

# THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA

May 2023

President's Column

Next Meeting

Thursday, 25 May 7 PM

17618 S. E. 303rd PL, Kent

This Month's Program

***That Clever Mr. Link:  
The Birth of Simulated  
Flight***

Inside this Issue:

Presidents Column	1
EAA news	4
Member Reports	5
Guess that airplane/panel	9
On the Wreckord	13
For Sale	16

## Is the Flying Season Here, Yet?

Let's hope so. Weather has gotten better. Along with daylight savings time, it's light enough to fly after dinner.

That means that after the annual inspection (or condition inspection) of the airplane, it's time to do a condition inspection and do some preventative maintenance on our piloting skills. For many, there just wasn't much flying over the winter. Now is the time to brush the rust off, but we want to do it safely,

Maybe that means some time with a CFI, even if we are legally "current". Three takeoffs and landings in 90 days is precious little proficiency experience. Airwork, slow flight, stalls and recovery, remembering how the airplane talks to us, steep turns, ground reference maneuvers, and pattern work are not the only things to "remember". Systems operations, and the emergencies that can develop when they don't operate as they are supposed to are important, too. Spend some time with the flight manual. Remind yourself of performance speeds and the performance that goes with them.

This is a good time to re-set your personal minima.

Fly safe.  
Brian

## Chapter Officers

President: Brian Lee  
(253)-639-0489

Vice-President: Mark Owens

Secretary: TBD

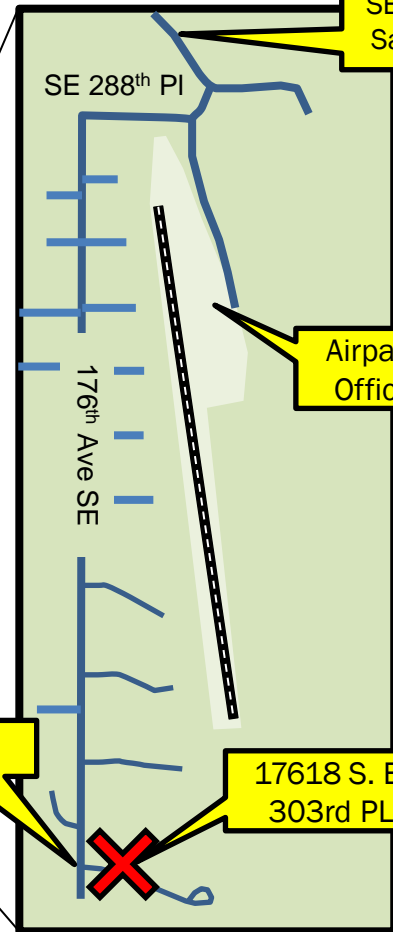
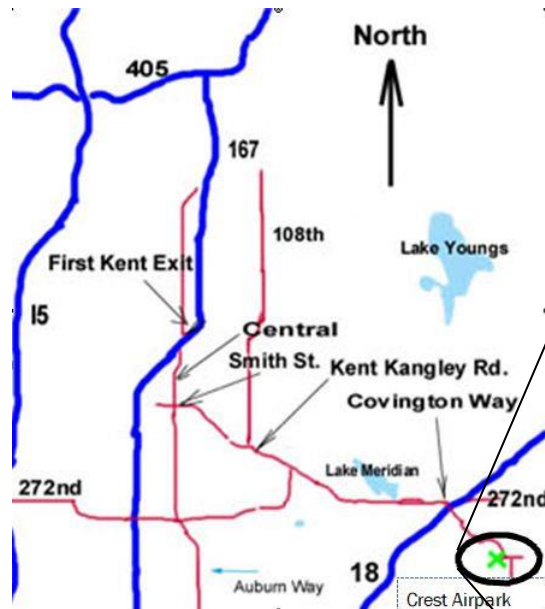
Treasurer: Steve Crider

Tech Counselors/Flight Advisors:  
Brian Lee (253)-639-0489  
Dave Nason  
Jonathan Lee (253) 508-1376

Newsletter Editor: Ron Wanttaja  
(253) 833-7394  
ron@wanttaja.com

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

## Getting Here



## What did we talk about Last Month?

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



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

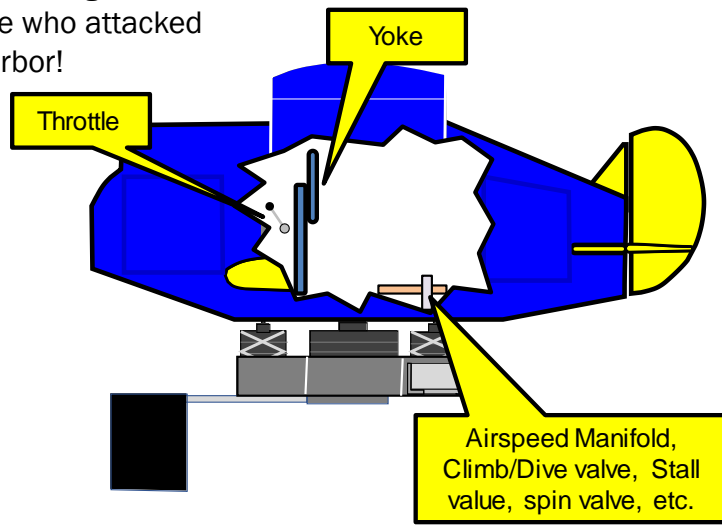
### *That Clever Mr. Link: The Birth of Simulated Flight*

The “Link Trainer” is an icon of aviation, never mind that they never left the ground.

In 1928, Ed Link invented the first (semi-) accurate flight simulator. This is all the more amazing when you realize what Ed Link DIDN'T have: No computers, no microprocessors, no electronic memory, nothing more than electric motors and vacuum tubes.

Our presentation this Thursday is not a “history” of the Link trainer. It’s an in-depth explanation of how Link made it work.

Hundreds of thousands of pilots used Link Trainers during WWII...including the Germans who bombed London, and the Japanese who attacked Pearl Harbor!



## EAA to Introduce 70th Anniversary Beer at AirVenture 2023

AirVenture attendees and residents of the Fox Valley can get a taste of EAA's 70th anniversary as the organization partners with Stone Arch Brew Pub of Appleton, Wisconsin, to produce a special commemorative beer.

The Kölsch beer will be available in select Fox Valley grocery stores beginning July 1, and sold at camp stores on the grounds during AirVenture 2023, July 24-30. The beer cans will feature one of seven unique labels, one released each day of AirVenture and each representing a part of EAA's history. Only one design will be available in grocery stores, but all seven can be purchased on the AirVenture grounds.

The specific beer was chosen in part by attendees of the Flight at the Museum event in March, and an EAA staff tasting.

Kölsch beer classifies as a "Pale Bitter European Beer," and originates from Germany. This specific Kölsch beer is described as having a "very clean, slightly grainy malt, low bitterness, light hop flavor."



## EAA AirVenture Oshkosh 2023 Notice Includes Important Procedure Updates

There are several important FAA-approved changes in the EAA AirVenture Oshkosh 2023 Notice (commonly referred to as the Oshkosh NOTAM), featuring arrival and departure procedures for EAA's 70th fly-in convention on July 24-30 at Wittman Regional Airport in Oshkosh. These changes are based on pilot feedback and FAA review of arrival procedure recommendations.

The document is in effect from noon CDT on Thursday, July 20, until noon CDT on Monday, July 31, and outlines procedures for the many types of aircraft that fly to Oshkosh for the event, as well as aircraft that land at nearby airports. The Notice was designed by the FAA to assist pilots in their EAA AirVenture flight planning. It is now known as the Oshkosh Notice instead of a NOTAM because of a changed FAA internal procedure.



<https://www.eaa.org/airventure/eea-fly-in-flying-to-oshkosh/eea-airventure-oshkosh-notam>

The sliding pilot hole issue has been addressed. For those who were not at the meeting, I was drilling the firewall with a step drill for a spherical grommet and didn't notice that the drill tip had slipped out of the pilot hole... so by the time I finally got the 1.125" hole drilled through the stainless and had a look at it I realized it wasn't aligned with the mounting holes I had drilled first. After lots of looking at how to address this with a variety of fairly invasive techniques, today I suddenly noticed that by ovaling all 3 holes a bit I could get the plate to mount and still cover all of the openings. Not pretty, but seemed to be the best way to both get the plate mounted and maintain firewall integrity.



*From the Chapter 441 Discord Forum*

Hung the engine Sunday, only issue was the Plane Power backup alternator and the fuel pressure instrumentation port clashed on the mount (as in the alternator on the top right (ALF) mount cup and the instrumentation port on the bottom left cup); removed the instrumentation port as the easier thing to put back on after install and no further issues.





For the first time in about 25 years, I flew as a passenger (e.g., not PIC) in a General Aviation airplane.

Will admit it was fun. Will admit it was a LOT more comfortable flying to the San Juans in a Cherokee Six instead of my Fly Baby.

Except for one thing. That darn headset. It clamped down on my ears, and with a warmish day, was a bit uncomfortable.

Instead, inspect the dashing aviator in the photo to the right. There a microphone in front of his mouth, but where are the “cans” over his ears?

I fly with a conventional headset during the winter months (basically because it keeps my ears warm in the open cockpit), but in the summer I switch what some might call a “skeletal” headset: A simple holder for the microphone element (made from Romex cable and a bit of flex tube) and ear buds to carry the sound of the radio to my ears. The ear buds are “Plugfones” which combine ear bud functionality with foam ear plugs. They feature 29 dB of passive noise attenuation, which is more than an ANR headset does.

I can get away with the ear buds, as my aircraft radio is a stock handheld with an 8  $\Omega$  output impedance...vs the 150/300  $\Omega$  of the stock aircraft radio.

Was posed a puzzler a week or so ago. A gentleman in Florida flies a Waco YMF, and can't hear the darn radio. The airplane is too loud!

Lest you wonder, he *has* tried just about everything. Talking to the avionics shops. Talking to the radio manufacturer. Add-on ear speakers from CEP. An ANR headset.

At this point, he is getting desperate. “What else can I do?”

It's tough to help someone fix their radio issues from 3,000 miles away. But I *did* have an idea or two.....

(Continued Next Page)



**“Help me Obi-Wan, you are my only hope”**

Initially, I figured there wasn't anything I could try. Then I found the CEP ear buds he was using were installed on a stock (non-ANR) headset. They aren't compatible with ANR units.

Obviously, he needed to combine the major passive noise reduction of the Plugfones with the ANR headset...in other words, wear the GOOD ear buds under his ANR, and get the benefit of both.

But... the ear buds aren't compatible with aviation radios. Back when they started putting radios in airplanes, they grabbed parts from one of the most common electrical units out there: Telephones, and especially telephone switchboards.

This is why our headphone plugs are common 0.25" units, and why the microphone plugs are 0.206" units used nowhere else in the world. AND that was why the speakers in your aircraft headset have a 150-ohm impedance, and why your 21<sup>st</sup> century microphone has to mimic a 1920s telephone carbon mike.

Plug a modern 8-ohm headset into an aircraft radio, and you don't get much out.

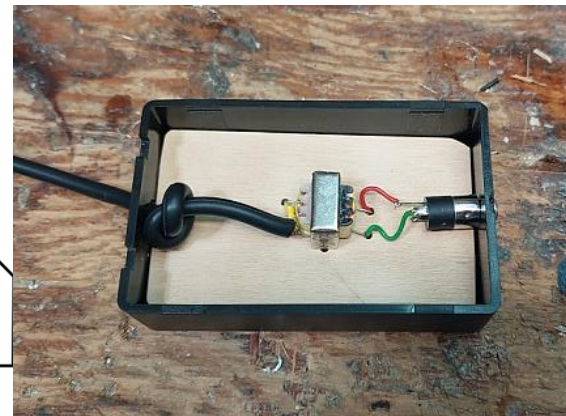
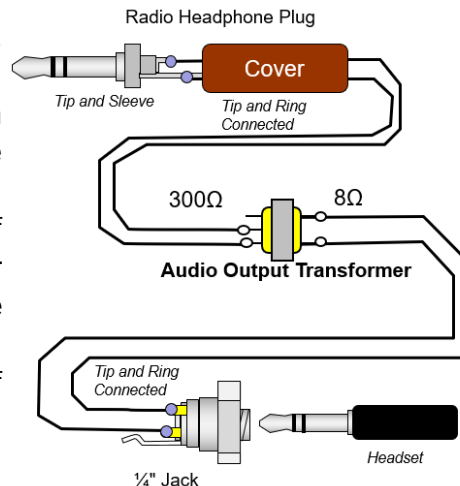
But...you can easily MATCH the impedance of an aircraft radio using a simple, cheap, audio output transformer.

I built him an adaptor using a small electrical project box. Didn't use a circuit board, just drilled some holes in thin plywood, attached the transformer, and soldered wires from the 1/8" jack (for the ear buds) and the audio cable from the 1/4" aircraft jack through holes under the board.

I've sent him an old set of Plugfones, with the instruction of putting them on under his ANR headset, and plugging the ear buds into the aircraft radio via the adaptor. He can just leave the headphone plug for the headset dangling.

I have an old Narco Escort in my shop just to test this sort of thing out...and the adaptor was certainly working.

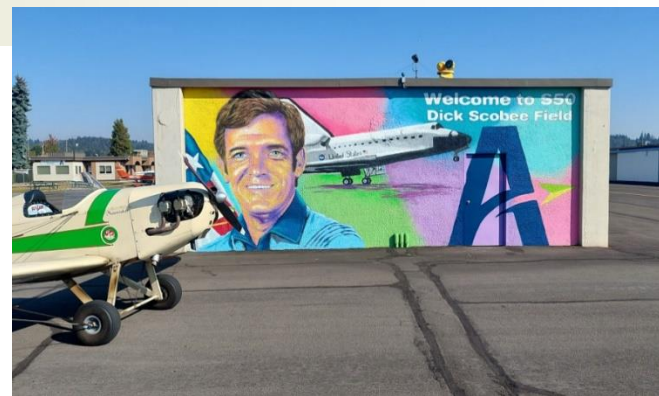
Mailed it to him this week; we'll see how it works.





Back in the November issue of the newsletter, I mentioned that Auburn Airport was having murals painted on the ends of the hangar rows facing the runway. The theme of the first was Challenger astronaut Dick Scobee, whom the airport is named.

Not long after this, I was talking to the airport manager and he said he was looking for subjects for additional murals. I pointed out that Peter M. Bowers, a famous aviation historian and the designer of the Fly Baby, was local...and that his original Fly Baby had been based at Auburn airport in the '80s and '90s (and, for THAT matter, was based at the OLD Auburn airport, located where the Muckleshoot casino is located now).



He loved the idea. I supplied a lot of original photos. The mural, painted by Myron Curry, was completed this last weekend. Turned out great!

When I first met Mr. Curry, I gave him one of the Fly Baby "Roscoe" patches. He loved the patch, obviously, and wanted to incorporate it into the design. The patch had been designed by a Gig Harbor artist, Pat Moriarity, and Pat generously gave his permission for "Roscoe" to be included in the design.







This Month





## Last Month: Fokker D.XXI

The Fokker D.XXI fighter was designed in 1935 by Dutch aircraft manufacturer Fokker in response to requirements laid out by the Royal Netherlands East Indies Army Air Force (Militaire Luchtvaart van het Koninklijk Nederlands-Indisch Leger, ML-KNIL).

The D.XXI was designed as an inexpensive, rugged, and compact fighter aircraft that would possess respectable performance for its era. Entering operational use in the early years of the Second World War, it provided yeoman service for both the Luchtvaartafdeling (Dutch Army Aviation Group) and the Finnish Air Force. Following the invasion and occupation of the Netherlands in May 1940, several captured Dutch D.XXIs were subsequently placed into service with the Luftwaffe.

### Design and development

Fokker's design team had sought to incorporate and combine various new concepts and recent features from successful fighter aircraft, including the previous C.X and D.XVII aircraft. The proposed aircraft was a low-wing monoplane which adopted an entirely enclosed cockpit; initial design work had been conducted in cooperation with British engine manufacturer Rolls-Royce but a Bristol Mercury radial was selected for the final design

[https://en.wikipedia.org/wiki/Fokker\\_D.XXI](https://en.wikipedia.org/wiki/Fokker_D.XXI)

<https://www.youtube.com/watch?v=urvPUL5AVPU>

[https://airpages.ru/eng/ot/fokker\\_d21.shtml](https://airpages.ru/eng/ot/fokker_d21.shtml)



### General characteristics

Length: 26 ft 11 in    Wingspan: 36 ft 1 in    Height: 9 ft 7 in

Wing area: 16.2 m<sup>2</sup> (174 sq ft)

Empty weight: 3,514 lb    Gross weight: 4,343 lb

Powerplant: 1 × Bristol Mercury VIII, 830 hp

### Performance

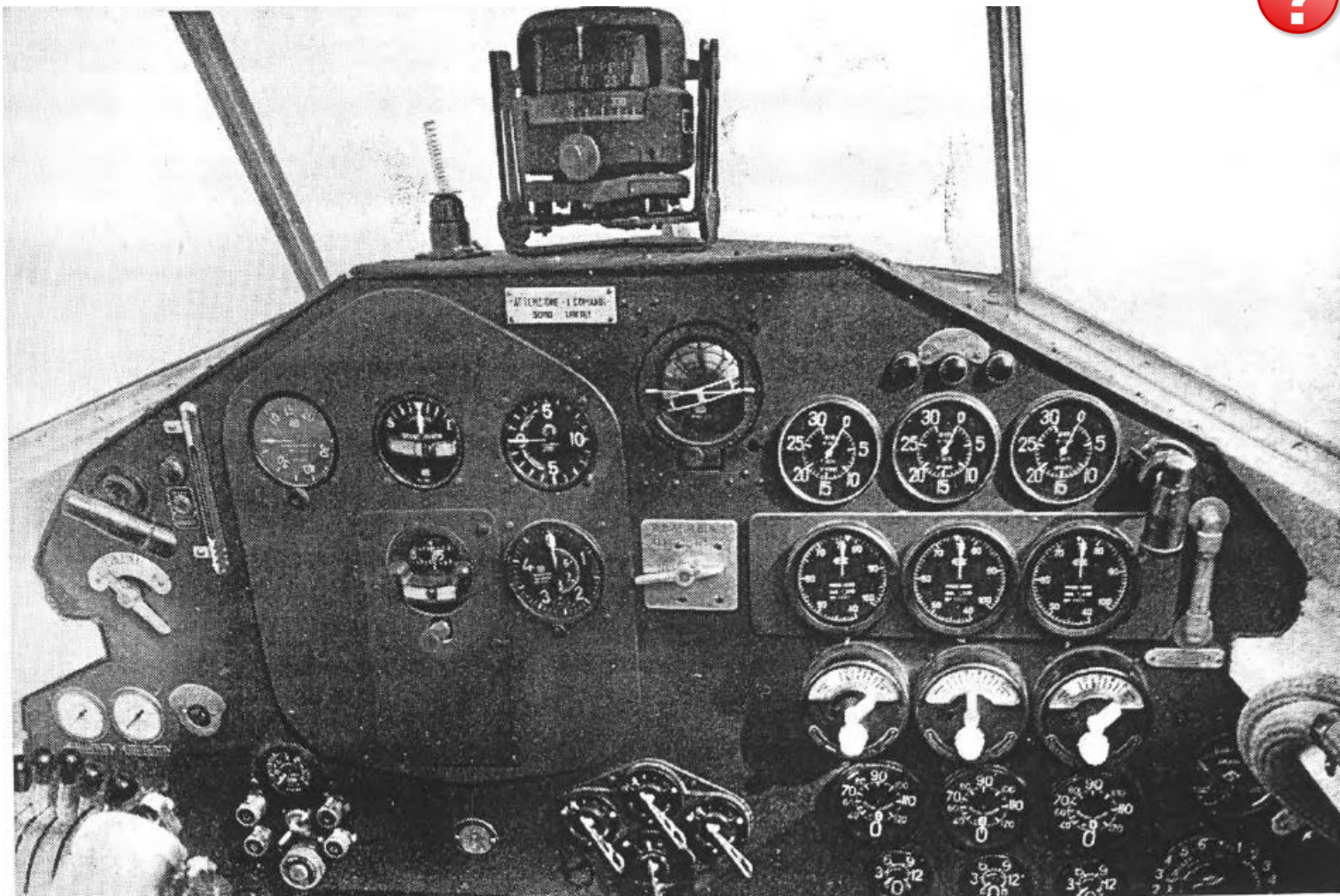
Maximum speed: 290 mph    Cruise: 267 mph

Range: 580 mi    Service ceiling: 37,240 ft

Armament 4 × 0.303 in Vickers machine guns



This Month







## Last Month: The De Havilland Drover

The de Havilland Australia DHA-3 Drover is a small transport aircraft that was built by de Havilland Australia (DHA) in the 1940s and 1950s. The aircraft had some similarities with the two-engine British-built de Havilland Dove but used a trimotor configuration.

### Design and development

Design work on the DHA-3 began in 1946 after DHA identified a need to replace the de Havilland Dragon biplane then in widespread use in Australia. Although the British parent company's Dove was being produced at the same time, DHA saw that the Dove was not entirely suitable for Australian conditions. Using the Dove as a starting point, DHA designed an aircraft with three four-cylinder Gipsy Major engines instead of the Dove's two Gipsy Queen six-cylinder engines and a fixed tailwheel undercarriage instead of the Dove's retractable tricycle undercarriage. Like the Dove the DHA-3 was sized to carry 8 to 9 passengers with a single pilot.



### General characteristics

Capacity: 10 passengers/patients - 1,710 lb maximum payload  
Length: 36 ft 2 in Wingspan: 57 ft Height: 9 ft 9 in  
Wing area: 325 sq ft Airfoil: RAF 34 modified 2.5% camber  
Empty weight: 4,585 lb Max takeoff weight: 6,500 lb  
Powerplant: 3 × Lycoming O-360-A1A, 180 hp (130 kW) each

### Performance

Maximum speed: 192 mph Cruise speed: 144 mph Stall speed: 65 mph  
Range: 540 mi Service ceiling: 15,200 ft Take-off run: 865 ft (264 m)  
Take-off distance to 50 ft: 1,400 ft  
Landing distance over 50 ft: 1,570 ft

[https://en.wikipedia.org/wiki/De\\_Havilland\\_Australia\\_DHA-3\\_Drover](https://en.wikipedia.org/wiki/De_Havilland_Australia_DHA-3_Drover)

<https://pimaair.org/museum-aircraft/de-havilland-australia-dha-3-drover-mk-2/>

<https://aeropedia.com.au/content/de-havilland-dha-3-drover-mk-1/>

**Zenith CH-601 – California:** The pilot taxied to the runway with the canopy unsecured, and later he could not recall if he secured the two latches before takeoff or if the “mental checklist” he used included securing the canopy. He initiated the takeoff roll, rotated the airplane, and then climbed it to about 80 ft above ground level, at which point the canopy opened. The canopy began “bobbing up and down,” so the pilot aborted the takeoff and landed on the remaining available runway. The pilot reported that he “lost perspective” during landing and that the airplane impacted the runway hard, which resulted in substantial damage to the fuselage and wings. (10/27/2015)



**RV-4 – Nebraska:** The pilot completed several intentional low-altitude passes (at or below 100 ft above the ground) over his brother's property/residence. Following the final low pass, the airplane pitched up into a climbing right turn. During the climbing turn, the airplane suddenly pitched nose-down and descended rapidly. The airplane recovered briefly to a wings-level attitude before the wings rocked left and right and the airplane entered a descending right turn into terrain. (10/17/2015





**Lancair IV – Wisconsin:** While practicing an emergency descent during a dual training flight, the pilot receiving instruction entered the airplane into a steep dive, which resulted in a 0.5-G load factor for about 5 seconds and a transient drop in engine oil pressure of about 15 psi. As the descent continued, engine speed steadily increased beyond the maximum operating limit of 2,700 rpm. While still in the dive, the pilot initiated a left turn with a 3-G load factor, during which the engine oversped to 3,390 rpm. The engine immediately began to run rough, and subsequently experienced a total loss of power. The pilot executed a forced landing to a field with the landing gear and flaps retracted, during which the airplane struck a rock wall and tumbled.



Postaccident examination revealed that 8 teeth on the left magneto distributor drive gear and 16 teeth on the right gear had fractured. No evidence of progressive damage or material anomaly was observed with the distributor drive gear teeth. The nylon gear teeth were most likely damaged by the abnormal shock loads on the gear train during the engine overspeed. The damage to the gear teeth resulted in a dual magneto failure and subsequent loss of engine power.

The flight profile of a low-G pushover to a steep dive, which was accompanied by a drop in engine oil pressure, may have led to the propeller governor not supplying adequate oil pressure to the propeller, which subsequently contributed to the engine overspeed and the failure of the magnetos. (11/15/2015)

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](mailto:Npauk@msn.com)



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](mailto:ebsharp@centurylink.net)

EAA 441

# project-updates

TEXT CHANNELS

# introductions

# announcements

# resources

# suggestion-box

# calendar

# general

# help-needed

# tips-and-tricks

# trading-post

# project-updates

# flight-reports

# young-eagles

VOICE CHANNELS


General

February 15, 2023

Steve Cameron

02/15/2023 11:53 AM

So, my big honkin' capacitor showed up... I thought it would have the screws included, but didn't. Headed to Tacoma Screw to get some short M5 screws and washers. Also, now I think I need to make some sort of nifty box to hold it for mounting, given the external side is negative polarity. It is way bigger in person than I had thought!



Mark Owens

02/15/2023 11:55 AM

It is huge.... I am sure a physically smaller one will work.... Adel clamps or hose clamps mount them nicely

@Mark Owens It is huge.... I am sure a physically smaller one will work.... Adel clamps or hose clamps mount them nicely

Steve Cameron


02/15/2023 12:06 PM

Thanks!

Mark Owens

02/15/2023 12:10 PM

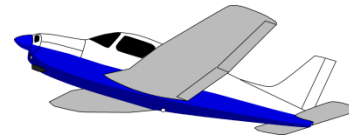
Would you like to test with this one



+ Message #project-updates

Ron Wantt...  
#1534





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.