



The Hagerstown Homebuilder

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**The Members and Officers of Chapter 36
Wishes All a Very Merry Christmas and Happy New Year**

EAA CHAPTER 36

**December
2009**

2009-10 OFFICERS AND SUPPORT STAFF

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**Chapter Meetings held the
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Lounge, at the Hagerstown
Regional Airport.**

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End of Another Year

From the President
December 2009



December is here already and it's time when thoughts turn toward the holidays. It's also the time when we start to think about next year's chapter plans.

Recapping this past year, the chapter only held one fly-in and it was a fair showing probably due to

the state of the economy. No new projects have presented themselves to help finance the chapter. Without an additional project, I fear we will have to forfeit the hanger and sell off the contents before the bank funds run dry. Yes we too are feeling the pinch in the piggybank.

In this next year we'll need to be more active in order to support our needs or "change" will be the new calling. I'm hoping we could hold an additional fly-in, a Young Eagles Rally mid June and possibly a few fly-in breakfasts. These may take place at Potomac airfield where it's better suited for these extra activities. We also need to find a good project that everyone would like to help out on.

Currently the J4 Cub frame is the only item in the hanger that is a chapter project.

With interest growing in our chapter and its activities we are picking up a few new members. However if there isn't a project to retain their interest they will wane away as well.

My hope in the coming year is to turn the tides more on those that have already shown signs of progress. Will you help me accomplish this next year? I hope so.

I'd like to wish everyone a happy holiday and a safe new year. Please be safe when flying but also safe on our way to the airport or to Grandma's house for the holidays.

Again Happy Holidays to all,

Mark Hissey

President, EAA Chapter 36

Anyone who's bought a new Continental engine, had theirs rebuilt or had top end work done since June 19, 2009 could be affected by an [emergency AD](#) requiring replacement of the hydraulic lifters installed in those engines. There have been at least three cases in which the lifters wore out in as little as five hours. Teledyne Continental Motors issued a mandatory service bulletin ([PDF](#)) Nov. 3 and the FAA issued the emergency AD after assessing the MSB. The AD includes part numbers 657913, 657915, or 657916, in Model 240, 360, 470 and 520 engines. Although 550-series engines are not mentioned in the AD, there are reports that they are also affected. The lifter problems have also delayed rebuilds that were on the bench when the problems became known.



Chapter Minutes

November 3, 2009

Our monthly chapter meeting was called to order by Mark Hissey at 7:30 p.m. in the HGR Pilot's Lounge. There were 19 members and 3 guests present. The October minutes and November treasurer's report were read and approved.

Mark noted that if we can lend a helping hand, the Unity Church is having a hangar dance Saturday, November 7th. Help is needed to set up, for parking and for teardown. Please contact Doug Lundgren if and when you can help. Mark will forward his email to our membership with all the details.

There was a discussion about the Moni -Tri-Gear owned by Sally Keefer. The membership agreed that this would be a good club project. Mark will follow-up with Sally to see if she still has the plane.

Walter Green reported he has moved his Bee Dee Jet from his basement to the club hangar. He is looking for help to finish it before donating it to the HGR Museum.

Mark reported that he and John Mainville discussed adding the universal decals to the P51 pedal plane. They agreed that the decals will make the pedal plane have a more finished look. John will take care of adding the decals.

There are still 53 tickets left to be sold on the pedal plane before the raffle.

We hope to set up an information booth at either the Valley Mall or the Chambersburg Mall in the near future to sell the remaining tickets.

Bob Hixon and Sandy have had no luck with contacting the Valley Mall manager. Sandy will try to set something up with the Chambersburg Mall.

Sandy Hissey suggested a fundraiser with Bonanza Restaurant at the Chambersburg Mall.

For everyone that dines at the restaurant during a specified time period, and has a coupon from our chapter, Bonanza Restaurant will donate 20% of the purchases to our chapter. The members agreed this would be worth a try. Sandy will take care of organizing this for the months of November and December.

Bob Hixon reported that the one wing of the Kitfox is done. The other is covered and will be working on rib stitching the wing next Tuesday.

The search for the J4 Cub parts continues. Mark reported information relayed to him by Ken Bercaw. It's reported there was a witness when the engine and wings were taken from Alphin's hangar. Jim Marsden will speak with Tom Cozzoli to see if he wishes to pursue this or if the chapter should clean the frame and sell it.

Mark received an email from Gary Hartle. Gary strongly suggests that we don't powder coat the frame. The process could possibly derogate the metal properties weakening it.

Robert Swartz now has his Kitfox 4 that he has been building certified. He shared photos with everyone. What a beauty! Congratulations Robert!

Jay Kanagy informed us on the upcoming events. These can be found in our newsletter.

The meeting was adjourned at 8:30. The next monthly meeting will be Tuesday, December 1st at 7:30 pm. Again we will have social time beginning at 7:00 pm.

After the meeting the member enjoyed a birthday cake in celebration of Chapter 36's birthday. Happy Birthday Chapter 36!

Submitted by Sandy Hissey, Secretary

Chapter 36

News and Events

Happy Birthday
Dec. 08 – Don Wilson
Dec. 11 – David Berger
Dec. 26 – Edward Schupp
Dec. 26 – Michael Vere

Happy Anniversary
Dec. 04 – Ken Jones



Our Kitfox Project is progressing well. Bob Hixon reports that the one wing of the Kitfox is done. The other is covered and will be working on rib stitching.

Details and photos are available on our [website](#).

The Airport Safety/Security Council Meeting was held on October 15, 2009. For your information, the minutes are available on our website.

Attention All Members:
 Tuesday is weekly build night. Except for the first Tuesday night of each month since that is our monthly Chapter 36 meeting. That week we will meet on Monday night.

<p>Spread the Joy of Flying with the general public through our "Fly-Outs to Fly-Ins" program. Let's get a group together, contact others to ride along, and perhaps share expenses as we visit various fly-in's.</p>	E V E N T S	Dec. 1	EAA Chapter 36 monthly membership meeting. Pilots lounge on the Hagerstown Airport. Social time will be at 7:00 PM, with the meeting to follow at 7:30. Please invite a friend to join you.
		Dec. 12	Christmas in the Airport; 2009. Come join us at the Reading Regional Airport on December 12,2009- 08:00 AM To 03:00 PM. Santa Arrives By Jet. Join Santa, Mrs.Claus and a host of friends! There will be displays, activities, Young Eagle flights, Berks County's Mascots, Breakfast w/Santa and a quot;Santa'squot; Workshop filled with games and projects for children to enjoy. Santa will have gift bags for all those quot;good unquot; boys and girls. For additional information, call 610-372-4666.
		Dec. 12	EAA Chapter 518 Fly In Breakfast. Reedsville, PA. Mifflin Co. Airport, (RVL). CTAF 122.7. Unicom 122.7. Contact: Darrell Brown, Phone: 814-644-9452
		Dec. 25	Merry Christmas and a Happy New Year to you and your families from the Officers of Chapter 36.

A Little Frost Won't Hurt...Or Will It?

by Paul Pellicano

It's a cold and clear winter weekend morning. Your airplane needs exercise. You don't have a lot of time—plenty of chores to do back home—but you are eager to oblige before the next round of winter storms keeps you both bound to the ground. You eagerly walk across the ramp, anticipating the freedom of the sky and the higher performance you expect in the colder and “thicker” winter air.

Uh-oh.

Your eye catches the glimmer of sunlight reflecting off your faithful flying machine, but you know that glint isn't coming from a clean or freshly waxed airplane. Rather, it is coming from sunlight shining on the layer of frost covering nearly every exposed surface of the airplane. As you draw closer, though, you see that the layer of “frosting” isn't terribly thick; in fact, the sun is already beginning to melt it away. The ice may be thin, but the questions come thick and fast.

Where Does this Stuff Come from?

It didn't rain last night, and the morning is clear. How can there possibly be ice on your airplane? The answer is simple. When cold temperatures combine with any kind of visible moisture, some kind of ice contamination is likely. Here are some possible ways for ice to exist on an airplane parked in visual meteorological conditions: The airplane has residual ice from a previous flight in icing conditions.

- The airplane was exposed to snow, freezing drizzle, or freezing rain overnight.
- The airplane was exposed to active frost conditions overnight or is still in active frost conditions.

But, the Ambient Temperature Is above Freezing!

Yes, but ice contamination can still occur. Consider the example of an airplane sitting on the ramp through a clear, cold night. If the airplane's skin temperature is below freezing, and the air is humid enough, frost will form on the skin. Obviously, an outside air temperature below freezing can cause the skin temperature to be below freezing. But the skin temperature can also be colder than the air temperature. Remember from high school physics that the temperature of outer space is absolute zero. Radiant cooling to a clear nighttime sky can cause the skin temperature of your airplane to be colder than the air.

Are Some Airplanes More Susceptible?

All airplanes are susceptible to the effects of ground icing; however, smaller airplanes are generally more vulnerable than larger airplanes. High-wing airplanes account for two-thirds of general aviation icing takeoff accidents, perhaps because the upper wing is more difficult to see and reach on preflight. Pilots of high-wing airplanes should make sure they have the means, e.g., a stepladder, to access the upper wing during preflight when ground icing may be a factor.

How Much Harm Can a Little Frost Be?

Do not let your eagerness to fly lead you onto thin ice in your thinking. Many small-airplane pilots assume that the frost or ice contamination they see on the airplane is not significant enough to cause a problem. An examination of takeoff icing accidents involving small airplanes from 1982 to the present shows that, in most cases, the pilot did not de-ice the airplane before attempting to fly. In at least half of those accidents, the pilot knew about snow, ice, or frost contamination before takeoff, but did not remove it from the airplane.

Here are the cold hard facts:

Certification of a • Airplanes assumes that the airplane is free of ice contamination. There is no testing or analysis to demonstrate that a takeoff can be safely accomplished with contamination of any kind or amount.

- It only takes a little bit of frost or ice to do a lot of damage to your airplane and, quite possibly, to you and your passengers.
- Even small amounts of frost, ice, or snow contamination can impose large lift and drag penalties.
- Roughness similar to medium sandpaper on the wing's leading edge and upper surface can reduce maximum lift by as much as 30 percent and increase drag by 40 percent.
- Ice also increases the total weight.

To understand what this really means, think back to that basic “equation” you learned in ground school. For an airplane to remain in steady, unaccelerated flight, lift must equal weight and thrust must equal drag. Ice—even in small quantities—plays havoc with that balance. Ice reduces lift while it increases both weight and drag. In a typical light general aviation airplane, you are very unlikely to have sufficient thrust to overcome those penalties.

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A Little Frost Won't Hurt...Or Will It?

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That's bad enough, but don't forget that ice contamination can also create control problems. Depending on where the aircraft was parked, one wing may be more contaminated than the other. This condition can lead to roll-control problems. Contamination on the tail can result in pitch control problems.

Are All Surfaces Critical?

Pilots—especially those in a hurry—may be tempted to assume that some surfaces are aerodynamically more important than others. Before you fly off with ice adhering to some “non-critical” part of the airplane, remember that any amount of frozen contamination on any surface of a small airplane can result in a significant drag penalty. The safest approach is to clear the entire airplane of all frozen contamination. Don't forget the propeller: The blades are airfoils, and the ability to climb depends on their ability to generate thrust. Also, don't forget about engine inlets, pitot probes, static ports, and angle-of-attack or stall-warning sensors.

What about Polishing Frost?

Pilots sometimes assume that the roughness associated with frost is the main problem, and that they can overcome it by smoothing, or “polishing,” frost instead of removing it. This practice is a factor in about 15 percent of the small airplane takeoff icing accidents. Dispense with the idea that smooth or polished frost on lift-generating surfaces is an acceptable preflight condition. Instead, take the time to ensure that you clear all contaminants, including frost (polished or not), from wings and stabilizing or control surfaces. In addition to an aerodynamic penalty, the FAA has no data to support practical guidance on determining how to polish frost on a surface to make it acceptably smooth, other than completely removing the frost. Subsequently, the FAA issued two Safety Alerts for Operators (SAFOs)—[06002](#) and [06014](#)—advising against the practice of polishing frost.

Do I Need to Do a Tactile (Touch) Check?

It is difficult to determine visually whether a wing is simply wet, or whether it has a thin film of ice. Also, ice accumulation on the wing upper surface may be difficult to detect from the cockpit, cabin, or front and back of the wing because it may be the same color as the wing. Don't forget to do a tactile check after de-icing, because you need to make sure that no ice or other contamination remains.

What about Using Anti-Icing Fluid?

It depends. Consult your Airplane Flight Manual (AFM) or Pilot Operating Handbook (POH) for specific information on this topic. The AFM/POH information governs what you can and cannot do, but the following general guidance may be useful.

The key factor is rotation speed. If your airplane has a rotation speed of fewer than 60 knots, you should only consider Type I fluid. If the rotation speed is 60 knots or more, you can use Type III fluid, if approved by the airframe manufacturer. Only if your rotation speed is 110 knots or more, should you use Type II or IV fluid—and then only if approved by the airframe manufacturer.

Other than Type I (orange in color in North America and mostly glycol), you need positive authorization from the manufacturer to use Types II (clear or straw color, rarely used in North America), III (bright yellow color, not yet widely available in the United States), and IV (green). The Type II and IV fluids have thickening agents that may not flow off prior to takeoff on small airplanes, thus causing lift loss and large increases in the control force required to rotate. These thickened fluids may leave residue that, if not washed off, can rehydrate and refreeze at altitude and cause control difficulties.

Please note that all anti-icing fluids provide protection only for a limited time. For Type I fluids, this time is generally short (about five minutes, or less in some conditions). Always check just before takeoff to ensure that the fluid is still preventing contamination. As for using any other fluids to de-ice your airplane, see the references at the end of the article for examples of fluids you can use.

Other Assumptions to Avoid

Never assume that:

- Contamination will blow off during takeoff. Even if the snow does blow away, another problem arises if it is simply concealing a layer of ice.

- Don't think it's enough to clean just the leading edge of the wing or only around vortex generators. You need to clear all contaminants from the entire wing surface, including flaps and ailerons. Don't forget the horizontal tail and elevator.

The bottom line: Make sure your airplane is free of any and all ice contamination prior to takeoff in ground-icing conditions. ➔

Paul Pellicano is an aerospace engineer in the FAA's Small Airplane Directorate and resides in Atlanta, Georgia.

News



FAA ORDERS TOTAL BAN ON RESIDENTIAL TTF OPERATIONS Chime in on Oshkosh365

On September 30, 2009, the FAA issued Order 5190.6B that contained a

new FAA policy banning through-the-fence (TTF) residential operations. Page 12-7 of the order clearly states this new policy: "Under no circumstances is the FAA to support any 'through-the-fence' agreement associated with residential use..." Two weeks later, on October 15, 2009, the FAA presented a draft TTF policy memorandum to several associations for comment, including EAA. The draft policy titled, "Through-the-Fence and On-Airport Residential Access to Federally Obligated Airports," mirrors the FAA policy as presented in FAA Order 5190.6B, and EAA is asking members to post their comments about this important policy to a thread created at Oshkosh365. [Read more](#) | [EAA Radio Report: Some Residential Airport Access Banned](#) →

TSA PROPOSES INCREASED SECURITY AT REPAIR STATIONS

The Transportation Security Administration (TSA) published its notice of proposed rulemaking (NPRM) for the Aircraft Repair Station Security Program this week. The new rule would require certificated stations at home and abroad to implement strict access controls, provide security awareness training, and allow for Department of Homeland Security (DHS) inspections. The proposal would affect 4,227 FAA-certificated repair stations in the U.S. as well as 694 foreign shops. [Read more](#) →

Question of the Week

I had a prop strike and am getting a new prop, the same model as the old one. There was no damage to the engine from the prop strike, however some corrosion was found in the cylinders, which was taken care of. What are the flight-testing requirements after the plane is back together?

Answer

Information regarding flight-test requirements is the operating limitations document issued by the FAA inspector or DAR that issued the airworthiness certificate for your aircraft. It specifies what to do when changing or modifying your aircraft, and how to proceed. The first factor that must be determined is whether the change is major or minor. FAR 21.93 states, "A 'minor change' is one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. All other changes are 'major changes' (except as provided in paragraph (b) of this section). Since you are replacing the propeller with the same model as the original propeller, this is not considered a major change,

ADVANCE-PURCHASE CAMPING NOW AVAILABLE ONLINE FOR AIRVENTURE

Advance-purchase ticket site open at

www.airventure.org



Following on the popularity and success of advance online ticket availability for EAA AirVenture Oshkosh the past two years, attendees staying at the drive-in

Camp Scholler area can now also pre-purchase camping for prime arrival dates. AirVenture 2010, "The World's Greatest Aviation Celebration," is coming July 26-August 1, 2010, at Wittman Regional Airport in Oshkosh. [Read more](#) →



EAA LAUNCHES EAA WARBIRDS BRIEFING E-NEWSLETTER

EAA and its EAA Warbirds of America division has launched Briefing, a new e-newsletter for EAA's Warbird community and enthusiasts. The monthly publication includes feature stories as well as content focusing on government affairs, operational safety, aircraft under restoration,

news from warbird squadrons and regions, and more. The newsletter will also include links to audio, video, and the growing number of warbird discussion topics on [Oshkosh365](#). [Read more](#) →

HOMEBUILDING HINT OF THE WEEK:

TURNBUCKLE SAFETYING: DOUBLE WRAP SPIRAL METHOD



Brian Carpenter of Rainbow Aviation Services teaches us the Double Wrap Spiral method for safetying a turnbuckle. Brian is an A&P aircraft mechanic with an Inspection Authorization rating (IA), a DAR for light-sport and

amateur built, a Sport Pilot Instructor Examiner, an FAA Certified Flight Instructor, and an EAA Technical Counselor and Flight Advisor. [Watch the video.](#) →

Pilot Deviation Safety Tip

Notice Number: NOTC2038

What is an airborne pilot deviation? The actions of a pilot that result in the violation of a Federal Aviation Regulation while in flight. Such deviations could result in a loss of separation between your airplane and another or with the next mountain peak!

Why do pilot deviations happen? Pilots don't start off the day by saying, "Today I'm going to go out and commit a pilot deviation." We don't say, "I'm going to fly through some airspace that I'm not supposed to." No, pilot deviations occur because of poor technique, inattention, or failure to plan properly.

The FAA Safety Team wants airmen to be aware of this problem, and encourages pilots to increase their awareness and skills so that aviation safety is enhanced.

Types of IFR Deviations (Listed in order)

- Altitude violations - Failure to maintain the assigned altitude
- Course clearance violations
- Airspeed violations
- Missing a compulsory reporting point

What can be done about it?

- First, have a method to remember and record directions and/or clearances from ATC, and second, execute the action. For example,
 - Write it down,
 - Input it into an altitude alerter or avionics system, or
 - Index the heading bug
- Use current directories, charts, approach plates, and data bases
- If ever in question, call ATC and confirm

Types of VFR Deviations (Listed in order)

- Airspace violations - Flying into airspace such as class B, C, D, prohibited, restricted or TFR's without communication and/or clearance
- Flying VFR into IMC conditions
- Low level flight
- Required aircraft equipment is not installed or operating

What can be done about it?

- Improve flight planning - Know the route and requirements
- Have only current directories, charts and data bases onboard
- Obtain better/complete weather briefings
- Obtain the NOTAM's and TFR's for your route of flight

Plan ahead and be precise in your preparation for flight and in your actions while operating the aircraft. Don't become complacent or make assumptions. Always be alert and aware and continually processing the situation. Ask yourself, "Do I really have everything correct?"

AD Issued for TCM Reciprocating Engines

FAA issued an Emergency Airworthiness Directive (AD) on November 18, 2009, to address rapid wear with certain hydraulic lifters on Teledyne Continental Motors (TCM) 240, 360, 470, 520, and 550 series reciprocating engines. The AD requires replacement of these hydraulic lifters (P/Ns 657913, 657915, and 657916), if installed. TCM has reported three occurrences of rapid wear on the faces of these lifters with as few as five hours of time-in-service. If not corrected, airplanes using these lifters could experience a loss of power and control.

[The AD is available for viewing.](#)

A General Aviation Pilot's Guide to Airframe Icing

With the winter flying season already enveloping many parts of the northern United States, pilots need to know how to identify and avoid flying in icing conditions. Ice can form on lift surfaces quickly, often in just a few minutes — the time it takes to climb or descend a few thousand feet through a cloud layer. The effects are cumulative, and it doesn't take much to severely reduce performance. A thorough understanding of the weather factors that can lead to icing conditions is critical to safe winter operations. See "Ice Belongs in Drinks" on page 9 in the [November/December](#) 2009 issue of *FAA Aviation News*.