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News!

February 2022

On the Web: www.EAA80.org

Facebook: www.facebook.com/eaa80

Twitter: https://twitter.com/eaa_80

President's Corner

By Bruce Mundie



2022 started with excitement and opportunity as we have been offered a donation of a Glastar aircraft kit and engine. Additionally, we will officially kick off the 2022 edition of our Ray Scholarship campaign. We need your help with

both projects so please make sure you come to our chapter meeting on February 16 at ABLE ACE at the Oak View Mall.

Our chapter winter gathering was a great success! As always, Anthony's Steakhouse did a fantastic job, and we are all sorry that it is closing in February. EAA 80's annual awards were delivered and everyone had a great time. I cannot thank all of the award winners enough for their efforts in 2021. Our chapter thrives on their interest, drive, and leadership.

We have the opportunity to accept a Glastar aircraft kit and engine from Glenwood, Iowa. The empennage, fuselage, and fiberglass work is complete. The metal wings and finishing kit is all that remains. It comes with a newly rebuilt engine a prop, all we need are volunteers to finish the job. Please bring your ideas

to our meeting to discuss the merits of taking on this project.

See you in February to come learn, build, and fly with EAA 80!

Thanks, and Fly Safe

Bruce Mundie

EAA 80 Calendar of Events



Feb **16** (not 14), Chapter meeting, ABLE ACE mall

Mar 14, Chapter meeting, ABLE ACE mall

Apr 11, Chapter meeting, ABLE ACE mall

Sep 24, STEM Day, with location TBD

Congrats!

Congrats to Cole Dostal on earning his Commercial Pilot Rating!



EAA Chapter 80 Meeting Minutes January 2022

The January monthly meeting was not held. The Christmas Party at Anthony's took the place of the meeting.

Next Meeting: The next meeting is February 16th at the ABLE ACE build site, Oakview Mall, at 7pm.

Note: Exterior mall doors are locked at 7pm.

Zenith Build Progress

Zenith CH750 Project Status: After a few weeks of head scratching, new parts and perseverance, the Horizontal Stab and Elevator are now mounted and function properly. We're now fitting control cables to complete the installation. Work forward of the firewall is continuing with installation of a custom made heat muff and intake flange for the throttle body. Finally, the control panel has been painted and labeled!

Technical Advisor

→Koehler's Korner→



I To start off, there is now a schedule of an EAA SportAir Workshop program in the Norfolk area on the weekend of April 30, 2022. I think I gave you a bad date last month. You can get more information and sign up at www.sportair.com. It's planned to have Sheetmetal, Composites, Fabric, and Electricity Workshops. Hope to see you there.

I get a lot of questions on magnetos, so let's take a little look at them this month. The two most common are the Bendix and Slick mags. Both have gone through various owners over the years. Bendix is now part of Continental Motors Incorporated (CMI) and Slick is part of Champion.

Looking at both magneto brands first, they both operate exactly the same. Each spins a magnet which creates an alternating magnetic field in a horseshoe of iron. Around the iron horseshoe is wrapped a primary winding of fairly large wire. As the magnetic field moves through the wire, it induces an electric current in the wire. At the precise moment when the current is peaking, the points connected to the primary winding open, killing the electric current. This collapsing electric field induces another magnetic field that goes through the secondary winding which is many feet of very fine wire. The two windings act like a transformer, shifting the low voltage, higher current electricity in the primary winding to very high voltage (about 15,000 volts) low current electricity in the secondary winding. This voltage is then distributed to a spark wire to fire the spark plug. That's it folks. Other than some trick items to help with starting, like shower of sparks or impulse couplings, and the case, that is all there is to a magneto. It is

No outside power is needed to keep them functioning. This is why we have been using them for airplane engine ignition for over a hundred years. Note that the only "control" we have for the mags is a wire connected to the primary winding, and thus called the primary lead, or P-lead. By grounding this wire, we can shunt off any electricity generated in the primary winding and prevent the mag from generating a spark. Hence, we "turn on" a magneto by opening the circuit or ungrounding the P-lead.



Slick Magneto

So, the only difference between Bendix and Slicks is the mechanics of how they are built. The biggest difference is in the bearings for the shaft that rotates the magnet. On Bendix mags, they are open ball bearings that have a brass keeper. These bearings need to be cleaned, inspected, and greased regularly, at least every 500 hours. This process can be done on the workbench of your shop. A special, non-conductive, grease must be used, of course, but the process is very analogous to greasing the roller bearings on your wheels. While in there doing the bearings, the points, seals, and general condition are also inspected. Slicks, on the other hand have sealed bearings that never need greasing. Also, the bearings are press fit on the main shaft and a special puller is needed to remove and/or replace them. One must spend something over a thousand dollars to get the special tools needed to work on the Slicks. These fundamental design differences drive the maintenance requirements for the mags.



Bendix Magneto

a self-contained AC generator, sometimes called a permanent magnet generator (PMG) connected to a transformer and distributor system. They are dirt simple, and hence, very reliable. They are also totally self-contained.

Bendix mags should be opened up, inspected, and regreased every 500 hours. Any parts worn beyond limits must be replaced. This

process is usually called an overhaul. Slick mags, on the other hand only require an inspection every 500 hours, with an overhaul at 2000 hours. The 500-hour inspection is called an Inspection and Repair as Necessary (IRAN). One can expect the Slick mag to pass the first IRAN with no replacement parts needed! On the second and third, expect to begin seeing items like the points and seals to show signs of wear and needing replacement. At the 2000-hour overhaul, expect the needed replacement parts to exceed the cost of a new slick mag, and most folks just replace the mag, whereas, the Bendix just keeps soldiering on with its 500-hour overhauls. It's kind of a case of pay me now or pay me later. Unfortunately, many aircraft owners do not understand and get full overhauls with usually a hefty cost for

their mags, when it is not necessary. Next month I'll try to look at some alternatives to Bendix and Slick mags and kick around their plusses and minuses. Remember, most of the "modern" ignition systems must have an external source of power. If you have an electrical failure, they get very quiet.

I hope this little review of ignition systems was useful for you.

Keep building, flying and maintaining.

Dick 01/2022

Re-published with permission of Dick Koehler, EAA 186



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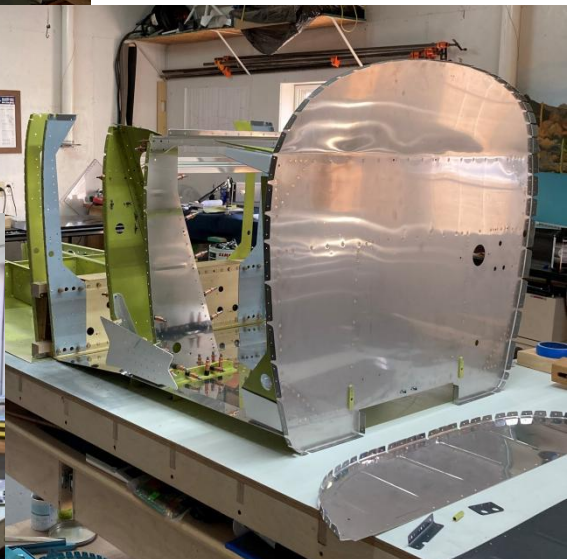
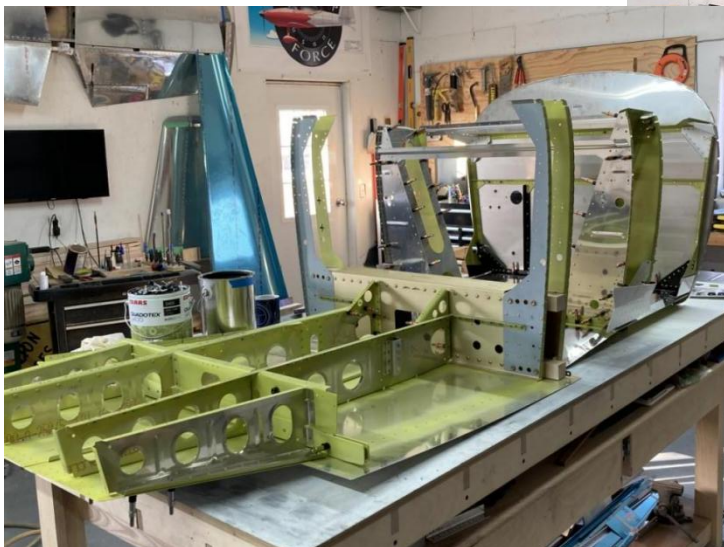
Photos



Left, Below Left, and Below:
Photos of the potential GlaStar
project donation to the chapter.



Below, Right: A couple of Michael Stahl's
project photos on the progress of his RV-8.



Upcoming Webinars

Become a Better Chapter Leader – Secretary/Treasurer 2022

2/15/22, 7 p.m. CST

John Egan and Charlie Becker

Teardown Needed?

Qualifies for FAA WINGS and AMT credit.

3/2/22, 7 p.m. CST

Mike Busch

EAA Ray Aviation Scholarship Coordinator Training

3/3/22, 12 p.m. CST

Christopher Gauger

The Treasures of Pioneer Airport, Part 1

3/8/22, 7 p.m. CST

Chris Henry and Ben Page

Shiny Side Up — Avoiding Spatial Disorientation

Qualifies for FAA WINGS credit.

3/9/22, 7 p.m. CST

Prof. H. Paul Shuch

EAA Ray Aviation Scholarship Coordinator Training

3/10/22, 7 p.m. CST

Christopher Gauger

International and Cross-Border Aircraft Transactions

Qualifies for FAA WINGS credit.

3/16/22, 7 p.m. CDT

Paul Herbers and Patrick Floyd

Home Flight Simulation for Private Pilot Training and Proficiency

Qualifies for FAA WINGS credit.

3/23/22, 7 p.m. CDT

Evan Reiter and Phil Coyle

EAA Learn to Fly Day – Hosting a Chapter Flying Start Event

3/29/22, 7 p.m. CDT

David Leiting

Taming the Tailwheel Shimmy

Qualifies for FAA WINGS credit and AMT credit..

3/30/22, 7 p.m. CDT

Will Fox

These are the current webinars listed on eaa.org.

Please check the site at:

www.eaa.org/en/eeaa/news-and-publications/eeaa-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 or contact an officer to inquire about making a tax free donation.

EAA 80 MONTHLY TREASURER REPORT

Jan-22

Checking

Opening Balance **\$14,262.19**

DEPOSITS

No Deposits \$0.00

EXPENSES

Rent ABLE/ACE \$150.00

Office Supplies \$54.99

Ending Balance **\$14,057.20**

Asset Accounting

<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 TBD	
7/13/2020		\$100.00			
8/10/2020		<u>\$25.00</u>			
Total		\$250.00			



EAA CHAPTER 80

NEW MEMBER APPLICATION FORM

CONTACT INFORMATION

NAME:

EAA #:

HOME ADDRESS:

SPOUSE NAME:

HOME PHONE #:

E-MAIL ADDRESS:

CELL PHONE #:

PROFESSION:

RETIRED? [☐ Yes ☐ No]

MEMBERSHIP PROFILE

OWNED AIRCRAFT? [☐ Yes ☐ No]

TYPE:

N-NUMBER:

AIRCRAFT BUILDER? [☐ Yes ☐ No]

TYPE:

% COMPLETE:

AIRPORT BASE:

HANGER:

PILOT LICENSE/RATINGS:

JOIN E-MAIL GROUPS: [☐ Fly-Out ☐ Builders ☐ Young Eagles ☐ AirVenture ☐ Chapter Build]

YOUNG EAGLE

VOLUNTEER? [☐ Yes ☐ No]

YOUTH PROTECTION

TRAINING CURRENT? [☐ Yes ☐ No]

OK TO PUBLISH INFO. IN

CHAPTER DIRECTORY? [☐ Yes ☐ No]

DO YOU HAVE

A NAME TAG? [☐ Yes ☐ No]

YEAR JOINED

EAA80?

PAYMENT – DUES \$25/YEAR

PAYMENT FOR YEAR(S): [☐ 2022 ☐ 2023 ☐ 2024 ☐ 2025 ☐ 2026]

PAYMENT DETAILS: TYPE:

AMOUNT:

DATE:

MAIL CHECK TO:

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ELKHORN, NE 68022

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