



The ThunderWord

Thunderbird Field EAA Chapter 1217 May 2020

Scottsdale, Arizona

PRESIDENT'S CORNER

Greetings from my corner of the hangar! The COVID virus has put a real damper on our EAA Chapter activities. We have had to cancel the past two meetings as well as cancel our annual May Day BBQ. Word has come down that the annual Oshkosh AirVenture Fly-In is cancelled also. It would probably be a logical assumption that our 22nd annual Chapter Happy Hour at Wendts is history for this year. If there is a silver lining in any of this, it is that every event plans to come back bigger and better next year with lots of happy, healthy participants!

I have been trying to stay engaged in sport aviation by working on getting the Wickham Twin ready for paint. The past month has been comprised of installing new Grove wheels and brakes, rebuilding the landing gear struts and installing ADS-B. Hopefully by the June newsletter I will have completed these upgrades. Also thanks to Chapter members John Davis, Jerry Lane and Stephanie Frazier the motorglider is progressing. The wings are on it and most of the rewiring is complete. The next month barring any setbacks should just about wrap it up.

A big thanks to Chapter member Bernie Gross for donating storage space for the Chapter 1217 Fokker Triplane. It now has all the Chapter 1217 logos on it and is usable for events and promotions.

For Christmas, Chapter member Mike McGarry gave me the losing ticket in the Alaska Airman Cessna 180 raffle. It was a lot of fun when quarantined to watch the videos of building the plane and all the cool stuff that went into it. Each of the add ons was discussed at length and used as an

advertisement for the product. After watching the build video I ordered a set of Door Stewards and some rubberized flooring that is really cool.

See you around the airport!

Curtis

CHAPTER MEETINGS

THIS SUMMER

One of the things our Chapter 1217 members enjoy is our monthly meetings and guest speakers; It is a chance to catch up with old friends and make new ones while getting to enjoy a program somehow loosely associated with sport aviation.

In the past year we have had some great presentations particularly Jerry Foster on the early days of TV helicopter flying and then several months later by Bruce Haffner the Chopper Guy. Bruce's digital high energy presentation was really a fun event that had more than a few people thinking about helicopter lessons. A few months back we learned about the secret life of Howard Hughes. The presentation was great but at the end it went off the rails with conspiracy theories about the Kennedy assassination and UFO's.

Because of the Corona Virus we are going to take the summer off from having monthly meetings. It is a tough decision but with all the available meeting spaces closed and guest speakers reluctant to talk to groups it is a no-win situation. The plan will be to restart in September after the hysteria has calmed down. This will give everyone the summer to come up with some really great speakers and for the excitement to build. The other big

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Karen Martin got a great picture of the US Air Force doing a fly-over of valley hospitals as a show of gratitude to those on the healthcare front lines.

thing is, a good percentage of our members are in the "high risk" category for getting sick.

Rest assured that for 22 years we have been having monthly meetings and we will get back to it when life gets back to normal.

AIRVENTURE 2020 CANCELLED

My fellow EAA'rs. It is May here in Wisconsin, and unfortunately like many of you across the country, we are still under a stay-at-home order through May 26. Normally, this is the month when we start our preflight planning for EAA AirVenture Oshkosh. By this time, we should have begun ramping up our entire site in preparation for our July convention. Volunteers from across the country and world would have descended on Oshkosh. Together they would have formed work parties, our suppliers would begin start setting up tents and infrastructure. Our EAA staff would be printing wrist bands, camper's guides, programs and

an assortment of EAA collateral as full-on AirVenture execution begins.

But because of circumstances beyond our control, none of this can happen now. We cannot even get to the hangar so our preflight is left to watching the prog charts. While this certainly makes the ability to prepare for the event a scheduling problem, it does not preclude the bigger issue of predicting what will be the health guidelines in July. Right now, there are three phases that have been defined in Wisconsin as the recommended procedures. As I write this, we are not in Phase 1 yet. Phase 2 restricts gatherings to 50 people. Phase 3 allows for mass gathering with restrictions.

Our convention attracts EAA members not only from the U.S. but around the world. Today we cannot predict when we will be at a point that our event meets the all clear Phase 3

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Karen Martin also captured this nice photo of the CAF VE Day fly-over of the Valley

milestone for mass gathering with restrictions. As your leader, I see no clear path to meet our own requirements to insure the health and safety expectations our organization demands for our employees, members, volunteers, exhibitors and attendees. That includes sanitization, separation and personal protection requirements.

My conclusion is, like in any good flight planning, don't take the risk. Therefore, I have no choice but to cancel AirVenture 2020. Together, we can come back stronger, safer and ready for AirVenture 2021 and create a memorable world class aviation event. Because of our dedicated and enthusiastic EAA members, our Association is strong. We know that at some point this storm will pass. And over the next 12 months we will continue to support all of you as we again, together, grow EAA in the Spirit of Aviation.

Respectfully,

Jack J. Pelton

Experimental Aircraft Association

CEO and Chairman of the Board

DVT 25L/7R CLOSED

Deer Valley Airport Management would like to take this opportunity to inform you of an upcoming construction project at Phoenix Deer Valley Airport. The project will consist of an asphalt mill and overlay on Runway 7R/25L

that will vastly improve the condition of the asphalt. However, it will require a round-the-clock closure of the runway for approximately seven days. The north runway, Runway 7L/25R will remain open throughout the duration of the project and crossover points, for aircraft with a wingspan up to 79', will be available at B3, B11, & A13.

The project is expected to commence at 12:01am on **May 26, 2020**, and should be **completed and the runway re-opened on June 2, 2020**.



Here are two of our past meeting speakers, Lindsey and Dave Goss from Gosshawk Unlimited enjoying a flight in the Consolidated PB4-Y2 Privateer. It must be running right from the smile on Dave's face



Steve Tompson, our website guy, recently became the proud owner of this Luscombe

THE LIGHTSPEED PREFLIGHT

Oil... Check!

Fuel... Check!

Cowl clear of bird's nests... Check!

Ready to fly? Ummmm... not quite yet.

The average pre-flight checklist includes a fairly thorough walk-around tour of the aircraft, inspecting the usual suspects for airworthiness and ensuring that the basic fuel, air and spark are ready for taking flight. However, there are a few other items you might want to add to your checklist that can cause serious problems if ignored. Here's my top 5:

1. Move the plane

The greatest single mistake that many pilots make during their pre-flight is not moving the plane while on the ground. When you grab the tow bar and move the plane out, you have a great opportunity to feel how it moves on the ground. Are the brakes hanging up? Is the

nose gear loose? Ground handling is a great opportunity to evaluate those systems.

2. Read the tarmac

Now that the plane has been moved from its storage spot, look at the ground for clues. My Bonanza always "marks its territory" with a few drops of oil from the breather tube in exactly the same spot (enough that I put a pan there when I'm not flying). However, I recently saw some drops of red brake fluid under the right wheel that led me to a leaking caliper. That was followed shortly by a bunch of spots left on the hangar floor under my car from a leaking power steering cooler... but I digress.

3. Exercise the struts

If your aircraft has oleo struts, grab hold of the inside of the prop and gently bounce the strut up and down a few times to see if it operates smoothly and where it comes to rest. The same can be done for the wings if your main

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gear has struts. Struts require periodic maintenance, and the gas pressure in them varies with temperature. They will generally remain at the height they were left at until you work them a little. That will let you see what condition they will actually be in when you need them for landing.

4. Clean those antennas

The performance of antennas can be seriously degraded when covered with oil and dirt. It's amazing how little attention they get until they stop doing their job. A quick wipe down with a rag will prevent airborne communication issues. And, the rest of the pilots out there will appreciate that you're not the one clogging up the frequency with garbled transmissions.

5. Check the avionics

It's a common practice to leave the avionics off until the engine is running. However, doing an avionics preflight can help you avoid in-air emergencies. This is especially true for IFR pilots. Power everything up and run things through their paces. Is the electric T&B noisy? Is the autopilot engaging? Do you get a good GPS lock? Don't wait until you shoot into the clouds to see if the systems you rely on are working as expected.

Adding just a few more steps to your next preflight can dramatically increase your flight safety. You'll get to know your plane just a little bit better and it's always easier to resolve problems on the ground than in the air. Until next time... Happy Flying!



Somewhere at an undisclosed secret location in Gilbert progress is being made on a GeeBee R-2. Mac Transom is the talented builder putting it together. He says he will speak at a future meeting when it flies.



Jerry Lane, Stephanie Frazier, Tony Redden and John David after they assembled Curtis' Sheibe SF-25E motorglider



Pat McGarry has been known to fly anything that flies. Since his TF-51 ride gig is temporarily grounded he is getting in touch with the low and slow side of life. Here he is flying a VW powered Stewart Headwind

THE DEADLY KILLER CO

Despite several high-profile CO-related aircraft accidents in recent years, very few pilots carry any sort of carbon monoxide detector when they fly. Those few who do mostly rely on the el-cheapo chemical spot detectors that are almost worthless. Here is one of the most important product research efforts AVweb has undertaken to date:

Carbon monoxide is an invisible, odorless, colorless gas created when fossil fuels (such as gasoline) burn incompletely. In a piston-powered aircraft, engine exhaust contains high concentrations of CO, particularly at mixture settings richer than peak EGT. The most common way for this CO to find its way into the cabin is through the cabin heat system. The vast majority of single-engine aircraft obtain their cabin heat by ducting ventilation air over the surface of the muffler. Therefore, when cabin heat is being used, any cracks or holes in the muffler can allow CO-rich exhaust gas to contaminate the cabin air. Other possible causes include inadequate sealing of the firewall, wheel wells, or other air leak that allows exhaust to leak into the cabin.

Normally, oxygen inhaled into your lungs combines with the hemoglobin in the red cells of your blood to form "oxyhemoglobin." The oxygen is then transported throughout your body by your arteries and capillaries, where it disassociates from the hemoglobin and oxygenates the cells of your tissues and organs (including your brain). The deoxygenated hemoglobin then returns through your veins to your lungs, where it combines with more oxygen and the cycle repeats.

When carbon monoxide is inhaled, the CO combines with your hemoglobin to form "carboxyhemoglobin" (COHb). The COHb bond is over 200 times stronger than oxygen's bond with your hemoglobin. Thus, the CO effectively puts your hemoglobin "out of commission" and deprives your body of the oxygen it needs to survive. The strong COHb bond explains why even very tiny concentrations of carbon monoxide can poison

you slowly over a period of several hours, and why it may take a long, long time for your body to eliminate CO buildups from your bloodstream.

Given the insidious nature of carbon monoxide poisoning and the apparent increase in the CO-related accident rate, it seems astonishing that so few pilots install CO detectors in their airplanes (particularly piston singles, which are by far the most vulnerable). Furthermore, among those pilots who do use CO detectors, almost all seem to be using those adhesive-backed cardboard chemical spot detectors that are commonly sold for about \$4.00 apiece under trade names like "DeadStop" and "HeadsUp" by pilot shops and mail-order outfits like Sporty's, Aircraft Spruce, Chief Aircraft and San-Val Discount.

These chemical spot detectors are better than nothing but they leave a great deal to be desired. For one thing, they have a very short useful life, claimed to be 30 to 60 days (and experts say that anything more than 30 days is wildly optimistic). Unfortunately, most pilots who use these detectors are very bad about replacing them once a month religiously. If you did replace them once a month, they'd cost you \$50 a year!

Finally, the chemical spot detectors are incapable of detecting low levels of CO. If you're lucky, they'll just barely start turning color at 100 PPM, but so slowly and subtly that you'll never notice it. For all practical purposes, you'll get no warning until concentrations rise to the 200 to 400 PPM range (and that assumes a fresh, uncontaminated detector). Even at these levels, it can take so long for the color change to take place that you could easily become impaired before you notice it. As I said, these things are arguably better than nothing, but not by much

Recommendation

After researching the subject rather extensively, we have concluded that there's basically no contest. The only currently available low-cost CO detector I'd trust in my

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airplane is the CO Experts Model 2002 Low-Level CO Monitor. It employs by far the best technology available, and appears to be built to "aircraft quality" standards. It offers five years or more of the most reliable and sensitive CO protection available for about \$20 a year. This is actually cheaper by far than those el-cheapo cardboard spot detectors that are only slightly better than worthless.

At present, the only viable challenger appears to be the Kidde Nighthawk 900-0089, which is far better known but not nearly as good. I consider this unit adequate for residential use, but I honestly can't recommend it for aircraft or vehicle use where it's exposed to vibration, because it's just not built to take it. The Nighthawk is also blind to CO concentrations below 30 PPM, while the CO Experts Model 2002 starts to display at 5 PPM and provides a low-level alarm at 10 PPM.

While Kidde Nighthawks and First Alerts can be found ubiquitously in almost every hardware and building supply store (as well as K-Mart, Wal-Mart, etc.), the CO Experts units are not nearly as well known or easy to find. You won't find these units advertised or sold in retail stores, which is why nobody ever heard of them until we started talking about them on *AVweb*. None of the big pilot supply houses offer these units, and that's a pity, because I'm convinced that this device belongs in every cockpit.

Mounting in an aircraft

First of all, keep in mind that no under-\$100 electronic CO detector (including the CO Experts model that I recommend) is TSO'd, STC'd, or otherwise approved for aircraft use. (There is at least one FAA-approved panel-mount CO detector available, but it's a lot more expensive and much less sensitive.) Consequently, it's asking for trouble with the FAA for such a device to be "permanently installed" in the airplane. This is an issue similar to the one you face with a handheld GPS or other non-TSO'd portable equipment. As an A&P mechanic, I'd recommend mounting the detector with Velcro or somesuch, rather than bolting it to some

structural component. I've had excellent luck with high-strength hook-and-loop mounting strips such as Radio Shack "Superlock Strips" (part number 64-2360, price \$2.99). Do not let the unit lie around loose in the cockpit, since it weighs about a pound and could easily become a projectile in moderate turbulence or worse.

Where's a good place to mount the detector? Well, the answer depends on your particular cockpit layout. The detector folks suggest that you *not* mount it directly in front of a heater or ventilation outlet, and that you *not* mount it in some blind corner where the air is likely to be completely stagnant. In other words, they'd prefer to see it in an area of moderate airflow. It doesn't really matter whether you mount it up high or down low, although CO is slightly lighter than air, it mixes with air so thoroughly that the concentration is likely to be relatively constant throughout the cabin. What's most important is to find a mounting location that's readily visible to the pilot and which doesn't obstruct the pilot's view of something else important. That leaves a lot of latitude. In single-engine Cessnas, for example, the center pedestal may offer a good mounting site. In low-wing aircraft with a single door on the right, the left sidewall may be a workable location. The floor between the front seats is another good possibility. Even the ceiling is possible, although I'm not sure I'd want to trust hook-and-loop mounting strips for that. You'll simply have to study your cockpit layout and come up with an optimum location.

Since electronic CO detectors like the CO Experts and Nighthawk use an internal microprocessor, you'd also be well advised to check carefully for interference with on-board avionics. I've not heard any reports of such problems, but common sense dictates that you be cautious until you're sure there's no problem in your aircraft.

What to do if the alarm goes off in-flight

Please don't wait until the alarm goes off! Look at the digital display from time to time.

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In order to avoid false alarms, UL-approved CO detectors like the ones from Kidde and First Alert do not alarm until they think you've been exposed to enough CO for a long enough time to raise your COHb level to somewhere between 5% and 10%. If you get to this point while flying an airplane, you're already in deep kimshee! By including the digital readout in your scan from time to time, hopefully you'll discover a CO problem long before it gets serious enough to create a potential crisis. That's why I consider it so important to choose a digital-readout unit detecting low levels of CO ... and why I'm not at all happy about the UL requirement that prevents residential detectors from even displaying CO concentrations below 30 PPM.

If the display starts reading 10 PPM or greater in-flight, you've got a problem that your mechanic needs to look into. If the concentration reaches 35 PPM in-flight, get down now!

Anytime you have a CO problem, the first thing to do is to shut off the cabin heater, which for single-engine airplanes is the predominant source of CO contamination. Twins typically use combustion heaters, which can create a CO problem in unpressurized twins but are very unlikely to do so in a pressurized twin.

The second thing to do is to start breathing supplemental oxygen if you have it aboard, and turn up the flow to its maximum level. Going on O₂ will reduce your intake of CO, and will increase the rate at which the COHb level of your blood will dissipate.

The third thing to do is to start making plans to land at the earliest possible opportunity. That's particularly important if you have any symptoms of CO poisoning or hypoxia, such as headache, nausea, or double vision. Don't just keep on flying and hope that you'll feel better. Remember that it can take many, many hours for the effects of CO poisoning to abate, even if you're breathing uncontaminated air or supplemental oxygen.

A fourth step would be to make sure your engine is leaned aggressively to minimize the CO content of the exhaust (remembering that CO is produced by *incomplete* combustion of fossil fuels). This trick is especially useful when high levels of CO are detected during ground operations. Many pilots taxi around with the mixture full-rich, and that's like driving a car with the choke full on. (Am I dating myself?) Over-rich mixtures result in CO-rich exhaust. Lean for maximum RPM rise at idle and the CO level will plummet and your engine will stay cleaner and won't foul its sparkplugs.

Beyond that, you'll have to experiment. Whether opening the fresh air vents will help or hurt is something that depends on the design of your aircraft's ventilation system and the source of the CO contamination. With a fast-responding digital CO detector, you can try various ideas for ventilating the cabin and see whether they seem to help or hurt CO-wise.

But, the main thing is to get it on the ground ASAP and then sort things out.



Carbon Cub seen at the CopperState Fly-In

Thunder Ads

ALASKA BABY BUSHWHEEL

tailwheel assembly, Like new. 6x8.5 tire Used but in good shape, Jack Pollack 480 695-4441

LONGEZ AND SONEX

Tom Partin has decided to stop flying and has two airplanes for sale at Thunder Ridge air park (AZ28), a 180hp LongEz and a 120hp Sonex. Anyone interested can contact Bertha Partin at bmpartin@gmail.com

GLASAIR III

Lynn Babcock has decided it's time to sell his Glasair III. This aircraft has every upgrade from speed brakes to airconditioning and cruises at 220 kts. He is asking \$215,000. Lynn is the original builder and the plane has been based at Scottsdale Airport its entire life. 480-227-5945.

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COOL PLANES FOR SALE

Only flown by little old ladies to church on Sundays. <http://captainbillywalker.com/aircraft-for-sale/aircraft-for-sale>

CESSNA 172'S FOR RENT

Two IFR Cessna 172s for rent at Chandler. Owned by Chapter member Pat McGarry. Contact Chris Hoel for more information and to schedule birdgangft@gmail.com

RV-4 PARTIALLY BUILT KIT

\$13,500 Lycoming O-290-D2, kit for \$3,000 or \$16,000 for both. Bill Refrow 602-843-9862 w7lov@cox.net

LYCOMING O-360 A1A

Engine built up for RV project never completed. Invested \$50,000. Price very firm at \$25,000. Martin Del Giorgio delgiorgiopels@gmail.com

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