

THE SLIPSTREAM

THE NEWSLETTER OF GREEN RIVER EAA CHAPTER 441 KENT, WA
SEPTEMBER 2020

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SPECIAL POINTS OF INTEREST:

PHYSICAL GATHERINGS TEMPORARILY ON HOLD UNTIL FURTHER NOTICE

WE ARE GOING TO A VIRTUAL GATHERING THIS MONTH

PRESIDENTS COLUMN, MARK OWENS GLASAIR LANDING GEAR UPDATE:

President's Column:

Airlines in the Pandemic and Weight and Balance

Just returned from an extended trip to the Midwest. We flew on an airline based in the Pacific Northwest. Of course, masks were required in airports at both ends of the trip. Interestingly, some employees in the airports wore gloves, some did not, including some TSA agents handling everyone's luggage.

Masks were required on board the airplane. Most passengers scrubbed their own seats (we did) with disinfectant wipes. Airlines have modified their service. No cabin service on trips less than 250 miles. On trips of more than 350, no food, but abbreviated beverage service was offered.

Happily, change fees have gone away. Good thing for me, we had to change our return trip 3 different times (long story). But the fare difference still applied, so we were giving up advance purchase tickets to buy short notice tickets (ouch).

On 737's, all center seats were blocked, which was kind of nice. On the -800 we were on from Kansas City to Seattle, there were maybe 50 people on board. Lots of room to spread out. No overhead space challenges. With the light load, many passengers were quick to choose their own seats: mostly exit rows with more leg room, etc. What was interesting was that the cabin

crew announced several times that we were a "CG limited" flight, and they could not allow changing seats from what was assigned. They came through the cabin and checked each seat...one guy did not move until the FA approached him specifically to get him out of the exit row.

We've all had to do weight and balance computations for checkrides, and sometimes for specific loadings on rare trips. What may not be so obvious is that weight and balance is just as important for airline operators. I was once on a chartered 727, and counted something like 35 people standing in the aisle, waiting for the lav in the back. I did a quick sum in my head and asked the guy standing next to my seat if he understood how much the CG was moved aft by all those people moving from forward seats to the aisle in the back...something like 2+ percent. In the case of our flight this week, the airline had obviously very carefully assigned seats to the few people on board (probably lots of cargo downstairs) and could not stand very much variation.

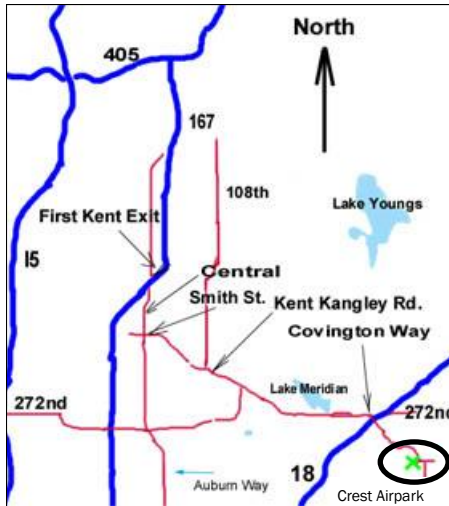
When's the last time you did the calculation for a large passenger in the back seat? Or extra stuff in the baggage compartment? The big boys pay attention: we should, too.

Fly safe.

Brian

Mark Owens Glasair Landing gear replacement:

WHERE DO WE MEET THIS MONTH?



Meets 4th Mondays 700 pm
 17605 SE 288th PL, Kent
 The Mellema Hanger



SEPTEMBER

Virtual meeting with a round table discussion and sharing of photo's and ideas

Program

Virtual Meeting information:
 Mondays meeting is again on Zoom:
 Here are the details:
 Monday September 28, 7pm-9pm
 Join Zoom Meeting URL is [Click Here](#)

Password: 1234

Phone one-tap: US: +12532158782,,98249761414# or +13462487799,,98249761414#

Meeting URL: <https://gettyimages.zoom.us/j/98249761414?pwd=a1dLdm9yV0JrOWV0a3czY2lRUjhjQT09>

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Meeting ID: 982 4976 1414

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GLASAIR LANDING GEAR UPDATE:

The Glasair kit included a set of Fiberglass landing gear.

I was never satisfied with the installation and alignment of the original gear. I tried several time to align the gear and never got the same measurements so the gear may have been cut wrong by me, may have had a different flex right from left to right. I also damage the pilot side gear in an incident at Harvey field after which I attempted again to correct the alignment. I ended up with a little tire wear and the passenger wheel about 1/2 inch farther aft that the pilot side gear. When I had the incident at Harvey field I ordered Grove Spring Aluminum Gear, Feb, 2019. It was about 4 months in delivery and I was not willing to take the down time to complete the replacement. Landing gear replacement was supposed to be a quick and easy change but I knew better. With the original gear I started with a raw product that required trimming and sizing both end of each gear leg. The product from Grove was much nicer. It included ready to install gear including gun drilled brake lines drilled inside the landing gear. The process is

- 1- Remove the seats, console and seat pans
- 2- Jack up and level the plane



- 3- Remove the wheels, drain the brake fluid
- 4- Remove the original landing gear. Inboard and outboard mount points.
- 5- Using a plumb bob,
 - a. Mark on the floor, left and right sides of the firewall, measure and mark the center of left and right
 - b. Mark on the floor the center of the fuselage tail.
 - c. Mark the center line on the floor from tail to center of firewall and firewall left to right, extend the firewall lines out 20 inches.
- 6- Measure and centerpunch 4 drill spots on each of the outboard mounting brackets.
- 7- Loosely install the outboard mounting brackets on the landing gear.
- 8- Mount the inboard landing gear attach points .
- 9- Raise and temporarily install the outboard mounting bolts.
- 10- Set the inboard mount points 1/8 inch from center on both sides.
- 11- Using a plumb bob measure from the center line to the center of the landing gear. Measure from the extended firewall line to the center of the landing gear.

- a. Compare both sides
- b. Compare to the expected measurements from the Glasair manual.

12- To accomplish the balance and measurement small adjustments to the outboard mounting bracket placement is required.

This step took about an hour to get the brackets just right and I had to make sure that the center mount point stayed at 1/8 inch....

13- Hot glue the brackets in place.

14- Verify that the planned bracket drill spots are not too close to the edge of the landing gear.

15- When satisfied drill 1 hole at a time and install a 1/4 bolt, locknut and washer before moving to the next hole.

16- When on side is completed, verify measurements again before proceeding to the second side.

17- Connect brake lines,

18- Reinstall wheels and brakes

19- Bleed the brakes....

20- Check toe in alignment. Recommended toe in is 1%

21- Fabricate toe in shims.

- a. I needed shims with a .020 slope over the 2 inches of the axel mount space.

- i. Grove has some pretty good information on the website, they also sell shims. I made my own.

22- Roll test by placing a few magazine pages in front of each



TECH COUNSELORS AND FLIGHT ADVISORS



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.



GUESS THAT AIRPLANE; GUESS THAT INSTRUMENT PANEL

This months entry:

Go to Page 10 for August's airplane

This months entry:

Go to Page 11 for August's Instrument Panel



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GLASAIR LANDING GEAR, CONTINUED, UPDATE FROM ODDBALL:

wheel and pull the plane forward. The pages should not be pulled out of alignment.

Taxi and flight tests.

Taxi test was just a taxi and verification of low speed control, braking and stop and verify everything before a flight test.

I found the grove spring aluminum gear to be stiff in comparison to the fiberglass gear. I felt the bumps in the grass taxiway and runway much more with the new gear.



Takeoff and landing were both easier to keep the plane straight on the runway or it just seems to be. 3 takeoffs and landing. I like the gear, measurements balance correctly and I expect much less tire wear.

The wheel pants were then completely out of alignment as they were aligned with the gear. So they required replacement mountings. Using a similar process to the gear installation, the centerline and firewall lines were found. The Wheel pants were lined up and squared with a plumb bob and measurements. I think that they are lined up better than before.

The smoke came in before I completed the wheel pant installation so. I am waiting to see if I can notice any difference.

Mark

Updates from Oddball:

Missed last month's meeting, had a long workday. In September I did a tech counselor visit of a Highlander on Full Lotus floats for Robert Moehle and David Krall. Steve Cameron visited as well, he's working on building a Highlander. Looks like a fun machine. It has a Suzuki turbo engine on a Megasquirt computer. I believe the belt drive is by Raven. Lots of wires. Unique methods for prototyping the installation with the engine and oil cooling until a final configuration is reached, while dealing with the high vibration environment of a seaplane. The airplane has previously flown on the first version of this engine, but hasn't flown on the rebuilt engine yet.

The FAA finally processed the Luscombe registration, although I haven't received the paperwork in the



DARINS RV, PIETENPOL UPDATE:

mail yet. Not sure who should get most of the credit, USPS, FAA, or both for the 2.5 month wait.

Not much new outside of that, been cooped up inside to stay out of the smoke, and back & forth with the Doc dealing with eye gremlins.

Tom (Oddball)

Darin's RV Adventures:**Cowling part 1**

I never do things the easy way....

I started the cowling a week or so ago. As is my standard I feel I need to "improve" things a little. In the case of the cowling I am using quarter turn fasteners (I did this on the 9 as well and was glad I did) and I'm doing some cosmetic alterations as well. This cowling is much larger than the one on the 9 and there were times when it was difficult to get the lower cowling on and off. For the 10 I decided to cut the snorkel section out to make it easier to work with while installing and removing. That requires lots of work and a bunch more quarter turn fasteners. You will see what I mean below. Once that is complete there is a strong possibility that I will split the lower cowling in half so that I can install/remove one side at a time. More fiberglass work and more quarter turn fasteners. I'll make that call once I have the scoop complete. The top cowling half gets fitted first. You can see the overlap with the skin. If you look closely you can see the blue line I drew 3" back from the firewall edge. This line helps me measure forward to determine the precise cut line. Actually it wasn't one single cut...it was one big cut and a bunch of iterations of sand,

install, measure, remove, sand, install....you get the picture.



To Read More: [Click Here](#)

Pietenpol Update:

Hello 441,

Had my Pietenpol weighed last week and it went well. The bird is on track to come out around 700 pounds - which should be about average for a Piet. Ernie Morano is a tech councilor at EAA 292 here in Independence, Oregon. He brought the club's scales and it took about an hour and a half. Ernie tells me he has done around 400 of these weighings!!! Anyway, most of the work these days is getting settled-in here. There is a lot to get unpacked and a shop to get set up. I'm still telecommuting with Boeing, I guess one "good" thing about these decidedly unusual times....

Having fun and learning a lot...

Jake



PIETENPOL UPDATE CONTINUED, EDITORS CORNER:

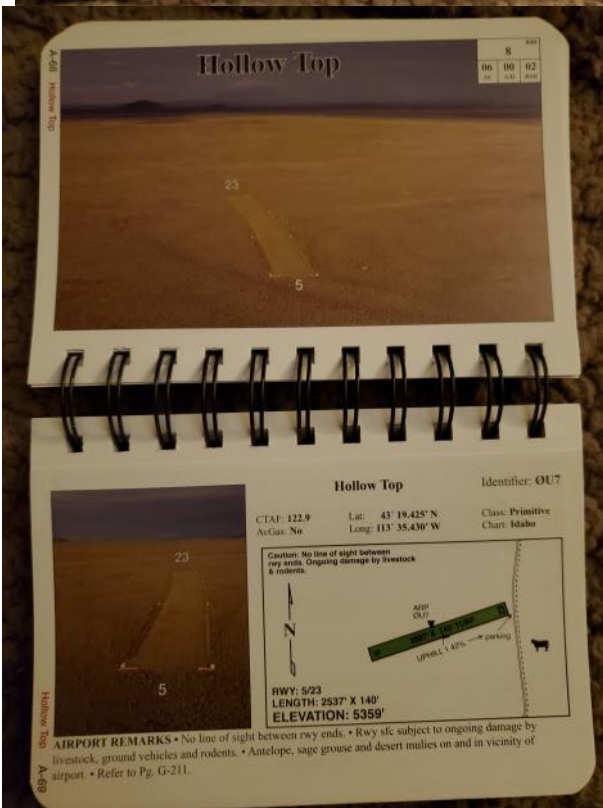
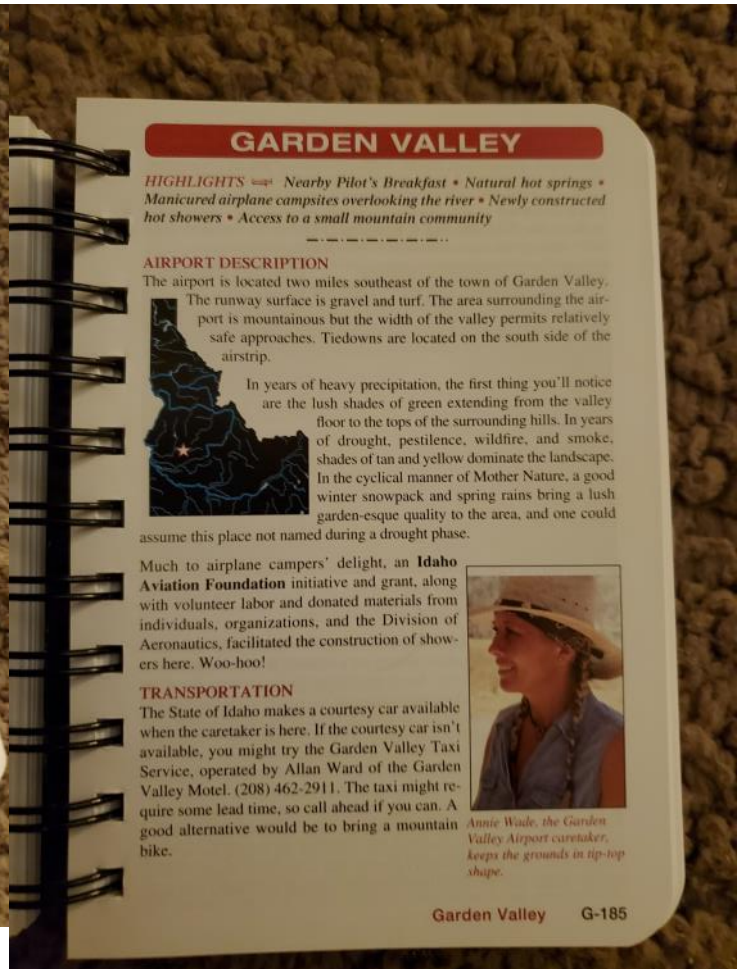
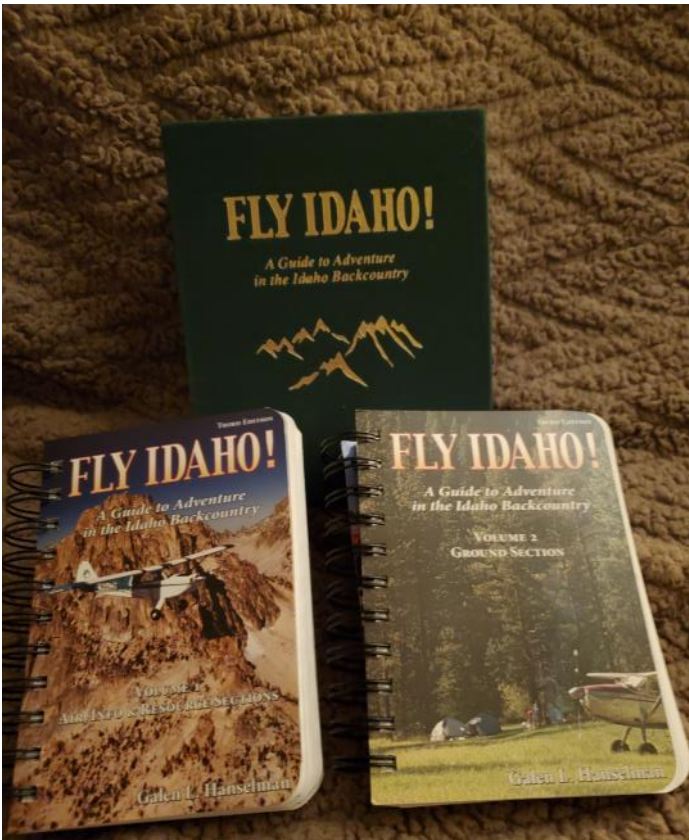


Editors Corner:

Another month come and almost gone. I did manage to go camping last week for three out of four intended days. I went to Ike Kinswa State Park and visit Mt. Rainier every day that I was there. I had some learning on camping in a tent where a lot of things turned into aggravations in the most inopportune times. Oh well.

I had purchased the Flying Idaho set of charts I spoke about last month. They came in a nice case and had two binders of information. See photos for samples of the contents. It is really full of information

EDITORS CORNER CONTINUED:



that is helpful for the back country pilot. It contains around 900 pages.

Our next meeting is again a virtual one.

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EDITORS CORNER CONTINUED, AUGUST MEETING MINUTES

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August Meeting Minutes:

Doug H: hasn't been on in a while flew his RV7 to San Diego, half of Cali is under smoke. On way back flew at 16000 ft Got a really good tailwind. Flew from San Diego to Roseberg Oregon in 4 hours. Used oxygen. Found an intersection named Happe in the torn.

Norm: T-angle has a bunch of T-angle. 6061 weldable aluminum.

Steve Crider. Dave Nason and Brian have a 1962 C150 talk with them

Dave Nason being flying his red aircraft (Falco)

Carl: Wants to buy house on airport.

Ron Wanttaja: willing to give his ancient microphone. Friend had a \$100k bounty in Afghanistan by the Taliban. Retired as a Major General. Very badly messed up last Wednesday. Estimated that there was room between a gaggle of C-182's. Last week or so someone didn't see Ron on final, and Ron over flew hm. Flybaby pilot has created a starter for the A65 \$1100.00 He hasn't had to hand prop his airplane. Lite weight, weighs about 9 pounds. Motor from a scooter. Been flying a bunch lately. Peter Lurk used to fly gliders which had a relief tube built into his suit for glider flying. Forgot that the tube wasn't connected to anything yet when he was interrupted on the ground.

Tim Yonkers: looking for weldable aluminum. has the machine already. ignition coil went out messing with lawn mowers. Kawasaki engine on the mower. bought a used mower for 20. runs but almost no oil, may have same gasket issue. The plane is sitting. Got to go to Norm for the right aluminum to build trailer brackets Europa xs. needs new gasket on the oil pan.

Brian: At Oshkosh. Chapter in Minneapolis (Chapter 52) flew down and got photos in front of the tower, making T-Shirts saying they flew to Oshkosh in 2020. 310 is signed off. Did test flight on the hottest day and vapor locked while refueling. No start cart Brought batteries home and charged. Last flew it in March. Gave Tinkertot a bath. Mechanic came and got a feel for the condition inspection. Couple of repairs needed couple of hinges need wire safety. Take carb off need to flush fuel system and decide what to do with the Carburetor. gasculator full of sledge. Needs new gasket and filter screen. Boeing surplus orange. Wanted to borescope and put in oil and run it, but with the sludge. Need to reset the valves every 25 hours. Friend Bought a Birddog but he could smell some fuel, was told it was normal. Fuel gushing out of the cowling. engine stopped before getting off the runway. The glider hanger is taking shape. Three more waiting to come this way. Bought travel trailer taken all cabinets. Needs to be two ft longer. Needs to add a wide door. Belly pan needed for trailer the T angles are for the belly panel. TT used scale to measure thrust of about 200 lbs instead of static RPM RV4 in NY coming up for sale. Flying airplane. May be reasonable.

Mark Owens: Walking his new puppy around the airport. Officially retired. Landing gear came off the airplane (purposely) New axels do not fit the new landing gear. May have to put old axels and brakes. It is a bolt pattern issue. Single pad is harder to lock up brakes. Fewer parts to replace. Experienced two independent brake failures and torque convertor failure on the way back from Republic bringing the trailer camper back. A home for sale on Crest (Norm Greer).

AUGUST MEETING MINUTES CONTINUED:

Dornier Do J Wal

The Dornier Do J Wal ("whale") is a twin-engine German flying boat of the 1920s designed by Dornier Flugzeugwerke. The Do J was designated the Do 16 by the Reich Air Ministry (RLM) under its aircraft designation system of 1933.

Design and development

The Do J had a high-mounted strut-braced parasol wing with two piston engines mounted in tandem in a central nacelle above the wing; one engine drove a tractor and the other drove a pusher propeller. The hull made use of Claudius Dornier's patented sponsons on the hull's sides, first pioneered with the earlier, Dornier-designed Zeppelin-Lindau Rs.IV flying boat late in World War I. The Do J made its maiden flight on 6 November 1922. The flight, as well as most production until 1932, took place in Italy because of the restrictions on aviation in Germany after World War I under the terms of the Treaty of Versailles. Dornier began to produce the Wal in Germany in 1931; production went on until 1936.

In the military version (Militärwal in German), a crew of two to four rode in an open cockpit near the nose of the hull. There was one machine gun position in the bow in front of the cockpit and one or two amidships. Beginning with Spain, military versions were delivered to Argentina, Chile and the Netherlands for use in their colonies; examples were also sent to Yugoslavia, the Soviet Union and to the end of production Italy and Germany. The main military users, Spain and the Netherlands, manufactured their own versions under license. Several countries, notably Italy, Norway, Portugal, Uruguay and Germany, employed the Wal for military tasks.

To Read More:

Wikipedia: [Click Here](#)

Air and Space, Smithsonian: [Click Here](#)

Maltadives: [Click Here](#)

General characteristics

Crew: Three

Capacity: 8–10 passengers

Length: 17.25 m (56 ft 7 in)

Wingspan: 22 m (72 ft 2 in)

Height: 5.62 m (18 ft 5 in)

Wing area: 96 m² (1,030 sq ft)



Empty weight: 3,630 kg (8,003 lb)

Max takeoff weight: 7,000 kg (15,432 lb)

Powerplant: 2 × Rolls-Royce Eagle IX V-12 water-cooled piston engines, 265 kW (355 hp) each

Performance

Maximum speed: 185 km/h (115 mph, 100 kn)

Cruise speed: 145 km/h (90 mph, 78 kn)

Range: 800 km (500 mi, 430 nmi)

Service ceiling: 3,500 m (11,500 ft)

Rate of climb: 1.5 m/s (300 ft/min)

Time to altitude: 3,000 m (9,843 ft) in 33 minutes



Photo by

[Dornier Museum Friedrichshafen](#)

GUESS THAT INSTRUMENT PANEL

Avro Lancaster

The Avro Lancaster is a British Second World War heavy bomber. It was designed and manufactured by Avro as a contemporary of the Handley Page Halifax, both bombers having been developed to the same specification, as well as the Short Stirling, all three aircraft being four-engine heavy bombers adopted by the Royal Air Force (RAF) during the same wartime era.

To Read or view More:

Cdna: [Click Here](#)

Airpages: [Click Here](#)

Wikipedia Commons: [Click Here](#)



The instrument panel of the Battle of Britain Memorial Flight's Lancaster I PA474.
(RAF Coningsby Photographic Section/ Crown Copyright)

1 Air speed indicator; 2 Artificial horizon; 3 Rate of climb indicator; 4 Altimeter; 5 Directional indicator; 6 Turn and slip indicator; 7 Accelerometer; 8 Undercarriage indicator; 9 Compass (P10); 10 Cockpit lights; 11 Gyro compass remote indicator; 12 Magneto switches; 13 Boost indicators; 14 RPM indicators; 15 Engine start buttons; 16 Boost coil switch; 17 Fire indication test button (guarded); 18 Flap indicator switch; 19 Vacuum indicator; 20 Flap indicator; 21 Vacuum system changeover switch (this works off the number 2/3 engine); 22 Propeller feathering buttons; 23 Fire indication lights; 24 Extinguisher buttons; 25 Air system and brake gauge; 26 Identification light Morse switches; 27 Engine radiator shutter switches; 28 VHF radio;