



Runway 15



The Monthly Newsletter for Experimental Aircraft Association Chapter 1541, Lincoln, California

In This Issue

Calendar of Events	1
EAA 1541 Chapter Information	1
President's Corner	2
Treasurer's Report	2
Scholarship Update	3
Project Corner	4
e-Aircraft By the Numbers	5
Sightings	6

On the Horizon: Calendar of Events

For the most up-to-date information, go to the chapter website: <http://eaa1541.org/>

Date	Topic
Wednesday February 16, 2022	Online February member meeting: Airport Safety Presenter: CFI Mary Wick Hangar chat at 6:40 pm Member meeting at 7 pm Join by clicking here at start time
Saturday, Feb. 19, 2022	Restart of Pancake breakfasts at the EAA hangar at KLHM. 8:00 a.m. to 10:00 a.m.
Thursday, Mar. 3, 2022 7-8 pm	Online IMC/VMC Club meeting with FAA Wings credit. All are invited to participate.
Saturday, March 5, 8 – 10 am	Breakfast at the EAA hangar at KLHM. 8:00 a.m. to 10:00 a.m.
Wednesday, Mar. 16, 2022	Online March member meetings: Building a Cozy MKIV on a road less traveled by chapter member Mark Rieger.

EAA CHAPTER 1541 INFORMATION

Meetings	Usually the third Wednesday of each month held at KLHM Hangar S-12. Details available on the website
E-mail	eaa1541@gmail.com
Website	http://eaa1541.org
Mailing Address	EAA chapter 1541, PO Box 1126, Lincoln, CA 95648
Chapter Hangar	Hangar S-12, Lincoln Airport
President	Darren Coomler
Vice President	Jim Hughes
Secretary	Darren Coomler (acting)
Treasurer	Scott Whelan
Chapter Board of Directors	Paul Darbo Christina Duran Michael Lagomarsino Dan Masys Ray McNaught Mary Wick
Webmaster	Dug Smith dug@dugbert.com
Newsletter and Tech Counselor	Dan Masys dmasys2@gmail.com
Membership	Chapter dues: \$20 per year for individuals; \$30 for families; \$300 for gold

President's Corner



Welcome Chapter 1541 Members and Friends,

Hello all. Well here we are in February, and it feels like May. I find myself outside enjoying the warmer days and envisioning some flying adventures I'd like to try this year. I'm excited to inform all of you that we are going to restart our chapter's face-to-face meetings at the hangar since the state is lifting the mask mandate in a few days. We will start with our February 19th Saturday pancake breakfast. Along with the breakfast we will be offering Young Eagles flights. If you are interested in having your child take a flight, check in at the greeting table and we can get you signed up.

As mentioned in previous President messages, each month this year will have a theme. This month's theme is "Airport Safety". Everyone that has flown more than an hour has probably experienced a situation that was not by the book. Unlike driving we don't have defined lines in the air that we need to stay in and I've yet to see turn signals on an airplane. If you have had an unexpected experience in the air or on the ground that has changed how you fly, be ready to share your experience as I will be asking you to share at the pancake breakfast, and we may have time to share during our February 16th Member Meeting. This month Mary Wick will be our presenter on Airport

Safety, if her schedule allows. Don't miss it as I think this will be a learning experience for all pilots.

As I do on all of my messages, I encourage you to join in to the IMC/VMC meetings the first Thursday of each month. Its one of the best hour's worth of flight learning around.

As we are commencing with our face-to-face meetings, we can use some help with these chapter events. Set up and teardown is always needed along with help cooking and assisting with the flight simulator operations.

I have noticed many new name tags on the hangar white board, Please pick them up and wear them proudly, since it also helps me know what your name is. Lastly, make sure you have paid your 2022-chapter dues as they will be increasing March 1st.

Look forward to seeing you all soon,

Sincerely
Darren



Treasurer's Report

I'd like to introduce myself as the Chapter's new Treasurer. Most of you know me as the face behind the grill this past year. Going forward I will keep the chapter updated on our financial health. Unlike most chapters, coming out of Covid we are in a relatively good position. We do want to make sure we can maintain this going forward.

I'm sure, everyone is very aware of how much the cost of goods has accelerated in the last two years. As a chapter we have been able to control our costs, but unfortunately, we also

face increasing costs just to survive. Cost of food and supplies is one of the reasons the chapter's individual annual dues will increase from \$25.00 to \$30.00. We are holding off on making the dues increase until April 1, 2022. Therefore, if you haven't done so already, you now have a financial incentive to pay your annual dues before April 1st. Family memberships will also increase from \$35 to \$40.

An area very near and dear to my heart is the galley. I especially enjoy the camaraderie and fellowship from meeting and catching up with the members in the galley. Unfortunately, and I will apologize ahead of time, but we have had to also increase our meal prices. Our pancake breakfasts increased from \$5 to \$7. I am however exploring the idea of family and kids pricing. As a father of three, I realize how quickly the costs can add up – 2 parents and 2 kids = \$28. While the chapter could really use the proceeds, I am also aware \$28 for a pancake breakfast is expensive – I will however GUARANTEE it is the best breakfast available (well, around the North Hangers at least). We can forego a couple of dollars on kid's meals to know that we are able to sit down and enjoy a meal together. To help stomach (pun intended) the price increase, one thing we are going to offer is the pancakes will now be an all you can eat. Careful though, you don't to overdo it and then need to recalibrate your weight and balance before you fly again.

We haven't had a lunch or dinner meeting for 2 years so I will really need to explore what to budget for those meals. My goal is to keep the hamburger meals to \$10. I will explore family and kid's meals options. I will keep you updated before we do a hamburger meal. They cost a few dollars more, but I am open to doing Kalua Pulled Pork and Tri-Tip sandwiches again. I encourage your ideas.

A membership option everyone should consider is a Gold Chapter membership. We are

keeping the price at \$300. While that may sound like a lot – a major benefit is that all your meals at the hanger are included. This membership pays for itself if you attend just a couple of meetings a month.

As the chapter's treasurer, I will provide you with a picture of the financial health of the chapter. I will include in the newsletter a recap of how much the chapter is raising through our meals and other fund raisers, and then how the chapter uses these funds to support aviation. If you ever have any concerns about the chapter's income or expenses, please reach out to me.

This chapter needs and appreciates your support. If you want to come out and just enjoy a cup of coffee talking about airplanes, or if you'd like to volunteer your time, helping with the sims or even in the galley, our chapter gets stronger with your support. I am always open for feedback. Please give me your suggestions on meal options and pricing.

There is a place for everyone at the EAA 1541 Table.

Scott Whelan
Chapter 1541 Treasurer

Scholarship Update

Our current Ray Scholar, **Kaden Kusick**, writes:

Hi Lincoln! I'm currently performing a lot of flight maneuvers involving slow flight, steep turns, power on and off stalls, S turns, turns around a point, take offs, low approaches, and pattern work. Looking forward to the end of this month, as I've cut back hours of working in exchange for hours in the sky! Lots of progress to come, and as always, thank you for your never-ending support 1541!

Kaden

(Editor's note: look also in the Sightings section below to see the great photo Kaden sent in.)

Project Corner

All chapter members are invited and encouraged to take a few minutes and send us a photo and description of whatever project you are working on now or have recently completed. Send your text and photo(s) to eaal541@gmail.com. Fun and education for everyone!

Mark Rieger writes:

My Superior XP O360 with 150 hours since new is now mounted on my Cozy MK IV. A hanger neighbor who helped with the installation generously offered to powder coat my valve covers and push rod shrouds which gave the engine some pizzazz. The engine has been on and off the airframe a few times for things like cowl fitting so it is nice to know that there is no reason for it to come off again before first flight.



Engine cooling in our canard airplanes can be a challenge so creating a nice airtight baffle installation is the next task.

Tom O'Hair writes:

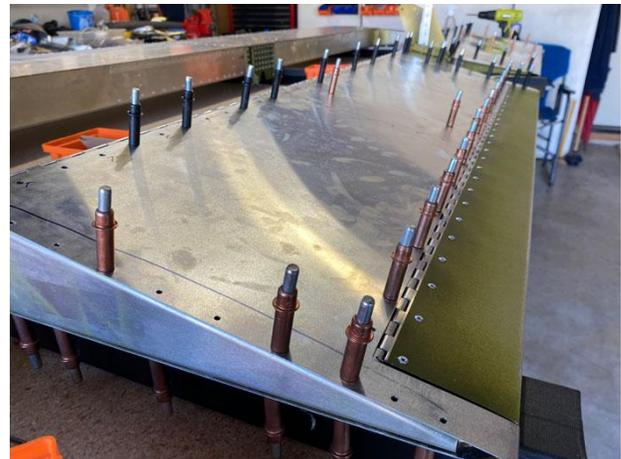
Hello,

We continue to make slow progress on the horizontal stabilizer/elevator for our Zenith 750 Cruiser. The wing kit is next, but the factory is several months backlogged so we are in no hurry to finish this part.

This photo is the finished elevator mass balance arm:



This photo shows the elevator trim tab:



We will be closing the whole thing up in the next week or two. The balance arm is a combination of proprietary Zenith aluminum

pull rivets and several strategically-placed stainless steel rivets.

We are working with the kit from plans, and a helpful third-party video series that makes things a bit easier. I can't imagine flying the Zenith will be as much fun as building it. Learning a lot and having a ball.

Tom O'Hair

Comments on e-Aircraft "By the Numbers"

By Jim Hughes
EAA chapter 1541 VP

Chapter president Darren Coomler presented an overall status of the e-aircraft development at our January member meeting. I made comments on my concerns on the viability of electric aircraft, and was intending to just point out that the status of battery technology is not ready for long range travel, but now, some LSA activity is encouraging.

Motor and controller systems can provide high power of up to 650 hp as in the 'Spirit of Innovation':



And the 'Zero' motorcycle parts are being used in light sport aircraft, needing only 10-20 HP, such as the e-Gull:



But these are not simple, uncomplicated systems, with sophisticated electronic controllers comprising hundreds of high power components. The temperature of the motor, controller and battery have to be monitored and cooled, so that the temps do not exceed about 200 degree F. The electronics have an upper limit of 257 deg F, for military/Automotive grade parts.

The motors, controllers and large batteries require air or liquid cooling, with their temperature control systems. So, comparing an air cooled aircraft engine to the equivalent electric drive will show that the electric system is much more complex, and has more points of failure.

Battery capacity/weight is one of the huge problems. For example, the Tesla 100 kWhr battery weighs 1,100 pounds. That 100 kWhrs is equivalent to the energy in 3 gallons of avgas !

However, since an electric drive system is 3x more efficient [90% vs 30%], it's more like 9 gallons of avgas, but with the avgas still only weighing 54 pounds, that's a 20:1 weight ratio.

Even if batteries eventually achieve the energy density of avgas, there is still the recharging problem - who will pay for the 240kw 'fast DC' chargers at airports needed to 'quick' charge the battery ? Plus the connection to a 480 volt, 500 amp service, that will provide a 240 kw charge capability, which will still require 1.7 hours to recharge a 400 kWhr battery that a

C172 would need, versus the 10 minutes to refill 50 gallons of avgas. Another example; a Cessna 172 needs about 110 HP to cruise at 60% power and can fly for about 5 hours. 110 hp is 82 kw, so, x 5 hours = 400 kWhr, for which today the battery would weigh 4,400 lb.!

The ‘bright spot’ is in the light sport aircraft, which only need 10-20 HP . (8-15 kw) motors. The Zero motorcycle drive is being used in a number of flying aircraft, as mentioned, plus the e-Xenos that Sonex will soon support!

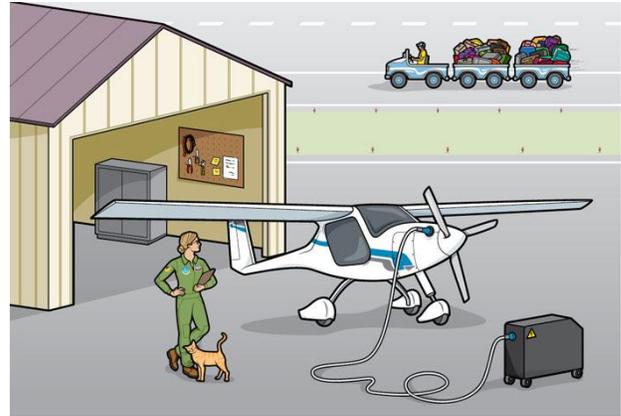


The 11 to 14 kWhr batteries can be recharged in about 5 hours from a typical hangar outlet of 120 vac and 20 amps. Higher voltage and current would reduce charge times, but are not typically available to pilots.

Then there is the large effort in developing e-VTOL (vertical takeoff and landing) aircraft, which may be useful for short commuter hops.

Right now, it’s all about the battery!

Jim Hughes



Sightings

Late afternoon sun and early moon at KLHM



Photo credit: Kaden Kusick, EAA 1541 Ray Scholar

