Volume 25 issue 3

THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA

March 2023

Next Meeting

Thursday, 23 March 7 PM

17618 S. E. 303rd PL, Kent

This Month's Program

Stephen Tibbitts of ZEVA Aero will talk about their electric vertical takeoff and landing eVTOL aircraft. See Page 3

Inside this Issue:

President's Column

Spring is springing, or has sprung. The weather guessers on TV say that spring starts this week. Weather on the weekend was great: sunshine, warm temps. I even went flying.

Days are indeed getting longer. With the help of Daylight Savings Time, sunset is now after 7PM and the hours of daylight are getting more every day. I love it. Pretty soon, evening flights will be available without having to consult the Farmer's Almanac or my logbook to check on currency. Hurray!

Now is when we hope we've already gotten the birds nests out of the cowling, and the cobwebs out from between our ears. If not already, then it's to high time to get to work on those things. FLYING season is quickly opening up. Think of the possibilities, evening flights when the air is cool, the winds are light, every landing looks (almost) perfect. How about a fly-out with your friends? How about an airplane washing party, followed by a drying the airplane off flight? There's a new airport restaurant at Bremerton to explore. How about a Saturday morning piece of pie in Port Townsend? We don't have to start in sub-freezing temperatures any more (Hurray!).

If you're not quite ready, yet, then get started. Need to brush off the rust? Find an instructor and get some air under the wheels.

Mark has a really interesting meeting set up for us this month. Come out, meet aviation people, get excited!

Fly safe.

Brian

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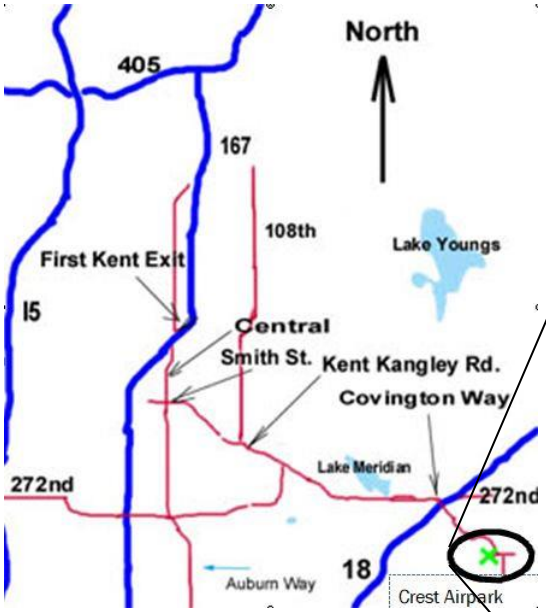
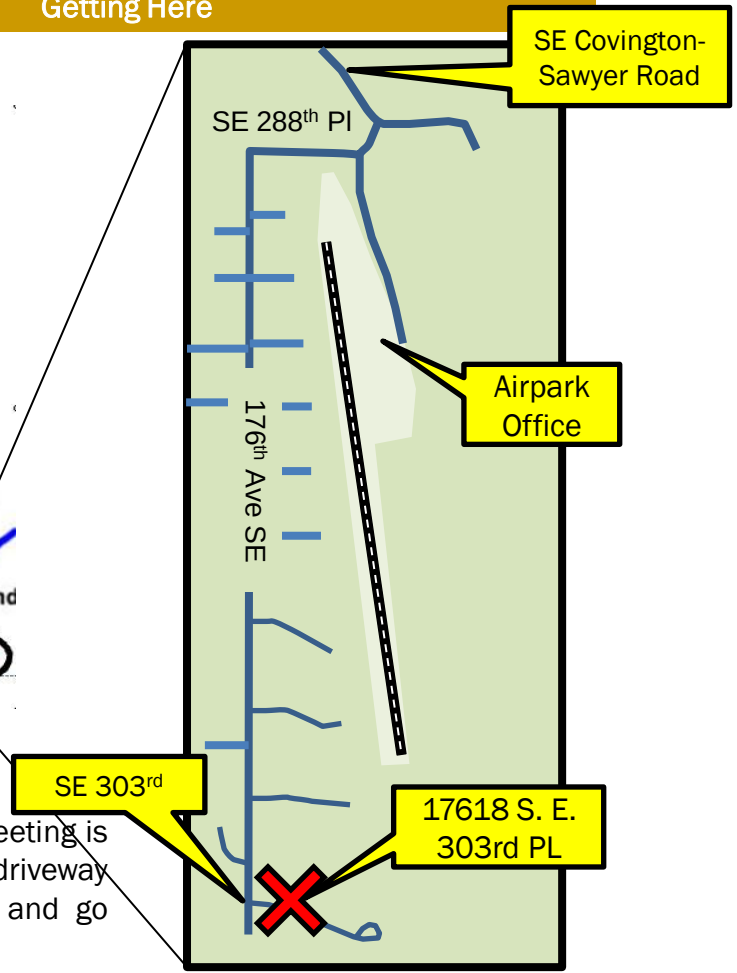
What did we talk about Last Month?

Edwin Sharp discussed Critical Incident Response planning.

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

ZEVA Aero is an electric vertical takeoff and landing eVTOL aircraft manufacturer focused on creating sustainable and efficient air transportation solutions. The company's flagship product is the Argon, an aircraft that utilizes advanced aerodynamic and propulsion technology to enable vertical takeoff and landing, as well as efficient horizontal flight. The aircraft has a range of over 200 miles, and is designed to be operated by a single pilot. ZEVA is committed to building a sustainable future through the development and deployment of innovative electric aircraft technology with a focus on safety, reliability, and efficiency.

Argon	
Take off	0 feet
Landing	0 feet
Useful load	605 lbs.
Range	330 nm
Cruise	140 mph

Team ZEVA is focused on achieving the most efficient path to commercialization of Argon. To that end, Argon is based on a pre-existing airframe with unsurpassed flight characteristics and excellent safety record. The aircraft delivers a wealth of engineering, innovations, robust materials, construction techniques, and features that contribute to the operational safety of the aircraft. ZEVA has modified and enhanced the wing and wing-strut to accept the vertical lift modifications.

Our speaker, Stephen Tibbitts, is the CEO of the company, as well as an engineer and pilot.

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.

From the Port of Bremerton:

We are excited to announce that the new airport restaurant, Amelia's Hangar, is officially open! After years of construction, this cornerstone of the Kitsap community has been rebuilt and is operating under new leadership. Owners Rena and Don Morris, also owning Burger Claim in Belfair, are excited to bring an elevated taste to Kitsap and share not only their delicious food but also their community-driven spirit.

We look forward to seeing everyone! This completion has been long-awaited, but we are so grateful for the hard work and patience that everyone has put into this project.

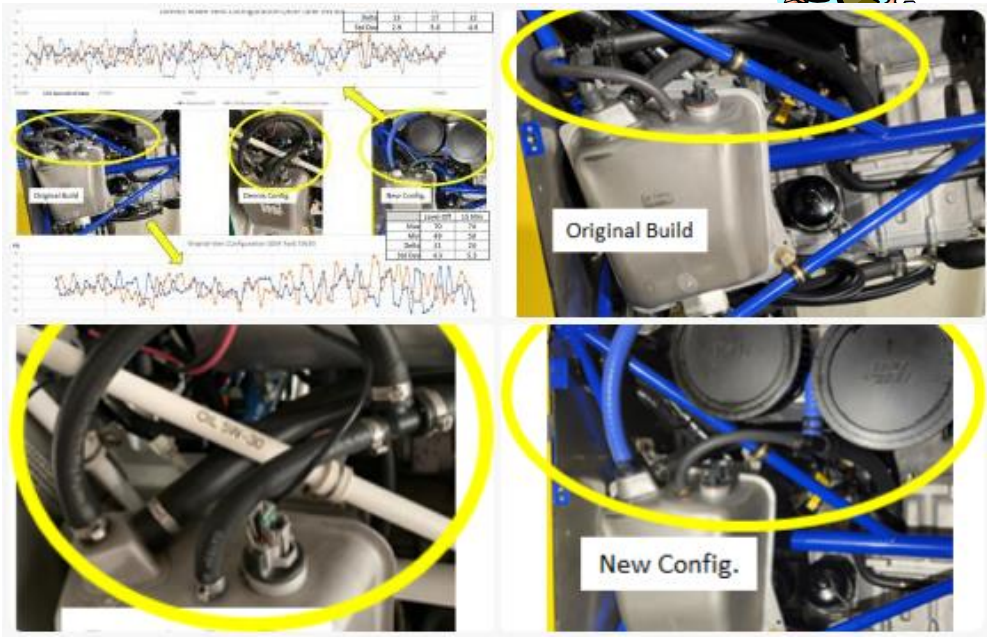
If you have any questions, we encourage you to reach out to Amelia's Hangar directly:

https://www.ameliashangarrestaurant.com/
ameliashangarrestaurant@gmail.com
(360) 525-2455.

Time for a Chapter Flyout?

Chapter Member Activity: Steve Cameron, Scottish Highlander

At the risk of boring people to death with my on-going oil fluctuation issue.... I tried different weights of oil, I tried a different oil tank... nothing seemed to be working. Then another Apex user posted his oil vent line routing. His routing placed the T-fitting to closer to the engine vent port and removed the U-turn bend in the smaller hose. So, I changed my hose routing/configuration to match his (Dennis Rowe in the chart) and tried it out. My methodology was to take off Wide Open Throttle, level off, set the throttle to 7,000 RPM (the 44% engine load cruise setting used by many Apex users), and cruise around until I no longer felt lucky with the oil pressure fluctuations. The Result: vent line routing/configuration matters. While still not sufficient for a final fix, merely changing the oil vent line configuration cut my fluctuation by about a third (as measured by Standard Deviation, for lack of a better measure) for initial level off and the first 20 minutes or so of cruise. The new configuration didn't go outside the nominal range of 50-70 psi until after almost 44 minutes of slipping the surlies at the 7K RPM nominal cruise setting, compared to almost immediately with my original hose routing. I'm waiting for the miracle oil tank promised by a purveyor of Apex paraphernalia as a final fix. Since that won't be for a couple months yet, my engine guy in Reno, NV, is looking at the aftermarket tank I tried out to see if he has any recommendations. People keep reminding me this is why our planes are classified as Experimental... No two of our installations are the same, even when we use the same parts..



From the Chapter 441 Discord Forum

Chapter Member Activity: Steve Cameron's PAPR-Thin Margin

Just to make sure my transponder was working OK with the new BHC (Big Honking Capacitor), I requested a PAPR report for my 3/4/2023 flight. I got back a response saying, "Your requested Public ADS-B Performance Report (PAPR) could not be completed ." I had to go all the way back to last July to find a flight that successfully produced a PAPR report. I went to Cascade Avionics at the South end of Auburn airport to see if they could test the system. After reviewing my situation, they suggested I do more troubleshooting before spending the money on their test. [for info, they do VFR transponder certifications for something over $200 +tax] After spending some time digging through my wiring, confirming all settings were correct in my EFIS [my transponder is a remote unit controlled by the EFIS display], and confirming no failure messages I uttered some uncharitable thoughts about the manufacturer of the transponder, yanked it out of the plane, and packaged it up to send back to Trig for evaluation. But, a little voice in the back of my head asked the most obvious question for cases when electrical things don't work--is it plugged in?

My transponder antenna cable was completely disconnected from the antenna. I reconnected it, visually confirmed the BNC twist lock was fully engaged, and lovingly re-installed the transponder. When I then started up to fly, my heart sank when the transponder came up as Short Circuit on the VP-X upon turning on the Avionics switch. However, I reset it and it all worked fine, I got a good PAPR report, and I showed up on Flightradar24.

From the Chapter 441 Discord Forum

Jason was trying to build some coaxial cables for his Zenair. RG-400 cable is the current recommendation, although traditionally, homebuilt aircraft use RG-58. RG-400 has the same impedance as RG-58, but has better shielding.

Jason followed a set of online instructions* for installing BNC connectors onto coaxial cable…Strip the cable according to the diagram on the upper right, crimp the center pin to the center conductor of the coax, slide the metal sleeve over the outside of the coax, then slide the body of the BNC connector UNDER the wire braid, and clamp it all together.

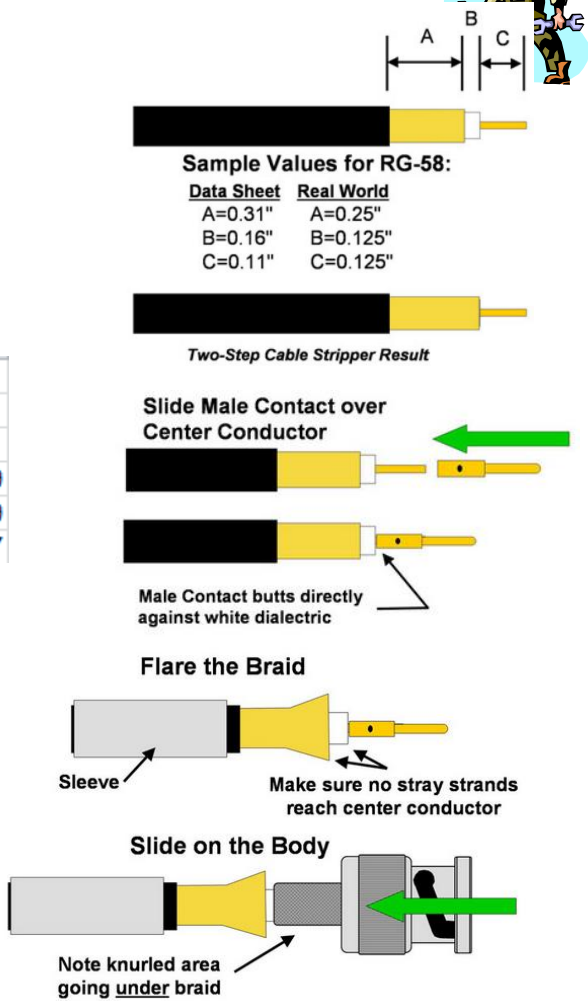
The trouble was, Jason couldn't get the sleeve to slide over the outside of the coax.

What happened? I grabbed a mix of RG-400 and RG-58 fittings and my trusty digital micrometer, then measured the outside diameters and wall thicknesses of the sleeves (My micrometer wouldn't fit inside). Results are shown in the table.

BNC Connector Measurements			
Fitting	Outside	Wall	Inside Dia
ACS RG-400	0.249	0.015	0.219
Pan Pacific RG-58	0.255	0.023	0.209
Off-Brand RG-58	0.259	0.021	0.217

Kind of interesting. No question, the sleeve of the RG-400 BNC connector from Aircraft Spruce did have a larger inside diameter than the Pan Pacific RG-58 unit. Only a hundredth of an inch, though. I tried the Pan Pacific unit on a spare piece of coax, and sure enough, it wouldn't slide on. But the coax has been slightly flattened by the side cutters I'd used to cut the cable. When a pliers was used to try eliminate the flatness, the RG-58 sleeve DID slide over the cable. And an RG-58 sleeve with no brand on the bag was almost the same I.D. as the Aircraft Spruce RG-400 unit

Recommendation? If you're starting from scratch and buying everything, get RG-400 coax and matching BNC fittings. Otherwise, see if any leftover RG-58 units will fit….



** Obviously his first mistake… the instructions were written by the EAA Chapter 441 Newsletter Editor*

This Month

Last Month: Waco Aristocraft

The Waco Model W Aristocraft was an American four-seat monoplane, the last aircraft designed and built by the Waco Aircraft Company.[1] It had an unusual configuration with an engine mounted at the front driving a pusher propeller at the rear.[1]

Design and development

The Aristocraft was an attempt by Waco to enter the post-war market for light aircraft. The prototype first flew in March 1947 powered by a 215 hp (160 kW) Franklin 6AL piston engine mounted at the front with a shaft driven pusher propeller at the rear. Of all-metal construction it was a high-wing monoplane with twin fins and rudders, It had a partially retractable tricycle landing gear.

The company had orders for 300 aircraft but decided that the type would need costly development in a shrinking market and only the prototype was completed. Waco sold the design rights and in the 1960s efforts were made to market the type for home-construction.

The sole prototype was eventually purchased in the early 1960s and restored to flight.

http://all-aero.com/index.php/56-planes-v-w/16278-waco-w-aristocrat-waco-w-winner
https://en.wikipedia.org/wiki/Waco_Aristocraft

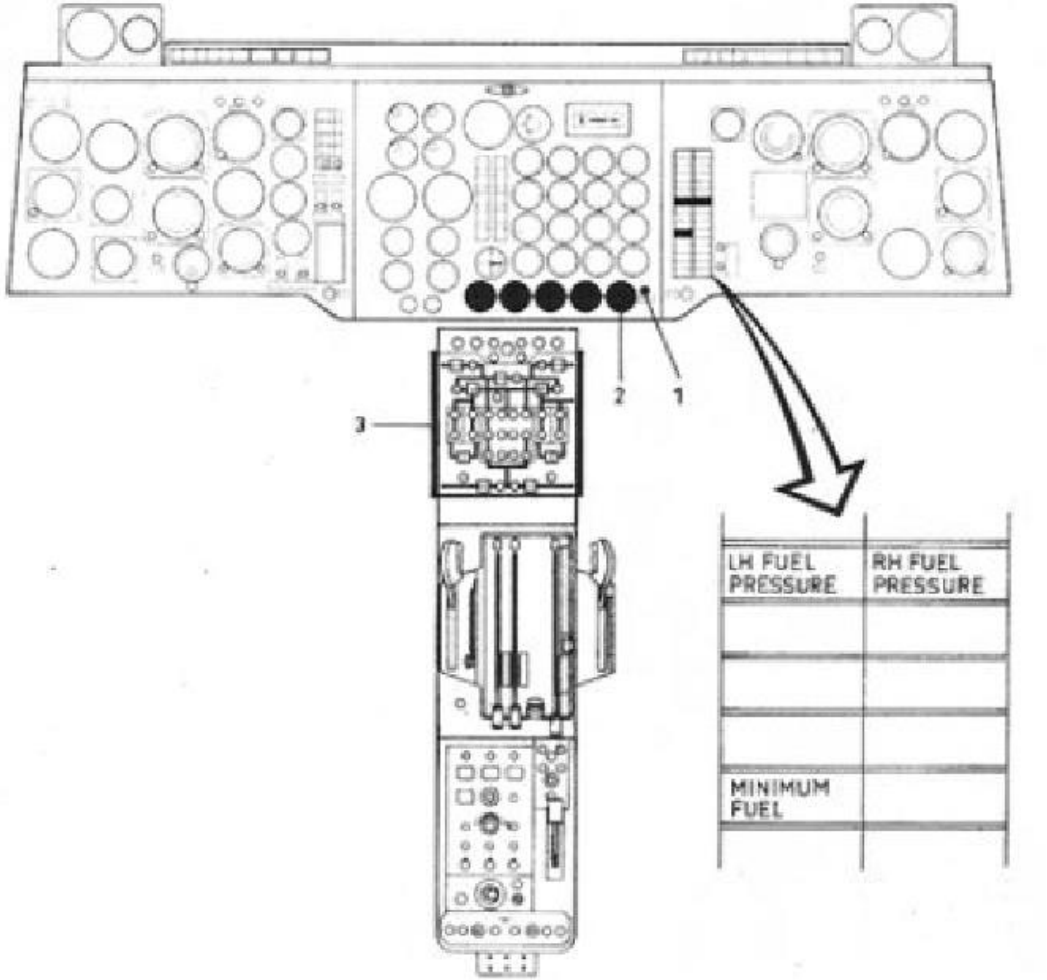
Specifications

Capacity: Pilot and three passengers
Length: 25 ft 0 in Wingspan: 38 ft 0 in (11.58 m)
Powerplant: Franklin 6AL 6-cyl. 215 hp w/Hartzell, 7 ft 0 in diameter reversible pitch propeller

Performance

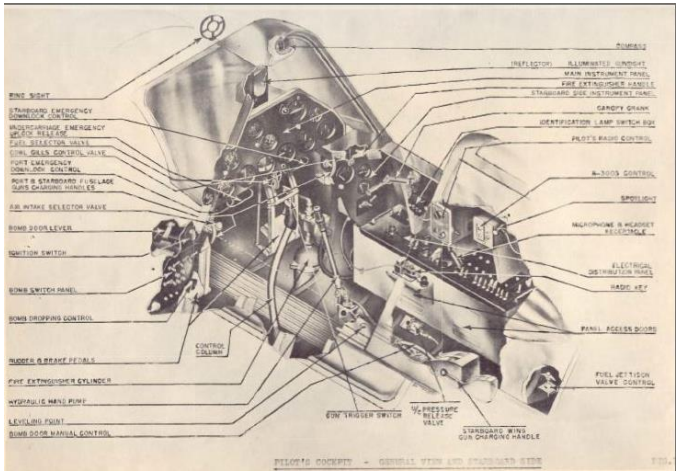
Maximum speed: 154 mph
Cruise speed: 152 mph
Stall speed: 55 mph
Range: 408 mi
Service ceiling: 17,500 ft
Rate of climb: 950 ft/min

This Month



Last Month: Brewster SB2A Buccaneer

The Brewster SB2A Buccaneer was a single-engined mid-wing monoplane scout/bomber aircraft built by the Brewster Aeronautical Corporation for the Royal Air Force (RAF) and United States Navy between 1942 and 1944. It was also supplied to the United States Army Air Forces and United States Marine Corps. The Buccaneer was overweight and lacked maneuverability, and has been described as a "classic failure"; while designed as a scout bomber, none saw combat, although a number found use in noncombat roles.



General characteristics

Crew: two: pilot and observer/gunner
Length: 39 ft 2 in, Wingspan: 47 ft 0 in, Wing area: 379 sq ft
Empty weight: 9,924 lb Max takeoff weight: 14,289 lb
Powerplant: 1 × Wright R-2600-8 radial engine, 1,700 hp

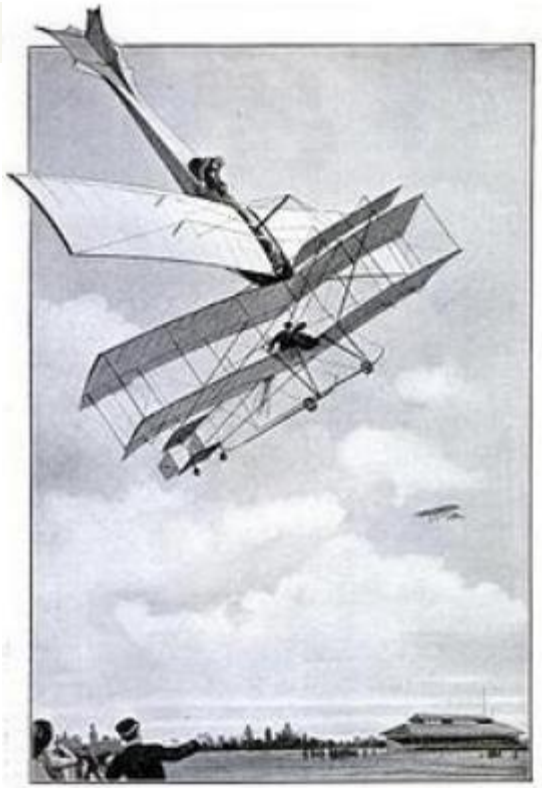
Performance

Maximum speed: 274 mph Range: 1,675 mi Service ceiling: 24,900 ft
Bombs: 1,000 lb in internal bomb bay

https://en.wikipedia.org/wiki/Brewster_SB2A_Buccaneer
https://www.history.navy.mil/content/history/museums/nnam/explore/collections/aircraft/s/sb2a-buccaneer.html

On the Wreckord Special: All About Midairs by Ron Wanttaja

Going to forego the usual blood and feathers summaries this month – Ron



Midair collisions are probably every pilot's nightmare.

Ever consider…why?

They're massively newsworthy. Two vans full of nuns might run into each other at the Fred Meyer interchange in Covington, and it may or may not make the newspapers in Seattle.

But let two Cessnas swap paint in North Carolina…and it's front-page news all across the US. "If it bleeds, it leads" is a long-time news media mantra.

So midairs get an inordinate amount of time in the daily news cycle. But why are pilots so affected by them?

My guess? Other accidents can be traced to errors committed by the pilot, owner, or maintainer. We can sit on our high horses and proclaim, 'That's not a mistake I'll ever make."

But midairs? We are at the mercy of other pilots. The classic horror movies about the Wolf Man usually feature this charming poem…"Even a man who is pure in heart, And says his prayers by night, May become a wolf when the wolfbane blooms, And the moon is full and bright."

Flying? This can be altered to "Even a pilot who is pure at heart and does everything right, might end up getting centerpunched by a B^3 (Blind Bozo in a Bonanza)."

So, let's take a look. HOW much of a risk is it?

We'll look at the 2008-2020 time period, looking at ALL accidents, not just homebuilts. The NTSB accident database has flags for midairs. I found 289 total aircraft involved in midairs, with 144 total midair events. This includes the foreign accidents that sometimes get listed in the NTSB's database.

(Yes, an ODD number of aircraft. Ask me why at the meeting….)

Continued next page

There were about 22,000 total accidents in in the 2008-2020 time period. With just 144 midairs, that means that collisions account for less than 0.7% of the accidents.

Less than one percent.

In 62 of the 144 midairs (~43%) no one was killed. Another 26 saw only one fatality, so there's better than a 50-50 chance you'll survive a typical midair.

Suddenly the odds start looking a LOT better, don't they?

And some of those accidents were not the kind that get ballyhooed on the news. Fifteen of the midairs involved planes trying to fly in formation or as a group flight. These were NOT just homebuilts… one case was a pair of Cessna 150s, others were warbirds. In a couple of cases, the intent was to take pictures. Couple of balloons bumping together, a few cases of drones bumping into airplanes.

Nine midairs involved gliders. In four of the cases, gliders bumped during soaring competitions. Some of the other 144 cases involved powered aircraft in races. So it's not the typical General Aviation operations.

Some of the complaints about midairs try to focus blame on aircraft without radios (NORDO). I flew Pete's original Fly Baby NORDO out of Auburn for about seven years. Had one pilot fume, "If you don't make a radio call, I don't know you're there!"

Let me gently suggest that this is NOT they way things are supposed to work.

But let's look at all those eeevvviiiiiiiii NORDO airplanes triggering midair collisions. Of those 144 midairs, nine involved at least one NORDO airplane.

One involved two NORDO ultralights. Three cases involved powered parachute aircraft, neither with a radio. Another case involved two crop-dusters running into each other while treating two fields. Another involved a glider colliding its own tow plane. None of these cases involved collision with a Cessna, Piper, etc.

Continued next page

So of those nine NORDO cases, only three were what we would consider "conventional" NORDO...an antique, classic, or homebuilt aircraft without a radio. They were a pair of float planes (Super Cubs) taking off from a lake, a Pitts Special and a Piper Cherokee, and a Taylorcraft and a Cessna 185. That's three cases in thirteen years.

So it should be clear that NORDO aircraft aren't the problem. In any case, it's certainly not an *expanding* problem...who builds NORDO airplanes anymore?

Even when the airplanes had radios, it's kind of difficult to establish the degree of communication involved. If the pilots are killed, it's hard to figure out whether they made position calls. I found definite claims of both parties making position calls in 27 of the 144 cases. In a couple of instances, the pilots admitted they'd dialed in the wrong frequency. In one case, two aircraft were operating from adjacent uncontrolled fields, talking, it is presumed, on two separate frequencies.

Keep in mind that the Common Traffic Advisory Frequency (CTAF) at Auburn is *changing* this summer. How long do you think it'll take for people to get the word? There'll be a lot of folks transmitting on 122.8 (the traditional frequency) when they should be on 122.975.

Oh, yes. THAT'LL be fun for people who depend on radios to spot traffic.

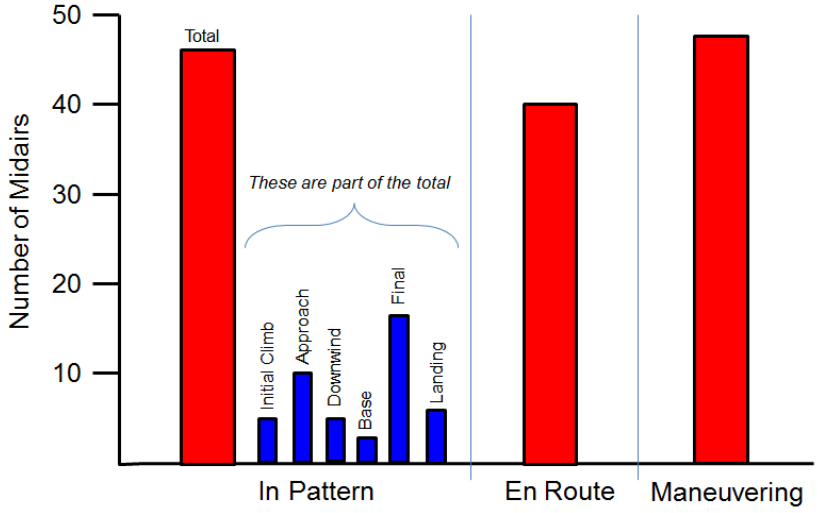
Finally, look at the chart on the right. It summarizes where those 144 midairs occurred, according to the NTSB records.

Notice? *Less than one-third of all midairs happen in the traffic pattern*.

Once you're away from the pattern, <u>everybody</u> is NORDO, unless you're operating in airspace that requires communication with ATC. And even that is not going to save you...six of the 144 midairs occurred at controlled fields.

The "Maneuvering" category is interesting. It's referring to areas away from airports where airplanes might tend to congregate for practice/training. Think of all the FBOs bringing their students to the Enumclaw plateau, for instance.

All the hardware...radios, ADS-B, etc....can help. But they have drawbacks. Used as tools, they're great. But problems arise when they become crutches. Eyeballs, folks. Use those eyeballs. *Ron Wanttaja*



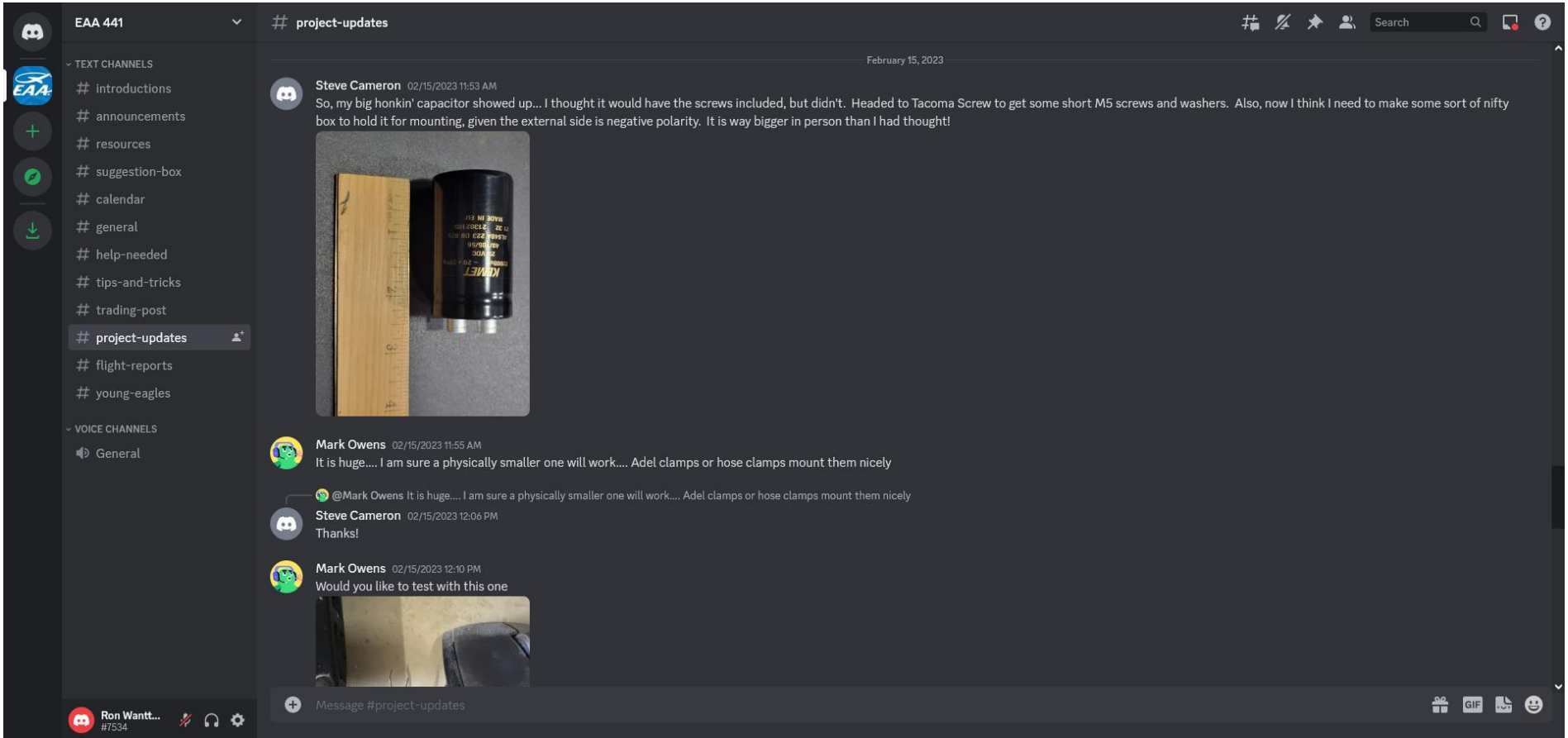
Hi fellow EAA members,

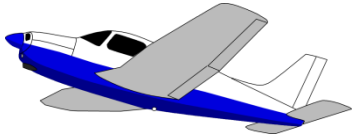
I am currently selling my unfinished S-18 project. If you or someone you know who is interested, please contact me at:

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, go to: https://discord.gg/RU7ydzze





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.