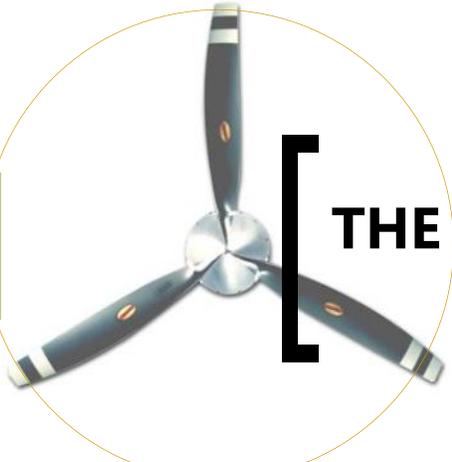


THE SLIPSTREAM

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



PRESIDENTS COLUMN:

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SPECIAL POINTS OF INTEREST:

Membership dues are due

Mark your Calendars for the 37th NW Aviation Event
 For over three decades the Washington Aviation Association has been pleased to present the Northwest Aviation Conference & Trade Show at the Washington State Fair Events Center in Puyallup, Washington.
 This event has grown to over 75 hours of safety seminars and 122,000 sf of aviation displays with an annual attendance of over 10,000!
SAVE THE DATE:
 FEB 22/23 | Puyallup, WA
 Conference Hours
 SATURDAY 9-5:30 | SUNDAY 10 - 4 PM
 \$5.00/day | FREE parking FREE kids 17 and under

Presidents Column:

Preflight Weather Challenges

Here in the Pacific Northwest we have some significant weather challenges for general aviation pilots. Really violent weather is not unheard of, but we don't very often have thunderstorms, tornados, really strong surface winds. What we do have is lots of marginal VFR: low clouds, fog, reduced visibility, rain. While the rain is rarely really hard, it's in general "skuzzy". In the winter (well, in summer, too), it's not just a problem for VFR pilots. Here's a pop quiz: when the cloud base is at 2000 and surface temps are about 40 degrees (like it is most of the time in winter), what's the minimum IFR altitude to go North and South on the East side of the Class B, and where is the freezing level likely to be? That's right: many times, we can't just file and go, because we've got to get above 4000 (to get past Tiger Mountain, and besides, there's a memorandum of understanding with Seattle Approach that all IFR traffic will go at or above 4000). And if it's 40 deg F on the ground, what will the temperature be at 4000?

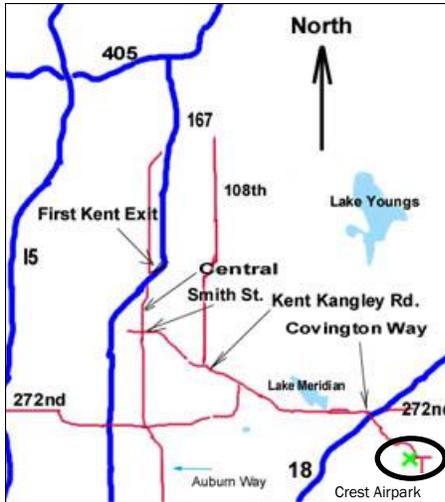
I've mentioned the need to get rather high, even IFR, because of the local terrain, but there's another issue with weather: our weather here in Puget Sound is ABSOLUTELY dominated by local geography. It's common for one side of a hill to get twice as much precip as the other side. What about the Puget Sound

Convergence Zone? You know, that 5-mile wide band between Seattle and Everett (it moves around) that gets much worse weather than the rest of us.

Now for preflight planning, we're required by regulation to become familiar with all available information concerning our intended flight. Used to be we could call Flight Service, or better, visit them at Boeing Field. When I lived in Wichita, the AFSS was literally across the street from my hangar, so I'd stop there on the way to my airplane. I once landed in Louisville, KY on the way from Tullahoma to Indianapolis, stepped into the Flight Service Station, looked at the radar, computed the speed of the thunderstorms and my ground speed and filed a flight plan to land just before they got there. It was reassuring to talk to a real person who might say "that's what it says, but now I'll tell you what I saw when I drove to work this morning".

Now, we have access to lots of weather sources (some more than others...my flip phone isn't so good at that), and the FAA has closed the AFSS's and given contracts to Leidos to provide that service. It seems pilots don't use that much anymore, because they keep cutting it back, citing lack of use. HIWAS is gone. TWEBS are gone. The FAA "expects" that everyone is getting internet weather. But there's a catch here. You may need to prove you complied with the preflight planning

WHERE DO WE MEET THIS MONTH?



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



JANUARY

Steve Crider: Proper Torque for threaded fasteners

Program

Steve Crider will talk and instruct on the proper torque for threaded fasteners.

2020

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PRESIDENTS COLUMN CONTINUED, NW AVIATION SHOW:

regulation (failure to do so might invalidate your insurance, as well), and not all weather sources are “official”, and not all record the briefing. Even if you do download weather from an official source, there’s no record of your reading it. That leaves the live briefing (which are all recorded). But as I said, that’s being cut back.

Now, back to the local weather. Leidos and FAA seems to think just reading the official weather is complete. Evidently, they’ve never flown in the Northwest. Briefers used to be trained for local areas, but that’s evidently a thing of the past, now, too. The Leidos briefer in Virginia can read me the weather, and his computer system is set up to give “closest” weather. So when I tell them I’m departing from Norm Grier, (e.g. to go to Puyallup), they read me the Renton weather. While it’s true that Renton is “closer” than SeaTac, it’s only closer by a few hundred feet. Besides, Renton is at the bottom of the hill next to a very large body of water. And, it’s 10 miles in the wrong direction. The Leidos system is not capable of differentiating this important geographic detail. Further, since KPLU has an automated observation system, frequently, the Leidos briefer won’t bother giving me the

benefit of McCord’s more detailed military weather (which includes a TAF). When it comes to enroute weather, they have done away with FA’s, and now we have a graphical forecast. But frequently the briefer can’t zoom in close enough to make any sense of it. Besides, the National Weather Service forecast models have a resolution of about 50 miles, and geographically, includes only a gradual rise from the West Coast to the Rocky mountains. They don’t even know about the local geography in the Northwest.

Now, the Atmospheric Physics department at UW figured this out a long time ago, and they maintain a high resolution forecast model of the northwest (as do many of the services the local TV stations subscribe to). The UW forecast has a resolution of as small as 1.3 km.

<https://a.atmos.washington.edu/mm5rt/>

The rub is that availing ourselves of that information is not recorded, so in the event of an accident, there’s no official record of it, and the NTSB report will say “there is no evidence the pilot got a preflight weather briefing”. Similarly, Leidos briefers don’t seem to know about these local resources.

The other day, I needed to retrieve my airplane from Spencer Avionics (that’s another story), and the weather was “skuzzy”. I got a briefing, which started with reading me the weather at Renton (several miles in the WRONG direction). The briefer did not include SeaTac until I asked. He told me about a NOTAM for icing from the freezing level to 14,000. The freezing level was reported as “surface to 12,000”. That kind of report is

worthless to us, but comes about because they look at the freezing level across a fairly large area, and we have mountains. He told me that there were rain showers, and significant snow East of my route, while he read me the report from Stampede Pass. Of course it’s IFR and snowing at Stampede Pass. It’s at 3800 feet above Sea Level! The briefer did not know that. When it’s 2000 overcast, I’m planning a flight at no more than 1500, why would he tell me that it’s IFR and snowing at 3800, and 30 miles East of my route of flight? The flight was fine, the vis was good VFR, and aside from getting wet (and strong winds at altitude), it was not particularly challenging. But the briefing was a huge frustration.

Fly safe.

Brian

New Year:

It’s a new year, and dues are due. Chapter 441 only costs \$20/year. The newsletters alone are probably worth more than that. See Steve Crider. At some point, we probably should cull the list to only those who actually pay dues. Don’t miss out.

Northwest Aviation Trade Show:

Mark has been communicating with Chapter 326 regarding the trade show. Traditionally, they have had a booth advertising EAA activities in the area. Mark suggested that Chapter 441 could help them out. They have lost many volunteers for the trade show to their Teen Flight booth, so could use some help. If you can volunteer some time to



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 9 for December's airplane



This months entry:

Go to Page 10 for Decembers Engine



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PIETENPOL UPDATE, DARINS RV ADVENTURES:

hang out and tell people about homebuilding and EAA, please coordinate through Mark. It's a really good cause. We have roughly 20 members, but there are 900! EAA members who live within 25 miles. We have a lot to offer, so let's get the word out.

Brian

Tinkertot Flying Club:

We are still planning to acquire Hilmer Swanson's Tinkertot, restore it and create a low-cost opportunity to get into the air. What we need is hangar space.

Brian

Portable Light:

As I get older, I find that I need more and more light to see what I'm doing. In particular, in the dark of winter in the North, the two small bulbs in the municipal airport hangar I'm using just don't cut it. And working with a flashlight in my teeth is just no fun anymore.

The local Chinese tool supply store had a sale on 4 foot LED tubes and furniture dollies recently, so I used up some scrap material and devised a way to get more light where I need it.

As seen in the photos, one provides light over-the-shoulder, and can pivot around the center of the tubes for versatility (a piece of sandpaper glued to the circular piece will provide plenty of friction to hold it in whatever position is desired). The lower, vertical standard is great for lighting up landing gear, and if necessary, can be put on its back to illuminate the



wheel well or the underside of things. Not a large investment but a huge help in the hangar.

Brian

Pietenpol Update:

Hello 441,

Back from a trip to Mexico and back into aviation...!

Progress continues on my 1931 Pietenpol project - this month in the form of my propeller. It is being carved in Missouri as I write this and I'm very excited to see the results. It is being carved by Alaina at Carver Propeller and will be a scaled-down profile of the propeller from a WWI British SE 5a. Stay tuned for more information and pictures next month...!!!

Jake

Darins RV Adventures:

December 2019:



DARINS RV ADVENTURES, CONTINUED:

More Doors

The past few weeks have been dedicated to working on the door fit and the instrument panel. I used my CNC to do some test cuts of the inserts for the instrument panel and found that there is a small error in the conversion from the Solidworks export DXF to the import process in Cambam (the GCode tool I use). Turns out that everything I cut is just a bit over-sized. So I took on the task of learning the Solid-



works CAM solution. It was a bit of a steep learning curve but I finally managed to get it working. However....on my first test cut the controller board for my CNC failed. I think it was in the USB connector but regardless it has become intermittent which is a problem. Bottom line is I ordered some new parts for the CNC and will be making some upgrades to it soon.

Regarding the doors, I've been working on getting the seals to fit properly. Once I felt they were about right I worked on the spacing between the doors and the cabin top. Still lots of work to do but here is what I have so far.

January 16 2020:

Yep, more doors

I can finally see the light at the end of the tunnel with this darn doors. Nothing hard about it but they sure are messy as you will see from the pics below. These last couple of weeks have been very cold so my time in the garage has been short. In addition to

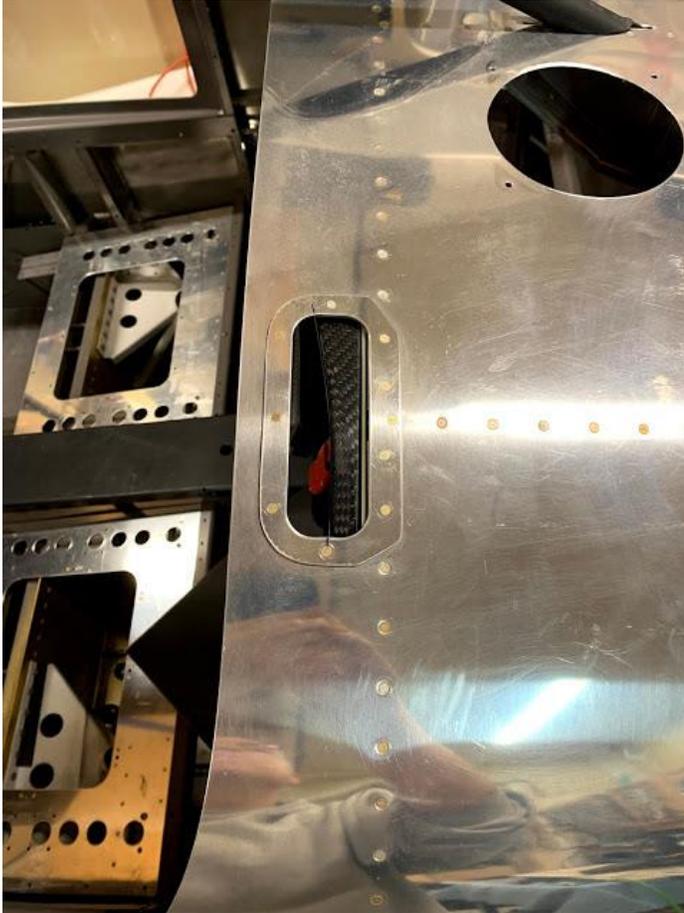


the tasks I took picture of below I also managed to finish riveting the top skin on the inside. I forgot to do this when Travis was here so finished up the last 8 rivets. I also epoxied in the two forward Naca ducts.

The lower console is fitted and drilled to the upper panel. I installed it in the airplane to make sure it all fits nicely. Next up for this area is to drill the lower console to the tunnel screw locations.

If you look at the hand hold (the hole) in the picture above you will notice that the instrument panel (the carbon fiber you see in the opening) blocks about half of the opening. There is still room to fit your fingers in there but it looked kinda sloppy to me so I drilled the doublers out and fabricated a couple of new ones that move the grip further aft. In the pic-

DARINS RV ADVENTURES, CONTINUED, EAA NEWS:



ture below you can see the new location.

Darin

To Read More, [Click Here](#)

EAA News:

Proposed Remote Identification of UAS::

EAA is very concerned that the FAA's proposed rule on Remote Identification (RID) of Unmanned Aircraft Systems (UAS) could have a severe detrimental impact on traditional model aviation, and is preparing a full package of comments on the Notice of Proposed Rulemaking (NPRM).

The rule would require most UAS, no matter whether they are "drones" or traditional model aircraft, to carry equipment that identifies the device and broadcasts its location. Additionally, many would be required to be equipped with "geofencing" systems that autonomously contain the craft within a defined altitude and

lateral boundary.

To Read More, [Click Here](#)

Structuring your Tech Consoler Visits::

By Lisa Turner, EAA Lifetime 509911

Do you remember the first string of technical counselor visits you made? On the drive or flight there, were you thinking about what you would find? Did you wonder about how receptive the builder would be to your suggestions? While most first visits go really well, you might have encountered a few that were difficult.

Structuring your visits from that first call can help you and your builder navigate the sometimes complex landscape of what to work on, what questions to ask, and in what order to approach topics.

To Read More, [Click Here](#)

EAA NEWS CONTINUED, EDITORS CORNER, DECEMBERS MEETING MINUTES:

EAA Encourages Caution Regarding Aircraft Registration Renewal:

EAA is warning its members to regard any solicitation they may receive regarding aircraft registration renewal, especially those that call for using a search engine to find the registration site, with a healthy dose of suspicion.

EAA is aware of several businesses — with names, web URLs, and logos that may appear reminiscent of a government agency — that notify aircraft owners of impending registration expiration (mined from publicly available registration information) and direct them to use search engines such as Google to find the proper renewal site. These businesses then buy ads from search engines to make their site appear first, before the FAA website, in search results.

To Read More, [Click Here](#)

New Aviation Museum Opens in Spokane:

The Historic Flight Foundation, home to John Sessions' remarkable collection of vintage aircraft and warbirds, has opened a new facility at Felts Field, an active GA airport in Spokane, Washington.

To visit the Museums web page, [Click Here](#)

Editors Corner:

Another new year has come upon us. 2019 brought many changes to our community and I am sure that the next year will see more changes happen.

I have decided to change out the Guess that Engine feature to Guess that Instrument Panel with this months edition. Hopefully we all will enjoy this new feature.

I keep finding more interesting airplanes, so that feature will remain a part of this Newsletter.

Has anyone been able to visit the new museum in Spokane mentioned above? If so, please send on some photos and thoughts about it.

Not much progress has been made in the last couple of months. I did manage to get the back up generator running in preparation for the predicted Snow-maggedon for the entire west coast. Getting it to run was a small victory for me as small engines refuse to run for me.

I had hoped to have the garage cleaned out a bit by now, but due to the Holidays, it is worse than before I retired.

Enjoy the New Year

Build Straight

Roger

Decembers Meeting Minutes:

Our December meeting was the annual Christmas Party with Chapter 26. We all had a good time and there were several steals that happened including one that managed to make it back to the original person on the last steal. The party and its photos were captured in the December 2019 Newsletter.



GUESS THAT AIRPLANE:**North American XB-28**

The North American XB-28 (NA-63) Dragon was an aircraft proposed by North American Aviation to fill a strong need in the United States Army Air Corps for a high-altitude medium bomber. It never entered into production, with only two prototypes being built.

Design and development

The order for a high-altitude medium bomber was put out on 13 February 1940; the XB-28 first flew on 26 April 1942. The XB-28 was based on North American Aviation's highly successful B-25 Mitchell, but as it evolved it became a completely new design, much more reminiscent of the Martin B-26 Marauder. The overall configuration of the B-25 and XB-28 were fairly similar; the most important distinction was that the twin tail of the B-25 was changed to a single tail on the XB-28. It was among the first combat aircraft with a pressurized cabin.

The XB-28 proved an excellent design, with significantly better performance than that of the B-25, but it was never put into production. High-altitude bombing was hampered significantly by factors such as clouds and wind, which were frequent occurrences in the Pacific. At the same time, medium bombers were becoming much more able at lower alt

To Read More:

Wikipedia: [Click Here](#)

Military Factory: [Click Here](#)

National Museum of the Air Force: [Click Here](#)

JoeBaughner.com: [Click Here](#)

Avistar.org: [Click Here](#)

General characteristics

Crew: Five

Length: 56 ft 4 in (17.17 m)

Wingspan: 72 ft 6 in (22.10 m)

Height: 22 ft 0 in (6.71 m)

Wing area: 675.9 sq ft (62.79 m²)

Empty weight: 25,575 lb (11,601 kg)

Gross weight: 35,763 lb (16,222 kg)

Max takeoff weight: 39,135 lb (17,751 kg)

Powerplant: 2 × Pratt & Whitney R-2800-27 18 cyl. air-cooled radial turbosupercharged piston engines, 2,000 hp (1,500 kW) each. The gains in aircraft performance that came with high-altitude flight were not considered sufficient to justify switching from low-altitude bombing.

**Performance**

Maximum speed: 372 mph (599 km/h, 323 kn) at 25,000 ft (7,600 m)

Cruise speed: 255 mph (410 km/h, 222 kn)

Range: 2,040 mi (3,280 km, 1,770 nmi)

Service ceiling: 34,800 ft (10,600 m)

Rate of climb: 1,111 ft/min (5.64 m/s)

Wing loading: 52.87 lb/sq ft (258.1 kg/m²)

Armament

Guns: 6 × .50 caliber (12.7mm) M2 machine guns in remote-sighted turrets

Bombs: Normal 2,000 lb (910 kg), Maximum 4,000 lb (1,800 kg)



GUESS THAT ENGINE:**Porsche PFM 3200**

The Porsche PFM 3200 was a six-cylinder horizontally opposed air-cooled aircraft engine developed by Porsche from its air-cooled line of automobile engines from the famous Porsche 911 sports car. The PFM designation was derived from the name of the division that designed the engines, Porsche-Flugmotoren (~ Porsche Flight Engines).

Design and development

In the 1950s, European light aircraft builders began adapting the air-cooled automobile engines from the Porsche 356 and Volkswagen Beetle into aircraft engines with a series of limited modifications. Porsche cooperated with some of these builders and produced a series of factory-built engines for about six years between 1957 and 1963, the Porsche 678 series. These relatively small engines displaced about 1.6 litres (97 cubic inches) and produced between 55 and 70 horsepower, depending on the version.

Porsche decided to re-enter the aviation market with much larger engines derived from the engine used in the Porsche 911, starting development in 1981.

To Read More:

Wikipedia: [Click Here](#)

Road and Track: [Click Here](#)

AOPA: [Click Here](#)

Newsroom.Porsche: [Click Here](#)

DriveTribe.com: [Click Here](#)

Specifications:

Single control lever
Automatic mixture and pitch control
Cylinders 6-cylinder boxer engine
2 overhead camshafts, gear driven
Displacement 3164cc

Performance

N01 Max Power 209 hp (156 kW) at 5300 rpm
Max Economy 167 hp (125 kW) at 5000 rpm
N03 Max Power 217 hp (162 kW) at 5300 rpm
Max Economy 174 hp (130 kW) at 5000 rpm
Bore: 95.5 mm
Stroke: 74.4 mm
Compression: N01 9.2:1, N03 10.5:1, T03 8.5:1.
Fuel System : Bosch K-Jetronic
Automatic correction mixture for "best power" and "best economy"
Two electric fuel pumps plus emergency fuel pump



Two ignition systems: Electronic control and trigger. Magneti Marelli.

Spark Plugs: Bosch WB 4 DTC

Lubrication: Dry sump lubrication

Oil tank capacity 6.7l, oil capacity 12.7l.

Power Supply : Two generators, mechanically driven independently

24 V, 35 V, 55 V or 70 A

Gearbox

Magnesium casing: Torsional vibration dampers between the crank shaft and gears
0.442:1 reduction

Fuel

AVGAS 100 LL

(or MOGAS DIN 51600 S for PFM3200N01)

Oil: Mobil 1. Aviation oil not approved

System weight

200 Kg including injection, ignition system, exhaust system, oil cooler and tank
172 Kg basic engine weight

Dimensions

973 mm / 854 mm / 610 mm (without exhaust)

Length: Width: Height

Exhaust System

Exhaust pipes (exhaust gas collector)

Silencers and heated air heat exchanger

75.4dB on takeoff.

Certification: FAA Type Certificate (TC) No. E23NE issued August 30 1985

TC Applicant: Dr Ing.h.c.F. Porsche Aktiengesellschaft, Weissach, Germany