit for more than three months. This was

the first time since I passed my private pilot check ride that I was out of my 90-day currency! Additionally, my local EAA chapter put all of our events on hold. Although we were able to conduct virtual gatherings and board meetings, it wasn't the same as our usual in-person events.

This lack of aviation activity caused me to reflect on my passion for aviation, and remind myself how easy it is to take for granted the aviation opportunities afforded by EAA. Like many of you, much of what I use to fuel my passion for aviation has come from EAA. EAA AirVenture Oshkosh, my Young Eagles flight, the relationships built through my local chapters, and the educational opportunities. Without EAA, I am not quite sure where I would find myself on my aviation journey.



One of the great pillars of EAA is the opportunity to give back, and pass the torch to future members. Perhaps you have given a Young Eagles flight that led to a career aviator, or lent a helping hand to a friend building their own aircraft. There is also a great chance that you have benefited from the generosity of a fellow EAAer. It is the lifeblood of our organization!

We all remember our mentor who introduced us to aviation and are forever grateful for the gift they gave us. That mentor may still be a close friend of yours within your EAA chapter. EAA is now asking you to join us in helping to preserve the legacy of EAA Founder Paul Poberezny, and of all our past and current members, by gifting an EAA membership to someone you feel will continue to carry on EAA's mission within The Spirit of Aviation.

It is EAA members such as yourself that can bring aboard the next generation of members. Your involvement in your local chapter is even a greater reason to introduce them to EAA. Chapter members are the most engaged and passionate members you'll find within EAA. There is no better group than a local chapter to welcome a newcomer to EAA.

**Once you identify whom you'd like to sponsor, simply visit: [www.EAA.org/Legacy](http://www.EAA.org/Legacy) to register EAA's newest member.** After you gift this membership, invite the individual to your chapter, and show them the opportunities and community that exist in their own backyard. By gifting a membership and becoming a Legacy sponsor, you will receive a Legacy sponsor pin and patch.

EAA cannot thank you enough for your continued support of the organization, and especially of your local chapter. Chapters are the lifeblood of EAA, and without them the impact of EAA would be fraction of what it is today. Enjoy your holiday season, and we hope to see you in Oshkosh this July!

## Side Notes

Scott Pridie reported 13 Young Eagles were flown at the rally on October 17.

The chapter trailer is reported to be repaired with a shiny new ball receiver installed.

## Photos



Don Bacon fielding questions during the lively Q & A. See more detail in the October meeting minutes.



Four aircraft at Beaumont, Kansas that made it to one of the 3 fly outs the chapter has had in the last month.

## Upcoming Webinars

### [Your Engine's Lifeblood](#)

11/4/20, 7 p.m. CST

**Qualifies for FAA WINGS and AMT credit.**

Mike Busch

### [The International Aerobatic Club Turns 50 Years Old and It's a Golden Birthday!](#)

11/10/20, 7 p.m. CST

Mike Heuer and Lorrie Penner

### [True or Magnetic?](#)

11/11/20, 7 p.m. CST

**Qualifies for FAA WINGS credit.**

Prof. H. Paul Shuch

### [Cockpit Power Management](#)

11/18/20, 7 p.m. CST

Phil Lightstone

### [RANS S-21 Outbound, All Metal, All Purpose](#)

HOMEBUILDERS WEBINAR SERIES

12/1/20, 7 p.m. CS

Randy Schlitter

### [Good Eyes, Great Catch!](#)

12/2/20, 7 p.m. CST

**Qualifies for FAA WINGS and AMT credit.**

Mike Busch

### [Hot Topics in Aviation Medical Certification](#)

12/9/20, 7 p.m. CST

Qualifies for FAA WINGS credit.

Dr. Steve Leonard, Donald R. Andersen, Greg Reigel, and Patrick Floyd

### [Night Flight](#)

12/16/20, 7 p.m. CST

Qualifies for FAA WINGS credit.

Larry Bothe

### [The Sonerai Story](#)

1/5/21, 7 p.m. CST

HOMEBUILDERS WEBINAR SERIES

John Monnett

### [It's Baffling](#)

1/6/21, 7 p.m. CST

**Qualifies for FAA WINGS and AMT credit.**

Mike Busch

### [Avionics Options for your Homebuilt Aircraft with Dynon](#)

HOMEBUILDERS WEBINAR SERIES

2/2/21, 7 p.m. CST

Michael Schofield

These are the current webinars listed on [eaa.org](http://eaa.org).

Please check the site at:

[www.eaa.org/en/ea/news-and-publications/ea-webinars](http://www.eaa.org/en/ea/news-and-publications/ea-webinars) to see if there are other webinars available.

**FAA 80 MONTHLY TREASURER REPORT**

Nov-20

Checking

Acct. 310  
Opening Balance \$13,929.04

Receipts

50/50  
T-Shirt Sale  
Dues Cash  
10/28/2020 Dues Chks \$225.00

Expenses

Y.E. Expnse  
10/14/2020 Jim Beyer Camp Kit \$70.00  
10/14/2020 Scott Pridie Replc. Radio \$572.22  
Refresh

Ending Balance \$13,511.82

Asset Accounting

Date	Item	Value	Date	Item	Value
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>			
Total to Date		\$250.00			\$0.00

AS INFO Nov. 2019 \$14,230.72

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 Bellevue, NE 68005

## EAA CHAPTER 80 2020 APPLICATION FORM

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CONTACT INFORMATION			
NAME		EAA NUMBER	
ADDRESS			
CITY, ST, ZIP			
SPOUSE NAME			
HOME PHONE		CELL PHONE	
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)										
2020		2021		2022		2023		2024		
PAYMENT	TYPE				AMOUNT			DATE		

Last updated: 1/3/2020