EAA THE SPIRIT OF AVIATION

RUNWAY 35

The Official Newsletter of EAA Chapter 35, San Antonio TX

Flying The Low Power Traffic Pattern

Mark Julicher, ATP,CFII, A&P, IA

When I was earning my CFII and my ATP, I had the good fortune of flying with some salty old timers. I'm speaking about folks that learned to fly in a *new* Stearman, fellows that watched Barling Bombers flying traffic patterns at their home airfields, and aviators that flew the E-2 cub wishing to swap their A-40 engine for the brand new Continental 65.

Those wonderful guys are mostly gone now, but from them I learned the fixed card ADF, time and distance to the station, and the hooded takeoff. That was over 40 years ago, and now I enjoy flying those high performance 65 horsepower planes.

The Piper J-3, Aeronca Champ, Taylorcraft BC12, and many more planes of the 65-horse persuasion are easy to fly but need constant attention to fly well. One of the more demanding tasks is making a good traffic pattern. Here then are my personal techniques for flying and teaching traffic patterns in low performance aircraft.

Let's define "good" before continuing this discussion.

IMHO Good Traffic Pattern:

> Takeoff on centerline and climb out on centerline unless there are obstacles or wake turbulence to consider. Initial climb is at Vx followed by Vy when obstacles are cleared.
>
> Turn to crosswind happens upon reaching field boundary and at least 400 feet AGL.
>
> Crosswind ground track is 90 degrees to runway heading and wings are rolled to level flight during crosswind.
>
> Turn to downwind keeping the aircraft within gliding distance of the runway. Roll out on downwind flying parallel to the runway and at traffic pattern altitude.
>
> Use full throttle until reaching downwind speed. Retard the throttle by ear, look later. Hand stays on the throttle at all times unless it is needed for other tasks.
>
> Make a radio call at midfield – who you are where you are what you want to do – crisp!
>
> Abeam the threshold – configure flaps and gear, begin glide.
>
> With the threshold 45 degrees over the shoulder – turn base. Base track is 90 degrees to the runway unless flying a biplane or there are overriding circumstances. Roll wings level on base and *clear long final!* Adjust airspeed to 10 mph below down wind speed. Add more flaps if desired. Make a radio call on base.
>
> Judge sink rate and altitude. Visualize a curving glide path and determine if high, low or just right. Rule of thumb: Halfway round = halfway down
>
> Roll out. Wings level. Crab as required. Stabilize on approach speed. Add half the gust factor to approach speed.
>
> Maintain centerline, aim point and airspeed. Full flaps when landing is assured – but they

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June 9, 2018

Annual Picnic

1130hrs- ?

Chapter 35

Clubhouse

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Annual Membership Appreciation Picnic

Bring your appetite

Show your talents

PRESIDENTS COCKPIT **STEVE JONES**

Making a Difference. FAA announces foundational changes to 14 CFR Part 23. The FAA has accepted ASTM standards for certification of general aviation aircraft. This replaces a compliance-based prescriptive airworthiness certification regime with a system that bears a strong resemblance to the ASTM consensus standards in place for Light Sport Aviation. It should drive innovation into general aviation and may bring down the cost of certifying new aircraft. EAA has been involved with the ASTM F44 committee responsible for developing these new industry consensus standards since its inception in 2012. Bear with me here, this is a long URL: https://www.federalregister.gov/documents/2018/05/11/2018-09990/accepted-means-of-compliance-airworthiness-standards-normal-category-airplanes

June Membership Appreciation Picnic. Join us Saturday, June 9th for our annual membership appreciation burger burn. Your money's no good this time - we will not be asking for a donation to cover expenses. Burgers, hotdogs and great company; that alone would be enough, however…

Talent Showcase: This is a chance for you to expand our horizons. We love airplanes, flying, building, telling war stories and waving our hands in the air as we explain, 'there I was,' but there's more to life than airplanes. During our membership appreciation picnic, you're challenged to show off your other talents. We have artists and craftsmen among our ranks. We want to see what you do! Last year, Mary Ann Schlattman wowed us with her beadwork and jewelry. David 'the Artist' Baker has showcased several incredible paintings and he even set up a mobile gallery for our hangar tour! Lew Mason is an accomplished watercolor artist. Bring a table and show off your skill, your passion, your craftwork.

May Cleanup. It was hot, dusty, sweaty work. Who would sign up for that? Well, at least 28 members stepped up and made our chapter clubhouse look great! The interior sparkles like new. The memorial garden hasn't looked this good in all the time I've been here. I mean, it looked good, but now it looks GREAT! The new wood for the benches sets off the ground work and the edging stones. The grass and the bushes are neat and trim. Retired Grounds Keeper Nancy Mason came out of retirement to really spruce up the flower beds around the building. I can't say thank you enough for the fantastic job you all did! Even our facility manager stepped up her game…

May Clean Up Continued: The traditional volunteer lunch is a simple affair of sandwiches, salad, drinks and desserts. This year, recognizing that even 'good' can be improved upon, Freda and crew made sandwiches with 50% more turkey and ham. It was noticed, too! Thank you to Roxanne and Danny Beavers for starting the day with delicious donuts to complement the coffee. Some folks couldn't be here on Saturday so they made contributions ahead of time: Darren Medlin rented a concrete grinder and took the dangerous lip off our heaving sidewalk – no more trip hazard! Susan Medlin grabbed a weed whacker and trimmed around the complete perimeter of the building. Chuck Fisher sourced lumber for the benches and made it ready for installation. Roxanne Beavers jumped in twice – Friday helping Freda Jones prepare the meal, and then again on Saturday.

Movie Night. Nine members gathered Friday night, May 18th to rally for General Aviation. When it was released in 2005, the movie 'One Six Right' won the admiration of pilots across this great land. Here, Sydney Pollack, Lorenzo Lamas, Paul Moyer, Hal Fishman, Desiree Horton and many others depicted local airports through the life, history and struggle of Southern California's Van Nuys Airport. With stories told from the perspective of pilots, air traffic controllers, historians and flight enthusiasts, it spoke to the legend of the airport where Amelia Earhart broke a world speed record over its runways, and where Marilyn Monroe was discovered while working in its hangars; scenes from Casablanca were filmed on the grounds as well. If nothing of the history of Van Nuys Airport moved you, certainly the visually stunning aerial sequences did.

Web Site. Our web site was down briefly due to technical difficulties, but it's back! Kyle Jester is working hard to rehost it 'in the cloud'. In addition to our web site, Jose Garcia continues to update our Facebook and Instagram sites:

https://www.facebook.com/eaa35
https://www.instagram.com/eaa_35

What Would We Be Without You? Your chapter, over 120-strong, needs you. Do you have a skill or experience you want to share? Do you see something that needs just a little of your time to make it right? Chuck Fisher juggled an amazingly busy schedule to make sure we were ready to refurbish our memorial garden benches. Peggy Fisher and B.J O'Dea contribute amazing amounts of time and talent as a stalwart volunteers on our Facility team. Ron O'Dea works tirelessly as our Membership Coordinator. My plea to you: get involved. It's actually fun!

Until we meet again, fly safe and have fun doing it.

CHAPTER BULLETIN BOARD

Annual June Chapter Picnic

Main Course:
Hamburgers and Hot Dogs, complemented with buns, lettuce, tomatoes, onions, pickles, mustard, mayo, and chips.

Side Dishes:
Please feel free to bring anything that goes with Hamburgers and Hot Dogs.

Desserts:
Requesting pies, cakes, cookies, brownies or anything you like.

I would like to say thank you to everyone who participated and worked very hard on cleaning our chapter building inside, rejuvenating our memorial garden outside and beautifying our grounds on May 12th. The place looks fantastic!

Our Volunteers:

Danny Beavers	Ulf Balldin
Roxanne Beavers	Darold Carpenter
Ron O'Dea	Sochiko Jungbluth
Steve Plant	Jim Humphries
Nancy Mason	Richard Poenisch
Lew Mason	Brian Cheney
Frank Pisz	Chloe Cheney
Rafael Cortez	Doug Apsey
Michael Landis	Jeff Rembolt
Freda Jones	Chuck Fisher
Steve Jones	Darren Medlin
Craig Ditsch	Susan Medlin
Pat Ditsch	Maarten Versteeg

LOW POWER TRAFFIC PATTERN CONTINUED

(Continued from page 1)

may not be needed nor advisable in gusty wind.

Switch from crab to wing low. Add power for the increase in drag. Check airspeed frequently. Slow to over the fence speed in the last 1000 to 500 feet on approach.

Over the fence – Hold the aim point, don't let it shift prematurely! Give a last look at airspeed. It should now be 1.2 Vstall for a normal landing If on speed, retard throttle normally (what ever that means). If slow, delay retarding the throttle and vice versa.

Move eyes up and down the runway. Power idle, hold the aircraft 6 inches off the ground until it stops flying.

Hold nose up (soft field) or lower the nose (short field.)

Brake as required, flaps as required.

Clear the runway before doing any checklists. Make a radio call.

Commentary/Rationale

The altitude for turning crosswind is a variable and is based on good judgment. The current FAA pilot handbooks say climb to 700 feet below pattern altitude before turning crosswind. I say that is fine but a little higher is better if terrain permits – this is the Texas Hill Country and runways are sometimes crammed into small valleys and that may dictate your turn altitude. If continuing straight ahead puts me out of gliding distance of flat terrain I may want to turn a little earlier. If turning puts me low over houses or people I will try to do the courteous thing.

In my "good" traffic pattern I use shallow bank turns especially when I'm climbing. That keeps my lift vector pointed at the sky. Ten or twelve degrees of bank will make a standard rate turn at Taylorcraft-Cub-Aeronca speeds and perhaps 15 degrees of bank is good at Cherokee speeds. If I can maximize the climb on cross wind I will have greater safety and I will arrive on downwind and pattern altitude simultaneously. If I minimize bank on base I have more stall margin. Sure, I can bury the nose and make an aggressive turn, but I would not want to teach that to anyone less than a strong commercial pilot.

I roll out wings level on crosswind and I clear ahead to left and right. Just because the traffic pattern entry is at 45 degrees to downwind does not mean that every pilot is entering the pattern at midfield. Some enter way earlier than that and some much later.

I roll out at pattern altitude and within gliding distance of the runway if at all possible... and usually it is possible unless it is 110 degrees in August. This procedure gives me options. First I can consider using the runway in case of engine failure. Second, many engine failures occur at the first power reduction after takeoff, so I'm trying to put the odds in my favor.

Power is reduced by ear. "Make it quiet." Take a quick glance at the tachometer and maybe make a slight power adjustment. It is poor technique to stare at a tachometer while making power changes.

I make a radio call at midfield downwind. This is an especially good point where a student should not be too busy. Yes proficient pilots can actually turn and talk at the same time... but then again, I don't use the microphone as a primary flight control, I try to transmit enough, but not too much and mostly that means two or maybe three times per pattern.

Abeam the threshold – configuration. This means different things for different planes. GUMP check is always a favorite although carb heat and flaps are not in that acronym.

I slow 10 mph as I turn to base and I maintain this new speed on base. I roll wings level on base. I know some current thinking is to make a single turn to final from downwind... that works for military overhead patterns and that works for biplanes where it improves visibility. For my Taylorcraft in which I'm about to go screaming 65 mph down final, I'm more concerned about some heavy metal doing a straight in approach eating me from behind.. So I'm going to roll wings level and check long final. That procedure has saved my bacon at least four times. You do it your way and I will do it mine.

Using judgment and finesse and I roll out on centerline every time, (I lie.) But I try! Start with wings level on final in a crab. Do a last chance check – Handle-horn-light-lights-pressure. OK that was for T-38. Perhaps GUMP? No still too grandiose for a Taylorcraft. How about carb heat on? OK that is good enough.

Vx is a good approach speed. 1.3 times Vstall is good if you don't have any other number; however, Cubs, Tcraft, Champs stall at about 40mph so that means flying 1.3xVstall would be about 52 mph which is well behind the power curve. Not such a good place to put yourself unless there is a serious need for short field performance.

Crab down final on centerline. Now switch to wing low. I teach this as a two-step. 1) Rudder until the fuselage is straight. 2) Drop a wing to hold centerline. I also perform this for a student as a two -step – yaw then wing drop. Most students catch on to this very quickly doing it this way. It is also to show how it takes a large rudder pressure and only a slight wing drop to get the plane set up. Early on, students use too much wing and not enough rudder and everything falls apart on the approach.

There are two admonitions about entering the wing low attitude. First, what is the picture for straight ahead? A Cessna 172 will forgive a little yaw at touchdown, but that could get exciting with conventional gear. Straight ahead is when I square my shoulders and find a bug smash on the windscreen straight in front of my eyeballs. Also, straight ahead is when the yoke shaft is pointing down the runway. You really need to *see* where straight ahead is so practice this in the chocks. Second is power. After all, wing low is just a slip and a slip increases drag, so expect to lose speed or add pow-

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LOW POWER TRAFFIC PATTERN CONTINUED

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er when you transition to wing low. Typically a student is too busy self-congratulating about getting the picture right to notice that the airspeed decayed 10 mph.

Aim point, Airspeed, Centerline. I repeat these words over and over as my students fly final. I want their approach to be straight-line stable and their crosscheck to be *moving!* There are several ways to teach aim point. It takes a while for a student to see where the plane will intersect the ground and to understand that merely looking at the numbers does not make that the aim point.

Over the fence, retarding power to achieve over the fence speed is pure judgment. A rapid crosscheck is essential. If power is retarded late or aim point shifts early then I call the resulting high flare/ long dropped-in touch down the "banana." If power is retarded early then the rapid airspeed loss/bottom drops out causes a firm touchdown, which I call the "reverse banana."

Sink rate is judged looking well down the runway but altitude is judged looking closer in, so keep eyes moving up and down the runway- no tunnel vision!

Expect the wing low attitude to change in the flare because wind velocity and airspeed are changing rapidly – so work to stay on centerline and keep the fuselage straight. Small corrections early are way better than large, late corrections.

Rollout is according to the type landing. If it is a short field then brakes and flaps as required. If it is a soft field then it may mean adding power to keep from bogging down.

Clear the runway, and there you have it - my way.

HANDY HANGAR TOOL DARREN MEDLIN

You may have seen the TV advertisement for a rechargeable air pump that is shaped like an electric hand drill. After reading lots of reviews I purchased something similar and have found it to be a great tool to have in the hangar and garage. My homebuilt uses low pressure (20 psi) tubes and tires. Too much pressure and my ultralight wheels crack, too little and I have to use cruise power to taxi. The tires and tubes are cheap and they lose some air between flights. I keep a miniature bicycle hand pump in the toolkit in the plane and used to count on spending a few minutes every week checking the pressure on each tire, pumping in air and checking the pressure again for each one.

Now I just connect my new tool, push a button, disconnect, and I'm done. On Amazon.com I bought a Fineed Hand-Held 12V Electric Mini Air Inflator with digital display, tire pressure monitor and preset. At less than 8 inches long and 1 ¾ inches thick it fits in my tool bag and can replace both my bike tire pump and air pressure gauge.

This lithium battery electric pump comes with both wall plug and cigarette lighter charger cords. When connect to the tire stem and turned on the pump tells you the pressure of your tire. You can set pressure you want to pump to and, once activated the pump will stop at that preset pressure. Alternatively you can just watch the digital display and stop when you when you see the pressure you need.

The pump has built in LED lights to help locate the tire stem in poor light and includes adaptors to work with presta valves used on some bicycle tires. Now I spend less time fooling with the tires and more time flying, and that's something to get pumped up about.

Always Learning.

SAFETY CORNER-SUBTLE CLUES **R.B. "DOC" HECKER, CFI, CFII, MEI, A&P, IA**

An Interesting Telltail in Large Aircraft

Telltales are subtle clues that may lead to interesting discoveries – IF – you can follow the trail. For example, when inspecting an engine compartment, light grey dusting near exhaust stacks suggest that an exhaust leak is occurring. Early discovery may make the repair easy to fix, or may lead to more serious investigation where large, hidden cracks may be found. Other telltales may be the so called smoking rivets which are a sign of loose fasteners. More obvious telltales are oil streaks or weeps, and of course blue staining around fuel lines. Each telltale should be noted and thoroughly investigated as part of an ongoing inspection. The pre-flight inspection is one of many general inspections that our aircraft undergo on a recurring basis.

A 1938 Built DC-3A Still Working 80 years After Being Manufactured in Santa Monica, CA

I recently attended a DC-3 Pilot in Command course where I was allowed to preflight the aircraft by checklist before each flight segment EXCEPT for climbing onto the wings for upper engine nacelle, fuel and oil inspections. It was the aircraft owner's company policy to limit those inspections to company personnel and pilots. The very first flight followed an introductory lesson where a rejected takeoff was briefed as the beginning of the flight lesson profile.

After confirming with the Instructor Co-Pilot that fuel and oil levels met our requirements for the flight, I started engines and taxied out to the run-up area. Per checklist, all pre-flight items were satisfactorily completed except for the barometric power check which would be observed during the take-off roll. While setting power for takeoff, it was noted that the right engine was not producing full power and a take off abort was called. This was not a drill. After coming to a full stop, a barometric power check was performed which confirmed the right engine was not producing increased manifold pressure. The aircraft was taxied off of the active runway and a short discussion about engine power failure ensued. Fuel and spark were available and an induction failure was suspected.

Upon return to the operations area and aircraft shutdown, an inspection of the right engine cowl induction area revealed bird droppings on the nacelle. A bird nest within the induction tunnel was suspected. After removing the engine nacelles cowls, a large bird nest was noted to be occluding the carburetor intake screen. The nest was removed and the right engine area cleaned. The left engine cowling was removed for inspection and found to be clear of debris. After cowling the engines, a complete power check was found to be normal for both engines. The maintenance technician who serviced the aircraft stated he saw birds circling around the right engine prior to releasing the aircraft for the day's operations.

The bird droppings on the cowl induction scoop were an obvious telltale that were missed, but once noted lead to an early diagnosis and resolution of the problem. It is up to us as pilots and aviation maintenance technicians to keep, may I say it, an "Eagle Eye" to allow us to ensure our flying operations were safe. Keep up the good work! You are the eyes and ears of aviation safety.

CHAPTER NEWS & FROM MEMBERS

YOUNG EAGLES-OBSERVATIONS FROM THE COCKPIT

CHUCK FISHER

Don't you just wish we could peer into the future and see how kids will turn out? I do. I do each time I see a kid step out of a plane after his or her first flight in an airplane.

When I was very young we lived abroad. We spoke German at least part time in school, and many of my friends were Austrian, so that was the language of the playground. I haven't spoken a word for decades, but when I hear or read it, those childhood neurons start firing. It's still in me.

Likewise, when I was a very young kid my parents were private pilots. I took my first flight, I think, with my mom's aerobatics instructor in his Citabria. But, my parents stopped flying when we went abroad and so did I for a long time. But, decades later a chance came along for a young doctor to fly with the Air Force. Those childhood neurons re-awoke. Flying was in me.

I am relatively new to flying Young Eagles, so each flight is a new experience. I hope the senior guys will tell me they will remain that way for a thousand more flights. And, each time I watch and listen to what the kids say and do. I'm fortunate to have four roomy seats, great visibility and can see the kids around me. On my Young Eagles flights, then, I am able to let the kids do a little flying if they seem ready, and I have the "copilot" make the radio calls and run the checklist. The back-seaters are spotting planes, landmarks and responsible for Selfies. It keeps them busy and makes them "valuable" I think.

I'd like to say I remember every child, but I don't. Heck, I think it took me a week or so to remember my wife's name after we first started dating. Memory is just not my strong point. However, I will always remember one of the young men I recently took on a flight.

Before we entered the aircraft he was already terrified. As we strapped in and did the safety brief he was already about to be ill. This was not going to go well. But, I reassured him, handed him the checklist and we got to work.

And as the wheels left the ground he let out an excited yelp. "This is sooooooooo cool!". He had been ill on a rollercoaster and was just sure this was going to be a repeat. Fortunately, the air was smooth and the aircraft purred as predicted. Before long he was craning his neck to see landmarks, and he and the other passengers were jabbering in excitement. Now it was time for a little "stick time". A gentle turn each way, then a level turn over the prescribed turn point. Spot on. I had him key the mike and make the radio call for the turn. He was flying.

After landing he was so excited he said "I never wanted it to end."

Many of the kids we take flying for Young Eagles or other times may not go on to become pilots or aviators in any sense. But that first memory, that first whoop of excitement, that first feeling of release from the earth…will be "in there".

And someday, for some of them it will re-awaken.

Because pilots like us, over the decades, have shared their passion with a child and created memories that are indelibly etched in their minds. So here is my soapbox. If you are a pilot and have not shared your passion with kids – I encourage you to do so. With one excited smile, you'll have paid off your plane and flight training in a 30-minute flight.

So, back to the time machine. I'll often wonder what happened to that young man in the decades to come. I think it'll be something good. Maybe, someday he'll have a chance again to fly and those neurons will re-awaken. Because I know "it's in him".

But regardless, I know that terrified kid gave me a gift…a memory…that (hopefully) I won't forget!

NTSB REPORTS

Fuel starvation leads to forced landing on roof

MAY 29, 2018 BY GENERAL AVIATION NEWS STAFF

The pilot estimated that he departed on the 10-minute, 16-mile, local flight with one fuel tank about half full and the other tank about a quarter full. He did not recall which tank he had the fuel selector positioned to during takeoff.

During descent for landing, he observed the engine rpm decrease to between 500 and 600 rpm, at which time he declared an emergency. He switched fuel tanks but did not remember which tank he selected or whether the engine lost total power.

The pilot made a forced landing on the roof of an industrial office building in Pomona, California. The pilot was seriously injured in the crash.

During examination of the airplane after it was recovered from the roof of the building, about 7.5 gallons of fuel was drained from the left wing, and about 1 quart of fuel was drained from the right wing. No visible contamination was observed.

NTSB REPORTS CONTINUED

The fuel selector was selected to the right tank position. Other than the absence of fuel in the right tank, examination of the airframe and engine revealed no anomalies that would have precluded normal engine operation.

Further, the lack of rotational damage to the propeller was consistent with a loss of engine power before impact.

While atmospheric conditions at the time of the accident were conducive to carburetor ice, the physical evidence supports the position that total loss of engine power was due to fuel starvation.

Probable cause: The pilot's mismanagement of the available fuel, which resulted in a total loss of engine power due to fuel starvation.

NTSB Identification: WPR16FA103

This May 2016 accident report is provided by the National Transportation Safety Board. Published as an educational tool, it is intended to help pilots learn from the misfortunes of others.

MAY MEETING– SEE MORE AT https://www.facebook.com/eaa35/

RICHARD POENISCH

The May meeting was a LITTLE short on procedure and LONG on work. We had a good turnout and much was accomplished around the clubhouse. All of the memorial benches around the flagpoles were upgraded with new cedar planking. The flower beds around the clubhouse and flagpoles were cleaned and mulched. The observation deck and outside restrooms were cleaned, scraped, and touched up with new paint. Exterior lights around the observation area were checked for operation. The clubhouse got a touch-up paint job, also. The inside of the clubhouse was scrubbed down, some windows repaired, and a few other spruce-ups were accomplished. The trophy cases and displays were opened, cleaned and dusted, and put back into proper condition for display. Lots of nit-picky issues in the clubhouse and outside observation area were remedied. The entire area around the clubhouse was mowed and edged. The sidewalk leading to the hangar was edged, also. The trees and shrubbery were trimmed and shaped up. Those are just the things I remember happening while I was working on the planking for the benches. It is a little hard to take pictures when you are running a tape measure, square, and saw, so the pictures this month are a little sparse. I apologize for that, but not for the way the clubhouse area looks. By the time all was done, the entire crew was ready for lunch. The sandwiches were FANTASTIC after the work put in by everyone, and I don't remember any leftovers; I worked on that end myself. The chapter should be proud to show off our handywork and our "fancied up" clubhouse. We, as a chapter, have a large, involved membership and we should rightly be proud of what we, as a chapter, have accomplished this year. We have a lot of people with many talents and they all were put on display at the meeting. Our members give freely of their knowledge and talents and for that I say "THANK YOU" as I have been the recipient of much of that, even though those who gave it may not think it so. For that, I am thankful that I found and am in this chapter.








APRIL MEETING– SEE MORE AT https://www.facebook.com/eaa35/ **PHOTOS BY RICHARD POENISCH**











THE BUILDER'S CORNER

Mark Julicher

Exhaust Leaks

Of all the systems on your plane, the exhaust system probably experiences more stress than any other component. Exhaust gasses routinely reach temperatures on the order of 1300 to 1500 degrees Fahrenheit. That is a lot. The blue flame of an oxy-acetylene torch is approximately 1500F, so whatever exhaust gas happens to touch can be damaged very quickly.

Once upon a time, student pilots were taught that during a pre-flight inspection they should grab the tail pipe and give it a little shake. That practice is still a good idea. If a tail pipe wiggles, the pilot should know why. Perhaps a particular plane has the tail pipe mounted on a swivel joint – OK, fine, it might wiggle a little bit. For most light planes the tail pipe should be firm and have little to no wiggle.

In spite of our best efforts, exhaust systems do fail. It is therefore imperative that pilots look for signs of exhaust problems before they become hazards. You know what I'm saying – use your superior judgment to avoid placing yourself in a situation where you are forced to use your superior skill.

Photo 1: Engine Baffle of a Cessna 150

Photo one shows a telltale sign of an exhaust leak. Have a look.

This is the aft baffle on an O-200 engine mounted on a Cessna 150. The gray-brown is exhaust stain from a very great quantity of escaping gas. Moreover, the location of these stains indicates that the exhaust system is leaking near the exhaust port of a cylinder. Sadly, the pilot of this plane had no idea there was a problem, yet the signs were screaming out a warning in plain sight just inside the oil filler door.

For some fortunate reason, the brakes were causing a problem and we were asked to check over this plane that had recently arrived from a 1000 mile cross-country. So we looked. We found the brake problem and much more.

The brakes took an hour or so to repair, but then we removed some cylinder baffles to see what was making the exhaust stain.

Photo two is what we found.

Photo 2: Aft cylinder on O-200

In fact, both aft cylinders were eroded beyond repair making the repair bill run into thousands of dollars. Maybe it could have been prevented by closer inspection at the last annual. No one can say that with certainty, but in any case the pilot in command could have/should have seen this life-threatening situation.

Photo 3: ELT as removed from a Cessna during a recent annual inspection. Ow!

Here is something that just came into the shop. Wow! It was actually installed in a plane with zip ties because the normal latching mechanism would not function properly. I'm sorry to say I don't think it is airworthy. Yes, I know a new ELT is about 500 dollars. But in Aviation Monetary Units that would only be 0.5 AMUs… Much cheaper when you think in AMUs instead of dollars.

A final thought… Do you have trouble figuring out reciprocal-headings? Try this simple trick. Take any compass heading from 010 to 180, add 2 to the first digit and subtract 2 from the second digit. Example: 150 degrees, add 2 the 1 and subtract 2 from the 5… that makes 330 degrees. If you take any compass heading from 200 degrees to 360 degrees then do the opposite math, i.e., subtract 2 from the first digit and add 2 to the second digit. Example: 270 degrees, subtract 2 from the 2 and add 2 to the 7… that makes 090 degrees. TaDa!! Naturally you figured out that this clever trick falls apart for courses of between 001 and 019 degrees and between 181 and 199 degrees…. but I just never fly those courses and that makes my life simple.

MAY MYSTERY PLANE REVEALED

DOUG APSEY

Congratulations to Ira Wagner and Charlie Brame for correctly identifying our May mystery airplane as the Bellanca Airbus/C-27 designed by Giuseppe Bellanca and built by the Bellanca Aircraft Corporation of New Castle, Delaware. The prototype first flew in 1930 and a total of 23 were built. The original design was designated the P-100 Airbus by Bellanca and was powered by a water cooled Curtiss Conqueror engine. Only one was built before the company changed over to an air cooled radial engine and re-designated it the P-200 Airbus.

USAAC C-27
www.mission4today.com

The Airbus was designed as a passenger and cargo aircraft and could be fitted with wheels, floats or skis. Set up as an air carrier, the plane could seat twelve passengers. The P-200's were powered by either a Pratt and Whitney R-1860 or a Wright Cyclone R-1820. A total of nine P-200's were built, with the tenth being the original P-100 that was converted to a P-200.

The US Army Air Corps purchased several Airbus' which carried the USAAC designation C-27. The first four the Army purchased were Y1C-27's and were powered by a 550 hp Pratt and Whitney R-1860 Hornet B radial engine. The Army then purchased ten C-27A's powered by a 650 hp Pratt and Whitney R-1860 Hornet B radial. One of the "A's" was converted to a C-27B powered by a 675 hp Wright R-1820 Cyclone radial. The four Y1C-27's and the remaining nine C-27A's were later upgraded to a 750 hp Wright R-1820-25 Cyclone engine and designated the C-27C.

Later in the production run of the Airbus, Bellanca made several structural modifications to the P-200 design and increased the seating to sixteen. This became the Bellanca Aircruiser. These were powered by several versions of the Wright Cyclone engine ranging from 675 up to 850 hp.

The Airbus/Aircruiser had a wingspan of 65 feet. Empty weight was about 6,000 lbs and a max weight of 10,000 lbs. Maximum speed was 165 mph with a cruise speed of 125 mph to 137 mph depending on the model. Range was between 600 miles and 1100 miles, again depending on the model. With the seats removed from the long and spacious cabin, the Airbus/Aircruiser became a true "heavy hauler" capable of carrying nearly two tons of cargo thanks in part to the large lower stub-wings and the airfoil shaped wing struts that provided additional lift.

Federal regulations implemented in 1934 prohibited single engine aircraft for commercial airline use thus ending the potential of the Airbus and Aircruiser as a commercial passenger carrier in the US. However their ability to carry heavy loads made them a popular cargo hauler. A few ended up in Canada where one, Canadian registration CF-BTW, was used to haul cargo as late as the 1970's. This Aircruiser, a 1938 model, has been restored and is now part of the Erickson Aircraft Collection in Madras, Oregon. Another Aircruiser, a 1935 model with Canadian registration CF-AWR, is under restoration at the Western Canada Aviation Museum in Winnipeg, Manitoba. This airplane crashed in northern Ontario in 1947 and was abandon until 1973 when the museum retrieved what remained of it and began the slow process of restoring it.

Sources for this article include:
https://en.wikipedia.org/wiki/Bellanca_Aircruiser
http://www.bellanca-championclub.com/menander/index.html
http://www.royalaviationmuseum.com/collections/restoration/
http://theaircache.com/2013/11/21/c-27-airbus-aircruiser/
https://www.planeandpilotmag.com/article/bellanca-aircruiser/#.WwYbTLQm6Uk

The only remaining flyable Aircruiser (CF-BTW)
www.ericksoncollection.com/aircraft/#/bellanca-air-cruiser/

NAME THE PLANE — DOUG APSEY

June Mystery Airplane

Here is your Mystery Airplane for June. Who will be the first to email me at dapsey@satx.rr.com with the following information about this unique little airplane?

1. Who designed and built it?
2. What is its designation and name? i.e. C-172 Skyhawk, PA-24 Comanche, etc.?
3. What year did it first fly?
4. How many were produced?

ANOTHER THANK-YOU — DARREN MEDLIN

Formation Mowing Award:

A big thank you to Chuck Fisher and Joe Killough for their recent formation mowing of the chapter grounds. We all have our own grass to cut so I'm especially appreciative of these gentlemen taking time out of their schedules to keep our Club House grounds looking great. Thank you both! - Darren Medlin, EAA 35/VP.

http://www.i.pinimg.com

UAV CERTIFICATION — DARREN MEDLIN

Are you a pilot? Is your BFR current? If the answer is yes have I got a deal for you. The FAA wants you to have your "REMOTE PILOT" certificate.

This is the coveted "Part 107 Small Unmanned Aircraft Systems (sUAS)" ticket that is required for any commercial drone operations and no, you do not need to own a drone or quadcopter or know how to operate one to qualify.

The FAA realizes how much information regarding airspace and airmanship you already possess and they have created a free, slimmed down, online presentation that highlights the special requirements specific to UAS operations. Everything else is skipped since you learned it in ground school. The pilot's interactive online course takes about 2 hours (I'm a slow reader) and includes quizzes to make sure you are learning the important items then there is an exam.

Go to "https://www.faasafety.gov/". Look in the upper left of the page in the block marked "Featured Courses." Click on "Part 107 small Unmanned Aircraft Systems (sUAS)" and get started.

Wordpress.com/Versa-6X-drone

Once you completed the course you download a completion certificate. The next steps involve connecting with an instructor to verify your identity and information. You can do it online using another FAA system called IACRA or you can do it using a paper application.

AOPA has a great article at "https://www.aopa.org/go-fly/aircraft-and-ownership/drones/guide-to-remote-pilot-certification" that lays it all out. You'll see how easy it is for someone with a current BFR and what other paths there are to getting this sUAS certificate.

I did my CFI verification portion using the online IACRA process and Steve Jones, our Chapter President, has earned his UAS ticket so ask us if you have questions.

Your kids and neighbors might be more impressed that you're a licensed commercial "Drone Pilot" than you think, anyway it's a great way to add to your aviation skill set and get recognized with another FAA certification. Have fun!

Always Learning,

Country Store

BRIAN GOODE

NEW ITEMS IN THE STORE

We have found a Duffle Bag that will do double duty. You can use it as an airline carry-on bag that will fit in the overhead compartment, or as a carry-on bag that will fit in your aircraft's luggage compartment..

Folded for transportation

It also has a feature that will let you stow the bag within itself. This will let you take it along on a trip folded up inside another piece of luggage and then put it to use when you have more souvenirs than will fit into the big bag. We have some in inventory so get yours before it's time to go to Oshkosh. They are priced way below the mail order bags at $30.00, which includes tax, title and delivery to 8T8.

Stuffed, ready to fly home

SHIRT NEWS

We presented a new item at the March meeting, it is the white Fishing Shirt with the **Texas State Flag** on the back. It was a great success as we took orders for 18 of them. They are only available in men's sizes, so the ladies can order a size smaller than a regular lady's size that fits them now. If you normally buy a lady's medium, the you should order a small size.

BTW, they are also available with long sleeves, with a little button-down strap to hold them rolled up, if you choose to roll 'em.

If you are planning to go to Oshkosh this year, you should get your TEXAS shirt on order now.

The Country Store is on vacation this month visiting family in California and attending one Grandson's graduation from U.C. Berkeley and another Grandson's graduation from High School in San Mateo.

COFFEE MUGS	**CH. 35 logo**	**$7.00**
Fishing Shirts Short sleeves	**Men's & Lady's**	**$39.00**
Long Sleeves		**$43.00**
TEXAS shirts are the same prices as above		
POLO shirts with Ch. 35 Logo	**SM – XL**	**$30.00**
DUFFLE BAGS	**Red with Logo**	**$30.00**
Log Book Bags	**To order**	**$31.00**
Baseball Caps	**Ch 35 Logo**	**$10.00**
60th Anniversary decals		**FREE**
Beverage Koozies	**With Ch 35Logo**	**$5.00**
Chapter 35 Sew-On Logo Patches		**$3.00**
Chapter 35 Bumper Stickers		**$1.00**
Wheel Chocks – Aluminum	**Two sets**	**$40.00**
"Wash Wax All" Products	**Under retail**	

All prices include State Sales Tax

For merchandise please call Brian @ 727-709-1159, or email: ladybgoode@msn.com

All of the proceeds from the sale of EAA Chapter 35 Country Store merchandise goes towards supporting the activities of the Chapter, so buy some stuff. Today.

CHAPTER CALENDAR — CONTACT EAA35VP@GMAIL.COM - *PROGRAMS ARE TENTATIVE AND SUBJECT TO CHANGE!*

JUNE	***9***	**ANNUAL CHAPTER 35 PICNIC** **Chef, Prep Cooks, Servers Needed**	**EAA Chapter 35 Clubhouse** **11:30 am to?**
JULY 	**14**	**FLY-IN BREAKFAST EVENT** **Chef, Prep Cooks, Servers Needed** **BOD Meeting**	**EAA Chapter 35 Clubhouse** **9:00-12:00 am** **12:30 am**
AUGUST	***11***	**LUNCH MEETING**	**EAA Chapter 35 Clubhouse** **Lunch 11:30 am** **Meeting/Program 12:30 pm**
SEPTEMBER	***8***	**LUNCH MEETING**	**EAA Chapter 35 Clubhouse** **Lunch 11:30 am** **Meeting/Program 12:30 pm**
OCTOBER 	***13***	**FLY-IN BREAKFAST EVENT** **Chef, Prep Cooks, Servers Needed** **BOD Meeting**	**EAA Chapter 35 Clubhouse** **9:00 - 12:00 am** **12:30 am**
NOVEMBER 	***10***	**ANNUAL CHILI COOKOFF** **EAA Chapter 35 Fly-mart** **Annual Membership Meeting and Election of Officers** **Lunch and Chili Judging**	**EAA Chapter 35 Clubhouse** **10:00 – 11:30 am** **11:30 am** **Immediately following the meeting**
DECEMBER 	***8***	**CHRISTMAS PARTY** **Christmas gathering 11-12** **Lunch catered** **Gift Exchange ~$15 target for gifts but that's up to you!**	**EAA Chapter 35 Clubhouse** **Social Hour 11:00 pm** **Lunch Served Noon-1:00 pm** **Gift Exchange 1:30 to 3:00 pm**

Upcoming Local/Texas Events and Airshows

Aviation Calendar of Events websites

Aero Vents	**http://AeroVents.com**
EAA	**http://www.eaa.org/calendar**
Fly-ins	**http://www.flyins.com**
Fun Places	**http://funplacestofly.com**
Social Flight	**http://socialflight.com**
Council of Air Shows	**https://www.airshows.aero/Page/ASCalendar**
Milavia	**http://milavia.net**

June 02 San Marcos Drive– or Fly-In
San Marcos Airport, San Marcos, TX

June 02 EAA Chapter 59 Pancake Breakfast Fly-in
McGregor Executive Airport, Waco, TX

June 30 Thunder over Cedar Creek Lake
Cedar Creek Lake, Tyler, TX

July 02 Grand Texas Airshow
Cleburne Regional Airport, Cleburne, TX

July 03 Kaboom Town Addison Airport Airshow
Addison Airport, Addison, TX

Please send me any and all aviation activities that you may know of or come across in your travels. The summer months are slow for sponsored air events in Texas and the next ones start again in September.

Thanks.

Courtesy of Brian Goode

CLASSIFIED ADVERTISMENTS

TWO T-HANGARS FOR RENT

R. B. "Doc" Hecker has 2 T-Hangars for rent, 30A and 30B. Interested parties may contact him via phone or email.

Ph: 210-391-1072 **Email:** faaexamdoc@yahoo.com

Web: assenddragonaviation.com

Undeveloped lot for sale at San Geronimo Air Park (8T8) -- fronting the runway. The lot is Tract #51, near the south end of paved runway 35. Build your dream hangar, and/or hangar home, on this lot with frontage along the paved runway. Asking $76,000. Contact Wayne Woldt at 402-450-6170, or <wwoldt1@hotmail.com> for further information.

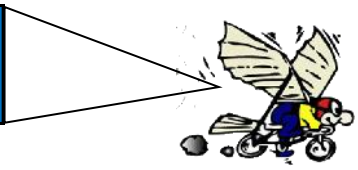
To post a classified—contact the editor at eaa35news@gmail.com

- *You must be an EAA Chapter 35 member.*
- *Ads are FREE and will run for 3 Months from the last date you re-verify that the item is still for sale.*
- ***PLEASE Notify me when your item sells!!***
- ***You must contact the editor by e-mail or phone to extend your ad beyond the expiration date***

Advertisement Prices for EAA 35 Newsletter

Size (percent page)	Monthly	Per YEAR	Savings
10% (business card size)		$ 35.00	
25%	$ 8	$ 86.40	10%
50%	$ 15	$ 153.00	10%
100%	$ 30	$ 324.00	15%
Classified ads	(Members Only)		Free

EAA Chapter 35 Leadership



Officers

President:	Steve Jones	**Vice President:**	Darren Medlin
210-570-9435	*eaa35pres@gmail.com*	*(210) 875-9971*	*eaa35vp@gmail.com*
Secretary:	Mike Landis	**Treasurer:**	Dee Brame
210-289-7445	*mlandis7210@sbcglobal.net*	*210-493-5512*	*DeeB@satx.rr.com*

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Nelson Amen (2012-2014)		Brian Goode	
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Dave Baker (2010-2012)		Ron O'Dea	
210-410-9235	*iflyaerosport@sbcglobal.net*	*210-488-5088*	*r2av8r@gmail.com*

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Ron O'Dea			
210-488-5088	*r2av8r@gmail.com*		

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Nick Leonard		*Lew Mason*	
830-765-7481	*ohlson38@gmail.com*	*210-688-9072*	*lewnan@sbcglobal.net*

Chapter 35 meets

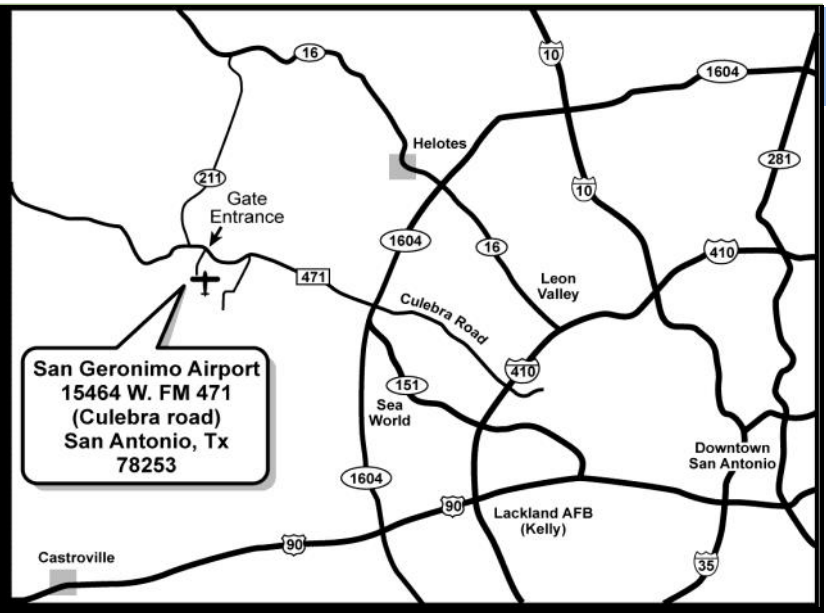
Each Second Saturday of the Month

June 9th

1130-?

Annual Chapter Picnic

Chapter 35 Clubhouse



EAA Chapter 35 is part of the worldwide network of EAA chapters. EAA embodies the spirit of aviation through the world's most engaged community of aviation enthusiasts. EAA's 170,000 plus members enjoy the fun and camaraderie of sharing their passion for flying, building and restoring recreational aircraft. Our clubhouse and building facilities are located at San Geronimo Airpark (8T8) located off FM 471 (Culebra Rd) West of San Antonio.

For 60 years Chapter 35 has represented aviators of creativity who share a passion for flying. Come join us!

Click Here for Link to 8T8 on AirNav.com

Ron O'Dea, Membership Chairman
15464 FM 471 W., #14
San Antonio, TX 78253

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All purpose cleaner/ wax that you can safely use on everything you clean. Leaves an anti-static protective coating on aircraft, cars, boats, motorcycles, and RVs. Lifts dirt without scratching.
Spray On - Wipe Dry

Wash Wax *ALL* Degreaser
All purpose Degreaser/ wax that you can safely use for those tough, greasy, oily cleaning jobs such as, aircraft engine and exhaust areas, landing gear, car wheels and tires, boat transom and water line. Removes dirt and black streaks without scratching.
Spray On - Wipe Dry

Belly Wash
The quickest and easiest way to clean the dirtiest aircraft bellies, engine areas, and landing gear. Safely removes grease, oil, hydraulic fluid, and exhaust soot without scratching the surface.
Spray On - Wipe Dry

PlexALL
leaves an anti-static protective coating on all aircraft windows, both plastic and heated glass. Plex ALL is also safe to use on cockpit instruments and displays.
Spray On - Wipe Dry
NEW

Waterless Wash Wax Mop - Faster, Easier, Safer. NEW
The only mop with two sides. one wet and one dry. Now you can waterless wash and wax with the *reach and leverage* of an extension pole. This allows you to clean a much larger area faster and with less effort, while also eliminating the safety hazards associated with constantly climbing and moving a ladder. Our customers report time savings of up to 50% over waterless hand application.

Aero Scrubber
Soft, non-scratching, long-lasting, reusable scrubber pad. Use with Wash Wax ALL for removing bugs from leading edges and for tough cleaning jobs such as aircraft bellies and engine areas.

AeroTowel
All purpose microfiber towel. Super soft, absorbent, long-lasting, and lint-free. The best towel for all of your cleaning needs.

AeroDiaper
Soft, absorbent, lint-free, 100% cotton 1-ply diaper for all your cleaning and polishing needs.

NEW

Waterless Wash Wax Mop Starter Kit
All you need to get started with the new Wash Wax Mop.

Starter Kit
All you need to get started with Wash Wax ALL.

Leather/Vinyl Kit
All you need to clean, restore and protect leather and vinyl in one kit.

Cabin Cleaner
Cleans and removes beverage spills and stains from carpets, seats, tray tables, side panels, cockpit, and galleys.

SafeSolv
All purpose citrus solvent. Removes tar, oil, hydraulic fluid, adhesives, and gum. A safe, effective, alternative to toxic chemicals that is safe to use on paint, plastic, glass, bare metal, carpet, and seats.

Leather Soap
Safely and gently cleans leather and vinyl. Removes dirt, grime, body oils, and lotions.

Leather Care
Restores, moisturizes, conditions, and protects leather and vinyl. Repels dust and dirt without leaving oily residue. Provides long lasting protection.

Rubber Care
Easy to use water-based rubber and de-ice boot care product. Restores and protects rubber, giving that new semi-gloss look, without leaving an oily residue. Excellent on weather stripping, tires or any rubber or plastic item.

Water Spot Remover
Quick, easy, safe way to remove hard water spots from paint, plastic, vinyl, clear coat, gel-coat, bare metal, and other hard surfaces. Use Wash Wax ALL to prevent hard water spots.

PolishALL
Easy-on, easy-off liquid polish. Removes oxidation and fine scratches from paint, plastic, aluminum, silver, and other metals. Can be used by hand or with power polisher.

Wash Wax Clay
Safely removes surface contaminants allowing wax to bond better. Removes overspray, tree sap, acid rain, & rail dust. Safe to use on paint, plastic, glass, chrome, gelcoat, and other hard surfaces.

AERO COSMETICS®

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