



# EAA 430 Flyer



Experimental Aircraft Association Chapter 430

Serving Sequim, Port Angeles and the Northern Olympic Peninsula.

## Gone (North)west



Chapter president Mike Radford is in the thick of moving back to Alaska, so no President's column this month. The chapter has benefitted a lot since January of 2017 from Mike's vast flying experience and devotion to

safety.

Jim Rosenburgh will be filling in in his role of Chapter vice president until a new set of officers is in place.

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## EAA CHAPTER 430 2017 BOARD & OFFICERS

PRESIDENT	Vacant	
Vice –PRESIDENT	Jim Rosenburgh	681-0973
SECRETARY	Ray Ballantyne	683-8571
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Tech Counselor & Flight Advisor	Jim Cone	775-0311
Tech Counselor	Dan Masys	797-3260
Website Editor	Ken Brown	681-8796
Newsletter Editor	Dan Masys	797-3260
Membership	Bob Hicks	452-9399
Merchandise	John Meyers	477-1354
Young Eagles	John Meyers	477-1354
Scholarship	Dave Miller	452-7136

\*Phones area code 360 unless otherwise noted

## On the Horizon: Calendar of Events

EAA Chapter 430 meets on the last Saturday of the month, in Hangar 10 at Sequim Valley Airport at 10:00 a.m. For directions and additional information about chapter programs, see the chapter website: <http://www.eaa430.org>

Date	Topic
Saturday, April 28, 2018 10:00 a.m. Sequim Valley Airport	CardioPulmonary Resuscitation (CPR) technique.
Saturday, May 19, 2018 10:00 a.m.	First Young Eagle Rally of 2018. Sequim Valley Airport.
Saturday, June 16, 2018 10:00 a.m.	Second Young Eagle Rally. Port Angeles Fairchild International Airport.

### What makes automobiles and airplanes so different?

*By Mike Busch, reprinted from AOPA website, March 1, 2018*



I received a thought-provoking email from AOPA Pilot reader Nate Bissonette of St. Paul, Minnesota, that started me thinking about the differences between automobiles and general aviation airplanes.

According to data from the U.S. Department of Transportation, the average U.S. driver puts in

13,474 miles behind the wheel each year. Males drive more than females: 16,550 miles versus 10,142 miles per year (I'm not sure why). The same study indicates that the average vehicle speed is a maddeningly slow 32 miles per hour, which probably says something about how much time we spend in traffic, and waiting at stop signs and red lights.

Bissonette suggested a thought experiment in which our cars were equipped with Hobbs meters. Divide 32 mph into 13,474 miles to calculate that the average automobile would put roughly 421 hours on its imaginary Hobbs every year.

These days, most piston aircraft engines have 2,000-hour times between overhauls. What if cars did, too? At 421 hours per year, your car engine would reach TBO in about 4.75 years and the odometer would read about 64,000 miles. "When's the last time you heard of somebody driving a Toyota Corolla that needed major engine work at 64,000 miles?" Bissonette asked me, rhetorically. "At that mileage, the Corolla engine would just barely be broken in. Heck, a Hyundai Sonata engine would still be under warranty."

Indeed, the current standard automotive powertrain warranty is 60,000 miles or six years; Hyundai, Kia, and Mitsubishi offer a 100,000-mile, 10-year powertrain warranty. Compare that to the warranty on a new Continental or Lycoming engine: 24 months. For the typical aircraft owner who flies 100 hours a year, that means the engine warranty runs out at about 200 hours on the Hobbs. For an airplane that cruises at 150 knots, that's about 30,000 miles.

### Apples and oranges?

Is it fair to compare aircraft engines with car engines in this way? After all, aircraft engines operate continuously at 65 to 75 percent of maximum rated power in cruise, while car engines loaf along most of the time. Aircraft

engines are air-cooled, so they have very poor temperature control compared with liquid-cooled automotive engines. Aircraft engines turn at ridiculously low rpm, so they require huge displacements and massive reciprocating components compared to high-revving car engines with their relatively tiny pistons and cylinders. Finally, aircraft engines operate on high-octane gasoline that is doped with tetraethyl lead, a chemical that causes severe internal contamination problems and (among other things) makes it impossible for the engines to use modern, full-synthetic lubricants.

While all this is true of the Continentals and Lycomings behind which most of us fly—engines based on the finest technology available in the 1950s—does it really need to be that way? Look at the Rotax 912 series designed in the 1980s. These high-revving, small-displacement, liquid-cooled aircraft engines are designed to run on unleaded mogas and to use modern full-synthetic oils. They're lighter and more powerful than comparable engines from Continental and Lycoming. Although they currently have a manufacturer-recommended TBO of 2,000 hours, the folks who overhaul them tell me that they're still in pristine condition at TBO and almost certainly could be safely operated much, much longer.

If things progressed that far from the 1950s to the 1980s, just imagine the benefits of a certificated piston aircraft engine designed in, say, 2010. There are a few, but to the best of my knowledge they're all diesels, and they're trickling into the fleet at such a glacial pace that few of us will ever have the chance to fly behind one.

### **Not just technology**

There are other reasons for the difference in longevity between aircraft and automotive engines. Probably the biggest difference is disuse. Most people drive their car every day, or at least several times a week; it seldom sits unused for very long. In contrast, GA airplanes

often sit for weeks or months without being flown. While I put more than 120 hours on my Cessna 310 in 2017 (more than average), all that flying time was during only six months, and the aircraft sat hangared for the other six months. This sort of irregular use is extremely hard on the equipment, and is the number one reason that piston aircraft engines fail to make TBO. It's not that we need to fly more, but that we need to fly more often and more regularly.

Another non-technological factor is government regulation. Both the auto and aircraft industries are highly regulated, but historically the philosophies of their regulatory agencies have been dramatically different. In the automotive industry, regulations have compelled auto manufacturers to create innovative new engine designs to meet ever-tightening federal fuel economy standards. In the aircraft industry, the draconian requirements and punitive costs of certifying an innovative engine design have acted to stifle innovation and keep us flying behind 1950s technology.

Finally, there's the issue of TBO. Aircraft engines have them; car engines don't. Although the FAA doesn't require it, all aircraft engine manufacturers encourage us to tear down our powerplants at an arbitrary number of engine hours, even if they're running fine and giving all indications of being healthy. Doing the same thing to an automobile engine would be considered insane; we run them as long as they continue to perform properly. Most of us will never need to have an automobile engine overhauled. Auto engines don't need TBOs, and in my opinion aircraft engines don't, either. I'd like to see the whole concept of TBOs abolished from our vocabularies, and all aircraft engines maintained strictly on condition, the same as we've always done with our cars.

### **Affordability**

While ruminating about comparisons between airplanes and cars, I recalled an interesting one

that I first heard many years ago from John Frank, the late founder of the Cessna Pilots Association. Frank suggested that a useful GA affordability metric was the ratio between the price of a new airplane and the price of a new Cadillac. It's a calculation that says a lot about the economic trajectory of GA.

I purchased my first airplane in 1968. It was a brand-new 1968 Cessna 182L Skylane that I picked up from the Cessna factory in Wichita and flew home to California; heady stuff for a 25-year-old kid. I paid \$25,000 for the Skylane in 1968. At the time, a 1968 Cadillac DeVille sedan had an MSRP of \$5,785, so the Skylane-to-Cadillac price ratio was roughly 4.3 to 1.

Fast forward to 2017, when the typical price of a new 2017 Cessna 182 NXi was \$505,000 and a new 2017 Cadillac CTS sedan had an MSRP of \$54,280. That's a Skylane-to-Cadillac price ratio of 9.3 to 1. Going further upscale, we might compare a new 2017 Cirrus SR22T NXi (\$862,900) to a new top-of-the-line 2017 Cadillac CT6 3.0 Turbo AWD sedan (MSRP \$72,959), for a Cirrus-to-Cadillac price ratio of 11.8 to 1.

My own choice for ground transportation these days is my 2018 Genesis G80, which I purchased new for about \$38,000. I only required one of these incredibly luxurious and well-mannered vehicles (with its 100,000-mile, 10-year powertrain warranty), but I could have bought 14 of them for the price of one 2017 Cessna

Skylane, and nearly 23 of them for the price of one 2017 Cirrus SR22T.

In real inflation-adjusted terms, the cost of new GA airplanes has gone up two-, three-, or even five-fold since 1968 compared to the cost of luxury cars, depending on what airplane and luxury car you choose for the comparison. I find that depressing. Is it any wonder that I could afford a new Skylane when I was a 25-year-old kid just out of college, but today it's far above my pay grade? Has the common belief that only rich folks fly private airplanes become a self-fulfilling prophecy? Is it any wonder that Experimental amateur-built airplanes are the fastest-growing segment of general aviation?

Mike Busch

### Available from our Members

**Aircraft hangars for sale** at the Port Angeles Airport. Newer, well built. Now just \$31,000 each. Call for brochure or more information. Alan Barnard, Professional Realty Services 360-461-0175

**Garmin GTX 327 transponder.** Solid state 250w digital transponder, 380 hrs TTSN, current production model, removed from RV-12 during avionics upgrade. New costs \$1850.00; this one yours for \$400. Includes installation manuals, tray, connectors, operating manuals, assistance with installation if needed. Dan Masys [dmasys@uw.edu](mailto:dmasys@uw.edu) or 360-797-3260.

## EAA Chapter 430 Membership Meeting Minutes

Date: March 30, 2018 Location: W28 # 10 10:00 a.m.

- Mike Radford opened the meeting with the Pledge Allegiance
- Introduction of Guests: Tom Klein, Doug Shappler, Bill Borsman, Randy Kepar, and several spouses. Over 50 people attended the meeting causing a shortage of chairs!
- Minutes: There was no February meeting due to the NW Aviation Trade Show.
- Comments:

- Correspondence to the chapter? None
  - Remarks: Financial balances/reports and the board minutes, are available in the members section on the web site.
  - Board meetings are open to all members and held on the 2<sup>nd</sup> Friday of the month 4/13 at 0900 at Mariners Café
  - Comments by membership: Bob Hicks asked all to sign in.
  - Scholarship: Dave Miller said that Seth, our young man at Rocky Mountain College near Billings, MT, had recently received his Certified Flight Instructor License. Paul Kuntz suggested that we should fund more scholarships by giving as little as \$25 when we renew our annual dues. A question was asked if that would support training for A&P mechanics, and the answer was yes.
  - Young Eagle Announcements: John Meyer said the first Young Eagle event will be **May 19 at Sequim Valley**. The next event will be June 16 in Pt Angeles. John said youth protection training is good for 3 years.
  - Programs: Lee Runion said he was looking into a CPR presentation for the future.
  - Tech Advisor Dan Masys said he had sold his RV12 to a young couple and sad to see it go, but glad for a good home. He also discussed video inspection scopes, of which many members have.
  - NEED for Raffle Manager: for merchandise & 50/50
- Project Reports: (members open forum)
 

Scott Brooksby said he finished his long project on the C310, and had a great trip to Utah and Idaho.

Dave Stallknecht said he bought Dennis Toepke's (who recently passed away) Aeronca Sedan and is looking for engine parts.

Rick Vaux has about finished his shop in Happy Valley, and is looking for some help finding and flying an ultralight out of his 400 ft strip.
  - Ernie Hanson said his experimental cub is about ready for covering. Ernie gave thanks to other 430 members that helped set the wings, and he said he was "hoping to outlive this project"
  - Paul Kuntz provided information concerning his efforts to install and certify his ADS-B installation and asked for help completing his annual – which was quickly volunteered.
  - Mike Radford reminded the group that he is planning to move to Alaska as soon as his house sells, and a new 430 president will need to be selected.
  - There was a request for Irrigation Festival parade fly over.
  - Several chapter members are planning to fly to Alaska in late May or June this year. Others are welcome to join them. Mike Radford will also be flying his C180 to Alaska for the summer, and invites others to join him.
  - Old Business: Fly outs for 2018 were not discussed, EAA430 road sign - Jim Rosenburgh to talk to Andy Sallee about the installation.
  - New Business: The idea of EAA430 purchasing a hangar or building as the chapter home. The board agreed to investigate and make recommendations to the members and get opinions during the general meeting. This will be discussed next meeting
  - Next General meeting will be April 28<sup>th</sup> 1000 here in Hangar #10

Break for coffee & cookies & donuts

### **Social Meeting and Presentation:**

Introduction of Air Force survival instructor, George Samples who provided a very informative presentation on essential items to carry on your person, survival kit tips, and nice to have items. There was great information concerning cauterizing bandages, new style tourniquets, pliable splints, and non-stick bandages for burns.

Mike Radford presented his most important survival item as a deck of cards. Mike is convinced that once he starts playing solitary after going down, someone will tap him on the shoulder to point out where he has not made a play of the black jack on the red queen – and then he'll be rescued!

Note: General Membership meeting minutes are now included in the monthly Newsletter. Minutes of the monthly Board meeting are also available to chapter members via login at the *Members only* page of the chapter website: <http://www.eaa430.org>

If you are a chapter member and do not yet have a login to the Members page, you can register with your email address to create a login at the website.