

The Flying Wire



Table of Contents

July Program	1
Dinner Menu	1
Events	1
Summer, etc.	1
Fly Mart	9
Notes From the Editor	10
Aviation Links	10
Board Minutes	10
General Minutes	10
Contact Information	11

Chapter 124 Experimental Aircraft Association

Volume 60 Number 7
July 7, 2021

Board Meeting - 5:30 pm

Dinner - 6:30 pm \$7

General Meeting - 7:00 pm

www.EAA124.org

www.CafeFoundation.org

www.EAA.org

EAA Chapter 124
5550 Windsor Road
Windsor, CA 95492

--- Mail ---
PO Box 6192
Santa Rosa, CA 95406

In Person Chapter Meeting

[Current CDC Guidelines](#) Describe how fully vaccinated folks can feel safe doing things they have not done while trying to stay safe from Covid. Common sense, masks, distancing and fresh air still offer a reduction in risk, which as pilots we can all appreciate.

July 7, 2021 Program

CJ Stephens: High Altitude Atmospheric Sampling

Collecting samples that tell a story about the hot spots in the history of nuclear testing.

Dinner Menu: All the good stuff prepared with same fun-loving spunk and care you have come to expect. The usual \$7.

Events Calendar

Please send info about upcoming events!

OSHKOSH July 26 - August 1, 2021

eaa.org

Bob Gutteridge: bob_gutteridge@pacbell.net

Stuart Deal: eaal24newsletter@sonic.net

How I Spent My Summer - 2020 (and Spring and Fall, and...)

(by Andy Werback)

As we all know, it has been quite a year – COVID-19, Elections, The “Debate”, Fires, Pandemic, Evacuations, Schools Closed. Everything all at once. The year that wasn’t.

We, like most everyone else in the area, started closing down in mid-March. Restaurants closed, doctor’s appointments postponed. Last year, my TURP surgery got postponed for a couple of months due to the Kincaid fire (we evacuated for a few days), but fortunately, it got done and things are much better (can pee again). Starting to do takeout from the local restaurants, find that neighbors down the street had COVID but are OK now. EAA Oshkosh cancelled.

The fires this year are even more intense – Wallbridge fire, Glass fire. Orange days, no sun, wearing a mask for the ash and particulates, besides COVID. These are pictures of the fires in the early stages:





In Order: LNU fires around Lake Berryessa...Overview of the Walbridge fire in the early stages... When the smoke really settled in... Hot spot erupting just north of us...

Here's a picture from CalFire at Santa Rosa:



and there are many more on-line...

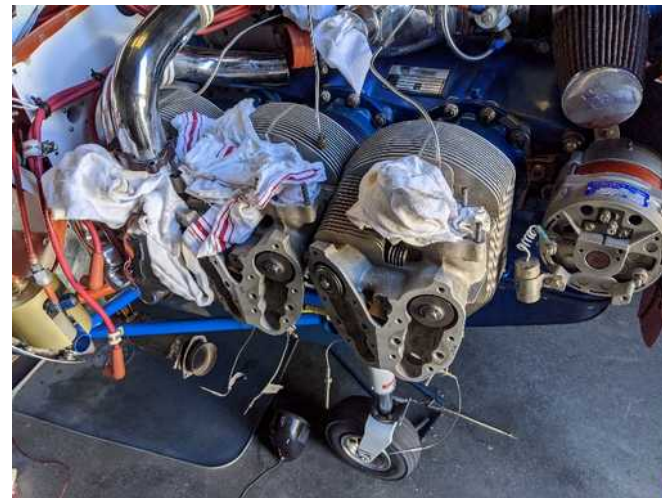
On the other hand, time to make progress on a lot of things.

In April and May, we did a whole lot of work on Peaks Pike -

repaving, clearing the edges of the roads, clearing the overhead growth, rebuilding the road shoulders. Not to mention the fund raising to enable that and all the neighborhood coordination that this sort of work entails.



June was interesting - the annual inspection of the Lancair turned up a couple of cylinders that just were not happy - a little surface corrosion wasn't getting better, so we disassembled a lot of parts, sent off the cylinders to LyCon for repair, and reinstalled them (Thank you Dave at SJC). Engine appears to be much happier, at least for now.



July - Wow, look at that! Comet NEOWISE is in the morning sky (barely visible), and just a couple days later, nicely visible in the evening sky. This is the first naked-eye visible comet since Hale-Bopp, about 23 years ago (that was an AWESOME comet). (you might want to expand the picture for a better view).

(Picture from our front yard... had a better view with binoculars)



In August, we had a rare visit from a relative - My cousin Tom Lotina (now Dr. Lotina), stayed a couple of days after finishing up his residency. Nice to see him and catch up on things.

But then things got exciting - 18 August - the start of the Walbridge fire. The beginning of about 2 months of pretty constant smoke, keeping the "go" bag packed, watching the news for the latest updates. A lot of stuff burned. Today (5 Oct) it is pretty nice, looking like fall weather, but the Glass fire is still burning, people still evacuated.



Early going in the Glass Fire - more orange

I guess we should mention what caused the Walbridge fire - some very intense dry lightning, caused by a combination of high pressure over California, a low pressure in the Pacific, and a tropical storm that was sucked up by the high/low areas. Over 13,000 lightning strikes in the bay area. The thunder and lightning lasted for hours at a time, over a couple of days. Pretty exciting, but then the fires started north and east of us, east of San Jose, around Santa Cruz. 4 million acres so far this season...

Speaking of fires, it wasn't just forest fires. We had a pretty big blaze right next to the SS Jeremiah O'Brien, on Pier 45 in San Francisco. Went for a quick flight to see the damage:



In late August, our friend Maynard Kuljian stayed a couple of days, still recovering from COVID and forced to evacuate from his Healdsburg home. He's 97 and doing relatively well, but things do add up. We couldn't manage more than a couple of days of home care, but he's doing better now.

In other COVID news, Sam has been organizing weekly "open house" gatherings among the neighbors. We've had pretty good participation, both in numbers and in different places to meet. Standard protocol is masks, social distancing, and food/beverage of your choice.

Regarding COVID, we did get tested, twice, just to make sure. All negative. But good to know that you can get tested in Sonoma

County. You just don't know who has been where... Maynard got it, so it's out there.

September was mostly orange, dim sun light, and hot. Record heat spell of 108 degrees for a few days. Pretty intense. Didn't get below 75 at night.

In other news, closer to home, we've had a chance to make progress on a couple of things.

The REO has never been totally "happy". The engine overheats. We didn't drive it for many months while working on a radiator shroud. By the time that got done, the head gasket had leaked enough to freeze up 4 of the cylinders. Everything except the cam shaft and valves came out - pistons, connecting rods, oil pan, head. Found some old rings, got some piston pin bores honed, got it back together (Really tightened down the head gasket this time), and now the carburetor is leaking. Fortunately, the bearings and valves were OK. Oh well... it probably needed it anyway. But it's getting hard to find folks who can work on the old stuff. Found one shop in the US that would repair a 1930 Schebler carburetor, and they did an awesome job.



Electronic projects - A couple of years ago, I discovered that you can buy some really cool stuff on eBay - stuff that cost \$\$\$\$, now available relatively cheaply. So now I have some nice test equipment and some parts to play with.



The guys at the museum (PCAM) were working on getting an A-26 sighting station hooked up to the gun turret - this is 1940's technology, lots of moving parts, vacuum tubes, etc. Pretty ingenious stuff. This aircraft let the gunner sit inside the aircraft and track attacking airplanes through a periscope. One guy could cover most of the gunnery needs. The streamlined gun turrets were operated remotely, so they didn't stick out in the airstream (unlike the bulky ball turrets on the B-17 and B-24, which also had the gunner fully exposed).



Douglas A-26 Invader - Classic light bomber

With today's technology, it is possible to use some of the old hardware that sensed position, but use new electronics that gets rid of all of the motor-generators and vacuum tubes. The end result is a small demo board - you turn the left "Selsyn Generator" to represent the gunner's sight, and the right "Control Transformer" is moved by electrical signals to match the Selsyn Generator.

In the A-26, this equipment weighs hundreds of pounds and takes a considerable amount of power. But the engineering was awesome, for that time. In the B-29, they went one or two steps farther - they added an analog computer (think vacuum tubes plus springs, wires, potentiometers, levers, Rube Goldberg) that could generate the proper lead angle - the computer would figure out how far and how fast, and make the appropriate adjustments. This system was very effective over Japan, but it weighed about 2000 lb (not counting the guns, ammo, turrets, etc.).

So, the project (picture below) was to hook up WWII selsyn devices with modern electronics. And again, it's amazing what can be had these days from various sources, including Amazon. This implementation uses a 1 chip 400 Hz oscillator, a Class-D amplifier

to get 15V at 400 Hz, silicon diodes for the error detector, and a little Class D servo amplifier to drive the motor. A lot of this stuff is used in the robotics projects. (A Class D amplifier is a linear amplifier, but using high-frequency switching and filtering for much better efficiency than the usual Class A amplifier).



I also had time to get back into modelling, at least a little bit. The first project was a balsa model of the A-26, just to have something to show at Young Eagles, or other places where kids might be interested. This model has an 8' wingspan and was designed for electric or gas engines. It wasn't supposed to cost a whole lot, but by the time you buy enough balsa, a bit of Spruce (and some for future use), covering material, etc., it's not so cheap. But, you can now buy spring-loaded landing gear that actually works.



The other area of interest is radio control models. I built one of the first analog proportional radio control systems, using the design and parts for Radio Control Modeler's "Digi-Trio" radio system. That never worked very well. For instance, the instructions said to clip the leads close to the printed circuit board - I cut them too close, and they started coming apart! (These days we have plated through holes that don't have that problem). This was in high school - 1965 or so. I later built a Heathkit radio control kit that was used in the USS Missouri and USS Fletcher boat models. (Putah Creek at Davis and at IBM's pond in San Jose).

But they started changing things, like frequency band. Sam had given me a nice Futaba system, but it was obsolete in a few

years. Used it in a Graupner soaring glider from Germany (Freiburg, if I recall).

Today, however, the radio control hobby has all sorts of options. Pretty darn cheap radio and servos. And small and very light. Some even have self-leveling capability. And electric motors and light weight batteries - awesome stuff. The motor controllers (Electronic Speed Controls) are super-efficient. That, combined with modern EPO foam, 3-D modeling software and CNC molds, makes for some very sophisticated models. Now most of the models are ready to fly, or almost ready to fly. And darned cheap. \$300 for a B-25? Airplane, radios, motors, and battery! Incredible. Now I just need to be able to get it back down in 1 piece.



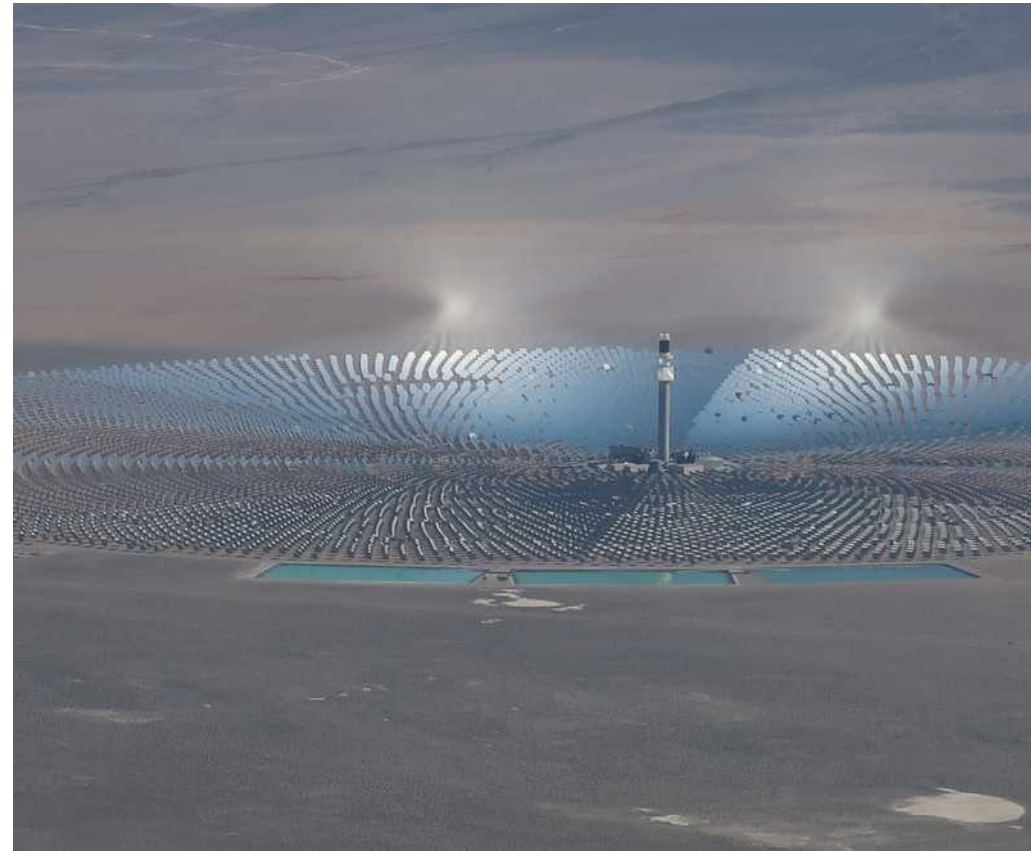
Just FYI - when I started working at Symbol Technologies (1993), the big thing was 802.11 - Wireless Internet. Now known as Wifi. There are two protocols - frequency hopping and direct sequence. Both generate a "spread spectrum" radio signal which survives noise and interference, and has pretty decent range with a

low power transmitter and receiver. We started out with radios (including the Intel 80186 micro processor to make it all work) on a small PCMCIA circuit board (about 2" x 3" with 400 parts covering both sides of the board). About \$400 ea. Now you can buy the whole thing as a chip for a couple of bucks. So today's RC radios can both control and send back telemetry, operate from a small battery, and have excellent range. Plus, they can share frequencies, as each device has a unique ID. But the servos still mostly use the same basic analog pulse width proportional modulation that the Digi-Trio system used...



Early 802.11 radio card by Symbol Technologies – radio and microcomputer, 1 MBPS FH

To wrap up, it has been a bit quiet this year. But did make a couple of trips over to Nevada just to see what there is to see – via South Lake Tahoe, Hawthorne, and over to Tonopah (nice and sunny). This is a view of the solar power plant near Tonopah (I thought it was pretty cool, even though I'm sure it's pretty hot):

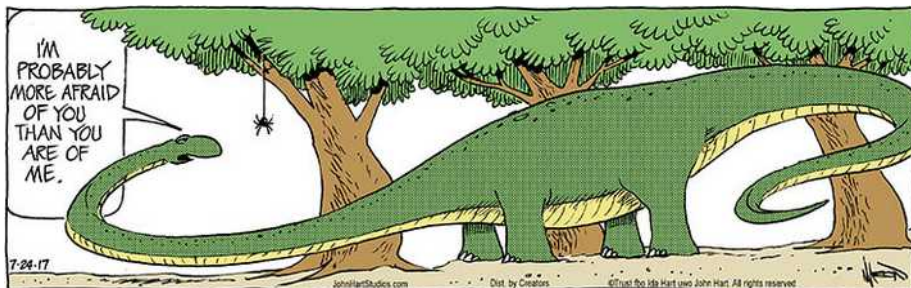


Fly Mart

Please send changes to aaa124newsletter@sonic.net

Your ad here (5-21)

What you have for sale and how to reach you
707-555-1234
YourEmail@YouISP.com



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News / Notes From the Editor

It is great to have contributors to the newsletter. Your contributions are welcome.

Interesting Aviation Links

(Thanks to Larry Rengstorf and David Heal)

Crazy Space Plane [Click Here](#)

Build a Cub [Click Here](#)

One of a Kind [Click Here](#)

EAA Chapter 124 Board Meeting Minutes June 2, 2021

Meeting Convened 5:30 pm

Members in attendance: Marlon Young (President) John Whitehouse (Treasurer) David Franco (Secretary) Bob Gutteridge, Larry Rengstorf, Dominic Cerneglio, Brien Seely, Mike Fenn. Dan Steinhoff

CAFÉ Motorhome- No action on the removal of motorhome.

Young Eagles upcoming dates 8/21, 9/18 & 10/30

Summer Event Proposal- Open House in combination with Young Eagles scheduled for Aug. 21st. Conveyor pizza ovens will be tested in preparation for a pizza competition.

Treasurer's Report- The coffers are generally holding steady. Rentals are largely paid up. The chapter is over and above last year's financial reserves. Progress has been made regarding the opening of gmail account linked to eaachapter124.com

Roster Concern- The delay in roster generation will be on next month's agenda.

Facilities Report- The facilities manager reports all grounds mowed and weed abatement has been done. Propjet will be moving to our side of the airfield in the coming month. Hangars are full.

July Meeting- Mike Fenn, presentation to be determined.

Future Agenda Item- Officer recruitment and nominating committee should be initiated.

Meeting Adjourned 6:00 p.m.

EAA Chapter 124 General Meeting Minutes June 2, 2021

Meeting Convened 6:30 pm

The president, Marlon Young, offered a hearty welcome to all in attendance. The resumption of gatherings has allowed everyone to share in the camaraderie that has long sustained our chapter's success. To that end, two new members, Robert Leach and John Kopilow were welcomed into the fold.

The president then announced the upcoming events:

Young Eagles upcoming dates 8/21, 9/18 & 10/30

Summer Open House- Scheduled to coordinate with the Young Eagles Aug. 21st event. The open house will include a pizza competition, with people's creations being backed onsite.

Member Announcements: Bob Gutteridge shared some impressions of his exhilarating trip, which included flying the continental divide from Canada to Mexico.

Presentation- Art Hayssen delivered a slideshow the largely focused on out of the way backcounty destinations that are all within a 500 mi. radius of our Santa Rosa base of operations. His talk also included photos and descriptions of his visit to the Pacific Northwest rainforests and participating in a Native American Potlatch, which we came to understand is a festive and welcoming ingathering of tribal and non-tribal participants.

Meeting Adjourned: 9:00 pm



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Young Eagles:

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Librarian:

Walt Ferris	(415) 482-8331
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EAA Chapter 124**5550 Windsor Road****Windsor, CA 95492**

Chapter meetings are held on the first Wednesday of each month at 7:00 pm. FOOD (\$7 sometimes \$10) AND SOCIALIZING (free) from 6:15 to 7:00 pm. EVERYONE IS WELCOME!

Directions: The site is located on the west side of Sonoma County Airport. Take the Shiloh Road exit from Highway 101 in northern Santa Rosa. Turn left at the stop light (west) and continue to a "T" intersection. Turn left again and follow the road to the EAA sign on the left.

Members are invited to submit articles of interest. You will be notified whether or not an article will appear in the current issue.

Please email articles to: eaal24newsletter@sonic.net

or mail to: Stuart Deal
430 Secretariat Ct
Santa Rosa, CA 95401

Deadline for newsletter submissions is the 20th of each month. Articles submitted after that date will be included in the newsletter at the discretion of the editor. All articles are copyrighted. To reproduce any article, please contact the editor.

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