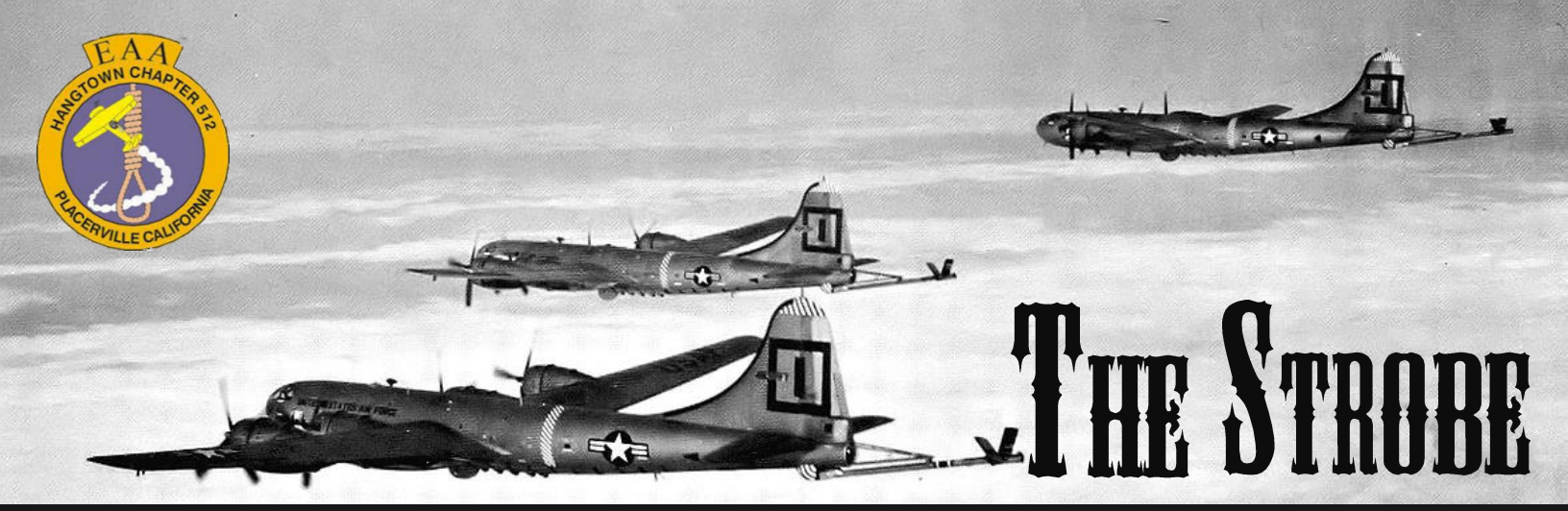


The Strobe

EAA 5I2 Placerville

January 2I

Prez Sez...

It's a New Year— And It Couldn't Come Soon Enough

Like many of you, I want to put 2020 in the rearview mirror! I look forward to serving as the new president of EAA Chapter 512: The Bob O'Hara Memorial Chapter. Hopefully, we all survived the year of the COVID-19 pandemic and can put it behind us this year with the new vaccines. We do not know exactly when that will happen, so we are planning to continue with our monthly remote meetings using ZOOM for Board, IMC/VMC and general meetings.

When the pandemic locked us down beginning in March, we started using Zoom to conduct board and general meetings. Now many of us regularly participate in Zoom meetings. It has invaded our language as a noun and a verb. While I was never a Star Trekker, Zoom is the equivalent of "Beam me up Scotty". Now we just get zoomed.

For the first time in our chapter's history, we held a virtual Christmas Party from the comfort of our respective homes via Zoom. It creates a virtual gathering place for participants

GENERAL MEETING INFORMATION

This Wed at 7pm via Zoom.

Link provided on *pg. 3*

IN THIS ISSUE

Happy New Year!

displayed in small windows on the computer screen.

I apologize for some confusion when I sent out the Christmas Party invitation. By mistake, the invitation went out on Tuesday with the wrong date. I followed that with the correct date, Wednesday the 16th, but in the subject line, it said something like "Tuesday meeting cancelled". Some people did not open the email with the link to the meeting on Wednesday. Of course, the Strobe got it right and the party went on with over 25 participants. We all had a jolly good time! Some of us (nameless) were well lubricated holding and tipping wine glasses or large bottles. We got it all on camera!

The pandemic has changed our way of life and how we socialize and communicate. By the end of the year, the number of cases in the U.S. was greater than 18M with 329,000 deaths. California topped all states with 2 M cases and 24,000 deaths by the end of the year. We are living in unprecedented times as I take the rudder pedals and try to keep the ship or chapter on a steady course. I am grateful for our new team with Vice President Jim Pinkowski, along with John Crocker as Director at Large. And of course, we could not do it without the hard work of Treasurer Judi Gordon, Secretary Rob Bulaga and Director at Large Dave Lugert.

We will articulate our goals for this year in future issues of the Strobe, but for now, foremost is to keep the chapter alive and thrive for the year ahead. One way we can do that is to grow our membership with new, younger folks starting their careers in aviation, or seasoned folks who just love airplanes. Each year we complete the EAA chapter renewal process and pay our dues to national, including insurance and naming the new officers. At the end of 2020, our membership count was 73, which includes families with multiple pilots and young adults who perform important chapter roles. Our headcount exceeds the national average of 43 by more than 70%. Our chapter is financially strong and growing in members.

I will use this space in the Strobe each month to communicate to our membership and try to keep you up to date on all things going on at the chapter and around the airport. Our mission is to promote recreational aviation at the local level and to enjoy and share our experiences with others. I hope you can join us at the next chapter meeting and get zoomed!

Welcome to new members:

Kevin Cooksy, James Golding, Dave Ross, Mac Macinnes, Bob Penzien, Brian Rauchfuss,

In the Pilot Pipeline: Despite all the hardships of 2020, the chapter can celebrate new pilots taking tests, getting check rides and achieving new certificates. These pilots include:

- Andrew Gordon, EAA 512 Ray Scholar, nearing the end of his pilot training for a Sport Pilot certificate.
- Dale Kral, Sport Pilot preparing for his check ride for Private Pilot. This was not an easy feat considering the limited instructor resources as Placerville.
- Greg Stein, Private Pilot working (completing) toward his Instrument Rating.
- Willard Mathews, Private Pilot, completing his instrument and commercial rating in November 2020.

Project Updates:

Neil Robinson, RV-12, Folsom

Rob Lasater, RV-9, Rescue

Jim Golding, Osprey II, Placerville

Rob Bulaga, Fly Cart II, Folsom, *GoFly competition sponsored by Boeing. See January issue of Sport Aviation.*

Upcoming Presentations:

January – Ney Grant, EAA512 member, author of "Fifty Classic Destinations for Pilots" will share his West Coast Flying Adventures blog. It's a great book with spectacular pictures.

Greg Stein, Long Cross Country from Kansas to Sacramento

Upcoming Events:

April – September - The chapter will host Display Days the first Saturday and Sunday each month, 9 AM to 1 PM, which will coincide with Pancake Breakfast on Saturday (when we are allowed to continue the chapter event). We plan to offer a warm place to meet with coffee and donuts while the hangars are open to display aircraft.

ZOOM MEETING

↓ TEMPORARY LINK ↓

https://us02web.zoom.us/j/84164500962

Use above link to join General Meeting on **Jan 20th at 7pm**.

Or, check your email for an official invitation.

Editor's Notes

(therefore notable)

Become a producer of next month's issue by helping furnish Newsletter content!

Here's a cheat sheet on what to do

Email Submissions to Helen at:
more_right_rudder@yahoo.com

INCLUDE *(please)*

1. **Article, Link, Ad, Image, Misc.**
2. **Title** (or I'll make one up)
3. **Date** (current or evergreen)
4. **Notes** (additional details on how you'd like it published or I'll be creative on your behalf)

DEADLINES 3RD SUNDAY

Late submissions risk not being published

For anything you'd like to share, promote or announce to our membership, the newsletter is a great place to do just that!

Seriously,

The Editor

IMC/VMC

IMC/VMC meetings resumed in November of 2020. If you are interested in attending, please email or call Greg Stein to ensure you're on the mailing list to attend.

Email: greg.stein777@gmail.com
Call: (916)862-0175

AVIATOR ARCHIVES

"As a kid during WWII, I remember getting to watch the military aircraft fly over and then became interested in identifying them. When I was about 5 years old, my uncle (who was in the war) had a plane, and one day, he flew over my house and I looked up, thinking; I want to do that! He's also the one that told me I needed to learn lots of math. I became interested in model airplanes, carving & building them, and also had a little pedal car which I put a board across for the wing. When we moved from Pine Grove to Jackson, I would ride my bicycle up to the airport and watch the planes come and go. My dad knew a guy who flew out of Jackson and so I got my first flight when I was about eight, and that's what started it all!

John's homebuilt Pietenpol

I finally got a job around 19 and, in between college semesters, I spent my extra money on flying lessons—one half hour at a time. Although I graduated as a mechanical engineer, all of the classes I took were anything I could find 'aeronautical & structural'. But then military and life interfered, and I didn't end up getting my license until 1969. My first flight lesson in '59 was in a Cessna 140. In the military, I joined a flying club and ended up soloing on the airbase in Otis, Massachusetts. I was there for 3 ½ years and experienced some of the coldest winters ever. When the weather got really cold, the airplanes were sent to Myrtle Beach, SC or Charleston, NC. They had an away-team that would go with them to maintenance the planes. After Otis, I was sent to Korat, Thailand as an aircraft maintenance advisor to the Thai Airforce. Although I was still a military officer, I was assigned to the state department. They had T-37's in the flight training school and needed someone there to help with maintenance. After that, I decided to get out of the Airforce and thirty days later, I was working for the Airforce again—as a civilian at McClellan AFB in the DEPO. I was initially assigned to the F-105, weighing around 57,000 pounds with a payload larger than the B-17, and worked as an engineer for about 12 years.

One of the problems I helped solve was the pilot recovery system. The jets were always taking hits over Vietnam and needed to be able to fly as long as possible (in order to get to a safe area to eject). The F-105 had two hydraulic systems and a third was later developed, that ran off of ram air turbine. So, by locking up the horizontal stabilizer—before losing hydraulic power—they figured the pilot would still have enough rudder control and yaw input, without power. For pitch control, there was a 4-way switch that split the flap control operation so that they could do differential flaps on the electrical system. It was a tricky but neat system and it worked.

About three years after the planes had been modified, there developed a problem. Inside the flaps were mechanically sealed potentiometers that were wire-wound around a plastic core. The plastic would eventually outgas and corrode the wire, killing the entire system, causing complete control loss of the aircraft. We couldn't figure out how the wire could possibly corrode. I happened to be taking a corrosion control course, offered by the Airforce, and I remembered them telling us that some plastics were corrosive. That's when I made the connection. We ended up replacing them all with a conductive plastic that didn't corrode or outgas.

While I was there, I got to witness the shortest landing ever by an F-105. A damaged airplane was coming back from the north and they cleared the airspace for him. His gear came down but, somewhere, the brakes had been damaged and locked up. The plane touched down and stopped in about 300 feet. The tires exploded and the rims were ground down to the axels. This, of course, caused all kinds of trauma for the squadrons coming in behind him, with low fuel. So, they ended up landing them on the taxiway.

I also worked on the T-39, military version of the Sabreliner, the 'generals' airplanes. They, of course, demanded "this and that", so, we complied. They were having roll & trim control problems, and it turned out, they weren't maintaining the airplanes. On the aerodynamic leading edge were slats, and if not maintained properly, they would lock up. We had to go through the planes and decide what maintenance was required, and then wrote tech manuals for them. Another problem we solved, after turning the aircraft, the pilot would have to re-trim everything. When I got involved, we started disassembling the airplane one piece at a time. Fortunately, one of the first things we removed was the vertical stabilizer. It turned out to be a five-cent washer that hadn't been placed on the head of the screw.

For the last 20 years of my career, I was assigned as fight control engineer to the A-10. It was built like a tank and flew like one too. I was on a team that got to investigate the components of each system after an accident and determine whether or not they were operational during the incident. I got to travel all over the world and most US states for this work. Overall, I really enjoyed getting to research the different aircraft systems and learned that there are a lot of different types of nuts! Some pilot "nuts" too!

I bought my first airplane, a Cessna 150, in the mid 70's and flew it about 10 years. Then I bought a Cessna 182 and have enjoyed flying it all over the western states with my wife, camping in the back country.

John McPherson was encouraged to join the EAA in 1967 by a friend he met in Otis who was building a gyrocopter. John is one of the original members and an active volunteer of the local EAA Chapter 512 who enjoys giving Young Eagles flights and helps in administrative & hangar duties. John's favorite project, his 1929-design homebuilt Pietenpol, keeps him quite busy!

Interview by Audrey Brand

Story & Photos Courtesy of John McPherson

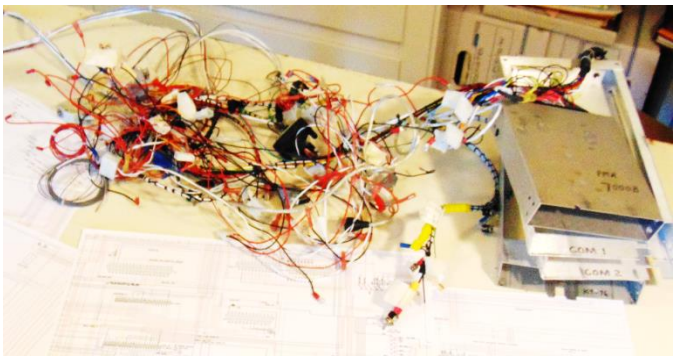
RV-7A Panel Upgrade - Part V

Reversing Wire Entropy

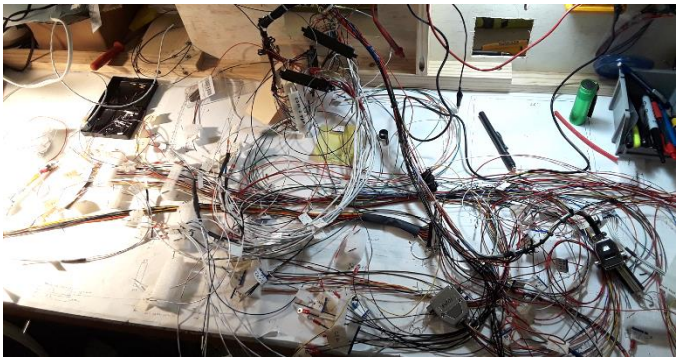
One of the reasons to build and maintain your own aircraft – it's actually part of the regulations – is for self-education. I do learn things doing this – like, for example, how incredibly long a series of seemingly simple tasks can take. Or how really bad at planning I am. Once I had the instrument panel removed from the aircraft, the wiring schematic "finished" and all the wires laid out on a work bench, I thought "great – a couple of weeks and I can get this all straightened out and bundled up neatly".

Sometimes I crack myself up.

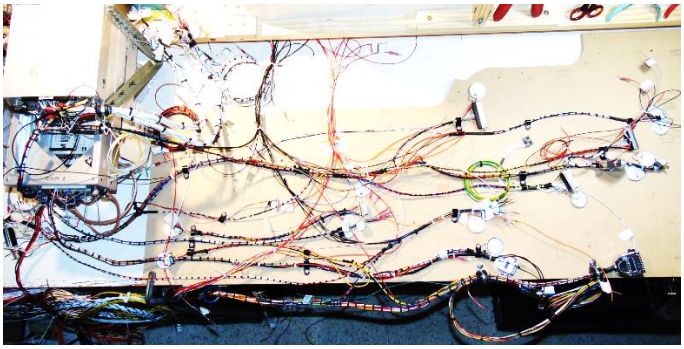
"Entropy" is, by one definition, "a process of degradation or running down or a trend to disorder". It turns out that poorly supervised electrical wires do this at a much faster rate than most other things in the known universe. This is the mass of instrument panel wiring as it was removed from the plane.



It was about to get a lot worse! After just a few weeks "straightening" things out, I had this:



Moving my original EFIS display from the left to the right side of the panel necessitated making a new, longer wire bundle from the AHRS, with several other wires that tied into various components. Most of the audio panel wiring also needed to be extended because of the radio rack now being rigidly attached to the airframe. The wires for all the new components (GRT Sport SX display, GRT EIS400 engine monitor, new combined fuel gauge) plus all the new sensors and related items had to be integrated as well. In the end, not much of the original wiring remained. Sheets of paper taped to a layer of Styrofoam sheet let me sketch out the necessary wire runs to size. As each wire was cut to length, it was routed around T-pins stuck into the Styrofoam with its respective wire bundle. Cutting sheets of adhesive-backed file folder labels in half, then creasing the half-sheets down the middle gave me color-coded "flags" to mark the ends of wires with the connector/pin ID where they would eventually be installed, matching the connector names from the schematic. Eventually, after endless hours of circuit tracing, organizing, updating schematics, calls to avionics suppliers, soldering, crimping, splicing, and cable lacing, I had regained some semblance of control. It took over three months.



All kidding aside, the key to getting through all this is to pay close attention to detail, and double- and triple-check everything you do. Spend a lot of time reading the documentation for the various components, and check for updates on manufacture web sites. I'm sure an experienced avionics technician could rip through one of these in a couple of days. I spent a lot of time just figuring out what I didn't know and tracking down the

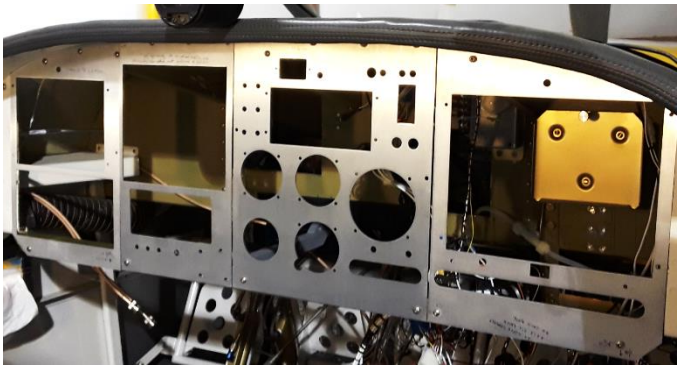
answers. I'm now pretty confident I know where everything goes and more or less why.

In addition to doing a better job of bundling and routing wiring, I also upgraded the wire connections. My original panel used Molex connectors. I've since become a big fan of D-sub connectors. I find them much easier to mate and de-mate, they are compact and I think make a much more reliable and secure connection. Plus, except for pins and sockets, they are surprisingly inexpensive. I used metal-rimmed paper key tags to mark finished D-sub connectors awaiting back shells. Prior to installing the back shells (lower right in photo), I engrave them with the connector ID to simplify maintenance or troubleshooting later. The bundles of loose red and black are power and ground wires, respectively, which will be cut to final length and terminated with ring terminals once on

Laser-cut panel pieces arrived a few days after ordering, vacuum-sealed on a sturdy shipping card.

the assembly jig. A few other loose wires are visible, tagged and ready to connect to terminal strips or other junctions. The whole wiring assembly is now on the assembly jig waiting to be mated with the components in the instrument panel segments.

In contrast to the wiring, obtaining the metal instrument panels pieces was quick and painless. As mentioned in a previous installment, the panel layout was done in a 2D CAD program and working panels made of ABS plastic sheet were hand-cut to match the CAD drawings by printing them out, pasting them to the plastic and cutting to match. This let me truth-check the CAD files to the physical structure. All I had to do was export the CAD files to a laser-cutting company's web site. Five days and $60 later, my instrument panel pieces showed up on the big brown truck ready to install. The panels matched the CAD files within a few ten-thousandths of an inch. Only a few minor adjustments had to be made, all of them mistakes I had made on the drawing files I submitted. I had the panels test-fitted to the airframe in under an hour, and I will correct my CAD files to match the few adjustments I made. If I ever have to order a replacement it should fit perfectly.



A few minor adjustments were needed due to errors on my part. The parts matched my CAD files exactly.

By: Al Herron

An Elephant towing a Corsair (Chance Vought F4U), on beaches near Kalpitiya (Puttalam), Ceylon 1944. The island of Ceylon is now modern-day Sri Lanka. Jason Brand

Modern-day Puttalam, Sri Lanka, from the air

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EAA Calendar Fundraiser

EAA Chapter 512 is offering the EAA World of Flight calendar to our members as a fundraising activity, and we're doing it a little differently from most fundraisers.

We are offering you the calendar *at our cost*: $7.85 ea. IF we can get commitments from at least 10 people. We will let you decide the amount of additional contribution you would like to make, starting at $0.00.

Please let Judi Gordon know how many calendars you would like, by emailing her at judieaa512@gmail.com, then mail her a check for $7.85 per each calendar plus whatever contribution amount you would like to make.