

# The Flying Wire



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**Chapter 124  
Experimental Aircraft Association**

**Volume 63 Number 4  
April 3, 2024**

**Board Meeting (Quarterly)- 5:30 pm**

**Dinner - 6:15 pm \$7**

**General Meeting - 7:00 pm**

[www.EAA124.org](http://www.EAA124.org)

[www.CafeFoundation.org](http://www.CafeFoundation.org)

[www.EAA.org](http://www.EAA.org)

EAA Chapter 124  
5550 Windsor Road  
Windsor, CA 95492

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

# April 3, 2024 Program

## Presentation: The anatomy of an an NTSB Investigation

Please join us at our April 3rd Chapter meeting to welcome speaker and longtime EAA Novato member Rick Beach. Rick is the Aviation Safety Chair for the Cirrus Owners & Pilot's Association (COPA) and a Cirrus Aircraft expert.

Rick and COPA were invited by the NTSB to participate in the investigation of a Cirrus fatal accident that occurred at nearby Schellville Airport in Sonoma. Their position in this investigation as Party Representatives allowed them to join the NTSB team to review factual evidence, analyze information, and contribute insights to the investigative team prior to issuance of the official NTSB report. This will be Rick's first public presentation on this topic and is sure to be an informative night.

Come and learn how the NTSB conducts an investigation, what happened... and what happens behind the scenes. Most importantly- - how we can all learn from this accident and avoid similar mistakes in piloting the aircraft we are so privileged to fly. The old saying goes... "A smart man learns from his own mistakes, but a wise man learns from the mistakes of others!"

We look forward to seeing you there!

## Dinner Menu:

April dinner menu is hamburgers and hot dogs with lots of fixings. Baked Beans and Super Salad. Brownies for dessert. \$7

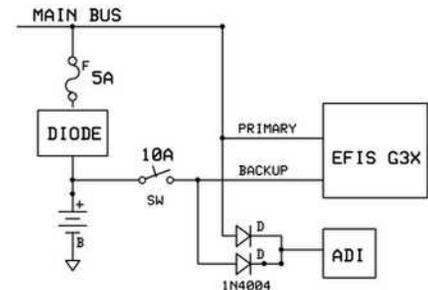
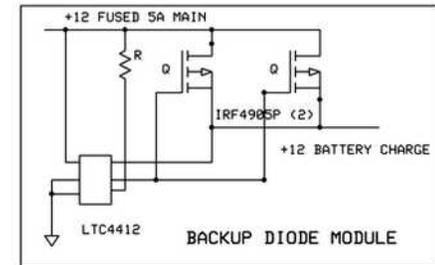
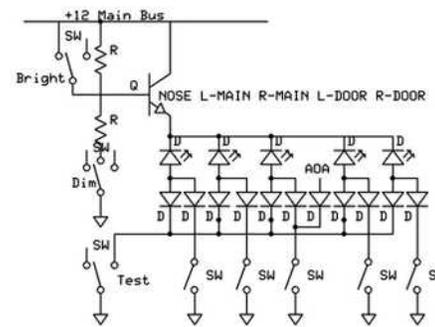
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## Printed Circuit Boards - EasyEDA

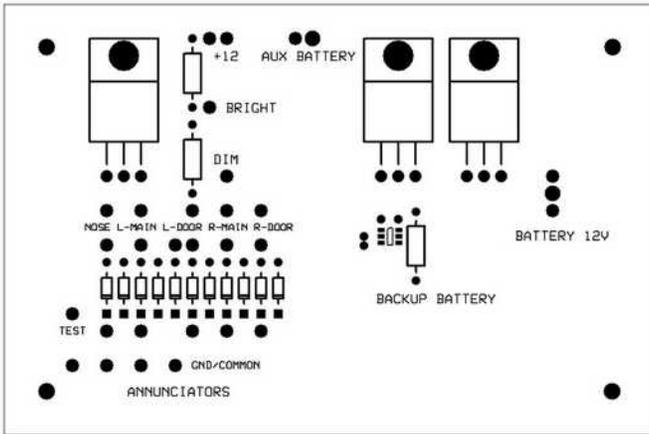
By Andy Werback

Sometimes there comes a need for a printed circuit board (PCB). Even in a simple airplane - This is the updated annunciator board in the Legacy - It provided diode switching for testing the gear down

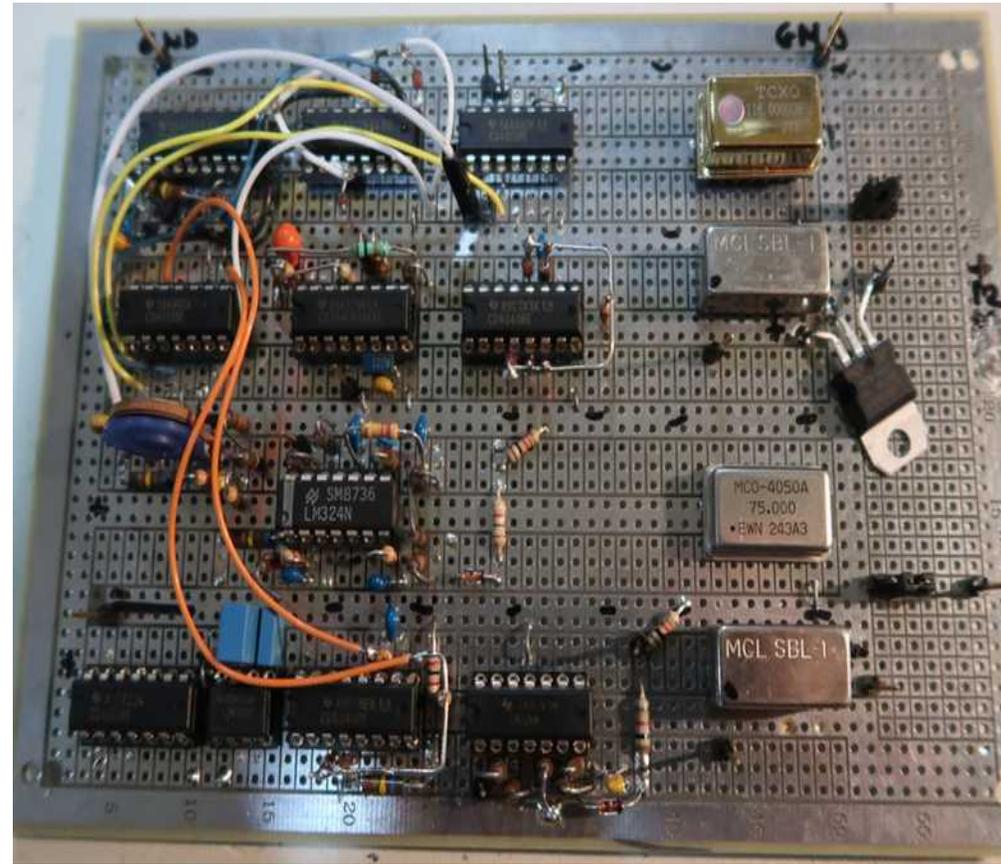
lights and a dimmer circuit, along with a battery backup charging module. It replaced a hand-wired board that wasn't much to look at. The schematic was done with ExpressSCH (Express Schematic) in 2014.



It took about 10 days to get the actual board back and assembled for a relatively modest cost of about \$30, I think it was. Quality was good, but the drawing tools were a little less than intuitive and didn't have some nice features like rubber banding the circuit traces. This is the final board artwork:



This year, several little projects needed a printed circuit board. A lot of times, I had just hand-wired up a prototyping board. It's a bit messy and lots of work (although easy to change a wire or add a component when trying different circuits). This is the result of one of those projects - a VOR signal simulator. It did require some redesigning along the way, so prototyping was a good way to go. The real mess, though, is on the back side of the board.



Forward to 2024 - There must be something better for doing quick and easy printed circuit boards. A few web references were checked, and EasyEDA seemed like a good place to start.

EasyEDA is easily installed, has no fees and is easy to use. Just like its name. Lots of "easy". The variety of parts available today is amazing, and it's essential that the footprint in the design tool data base matches up to the actual part - whether it is a surface mount part or a through-hole part. We're way past standard resistors, capacitors and a few transistors.

EasyEDA has an extensive library of parts that can be expanded as needed by the users. It can also generate the parts list, which can be exported to many of the parts supply houses, such as Digikey.

I experimented with several board designs in just a few days - it's

very intuitive, with just a few things needing a bit of research. For example, adding a pad and connecting it to a trace requires that the pad's "data" must be updated to indicate which trace on the netlist it should connect to. Otherwise, the program won't let you them connect, as it should. Also, you need to have a login account, in order to upload a PCB for fabrication. It only needs a credit card for fabrication and shipping (no credit card is saved with your account).

The file system is very robust - I haven't had any problem with wondering where files might be or how to get to them. And there is a very good design check that helps to verify that everything is connected as it should be and that there are proper clearances for traces. The rubber-banding of traces and ease of editing is excellent. And the automatic routing does work!

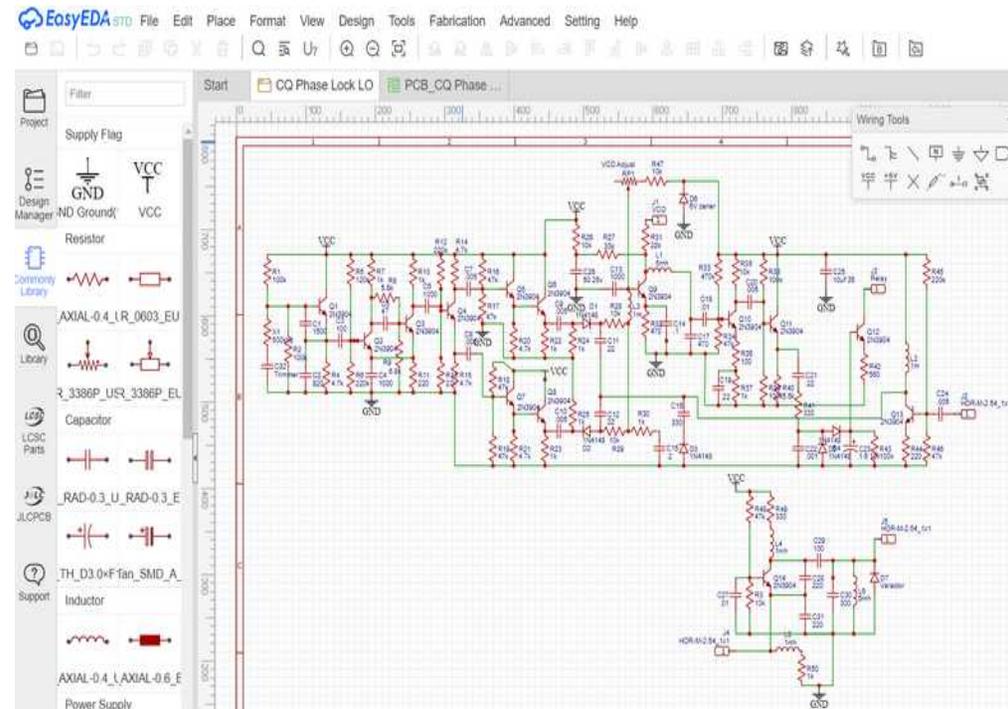
When it comes time to do the layout of the actual PCB, the program will display an initial board outline, with all of the parts and the net list off to the side. It's up to you to drag the parts to where they best fit and orient them to maximize the simplicity of the wiring traces - much like probably what you did on the schematic. It takes some time to put parts where they fit and make the board look like you would want it to look. The unrouted traces are shown in blue, so you always have a reference to show where parts would best be placed.

If you have to go back and change the schematic - add or change parts - there is an update feature. The changes will be exported to the PCB layout - all you have to do is remove the parts that were being replaced, and put the new parts where you want them. The rest of the PCB layout doesn't need to change unless the new parts were larger, for instance.

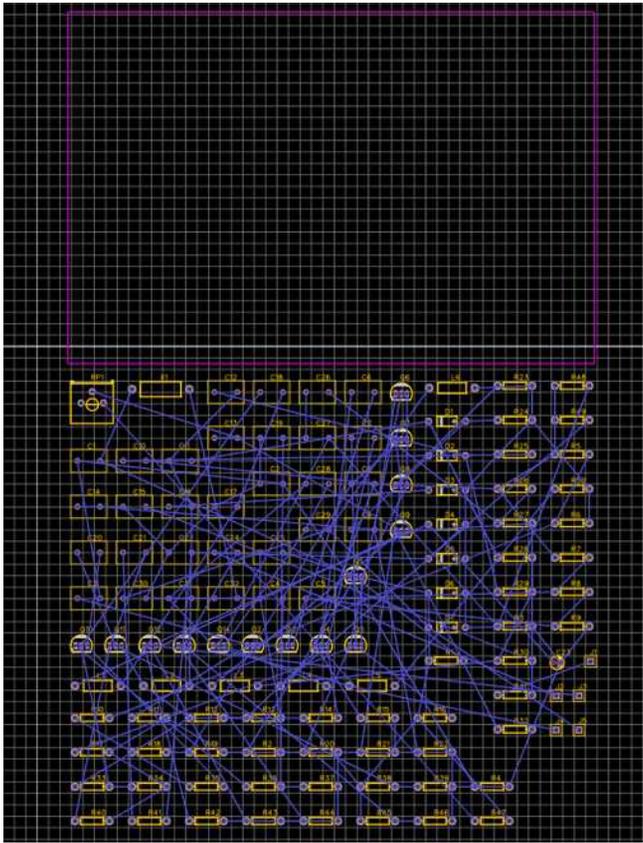
But the real stunner came when you upload the files for fabrication - the cost is about \$2 per board (minimum of 5), and shipping is about \$17. You can have a lot of fun for \$30. This all comes from China, via DHL, and it took about 6 or 7 days total. I'm not thrilled about doing business with China, per se, and the cost is amazingly low (a very efficient factory), but the quality and attention to detail is amazing.

A couple of screen shots - The schematic tools are on the left,

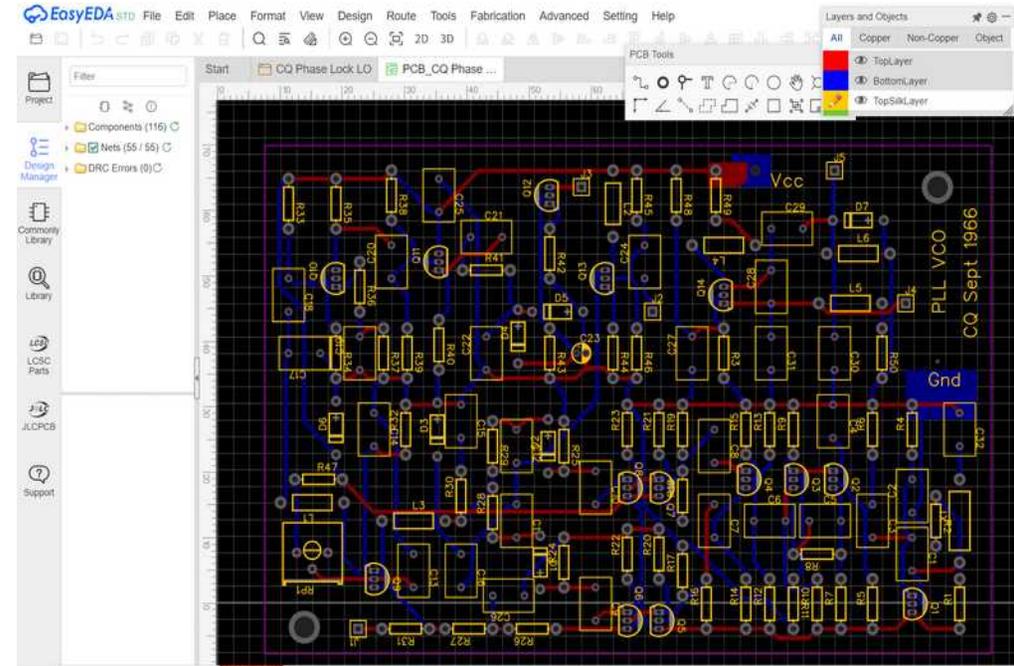
workspace in the middle:



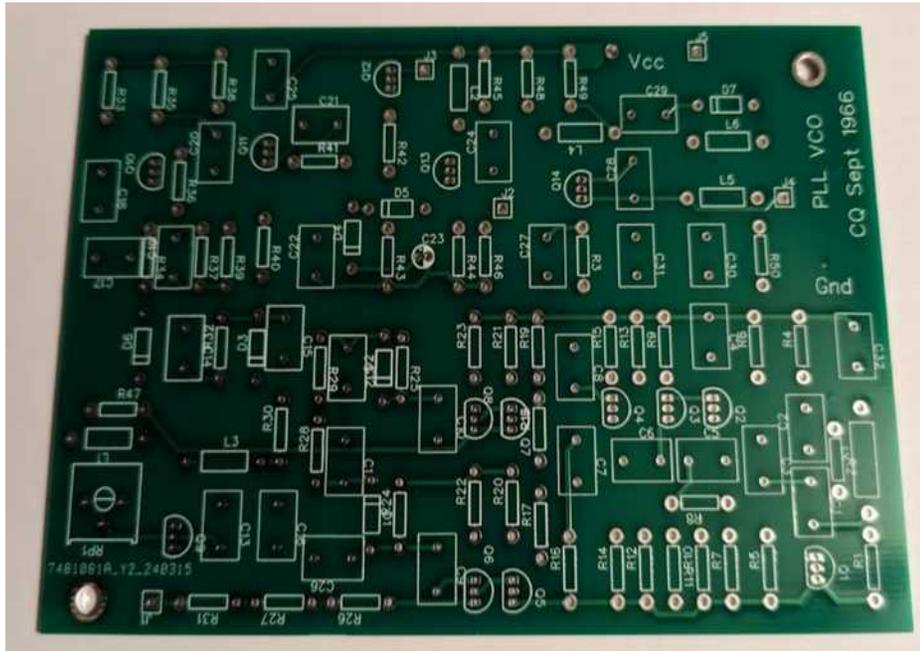
The next big step is to move the parts to the initial PCB layout (this is where the fun begins):



And here is the board layout:



Which shows up a few days later:



Add parts and you have a project!

## EAA Chapter 124 wins the 1st annual KSTS Airport Chili Cook- Off

(from Dominic Cerniglio)

Sunday March 24th saw the Airports' first Annual Chili Cook-Off competition. The extravaganza kicked off at noon with 17 competitive teams throwing their hat into the ring to compete for the prize. In the immortal words of Sean Connery- "There can be only one!!"

It was a tremendous success with over 300 people in attendance! The historic Redwood Hangar at the Jet Center echoed of her former glory with crowds of people milling about having fun, eating great chili and enjoying the day. It was made even better with Dane Jasper's P51 Mustang and Bud Eliff's Red Waco filling out the background and wow'ing the crowd.



The competition was hot and heavy with the likes of PCAM, CAP, Sonoma Jet, Kaiser, Alaska Air, North Coast Air, Tower Dave & ATC, Challenge Air and more striving for top Airport Chili. By 2pm all the Chili was gone and the votes were in.

EAA 124's own "Tri Motor- Tri Tip Experimental Chili" won by a landslide and took the coveted Stainless Steel Chili Ladle trophy! 2nd place went to Tower Dave and his amazing Smokin' Runway Chili, while 3rd place went to Tongue Punch BBQ.

It was a great day. The gift basket the Chapter won from the event will be on display at the Monthly meeting this April, and the coveted grand prize Chili Ladle will be on display in the meeting room forever! And the Chapter will receive \$500 cash from the Revenue generated for the event!!!

Special thanks to Sean Michael Beehler. Without his recipe and expertise we could not have done it. Hope to see you all the Chili Cook-Off next year!!

# Joby Takes Flight

(By Andy Werback)



Maybe you have been following the news from New York lately? A Joby VTOL taxi was featured doing test runs from Manhattan to La Guardia. Still in Experimental mode, but great progress.

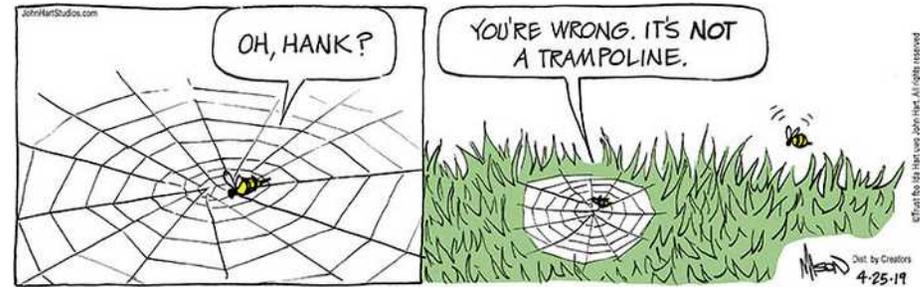
<https://www.jobyaviation.com/news/joby-flies-quiet-electric-air-taxi-new-york-city/>

A good friend of mine and fellow Lancair owner/builder Scott Berry, has been working at Joby for many years and is pretty excited about this. He says that they engineer and build virtually every part - structure, controls, motors, batteries, etc. Everything except some of the Garmin avionics. That's incredible.

Joby has facilities at 3 main locations, San Carlos, Santa Cruz, and Marina (KOAR). Marina is where they build the composite structures and do the integration. San Carlos and Santa Cruz do, if I have this right, corporate operations plus motors, batteries (yes, they build their own batteries), all of the electrical controls and battery management, and design engineering.

Good news - he has offered to host a tour and I would be happy to coordinate that with him. Possibly early next year when the weather cooperates.

For more information about Joby, <https://www.jobyaviation.com/>



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## Interesting Aviation Links

(thanks to David Heal)



[Click Here](#)

Blue Side Up [Click Here](#)

Pilot Debrief [Click Here](#)

## Newsletter Editor Notes:

from Stuart Deal

I am currently celebrating the emergence of the "No Backs" style of photography. Recognizing faces is back in. I hope for good!

If you have the urge to record an event, give a yell and get those shy participants to look your way and show their mug! We are styling now!

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## **EAA Chapter 124 Board Meeting Minutes**

**February, 2024**

Still Quarterly

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## **EAA Chapter 124 General Meeting Minutes**

**March 6, 2024**

Meeting convened 7:45

The President extended thanks to all the eager hands who made our St. Patrick's Day inspired corned beef dinner a success! The president next solicited builder's reports. An individual who is known to be storing a project in southern most hangar on facility grounds-presented a synopsis of his recent efforts getting an Ercoupe airworthy again. He recounted how he recently replaced the ELT and was working on getting the ADS-b transponder in order.

After concluding the description his recent progress, the individual proffered a motion from the floor. The motion requested that the board exhibit comity towards the CAFE hangar tenants and "Turn down the heated discourse" regarding the eviction of the CAFE hangar occupants. The motion was seconded. The motion was tabled pending a comprehensive review of the bylaws.

The treasurer posted the recent chapter balance sheet per usual.

Presentation- USMC Captain Bill Collier.

After serving in Vietnam as a helicopter pilot Capt. Bill Collier applied to an ad for helicopter pilots posted by Air America. The company would later be identified as a CIA front operation which armed and resupplied the Laotian forces hostile to the Northern Vietnamese military incursions into their country. He described a

taxing and often harrowing schedule of ferrying supplies and, in one case, a live sacrificial water buffalo to highland tribesman. He was principally based at Long Tieng, which while technically "Secret" was generally understood to be an American outpost.

Despite constant danger and near impossible flying conditions over inhospitable terrain, Bill emerged largely unscathed. He shared fond recollections of time spent out of harm's way, and shared the satisfaction he felt having flown a rescue mission, guided only by intuition, he navigated to the location of a downed observation plane and evacuated the pilot and spotter. The details can be viewed on YouTube. Search the title The Rescue Of Raven 1-1

Meeting adjourned 8:45 pm

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## Chapter 124 Contact Information

**President:** Dominic Cerniglio (24/25) (310) 628-9008  
**Vice President:** Marlon Young (24) (707) 479-9994  
**Secretary:** Dave Franco (24/25) (707) 494-4259  
**Treasurer:** John Whitehouse (24/25) (707) 217-2687

### Board:

Mike Cingari (24/25) 707 280 0159  
George Marshall (23/24) 707 293 4583  
John Swanstrom (24/25) 707 758 9017  
John Fluno (23/24) 707 315 5524  
Jeremiah James (24/25) 707 291 8445

**Membership:** Dave Franco (707) 494-4259

**Facilities Chairman:** Larry Rengstorf (707) 570-5267

### Facilities Committee:

Dwayne Green (707) 544-4539  
Mike Fenn (707) 481-5791  
Mike Tovani (707) 838-1891  
Dominic Cerniglio (310) 628-9008

### Newsletter Editor and Webmaster pro tem:

Stuart Deal (707) 328-4206

[eea124newsletter@sonic.net](mailto:eea124newsletter@sonic.net)

### Technical Counselors:

Bob Gutteridge (707) 539-5188  
David Heal (707) 953-5021  
Jerry Rice (707) 431-0206  
Kevin Quirk (707) 539-8589  
Doug Dugger (530) 526-4997  
Rolf Unternaehrer (707) 364-7935

**Flight Advisers:** CJ Stephens cell: (707) 799-2878  
David Heal home: (707) 838-0261  
cell: (707) 953-5021

**Young Eagles:** Josh Hochberg (415) 999-0949

**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: eaa124newsletter@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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