

EAGLE'S PROPWASH

DECEMBER 2022 ISSUE

CHAPTER 113 *"The Backyard Eagles"*



Our Web Site:
www.eaa113.org
group.eaa113.org

Gatherings: 7:30 PM
the 3rd Thursday of each
month at the
**EAA 113 AVIATION
EDUCATION CENTER**
Mettetal Airport (1D2)
8512 Lilley Road
Canton, MI 48187
(734) 392-8113



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CHAPTER MISSION STATEMENT:

"EAA Chapter 113's major focus is on the relationships with people who have diverse aviation interests, centered around their love of flight, fellowship, learning, and fun.

Chapter members have a passion for flying and are willing to share it with others.

Chapter 113 provides the opportunity for exchange of information, as well as the interaction that leads to friendships that last a lifetime."

BOARD OF DIRECTORS:

"The Board of Directors are to provide both advice and assistance to the chapter officers on an ongoing basis."



PRESIDENT'S *PODIUM*

Dave "Drano" Steiner (734) 645-1150
president@eaa113.org
December 2022

EAA 113 for 2022 is Nearly a Wrap

Just one holiday party/gathering ahead on Dec 15 (hope to see you there) and that will wrap up another pretty successful year for EAA 113, as we continue to emerge from COVID. We had several Young Eagle events and two Flying Start events for adults. Some hands-on instruction for both kids and adults took place in the very well-equipped Don Zimmermann workshop. Don would have been very happy to see that. Thanks to Dan Jones for being point for the workshops and for taking on the Secretary position.

In-person meetings became the norm this year, and we hope to increase attendance for Builders, Gatherings, IMC/VMC and other events planned for 2023. Our Ray Scholar, Blake Smokovitz, may have his ticket by year's end if the WX cooperates. He qualified for a free Zulu Lightspeed headset. Only work prevented him from participating in the kids workshop. We gave out two scholarships of \$3,000 each to deserving young people, and we hope to do more of that in 2023 as part of the EAA 113 Don Zimmermann endowment. A HUGE THANK YOU to all those who help 113 continue to be a great EAA chapter. Well done!

Chapter Survey from OSH

You all should have received the EAA HQ survey (check your Nov 18th inbox), so make sure you take some time to fill that out to help the Board and Events know what ideas you would find engaging. Or just let me or any board member know what you'd like to see more of or know more about. Do you have a speaker you'd like to hear? This is YOUR chapter, so you are encouraged to participate as much as possible to keep it thriving. Due to a printing error we already received a **GOLD LEVEL** 2022 banner ... and we have no intention of sending it back!

2023 Dues Only \$25 until January 30

The Board voted to discount 2023 membership dues from \$35 to \$25, but only if they are paid by January 30th. It's easy to do by going to the website and paying online, putting a check in the mail, or giving cash or check to treasurer Dave Buck, or any board member or officer, at any meeting/gathering. Thanks for getting your dues in expeditiously to make new Secretary Dan Jones' and Treasurer Dave Buck's jobs easy.

Prop Wash Content

Keep that content coming! A few photos with captions and a short paragraph or two about your latest aviation adventure are all that we ask. Send to: newsletter@eaa113.org. Please do share your aviation escapades. Pilot or not. The deadline is always the first of the month. Submission format guidelines are in each edition.

Merry Christmas, Happy Holidays and Happy New Year Everyone!

EAA 113 Board Meeting Minutes - November 10, 2022

Attendance:

Dave Steiner, Jack McClellan, Jim Brown, Al Bosonetto, Dan Jones, Dave Buck, Joe Kirk. John Maxfield (Zoom)

Absent: Elizabeth Hebron

Treasurer's Report: Dave B.

- * Financials - emailed separately: The chapter has a very good balance sheet and strong financial position.
- * Check register – any unusual expenses? No
- * Vanguard funds VTSAX, VSCGX - performing as expected with market fluctuation.
- * Switching insurance carriers to AVsurance, a division of AVFuel – building appraisal needed, in process. Need by 1st of year.

Secretary's Report:

- * Motion made and approved unanimously for Dan Jones to fill the secretary position thru 2023.
- * Membership dues for 2023? Discount to \$25 again if paid by Jan 30. Motion made and approved unanimously.
- * Bylaws update (last done 2012). Dan will start process, contact Molly regarding other secretary duties.

Ray scholarships:

- * Blake 2022. Zulu light speed headset from EAA HQ delivered to Blake last week. He passed written. Just awaiting check ride.
- * 2023 application process opened Nov 1st. Apply for 2023? Decision made to wait until 2024. ID a good candidate first. Need to be 16 years old.

Builder's meeting:

- * RV8 parts sales update – Dan to poll builders about tools/instruments that the chapter could/should possibly acquire and get EAA national “tool crib” fund to help with.
- * Dave Buck to earmark RV8 parts sale funds for possible future EAA 113 project.
- * **Dec 1st Bob Steinmetz – W & B presentation on his RV**

IMC/VMC Club Report: Only five people. Maybe due to FAA invite not going out. No November or December meeting due to holidays.

Newsletter Report: Liz out of town. No report.

Library Report: Barb, no report.

Events: Debbie

- * Holiday party Dec 15th – help needed that afternoon for set up.
- * Newsletter Survey responses – got six responses.
- * Youth builder program Oct 22nd report– Dan. Great group of kids. Follow up with some kids to finish projects on Nov 12th.

Oct 20th Membership Gathering:

Program: FAA Tim Caruso. ATC DTW Tracon.

Continues . . .

Future Meeting Speakers/Programs –

* December - Holiday party is Gathering

2023 -

- * Speaker from Yankee Air Museum? History of Willow Run or History of Bomber Plant.
- * Possible after hours tour “field trip” - Dave S. to contact Minuteman Missile Historic Site?
- * Ken Mosley – motor-glider hangar video with Martin?
- * Aerobatic competition?
- * Yak aircraft show & tell? Summer. Dave B has contact.

Building:

- * Zimmermann Workshop update – Signage & shelving needed.
- * Furnace filter needs to be checked/changed every 3 months.
- * Insurance waivers for AC hangar use calendar year 2023 (Smith, Jones, Maxfield)
- * CAP rental/use for Celestial Navigation instruction. Sorry, our policy is not to rent bldg. Problem with CAP naming EAA 113 as insured.

IT and web site going forward: Joe Hood says no issues to report.

EAA 113 - Goals for 2023

1. Ray Scholarships – Make sure Blake is successful.
2. Youth and adult hands-on workshops
3. Try to get back to normal ops/events
4. Get new blood for chapter activities
5. Need a roster of member/projects etc.
6. Groups i/o access. Instructions in newsletter. EAA113groupsi/o
7. Keep Gold level status (and banner sent prematurely).

Next Board of Directors meeting: December 8th. Complete chapter renewal as a board.

Motion to adjourn.



PAULSON LIBRARY

Barb Cook (734) 277-3469

library@eaa113.org

December 2022

Looking for an airplane picture book?

Try one of these pictorials.

They're mostly on the 769.4 or OVERsize 769.4

Magic of Flight: Photographic essay (769.4 BURG)

Posters of World War II (969.4 JUDD)

Fly Now! Colorful Story of Flight from Hot Air Balloon to 777 (769.4 LON)

Command the Horizon, Pictorial History of Aviation (Shamburger)

Picture History of World War II American Aircraft (Stoff)

Aviators; Photographic History of Flight(769.4 TAY)

Complete Guide to Aviation Photography (778.9 BOW)

Sky Gate; Aviation Photography of Etienne deMalglaive (778.9)

Photographing Airplanes (778.9 MAN)

Open Skies; The Way we Were (778.9 YOUN)

America from 500 feet (779.36 FORT)

Lewis & Clark by air; Pictorial Tour of Lewis & Clark Trail (779.36)

View from Space; American Astronaut photography (779.962)

Flight; Poster Book from Icarus to Star Wars (over 69.4 9629 OWEN)

Posters; Source book for collectors (OVER 769.4 RENN)

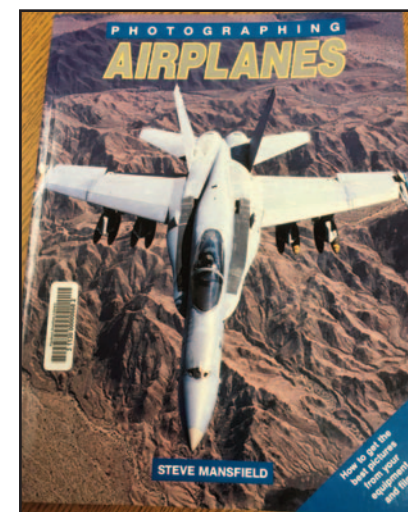
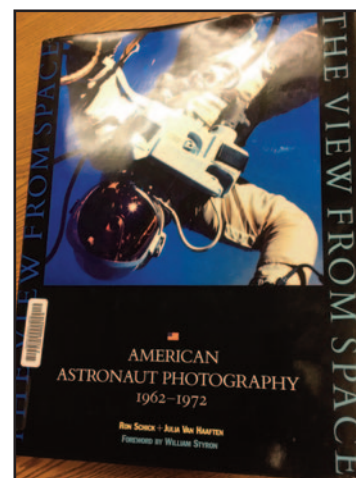
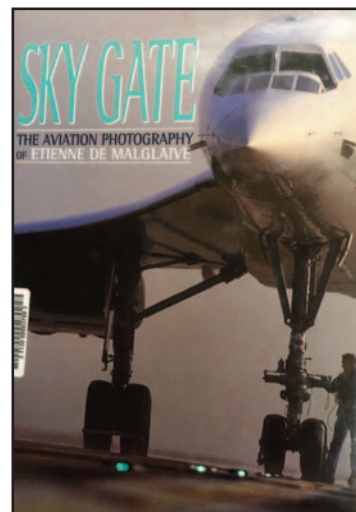
Skyward; Why flyers fly (OVER 779.962)

View from Space: American Astronaut photography (OVER 779.96)

Wartime Scrapbook; from Blitz to Victory (OVER 940.53)

American Heritage Picture History of World War II (OVER 940.54 0022)

Hitler's Wartime Picture Magazine (OVER 940.54 1343)





You are invited to EAA 113's

HOLIDAY PARTY

“Have a dinner” . . . “Share a Dinner”

Thursday, December 15th, 2022

6:30 p.m.

EAA 113 Aviation Center

Come celebrate the season with your family and aviation friends.

Please bring a dish to share for our Holiday Dinner and also

share some can goods for the Salvation Army.

Let's help make a difference to some families in need in our own community.



Salvation Army

Needs:	Canned Spaghetti/ Ravioli, etc.	Tuna Fish
Stuffing	Rice (Box or Bag)	Soups
Gravy (Turkey or Chicken)	Boxed Meals (Hamburger Helper)	Canned Chicken
Instant Potatoes	Mac & Cheese	Cereal/Oatmeal
Canned Fruit	Pasta Sauce	Peanut Butter
Canned Vegetables	Pasta Noodles	Jelly
		Jello/Pudding



Update from EAA 113 Ray Scholar:

Blake Smokovitz

In my most recent flight training, I have been working with my instructor on cross-country flights. I have not only been lucky enough to take some cool trips to different places but also have been learning all about preparing for the flights, different techniques in planning them, and different ways to navigate while actually flying them. Since then, I have completed my solo cross country time, and my solo at a towered airport. In between flying, going to school, and working, I have been spending my free time studying for the written exam. I am excited to share that I have now passed the written and am moving into check ride prep with my instructor! Although I am not out of the woods yet, with much left to learn, I am coming closer and closer to earning my license. I am incredibly thankful to EAA for awarding me this scholarship, this opportunity is truly such a blessing.

Blake



An excited Blake, inside the C-150 wearing his new Light Speed Headset he was awarded through the Ray Scholarship program .

ATTENTION ALL CHAPTER MEMBERS

If you have any interest in building your own aircraft,
learning how aircraft are assembled and how they work,
please plan on attending the next

Homebuilders Meeting on Jan. 5, 2023 at 7:30 p.m.

Our membership has a wealth of experience and knowledge and
we want to share it with all who are interested. Let's discuss it!

We have an excellent facility for building and learning. Let's use it!

We want to hear from you. We want to know what you'd like to learn.

We want to give you the chance to get hands-on experience working with
many different materials and tools and inspire you to follow your dreams!

Together we can discuss topics for presentations in the coming year
that will focus on your interests and encourage you to become involved.

If you are interested but unable to attend, please email Martin at:

builders@eaa113.org

EAA Chapter 113 is one of the best in the country; it has a great membership,
great facilities and a great knowledge base. Let's take advantage of it!

Hope To See You There!

THE FURTHER ADVENTURES OF MARTIN FILIATRAULT and HIS FALSI-FIGHTER

Photos and Article By Martin Filiatrault

I did a lot of flying last month; trying to get in as much as possible until winter hits. Lots of photos and video; I'll keep it to one photo and one link per flight.

In the last update I mentioned flying with a family friend, Anja. It was the same day I returned from Erie and it was a short bumpy flight but the highlight was getting to land on Rwy 18 at PTK.

<https://www.youtube.com/watch?v=RTfCULAmJlg>



The next flight was a short one over to Willow Run. I've wanted to do some pattern work there for a long time and get a good overhead view of the airport. It was so busy when I arrived I only did two circuits; I was so busy watching and following traffic I never really looked around. I was glad I captured the video.

<https://www.youtube.com/watch?v=r42upJZZBR0>



It's been over 32 years since I was night current. Since I want to be able to fly into 1D2 for our meetings I need to regain my night flying chops. I planned on flying to Mettetal at dusk for a full stop landing before returning to PTK for night pattern work. Lots of other pilots had the same idea; it was a very busy night in the sky. By the time I got to 1D2 it was fully dark. I didn't want my first night landing to be on a small runway so I followed a Cirrus into the pattern and did a low pass before departing to the northwest and maneuvering, waiting for a break in traffic to overfly PTK and head over toward Ray. I didn't land but experimented with activating the runway lights before returning to PTK for three full-stop landings. Night landings in the RV-8 are easier than I expected, which is a relief. The video of the flight turned out to be unusable and was discarded, but I did get a few decent photos.



Another flight I'd wanted to make was a cross-country to visit the Oscoda/Wurtsmith and Iosco County airports. It was a beautiful flight (although windy) and no traffic. I crossed Saginaw Bay on the return route. I love those airports and will definitely return.

<https://www.youtube.com/watch?v=327GeR80dR4>

I had been meaning to practice some short field landings. I picked a smooth day, went up and practiced some slow flight before returning to PTK and dragging it in a few times. Five landings, two decent; landing on 26R and could have made it off on Juliet twice. That's about 1260 feet or less. Not bad.

<https://www.youtube.com/watch?v=ykvOYYNjg5w>

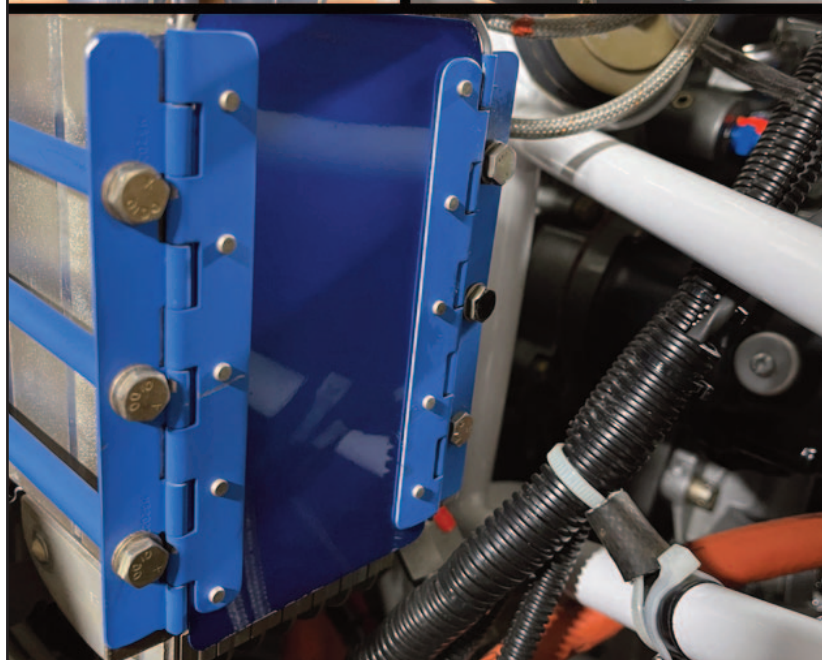


Time for another exploratory cross-country; this time to Brooks Field near Marshall. Cool airport with an old Beech 18 on the ramp; had to park next to it for photos. On the way back I did some pattern work at Flint; another local airport I hadn't visited yet. Lousy landings, but learned a few things.

<https://www.youtube.com/watch?v=F7tqypgVh20>

The latest flight was supposed to be a test flight of the Angle Of Attack display that I'd recently activated, but it didn't really work out that way. I had activated the AOA display in the G3X system but it had to be calibrated. There was a small indication on the right side of the EFIS screen that said "AOA UNCAL", but I never noticed it until now. (D'OH!) Well folks, when someone assembles your avionics for you and someone else does the calibration, you still have to read the manual to make sure everything was done right. I ended up just dancing around the sky and returned to do some really nice landings in the pattern, so it was still worthwhile. I also got some different video angles that I enjoyed.

https://www.youtube.com/watch?v=kEVmplv0e_A



That's it for flying this month. I did some maintenance; database updates; installed my oil cooler shutter for the winter. I started to think about working on the wheel fairings and did some layouts for the modifications, but haven't actually started the work yet. Suffering from low motivation for fiberglass work. That will happen sometimes.

KENNETH BURGER'S RV-10 PROJECT

By Kenneth R. Burger

My wife and I received our Van's Aircraft RV-10 empennage kit on November 23. The crate was huge, and I'm frankly surprised the driver from Old Dominion was able to get it off the truck without dropping it, because the liftgate was too small for it. But here she is. Forgive the mess. It's been cleaned up a bit since. The only thing missing that wasn't backordered was a single screw, so good job by Van's on that.

My wife and I are really looking forward to building this thing, which we hope will be designated N9259B, over the next several years. It feels like we're starting a new chapter of our lives, and I'm sure it's going to be a challenging but rewarding one. I look forward to attending the homebuilder's meetings going forward and learning from other builders there. Also, I've started a YouTube channel to document my build at <https://www.youtube.com/@vsavatar> for anyone who's interested in checking in on me.



MARS HELICOPTER COMPLETES 34TH FLIGHT

By Kate O'Connor, Published: November 29, 2022, AVweb



Image: NASA/JPL-Caltech/ASU/MSSS

NASA's Mars helicopter, *Ingenuity*, logged its 34th successful flight last week, staying in the air for 18 seconds and reaching a maximum altitude of 5 meters. The brief flight was the helicopter's first with its latest software update, which is expected to add capabilities including hazard avoidance during landing and the use of digital elevation maps to assist with navigation. Further flights to test *Ingenuity's* upgraded capabilities are planned.

Ingenuity, a technology demonstrator sent to test powered, controlled flight on Mars, was launched with the *Perseverance* rover in July 2020. The 1.8 kilogram helicopter's mission was last March to include supporting the rover as it explores the Jezero Crater. According to NASA, *Ingenuity* was originally designed to fly over flat terrain, necessitating the software update as it begin to move into rockier areas with fewer safe landing sites.

Since its on April 19, 2021, *Ingenuity* has logged almost 59 minutes in the air and travelled a total distance of 7,392 meters (4.6 miles). Its highest flight to date reached 12 meters above the surface and its longest lasted 169.5 seconds. As , NASA's Jet Propulsion Laboratory *Ingenuity* Mars Helicopter team was awarded the 2021 Collier trophy for accomplishing "the first powered, controlled flight of an aircraft on another planet, thereby opening the skies of Mars and other worlds for future scientific discovery and exploration."

FAA EXTENDS AIRCRAFT RE-REGISTRATION PERIOD

By Russ Niles, Published in AVweb, November 20, 2022

The FAA will issue a extending the registration interval for general aviation aircraft and the new seven-year duration applies to all GA aircraft. Until 2010, aircraft registrations lasted for the life of the aircraft but that resulted in a lot of inaccurate and ghost registrations on the books. In 2010, the agency made all operators re-register their planes and set a three-year limit for re-registration. The alphabets argued that was too onerous for private operators and got the ear of Congress. The 2018 FAA reauthorization mandated the agency extend the limit to seven years for non-commercial aircraft.

That caused an issue for the FAA because use and not aircraft type defines the distinction between commercial and private operation. "Consequently, it is impracticable to have different durations for commercial and noncommercial general aviation aircraft registrations," the final rule says. "Therefore, the FAA is extending the registration duration for all aircraft to seven years." As before, re-registration has to take place by the end of the month of the anniversary of the existing registration.

REGISTRATION NOT TRANSFERABLE	
UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION CERTIFICATE OF AIRCRAFT REGISTRATION	
NATIONALITY AND REGISTRATION MARKS	N 12345
AIRCRAFT SERIAL NO.	6666
MANUFACTURER AND MANUFACTURER'S DESIGNATION OF AIRCRAFT CESSNA C-180L ICAO Aircraft Address Code:	
U S C O	ROBERT E. BARD 300 MOERKLE ST ANYTOWN, OHIO 12345
It is certified that the above described aircraft has been entered on the register of the Federal Aviation Administration, United States of America, in accordance with the Convention on International Civil Aviation dated December 7, 1944, and with the Federal Aviation Act of 1958, and regulations issued thereunder.	
DATE OF ISSUE February 18, 1995	<i>David H. Jones</i> ADMINISTRATOR
U.S. Department of Transportation Federal Aviation Administration	
AC Form 8050-3(11/93) Supersedes previous editions.	

INSTRUMENT BATTERIES: CARE AND FEEDING

By Larry Anglisano, Published: November 29, 2022, *AVweb*



The four-hour rechargeable backup battery attached to the rear chassis on Garmin's G5 has a mandatory yearly inspection interval.

The backup rechargeable batteries used in current-gen EFIS models have gotten better over the years. But they still require routine inspections, might have mandatory replacement intervals and are intolerant of extreme storage conditions. Don't underestimate the costs associated with replacing them, either.

Fortunately, there are some things you and your mechanics can do to ensure they offer the juice required to keep electronic instruments powered when you need them the most.

For this tech report, we looked at the battery upkeep procedures for the most popular electronic flight displays. It's an easy task, mostly, but often a forgotten one.

Tighter Standards

The one and only purpose of backup power for primary and EFIS is to provide seamless transition when the instrument's input bus voltage drops below a predetermined value. If you don't know what that voltage value is for your 14- or 28-volt system, we suggest you find out so you'll be better prepared during an electrical failure. Depending on the model, you might be surprised that the typical modern EFIS can still

function with minimal voltage. But when it goes dark, you need enough time to get back on the ground, so the backup battery needs at least 30 minutes of endurance and most if not all avionics batteries will do that—when they're healthy, which isn't always the case.

Manufacturers push the chemistry envelope to get more capacity from li-ion battery tech—no matter its purpose. That drive hasn't gone unnoticed by the FAA, especially after thermal runaway issues with the main-ship lithium battery used on the Boeing Dreamliner. This, in part, has tightened the required specifications for newer small-battery tech, which fall under RTCA DO-311a—the minimum operating performance standards for rechargeable lithium batteries. This means more testing and certification rigors for even the smallest batteries used in avionics.

We talked with Garmin's Bill Stone about the lithium-ion batteries used in the popular G5 and GI 275 retrofit flight instruments. Stone said the timing of the push for tighter standards meant that Garmin had to do the stringent compliance testing required by DO-311a. Batteries for older avionics might not have been tested to current standards, which makes a good argument for regular focused inspections, although the instrument's instruction for continued airworthiness (ICA) governs the upkeep on batteries, whether for inspection/testing or replacement.

"By complying with the DO-311a standards, Garmin is able to offer later and better battery chemistry tech compared to others using older batteries grandfathered under older regulation," he told us. That means greater capacity and longer life.

The other thing to consider is the built-in intelligent battery management—separate from chemistry and cell technology. The batteries used in typical avionics are sensitive to temperature (an 80 percent charge at 30 degrees C is quite different than it is at 0 degrees C, as an example), so the battery management system has sophisticated monitoring, protecting against over/undercharging.

Continued . . .

When deciding on a new retrofit suite, consider what is required for backup batteries based on the STC, the backup instruments and your comfort factor. There are more combinations and requirements than we can list. Garmin's GI 275 electronic flight instrument with ADAHRS comes standard with a rechargeable lithium-ion phosphate battery, but the battery isn't standard on the base model. The G5 instrument comes standard with a battery, as does Aspen's line of Evolution flight displays.

There isn't a lot the operator needs to do under normal operations. But don't mistreat them—that means proper storage and not allowing them to remain in a state of discharge.



The battery is accessed from the rear chassis in the Aspen's Evolution.

“Lithium-ion batteries, and Aspen's backup battery in particular, should be kept charged. If they are discharged and allowed to sit for weeks at a time, the charge capacity is reduced permanently,” Aspen's field service engineer, Michael Studley, told us. Aspen's Evolution inflight battery logic allows the display to automatically switch to battery power if the power input drops below the normal alternator voltage level. On the ground, the display counts down and shuts off when power is removed.

What Checks?

Your best source for determining what checks need to be accomplished on backup batteries is the instructions for continued airworthiness for the instrument. You might also find battery information in the flight manual supplement. The check is pretty simple and worth the effort to avoid surprises when it doesn't work when you need it the most.

For Garmin's G5, the four-hour lithium-ion backup battery's capacity check is straightforward. Without power applied to the aircraft, turn the G5 on and note the remaining battery capacity at the top left corner of the display. After one minute, the remaining capacity will change from percentage to time (hour, minute). If the remaining capacity is less than one hour, the instructions say to allow the battery to charge until the capacity shows greater than 95 percent. If the capacity is still less than one hour after charging, it's time for a new battery.

When sending the G5 to Garmin for repair, it will evaluate the health of the battery and replace it (if required) under its flat-rate repair pricing. You can also purchase a battery, typically priced at around \$225.

For battery-equipped Garmin GI 275 instruments, the ICA requires a check every 12 calendar months (or after replacing the battery) to analyze the voltage and discharge qualities of the backup battery. The battery rundown check could take up to 150 minutes, and is accessed on a dedicated Backup Battery Test page. You'll enter the test date and complete an onscreen checklist, and then the unit will run the test. If the aircraft is in for an annual inspection, have your shop add the procedure to the inspection checklist so it doesn't get forgotten.

Aspen Avionics recently increased the useful life of its batteries to four years or 2200 hours (mandatory replacement), whichever occurs first, or if the battery fails the visual or ops test. The visual inspection and testing is required every 12 months, and every six months after three years (from the date of installation), to ensure it meets the minimum 30-minute requirement for powering the EFD1000. During the inspection, you're looking for things like corrosion, leakage from the battery around the seams and water contamination.



Dynon's SkyView HDX Certified big-screen EFIS has a remote battery installed behind the panel in a Cessna.

Continued . . .

The testing is easy. Turn the unit on, press the Menu key, select the Power Settings menu page and press the Battery line select key. The system measures the capacity, which must be a minimum of 80 percent, otherwise the battery will have to be charged. (The battery should always be charged as long as there is input voltage to the display.) With the battery displaying greater than 80 percent charge, set a timer for one hour. After the one-hour time has elapsed, the display must still be operating on the battery. If the battery can't supply the minimum one-hour operating time or fails to charge above 80 percent, it will likely need to be replaced.

Even big-screen glass like Dynon's SkyView HDX Certified suite has backup batteries for each display. The STC requires a 12-month mandatory test procedure to ensure the batteries meet the 45-minute backup period. The HDX has a dedicated battery test that automatically generates a pass or fail result. Dynon's maintenance manual advises that the test discharges the battery, and requires four hours of flying or four hours of ground power input greater than 12.25 volts to charge it back up.

The battery in the uAvionix AV-30 instrument is tested yearly by setting the display to max brightness, pulling the unit's circuit breaker and aborting the shutdown sequence and letting the unit run for two hours. If it doesn't last two hours, it's time for a new battery.



The uAvionix AV-30 has a built-in battery that's accessed from the rear chassis.

Set A Reminder

As you can see, testing these batteries isn't difficult, but remembering to do so might be. Don't rely on your mechanic to test it, and don't let the instrument deplete the battery without charging it back up before flying.

Last, understand how your system works on backup power in the air and on the ground, while recognizing that temperature (hot and cold) will have a direct effect on its performance. Thankfully, modern battery tech makes backup power more reliable than ever, but still requires testing and potential replacement.

That Battery Costs How Much?

Three years ago, I decided to upgrade my Mooney Ovation's perfectly good round gauge panel (mostly original) with glass. Additionally, the original engine instruments (Moritz) were removed along with the vacuum system, both the engine-driven vacuum pump and the back-up electric-driven vacuum pump. At that time, I already had Garmin's GTN navigators. The glass display that I decided on was the Garmin G500 TXi along with Garmin's EIS (engine indication system) that replaced the original engine instruments.

Per the STC, the TXi suite required a backup, and at the time the Garmin G5 was not available as a backup flight instrument so I decided to get the L3/Harris ESI-500 electronic standby instrument. It is fundamentally a mini-PFD and it was also configured (with the proper wiring and software) as a navigation display. The ESI-500 was connected to NAV 2 /GPS 2 and it provided VOR and GPS navigation including VOR/ILS and RNAV (GPS) approaches. I'm extremely happy with the L3/Harris ESI. It has a crisp, easy to read display.

However, the backup battery, which is required for flying under IFR, reached a point that it was no longer holding the charge. It needed to be replaced. Batteries are, of course, mini chemical reactors and do naturally decline in capability over time—whether they are used or simply sit idle. Nothing new. My surprise was the replacement cost: \$1500. I would have never, in my wildest imagination, thought it would cost so much; that's approximately one-quarter of the cost of the ESI-500 instrument itself. Additionally, given current supply chain issues at L3/Harris, the battery would take four weeks to arrive and that means the airplane would not be airworthy under IFR.

If we consider the cost of battery replacement as an ongoing operating cost, in my case it would translate to a \$500 per year expense. I also found out that the average lifespan of such a battery is five years, implying a \$300 per year cost. Still high.

When considering any backup instrument for a glass panel (especially aging ones that are on the used market) that requires a battery to meet airworthiness standards under IFR, the cost of the battery replacement is a concern. Typically, it is not a consideration in the choice of the instrument, but a big surprise when it's time to replace the battery several years later. Then hold on to your wallet.

2022 SHAPING UP AS RECORD YEAR FOR PILOT HIRING

By Mark Phelps, *AVweb*, November 15, 2022

The Aircraft Owners and Pilots Association (AOPA) reports that, according to the (FAPA), 2022 is on track for a record year for airline pilot hiring. Through October, 12 major airlines had hired 11,372 pilots. Projections call for a total of some 13,500 new hires by the end of the year, more than twice the number hired in 2021 (5,426), the previous record-holder.

Even at that, the pilot pipeline is still some 5,000 behind requirements cited by the U.S. Department of Labor. The agency cites a need for 18,100 new pilots per year to offset retirements among the current pilot population. In its latest , Boeing predicts that, over the next two decades, “602,000 new pilots, 610,000 new maintenance technicians, and 899,000 new cabin crew members will be needed to fly and maintain the global commercial fleet.”

According to AOPA, however, the demand has spawned sinister opportunism among unscrupulous bad actors. Boeing’s website warns: “These persons have been offering fraudulent employment opportunities to applicants and often asking for sensitive personal and financial information, including requiring candidates to arrange travel [with a complicit travel agency] for face-to-face interviews.”



December 2022



Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 EAA 113 Home Builders Corner 7:30 pm	2	3  Operation Good Cheer Oakland International Airport
4	5	6	7	8 EAA 113 Board Meeting 7:30 pm	9	10
11	12 	13	14	15  EAA 113 Holiday Party 6:30 p.m	16	17 
18 	19	20	21 <i>Winter Begins</i> 	22	23 	24
25 <i>Merry Christmas</i> 	26	27 	28	29	30	31 <i>Happy New Year</i> 



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The Zimmerman Shop is in need of approximately 16 feet of heavy duty shelving. Please contact Dan Jones or John Maxfield if you have a donation to make.

The EAA113 Workshop is available to EAA members for the construction or refurbishment of their aircraft. Contact Dan Jones or John Maxfield for details to see if your project is a good fit.

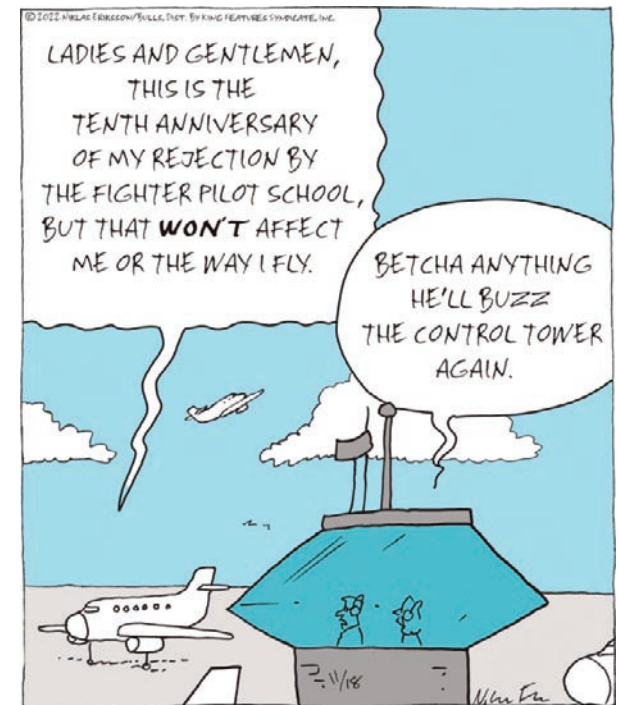
SUGGESTED GUIDELINES FOR *PROPWASH* NEWSLETTER

1. Please send all PDFs in LANDSCAPE orientation.
2. Please DO NOT format text. Send it as plain text in MicroSoft Word or as a PDF landscape file if you want your specific layout to be kept. **PLEASE PROOF YOUR PDF DOCUMENT CAREFULLY!**
3. The deadline for the newsletter will always be the First of every month.
4. Please send material to: newsletter@eaa113.org or Roogey.Batoon@gmail.com.

Thank you.

Elizabeth Hebron, *Propwash* Editor

P.S. I'm always in need of cover-worthy photos of your aircraft!



HOLIDAY PARTY:

December 15, 2022

6:30 PM

at the

EAA Chapter 113 Aviation Education Center

8512 N. Lilley Road

Canton, MI 48187

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