THE WINDSOCK

MARCH 2022

Editor: Frank Huber | Layout Editor: Deb Huber

The President's Flight Deck

Hello Chapter members! This month is a bit light on news, so I will keep this short.

With declining Covid rates we were able to host the February Chapter meeting in person as well as virtually. Be sure to let me know if this method is preferred as we want to include as many members as possible at the Chapter meeting. We will again be meeting in person as well as virtually on March 28th, with a spaghetti dinner planned. It is imperative members RSVP via the survey monkey we email a few days prior to the meeting so we can properly meal plan. It has been significantly more difficult to meal plan since the meeting attendance has been smaller than pre-pandemic, and we don't want to waste food at these events. I am asking for help with this meal as Al and Deb will be out of town that evening. We will get a sign-up genius out soon.

We also held a pancake breakfast in February, and attendance was respectable. This event is a great way to stay in touch with fellow Chapter members, so come on out to the next breakfast to be held April 2nd. Thank you to all the volunteers who have helped with these events, you are appreciated!

It was noted at the Chapter breakfast the simulator attracted much attention. I encourage all members to reach out to Dave Peterson to get checked out and begin using it. It is a fabulous asset that should be used more often.

We have also been encouraging Chapter members to use the Amazon Smile donation link. That link is now on our website. Be sure to get the link to help raise funds for our Chapter. You do not pay any more for your purchases, but EAA 237 gets a small amount, which soon grows to a larger amount!

Until next month, be sure to invite a friend or neighbor to join us at a Chapter meeting or Chapter breakfast to introduce them to the wonderful world of general aviation. *Kevin*

YOUR CHAPTER BOARD OFFICIERS

Kevin Sislo, President
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Contact the Board at: board@eaa237.org

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6 Ways To Help ATC On Your Next IFR Flight *by Corey Komarec*

What Happens If You Go Around After The Missed Approach Point On An Instrument Approach? *by Swayne Martin*

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Why You Shouldn't Fly With A Dirty Windshield *by Swayne Martin*

Understanding Pitot-Static Failures *by Nicolas Shelton*

How To Correct A Late Or Rapid Flare During Landing *by Swayne Martin*

Special VFR Clearance: How To Use It

Should You Follow The PAPI/VASI On Final, Or Aim For The Numbers?

Quick Links

How a rivalry between two WWII vets led to the world's smallest airplanes. Sky Baby vs. Bumble Bee *by David Roza*

U.S. Navy aerial refueling drone refuels F-35 for the first time

AIR FACTS
the journal for personal air travel—by pilots, for pilots

Five airplanes every pilot should fly *by John Zimmerman*

Video tip: seven bad radio habits

Student Pilot CRASHING Airplane on First Solo Flight

Our Ray Aviation scholars have been struggling with the cold, nasty winter weather in their efforts to complete their private pilot training. But, it looks like the Minnesota weather is going to be warming up and spring is just around the corner, so we should have some good news about four new private pilots in the coming months.

For the fourth year of the Ray Aviation Scholarship program, the chapter was recently awarded a Ray Scholarship for 2022.

We are currently accepting applications for this $10,000 flight training scholarship with a deadline of April 7. Applications will then be reviewed and candidates will be interviewed with the scholarship being awarded on April 21. Candidates must be at least 16 years old and be turning 17 years old twelve months after receiving the scholarship. They can be up to 19 years old upon receiving the scholarship. If you know of someone with a strong interest in becoming a pilot, please refer them to the EAA Chapter 237 website where they can find information on the program and an application for this year's scholarship. The site outlines the kinds of things we are looking for to identify excellent candidates for the scholarship.

Because of the bitter cold weather we have been experiencing in Minnesota this winter, the chapter was forced to cancel the March Young Eagles event for the second month in a row. But, spring is just around the corner, with temperatures forecast to be in the 40s and 50s beginning on Tuesday, March 15. So, baring bad weather, there should be a Young Eagles event on Saturday, April 9.

Michael Grzincich, Chapter 237 Young Eagles Coordinator Extraordinaire and Mike Miller, for the second year in the row, were again in the number 1 and 2 spots respectively for the most Young Eagles rides given in Minnesota for 2021. Last year they tied for the most rides given. They will receive their second award for their efforts at this years Great Minnesota Aviation Gathering being held on May 20 & 21. EAA Chapter 237 for the second year in the row will also be receiving an award for being the chapter that flew the most Young Eagles in Minnesota for 2021 at the GMAG. Chapter 237 ranked 9th of all EAA chapters for the most Young Eagles credits earned in 2021. Congratulations to all the pilots and ground crew members, who volunteered their time, airplanes and money to make this happen!

The Zenith 701 Project

The Zenith build crew has continued to make progress in spite of the severe winter hitting Minnesota. The issue with the engine ignition was figured out, so the engine is running like a top. The crew has been working on programing the Engine Monitoring System for water temp, oil pressure, OAT and rpm inputs. After weeks of trial and error, they figured out the sensors were automotive sensors that only were designed to turn on idiot lights not provide temperature and pressure readings. The oil pressure sensor was on the bottom of the engine and blocked by a plate used to mount the engine. So George had to cut a hole to access the sender. New sensors were ordered, installed and calibration is in the works. The crew has been waiting for warmer weather before the prop is installed for outside engine runs.

The doors have been installed and the crew have touched base with two other Zenith 701 builders in the area for ideas to make the doors seal better. Seat cushions still have to be made, so if there is anyone in the chapter with that talent, please give Mark Heule a call. Jack has installed the N-numbers, N357FC which represent 357th Flying Club. Keith installed the required "EXPERIMENTAL" sign above the left door for the passenger to see upon entering the cockpit. With spring just around the corner, the prop will be installed, soon, engine runs will be done for the engine instruments to be calibrated and adjustments made where necessary. Once everything is programed and running normally, taxi test will follow and before we know it the project will be a flyable aircraft.

EDUCATION RECREATION

EAA

HOMEBUILDERS

WHAT OUR MEMBERS ARE BUILDING, RESTORING AND FLYING.

Patrick Lee and his father Patrick are making great progress since the December 2021 story on their Fisher Flying Products R-80 Tiger Moth biplane. They have finished the construction of both the wings and are making great progress on the fuselage construction as can be seen in the pictures.

Jeff Mullin's Pegazair received it airworthiness certificate on November 19th, 2021. He received the Repairman certificate on February 23rd. He is currently working on 10 hours of dual for insurance. He plans to finish up the dual instruction the first week of April and conduct the first flight shortly after that.

MASTERY FLIGHT TRAINING, INC
PURSUE MASTERY OF FLIGHT

Thomas P. Turner | ATP/CFI/CFII/MEI Flight Instructor
Hall of Fame 2015 inductee | 2021 Jack Eggspuhler Award winner

This week's LESSONS The video of a Cessna 205's engine-out glide into Hillsboro, Oregon has made the rounds. It's an outstanding example of pilot command and control in a critical situation. The big Cessna was at 9000 feet on an IFR flight from Seattle, Washington to Sacramento, California, when its big-bore Continental engine failed catastrophically.

There are many LESSONS we can learn from this success story. I'm going to point out one about which, from my experience, it seems many pilots are unaware.

Watch the video, then come back and read on.

When the engine "popped" and the pilot reported engine smoke, he asked Air Traffic Control is "that is Hillsboro off my nose here?" He was maintaining awareness of his surroundings enough to know the airports in his vicinity. And he used available resources enough to confirm it, and other details like wind direction and runway length as well.

But that's not this week's LESSON.

The pilot seemed incredibly calm. He held a very constant pitch attitude, which results in consistent airspeed control. He asked the controller several questions. But he did not ask what to do, he told ATC what he needed and was going to do. *He was a pilot in command.*

But that's not this week's LESSON either.

As I watched this the first time I was just wondering how high the Cessna was above the ground (you cannot see the altimeter in the video) when, at about 5:20 into the video, the pilot asked the controller "Approach, can you give me the field elevation for Hillsboro?"

That's not the LESSON either, but it leads us directly to what many pilots may not know.

In a glide, how much altitude will your airplane lose in a 180-degree turn? If you're over an airport (as this pilot eventually was) or some other good landing spot, and you need to spiral down over the field to line up for a landing, how do you know you have enough altitude to make a 180 degree turn, or a full 360, or more?

I point this out to pilots when I present transition training in Beech Bonanzas. It varies a little by weight, but in the glide configuration—gear up, flaps up, cowl flaps closed, propeller at lowest RPM—at the Best Glide speed, I ask the pilot to tell me the vertical speed. It will be about 900 to 1000 feet per minute.

I then ask the pilot to start a 180 degree turn at standard rate (about 15 degrees of bank at that speed) and, once in the turn, to tell me the rate of descent. It usually increases to about 1000 -- 1200 feet per minute. A 180-degree turn at standard rate will lose about 1000 – 1200 feet.

I next have the pilot increase bank to 30 degrees. The vertical speed increases but the rate of turn increases as well…it still takes 1000 to 1200 feet of altitude to complete a 180-degree turn.

Let's say your engine quits and you're 4000 feet above ground level. You're right over a long runway and the winds are calm. How many complete circles can you make over the airport to line up for the runway of your choice?

In the case of the Bonanzas I usually fly, you can make about two complete circles—four 180-degree turns—in 4000 vertical feet. You'll need to make an almost continuous turn, not leveling the wings on in each leg of your pattern. You'll need to keep your pattern very tight to descend in this spiral maneuver, adjusting to compensate for wind.

As you turn onto short final and it's time to slow down to the power-off landing speed, the lower speed will increase your angle of descent. So don't slow down until you are sure you have the runway

made…and you'll be a lot higher and closer than a normal final approach.

If you're 4000 feet above ground level (AGL) you can expect to make two complete turns before landing. If you have to glide to a good runway and are 2500 feet above ground when you reach it, you can make at best one complete circle over the runway… upwind to downwind to final in nearly continuous turns. If you turn onto a downwind for a good off-airport landing field at 1500 feet AGL you can barely make it…if your airplane glides like a Bonanza.

Other types of airplanes have different glide characteristics. How can you learn more about the the type you fly? On your next training flight, at a healthy altitude:

1. Simulate an engine-out glide.
2. Once established and trimmed, note the vertical speed. This is your wings-level glide performance.
3. Then, begin a standard rate turn while maintaining Best Glide speed.
4. In the gliding turn, note the vertical speed. This is your shallow-turn glide performance.
5. Note how much altitude you lose in a 180-degree turn.
6. At the completion of the 180-degree turn, increase bank angle to 30 degrees.
7. In the gliding turn, note the vertical speed. This is your 30 degree-turn glide performance.
8. Estimate the number of turns you can make from your current altitude until you're on the ground beneath you.

The FAA's *Airplane Flying Handbook*, like many other sources, describes the traffic pattern "high [downwind] key" and "low [downwind] key" positions. If you find, for example, that your airplane loses 1200 feet in a gliding turn, then you need to maneuver so you are at 1200 AGL when you reach the high key position. Another way of looking at it is that when you are at 1200 AGL you can turn up to 180 degrees left or right and end up anywhere from under your left wing aimed in the opposite direction, to a short distance ahead of your nose, to under the right wing 180 degrees off your current heading.

If you are 600 feet AGL in that same airplane your landing spot must be anywhere from immediately under your left wing perpendicular to your current heading, to a point shortly ahead of the nose, to immediately under your right wing perpendicular to your current heading.

Remember, and occasionally practice glides and gliding turns, and estimating how many turns you can make from your current altitude to the ground.

This is different from the Commercial Pilot Airman Certification Standards (ACS) "Steep Spiral" maneuver (Area V Task B on page 35 of the Commercial ACS). According to the FAA's *Airplane Flying Handbook:*

The objective of the steep spiral is to provide a flight maneuver for rapidly dissipating substantial amounts of altitude while remaining over a selected spot. This maneuver may be useful during an emergency landing… [in] a gliding turn…of at least three 360° turns… [that] concludes no lower than 1500 feet above ground level…and the steepest bank should not exceed 60°…[at] a constant airspeed.

The ACS limits the maximum bank to 60° (usually it's seen as a *requirement* that bank reaches this value within five degrees, but the ACS does not specifically say so). The ACS requires maintaining "the specified speed +10 knots," but does not define the "specified speed" as being Best Glide to any other specific value.

Instead, these engine-out gliding turns are more like the Power Off 180 Accuracy Approach and Landing (Area IV, Task M, page 32)…a precision maneuver gliding with the engine at idle. Your real-world engine-out glide consists of multiple Power Off 180s stacked on top of one another, with the final repetition of the maneuver being the one that takes you from downwind to the landing surface. We used to have a Power Off 360 Task as well, but that is not currently part of the ACS.

Unlike the Steep Spiral, practicing the Power Off 180 is practice essentially identical to what you'd do in the last turn of your engine-out glide from altitude. Even if you're not pursing a Commercial Pilot certificate, it's a great task to ask your instructor to include in a Flight Review.

The lesser-known LESSON prompted by the video of this superb example of engine-out airmanship is to *know how many turns you can make at glide speed before you're on the ground.* As you maneuver for a power-off landing determine whether you can make a downwind-to-final pattern based on how high you are AGL compared to the altitude your airplane takes to complete each 180 degrees of turn.

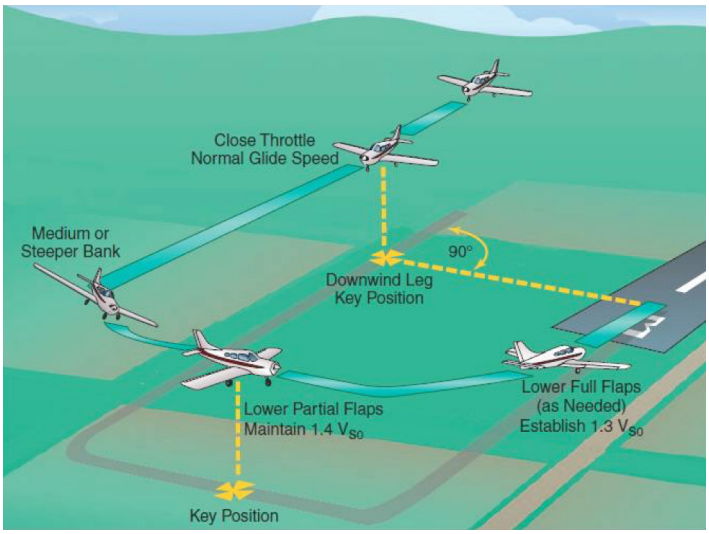
Your goal is to maneuver so you arrive very close abeam landing zone at the altitude from which you can just make a 180 degree turn at glide speed, and

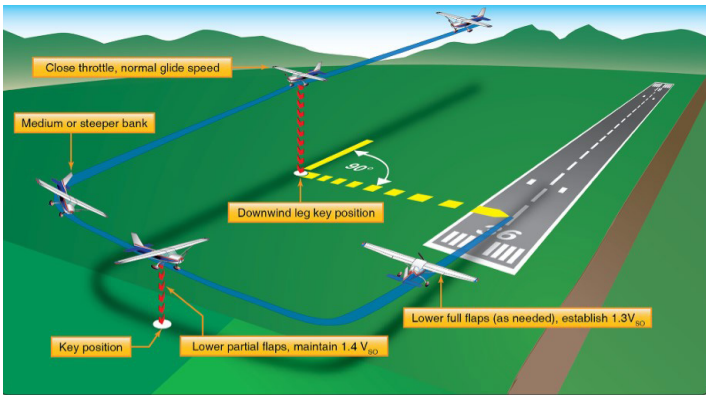
glide from that point to the surface.

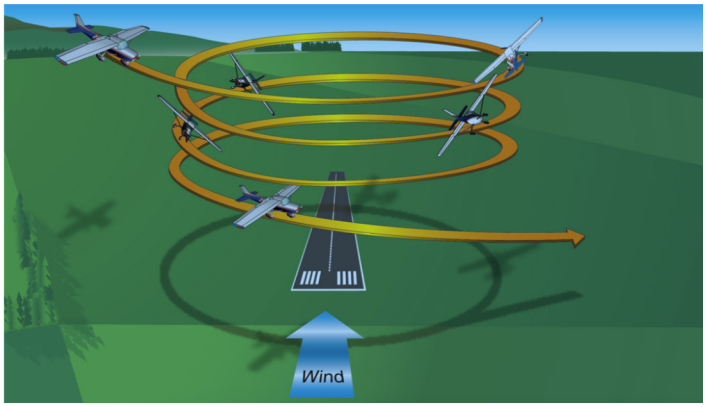
If you try to turn more than you have altitude in which to make the turns, you'll come up short of your landing spot…or be strongly tempted to try to "stretch the glide," with disastrous results. *If you calculate* you need to make more turns than you have altitude to complete, pick another approach path or landing surface while you still have altitude to maneuver to that site.

To do any of this, you need to know how much altitude you lose in 180 degrees of turn at Best Glide speed and configuration in the airplane you fly.

That is this week's LESSON.





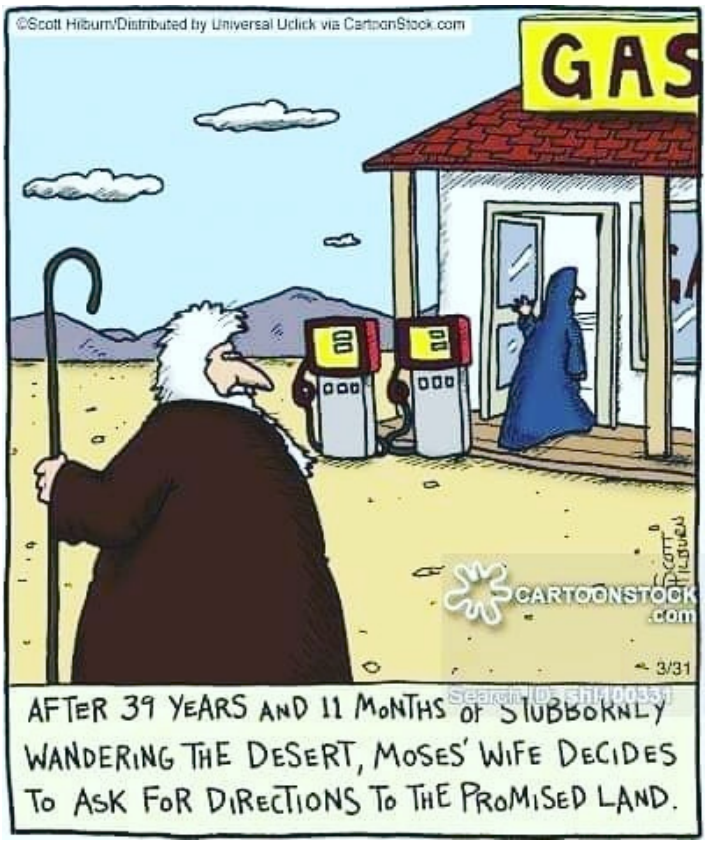


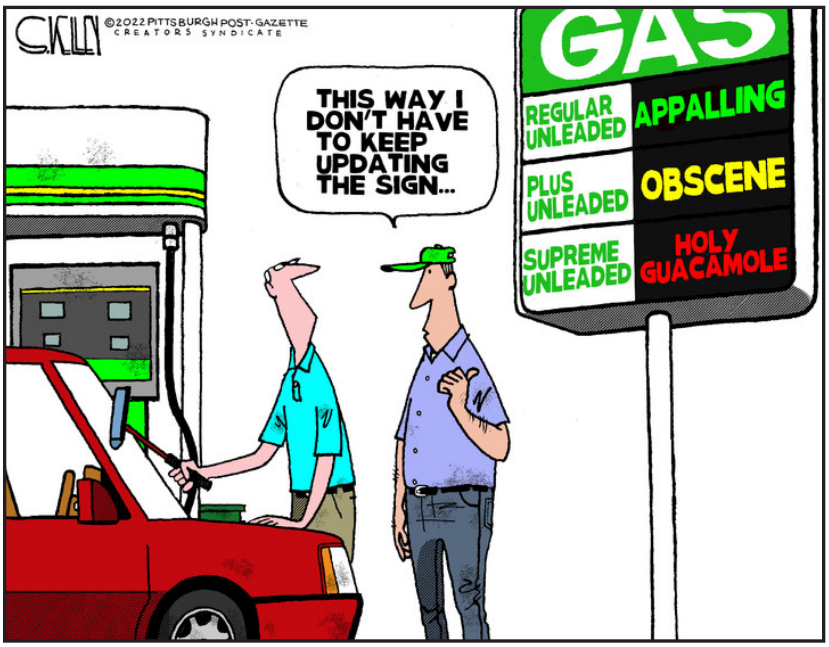
EAA237 COMING EVENTS

- *Chapter 237 will be holding a pancake breakfast on Saturday, April 2 from 7:30 am until 11:00 am.*
- *Chapter 237 Aviation Explorer Post meetings will be held on Friday, April 1 and Friday, April 15 at the chapter building beginning at 7 pm.*
- *Chapter 237 Young Eagles Event will be held on Saturday, April 9 from 7:30 am until 2 pm at the Atlantic Aviation FBO*
- *IMC/VMC Club will be held on Thursday, April 21 via Zoom. The VMC meeting will begin at 6:30 pm and the IMC meeting will begin at 7:30 pm. An email with the link will be sent to all members prior to the meeting.*
- *Chapter 237 monthly in person meeting will be held on Monday, April 25. Dinner will be served at 6 pm and the meeting will begin at 7 pm.*

RECOMMENDATION: Because of the possiblity of changing events, we recommend checking our Chapter Events page and our Monthly Chapter Events Calendar on our website for the most current, updated information.

On The Lighter Side





During our February chapter meeting the question came up about how Amazon Smile purchases can support the chapter. Some people who had visited the Amazon Smile website said they had trouble knowing the proper charity name to use to identify our organization. It seems that unless you enter in the exact, correct text for our charity name, Amazon Smile won't find a match. Be sure to enter in the following for the charity name.

Chapter 237 Experimental Aircraft Association

For every purchase you make on Amazon Smile (https://smile.amazon.com), the chapter receives .5% of the total sale amount. As of November 2021, our chapter has received over $192 from this program. Also, please note that if you already have a regular Amazon account, you can use that same account login for Amazon Smile. You do not need to create a separate account.

For people who are searching our chapter website for this information we have added a new Amazon Smile page to the website to explain how this is done including the proper name for our organization (as shown above). Below is the link to that webpage. You will also find a link to that page on the left side menu of the website, right after the Contact Us page.

https://chapters.eaa.org/eaa237/amazon-smile

We greatly appreciate your support of the chapter by using Amazon Smile for your purchases. If you are still having problems with this working for you, please send us an email at: president@eaa237.org.

Thank You!

In future Windsock editions, I plan to showcase aircraft that our members are building, restoring and flying. Please email me with the aircraft you are building, have completed building, are restoring or have purchased and are flying. I will follow up with you to provide a questionaire and will come out to take pictures to include with your article.

If you have a story or photo you would like to see in our newsletter, contact Frank Huber | eaap51@comcast.net | 763-245-0170

To view past issues of The Windsock, visit www.eaa237.org and select newsletters.

Articles and photos for consideration in our APRIL issue are due on or before APRIL 10.