Volume 25 issue 4

# THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA

April 2023

## Next Meeting

**Thursday, 27 April 7 PM**

**17618 S. E. 303rd PL, Kent**

## This Month's Program

**Mystery Program!!!!**

? ? ?

## Inside this Issue:



## Guest Editorial

### The Endorsement NONE of Us Have

We've got some very qualified pilots in our Chapter. Several fly high-performance homebuilts, we've got a twin owner, and several of our group flew jets in the military.

But there's a rating, an endorsement, none of us have.

A few years back I had just completed a touch-and-go. A Cessna 172 had turned crosswind ahead of me, then I heard the radio call: "Auburn traffic, Cessna XXX is coming back, I've got problems."

For a moment, it looked like he was swinging back to land downwind (he had just turned for the downwind leg, this wasn't an "impossible turn" situation. I swung to the right and called, "Fly Baby is getting out of your way...."

He continued on downwind. I followed behind. I think he was no more than 500 AGL at any point. As he got ready to turn base, he was VERY low. I was cringing, because he was over the downtown area. He flew a wider pattern than I would have, but it held together and he got set up on final.

He was, actually, too high when he made it back to the airport. But the runway is ~3800 feet long, and he managed to touch down and roll out to the turnoff at the end. "Nice job," I transmitted.

The interesting thing is what MY airplane was doing. I realized all my attention had been outside the cockpit. I was ~300 feet below pattern altitude, slow, with the throttle just at 2000 RPM or so, with the airspeed running lower than I would have liked.

Oops.

You can study the FAA's pilot rating system all you want, but there's one endorsement you won't find: There's no rating for flying more than one airplane at a time.

So no matter what's going on with someone else, remember: Fly your own plane first.

Ron Wanttaja

## Chapter Officers

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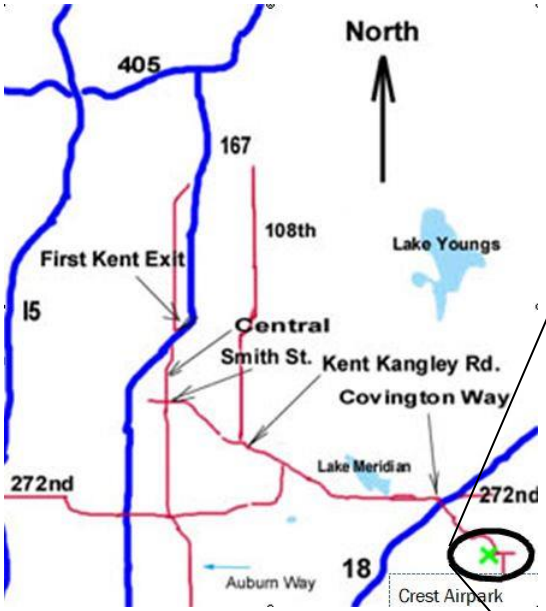
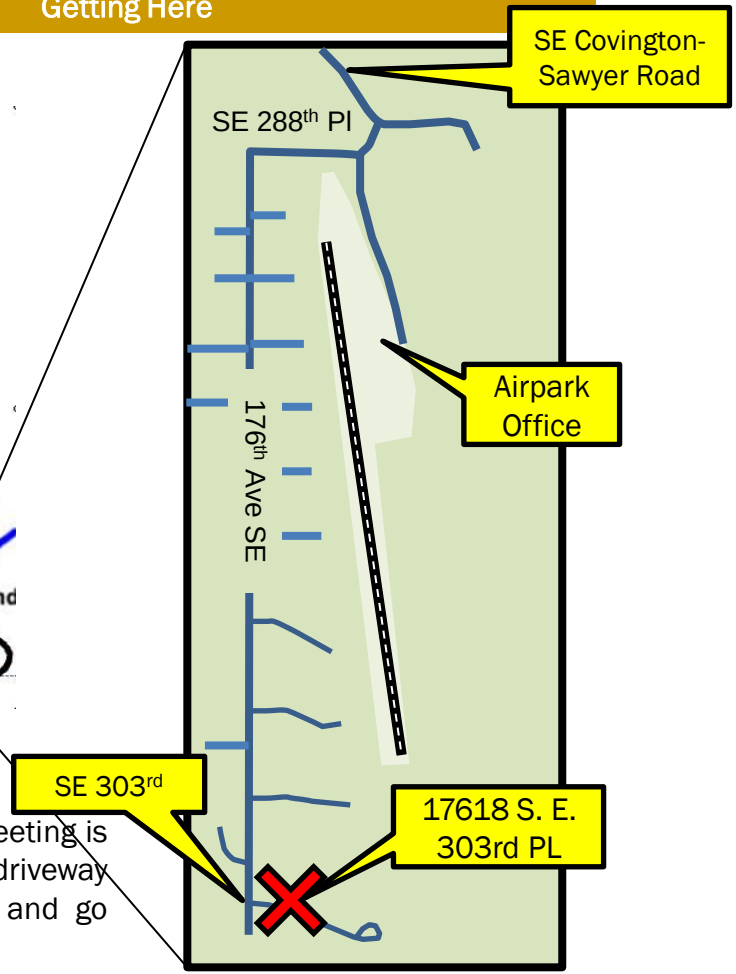
## What did we talk about Last Month?

**Stephen Tibbitts of ZEVA Aero presented their electric vertical takeoff and landing eVTOL aircraft.**

Meeting Address:
17618 S. E. 303rd PL
Kent 98042

## Getting Here




Park along side of road at 303rd, meeting is at the second house. Walk down the driveway between the garage and the house, and go downhill to the hangar

## New Parts Program Big Win for Vintage Fleet

Thanks to years of EAA's advocacy efforts, the FAA has unveiled a new program for the use of off-the-shelf parts in type-certificated aircraft. This is the first approval granted under the new Vintage Aircraft Replacement and Modification Article (VARMA) program, the next big step in keeping vintage aircraft flying.

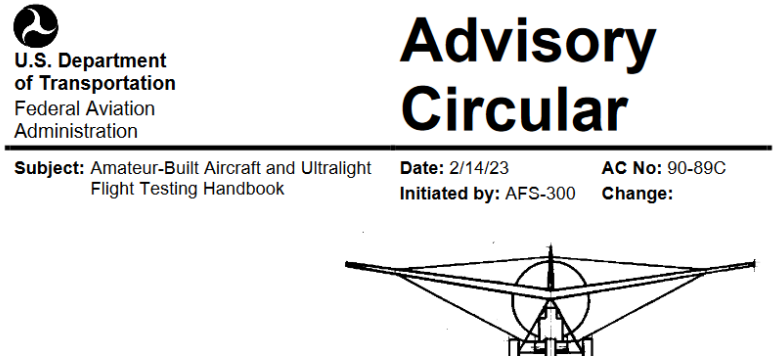
VARMA uses several existing FAA policies to create a program that requires no new regulations, orders, or advisory circulars. The program allows ordinary maintenance personnel to validate that certain low-risk replacement parts are suitable for installation on aircraft, without the need for extensive engineering analysis or complex and time-consuming design and production approvals from the FAA.

The program applies to parts whose failure would not "prevent continued safe flight and landing." While this means that safety-critical components are not subject to this program, there are plenty of hard-to-find parts that meet VARMA's criteria.

## FAA Publishes Task-Based Phase I Guidelines

Resulting from a multiyear sustained advocacy effort by EAA, this week the FAA published its guidelines for an optional task-based Phase I flight testing program. The program will primarily be an alternative to the standard 25 or 40-hour flight testing requirement for amateur-built aircraft, replacing the hours-based test period with a list of tasks to complete. When the tasks are complete and the aircraft is shown to operate as expected, and an Aircraft Operating Handbook (AOH) is created, the aircraft can exit the Phase I flight testing period.

The new guidance is housed in the recently updated Advisory Circular (AC) 90-89C, the Amateur-Built Aircraft and Ultralight Flight Testing Handbook. This is a wide-ranging document that the FAA first developed in partnership with EAA in 1989. The task-based program itself is found in Chapter 2 of the AC, beginning on pages 2-3.



U.S. Department of Transportation
Federal Aviation Administration

**Advisory Circular**

**Subject:** Amateur-Built Aircraft and Ultralight Flight Testing Handbook

**Date:** 2/14/23 **AC No:** 90-89C
**Initiated by:** AFS-300 **Change:**

## EAA Announces Inaugural Learn to Fly Week – May 15 to 20

Aspiring aviators will have the opportunity to discover multiple pathways to becoming a pilot as EAA presents its inaugural Learn to Fly Week on May 15-20.

Beginning May 15th, expert flight instructors and representatives from various aviation organizations will present free, interactive webinars. These webinars will cover topics from starting flight training, saving time and money in flight training, preparing for the FAA written exam, to passing the checkride, and so much more. While the live showing of these presentations will be open to the public, the recordings will be archived for EAA members to view at their convenience.

Learn to Fly Week will conclude on Saturday, May 20, with Flying Start events hosted at chapters across the country. EAA's Flying Start program allows EAA chapters to welcome, encourage, and educate new aviation enthusiasts about the fun, freedom, and accessibility of personal aviation in their local area. Following a short presentation about learning to fly, attendees will be offered a free introductory Eagle Flight to experience the spirit of aviation firsthand.

"Becoming a pilot is a dream for many, but few know where to start their journey. Learn to Fly Week was created to help encourage aspiring pilots to take action and begin the pilot training process," said David Leiting, EAA Eagles Program Manager. "Our goal is to show attendees how accessible achieving their dream actually is." Leiting also added that inspiration from this event stemmed from packed forums at the Learn to Fly Center at EAA AirVenture Oshkosh 2022, as well as the success of other EAA virtual events like Homebuilders Week and Virtual Ultralight Days.

Combining the educational forums from the Learn to Fly Center and the connections and inspiration found at Flying Start events, EAA Learn to Fly Week is the latest effort in the ongoing effort to help aspiring pilots achieve their dream of flight.

Sporty's Pilot Shop is the presenting sponsor of Learn to Fly Week. Sporty's will be participating in multiple webinars and offering product discounts during the week.

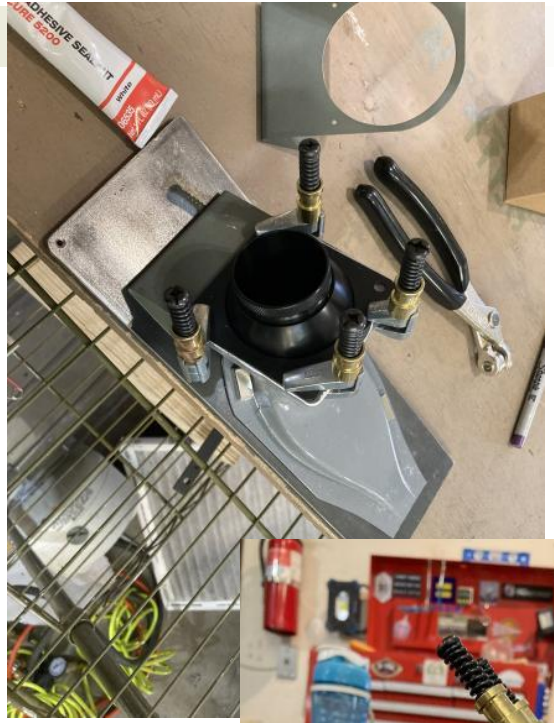
Full webinar schedule and more details on Learn to Fly Week can be found at EAA.org/LTFWeek.

## Chapter Member Activity: Edwina Sharp, RV-14

Another case of fortuitous procrastination on my end… Started working on installing the fuselage air vents this afternoon and ran into a bit of a snag when I couldn't find the eyeball vents. After several hours trying to find them (fallout of the project moving experience and having parts spread all through the old house… so they are probably still sitting in a random box of office stuff I haven't unpacked yet…) I gave up and decided to order new ones… with the background thought that as soon as I ordered them they would probably appear….

But… Vans no longer has the part number I needed. A quick check of VAF showed that apparently they had so many complaints about how the ones they supplied were leaking and not working properly that they decided to redesign the vents after I had received mine and now they offer an upgraded plastic one as well as an aluminum one. Given that these are basically glued into the NACA ducts it feels like a good thing that I couldn't find the old ones!

The pictures show the RV-14 cabin vents going together. One of the few areas on this plane where the kit drawings are a bit more confusing than helpful…. First they call out a vans part number for a vent eyeball that a) isn't included in the kit and b) has been discontinued (but did give me a great scavenger hunt in the hangar and led to me finding the drill press chuck key), then have you glue it together with sealant in a way that pretty much means you'll have to replace the entire unit if you ever need to change the eyeball.



*From the Chapter 441 Discord Forum*

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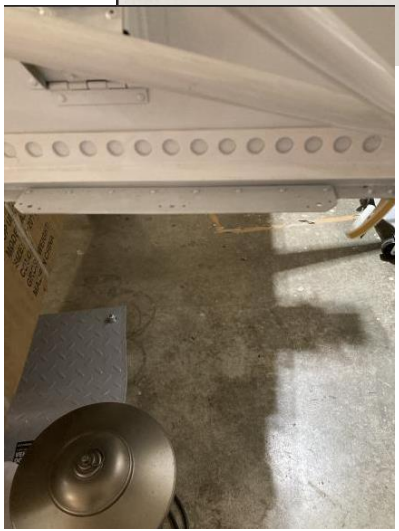
Where it mounts to the fuselage side skin is basically flat, so I opted for the steel baseplate and magnetic clamp approach with the eyeball clamped it for alignment before drilling and bolting it in place once the bracket to duct join has cured.

Was preparing for engine installation and came across a bit of a hard stop - my fuselage was built before the IO-390EXP package was an option, and to make room for the changed exhaust configuration these cowl plates on both sides need to have roughly the inboard third removed. Luckily there is good access for doing the rework in situ by cutting out the affected area as opposed to drilling out, removing, modifying, and re-riveting (which would involve removing the nose gear and the engine mount for squeezer or bucking bar access).

*Vents ready for installation*

By FlugKerl2 - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=27716875



*From the Chapter 441 Discord Forum*

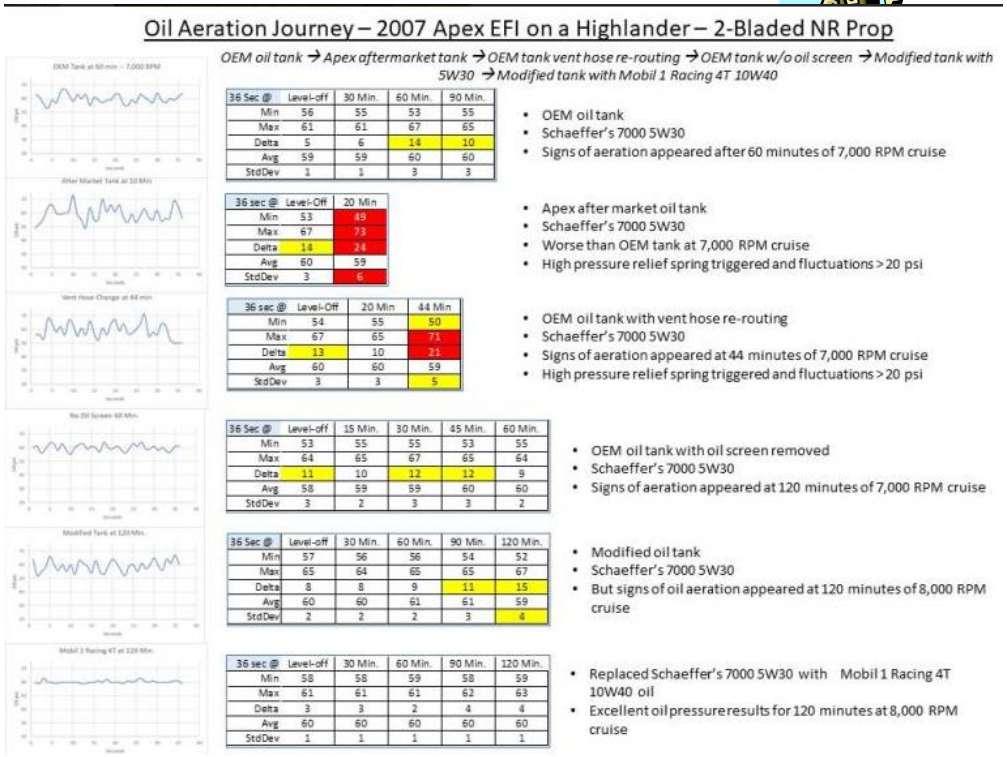
*Apex Oil Aeration Issue Solved*

With the help of my engine wiring harness supplier, Bryan Dacus (BDF Turnkey Engines), I think the oil aeration issue I've had in the 2007 Apex EFI motor on my Highlander is resolved.

In short, I went from the OEM Yamaha Apex oil tank, to an Apex aftermarket tank, back to the OEM tank with vent hose re-routing, to the OEM tank with the oil screen removed, to a modified tank with 5W30 oil, and finally to the modified tank with Mobil 1 Racing 4T 10W40 oil.

You can see the results attached. This all started when I installed a CAN bus converter to display the AEM digital data in round dial format on my GRT EFIS. I was surprised to see oil pressure fluctuations over 10 psi in the analog oil pressure display. I switched to an aftermarket Apex oil tank and things got worse, tripping the upper oil pressure relief spring and giving oil pressure fluctuations over 20 psi. Going back to the OEM oil tank, but with the oil screen removed improved things until about 40 minutes of cruising at just 7,000 RPM.

At this point, Bryan Dacus modified my aftermarket oil tank to 1) increase tank capacity by about 1 quart, 2) add a system of 4baffles, and 3) increase the distance the oil travels in the tank by moving the oil 'IN' to the front of the tank and the oil 'OUT' to the very rear of the bottom of the tank. This worked well at 8,000 RPM sustained cruise until about 90 minutes, when oil aeration seemed to appear in the form of fluctuations >10 psi.

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*Oil Issue – Continued*

Bryan then recommended switching from the Schaeffer's 7000 5W30 that had been originally recommended for my engine to one more tuned for high RPM motorsport engines -- Mobil 1 Racing 4T. I did that and was amazed at how rock solid the oil pressure is.

The modified aftermarket tank is working well for me.


After my oil pressure flight, I finally installed my carbon fiber spinner. It almost looks like a real plane now! At some point, I need to get it painted. I have the paint. Super Flite System 7... the same stuff I used on the rest of the plane. I just need to find a place locally that will do a tiny project like this. Any suggestions?

*From the Chapter 441 Discord Forum*

## This Month

## Last Month: Fokker M.7

The Fokker M.7 was a German observation aircraft of World War I, used by the armed forces of both Germany and Austro-Hungary.

### Design and development

Twenty aircraft, powered by 60 kW (80 hp) Oberursel U.0 rotary engines, were built, some of which were used by Kaiserliche Marine (Imperial German Navy) shore stations.[1] It was a single-bay sesquiplane (biplane) of conventional configuration, with slightly staggered wings using wing warping for roll control, tandem open cockpits and Fokker's distinctive comma-shaped rudder.

The W.3 / W.4 was a floatplane version of the M.7.[2]

Operational history

The aircraft was operated by the Austro-Hungarian forces under the designation Type B.I, following the German Empire's lettered prefixes from the Idflieg aircraft designation system.

Variants

M.7 : Two-seat reconnaissance aircraft version.
W.3 : Possible misidentification of the W.4
W.4 : Two-seat reconnaissance floatplane version.


**Specifications (M.7)** - Data from Data from Das Virtuelle Luftfahrtmuseum

**General characteristics**

Crew: two, pilot and observer
Length: 24 ft 7 in  Wingspan: 32 ft 7 in  Height: 8 ft 2 in
Wing area: 297 sq ft
Powerplant: 1 × Oberursel Rotary , 80 hp

https://en.wikipedia.org/wiki/Fokker_M.7
https://www.historyofwar.org/articles/weapons_fokker_m7.html

This Month

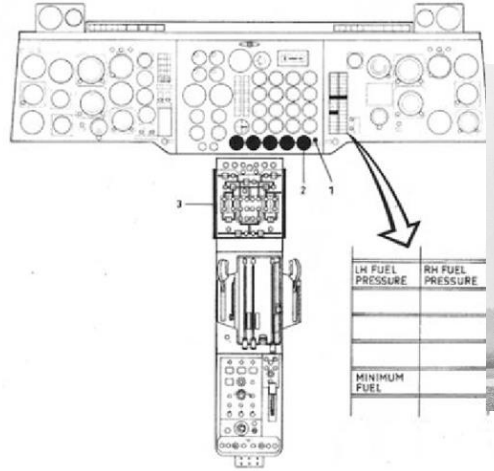
## Last Month: The Dornier Do 31

The Dornier Do 31 was an experimental vertical take-off and landing (VTOL) jet-propelled transport designed and produced by West German aircraft manufacturer Dornier.

The development of the Do 31 was motivated principally by heavy interest expressed by the German Air Force in the acquisition of short take-off and vertical landing aircraft (STOVL)-capable aircraft. Such ambitions received a further boost from the issuing of NATO specification NBMR-4, which called for a VTOL-capable tactical support aircraft that would be operated in conjunction with the EWR VJ 101, a West German VTOL strike aircraft designed under the NATO contract of BMR-3.[1] A total of three aircraft, two flight-capable and one static airframe, were constructed and used for testing. On 10 February 1967, the Do 31 performed its maiden flight; the first hovering flight of the type took place during July 1967.

The Do 31 remains the only VTOL-capable jet-powered transport aircraft to ever fly.

https://en.wikipedia.org/wiki/Dornier_Do_31
https://www.youtube.com/watch?v=FM-OOo4Sw-o
https://www.youtube.com/watch?v=AkdvKfiaEeg




**General characteristics**

Crew: Two  Capacity: 36 troops and 7,715 lb useful load
Length: 67 ft 4 in  Wingspan: 59 ft 3 in  Height: 28 ft 0 in
Gross weight: 49,500 lb (VTOL)  Max takeoff weight: 60,500 lb
Powerplant: 2×Rolls-Royce Pegasus turbofans, 15,500 lbf thrust each
Powerplant: 8×Rolls-Royce RB162-4D Vertically mounted turbojet lift engines, 4,400 lbf thrust each

**Performance**

Maximum speed: 452 mph
Cruise speed: 404 mph
Range: 1,120 mi with maximum payload
Service ceiling: 35,100 ft
Rate of climb: 3,780 ft/min -using Pegasus engines only

**Searey – Kentucky:** The pilot of the amphibious airplane stated that after a normal touchdown on a river, "5-10 seconds later we were upside down." The pilot and passenger were able to exit the airplane into the water and a nearby boater came to their assistance.

The pilot stated that he believed he struck a submerged object in the water.

According to a Federal Aviation Administration (FAA) Aviation Safety Inspector (ASI), the right side of the airplane showed evidence that the airplane struck an object submerged in the water. The FAA ASI also reported that he was informed of numerous recreational boats striking debris near the accident site earlier in the day. (8/15/2015)

**Sonex – Indiana**: The engine quit while maneuvering about 1,200 above ground level. The pilot stated that his only option was to land in a soy bean field, and he attempted to fly as slow as possible prior to touchdown. After rolling about 50 feet in the field the airplane nosed over.

The pilot reported that for the majority of the 30 minute flight, he was flying with the fuel mixture full rich. He stated that he did not depart with full fuel, and must have been burning fuel at a higher rate than he originally anticipated.

According to a Federal Aviation Administration Aviation Safety Inspector, during a postaccident examination the airplane's fuel tanks were empty and no fuel was found at the tank sumps. (8/15/2015

**Lancair IV – Florida:** During the climb to cruise altitude, the pilot noticed a loss of engine oil pressure. He declared an emergency with air traffic control (ATC) and requested to return to the airport. After ATC acknowledged, the pilot advised ATC that he lost all engine power and had to make an emergency landing. During the forced landing, the airplane collided with a ditch and was destroyed by postcrash fire.

An examination of the engine revealed that it failed catastrophically, displaying signatures of lubrication distress; further, no measurable quantity of oil could be recovered from within the engine. Detailed examination of the engine's turbochargers revealed that one of the two units displayed evidence of burnt oil on the external surface and evidence of a foreign material in the unit's center housing, on the thrust bearing, and on the thrust collar. The foreign material was identified as polyethylene (plastic), similar to that used to protect the exposed orifices of the engine during shipment. The pilot/mechanic had replaced both turbochargers with overhauled units two days before the accident flight. (8/30/2015)


**Photo 5 – View of foreign material in center turbo housing**

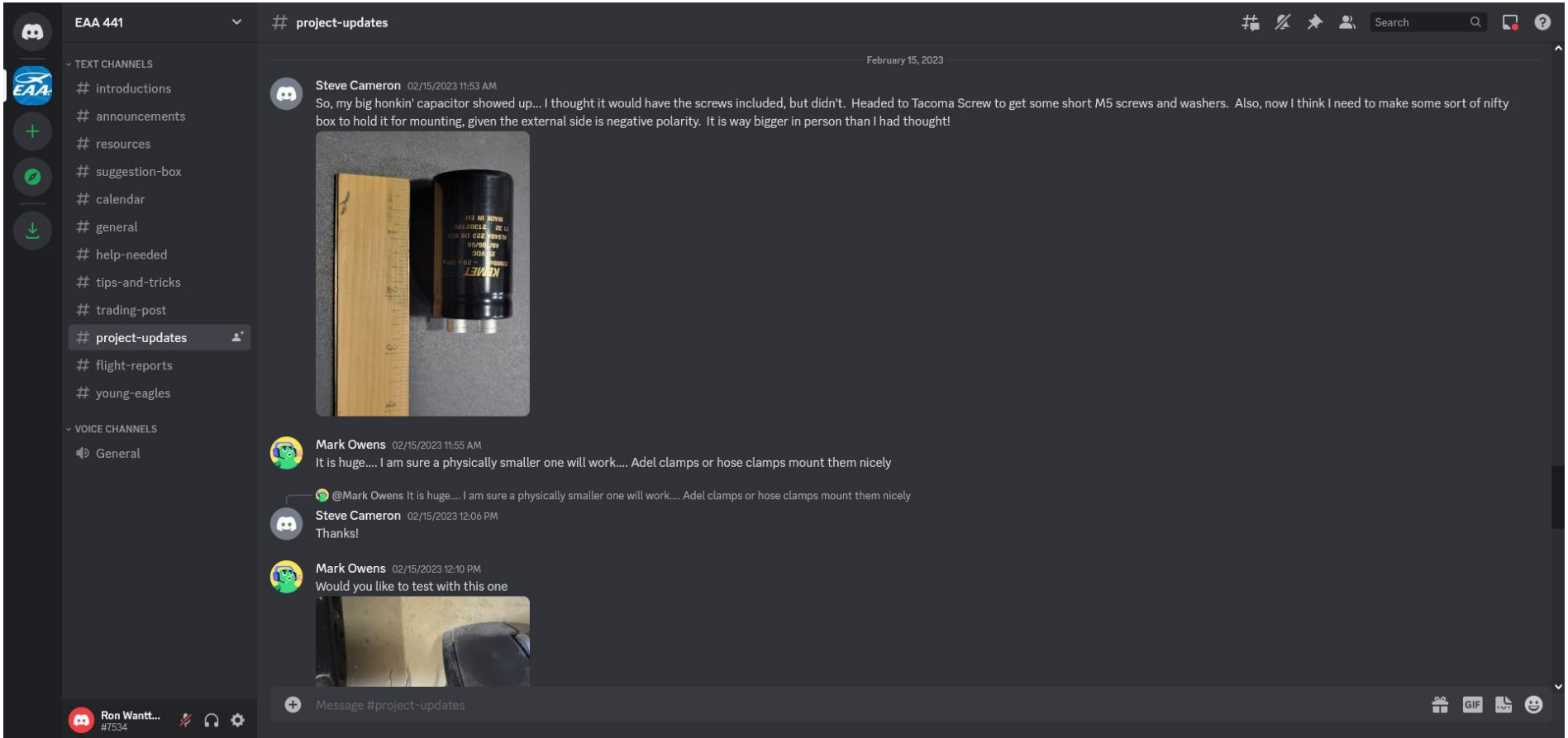
Hi fellow EAA members,

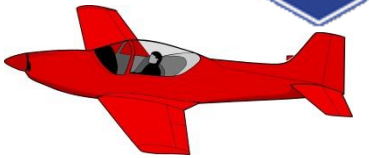
I am currently selling my unfinished S-18 project. If you or someone you know who is interested, please contact me at:

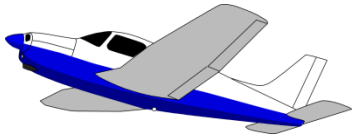
Norm Pauk: Tel: 253-561-4801
Email: Npauk@msn.com

## Chapter 441 Online Forum

EAA 441 has a dedicated online forum using the Discord server. It's a free service without ads or spam content, and can be accessed via mobile apps or on your PC via a web browser. To sign up, email Edwina Sharp: ebsharp@centurylink.net







Chapter 441 is fortunate to have two tech counselors. Feel free to call Brian (253)-369-0489 , or Dave Nason any time. You don't need to wait for some significant milestone in your project.

Remember, this is not an "inspection". The shop doesn't need to be cleaned for a visit. All are quite used to looking at pieces, parts, and assorted bits, and will be happy to answer questions, offer advice, and generally talk about projects, building, flying, or whatever.