EAA THE SPIRIT OF AVIATION

RUNWAY 35

The Official Newsletter of EAA Chapter 35, San Antonio TX

November 2019

Volume 63 Issue 11

Inside this Issue

Next Event

November 9

Chili Cook-off

Fly-mart

10:00 am

11:30 Am

Runway 35 is published monthly as a free service for our members and our flying community by EAA chapter 35.

Publisher: Chuck Fisher

Editor: Andrea McGilvray

eaa35news@gmail.com

STAYING AHEAD OF AN ENGINE PROBLEM

By Mark Julicher

Exhaust Valves

The exhaust valves in your engine are mechanical wonders. Opening and closing 10+ times per second and venting gasses traveling at hundreds of feet per second, withstanding hundreds of pounds of gas pressure, working at about 1000 degrees F - the environment in which these valves operate is harsh to say the least. Let's explore the environment of the exhaust valve as found in a typical aircraft engine.

Photo 1 shows the top of two cylinders with and without the valve cover. Most of us have seen cylinder heads like this many times. You can see much of the "valve train" here. The rocker arm, and valve springs are visible and a perhaps a small bit of the end of the pushrods. You can't see the valves or valve guides, but rest assured they are there inside those valve springs and under the end of the rocker arm.

Photo 1: Lycoming O-235 cylinder heads.

Perhaps photo 2 will better illustrate.

In photo 2, the rocker arms and rocker shaft are removed, the valve springs are out and so are the pushrods and valves. You can clearly see the two valve guides at the top of the picture

Photo 2: Disassembled cylinder head.

The cylinder head is made of cast aluminum, but the valve guides are a bronze alloy inserted into the aluminum casting. This serves two purposes. Bronze stands heat and wears better than aluminum and when the valve guide finally wears out it can be

(Continued on page 4)

NEXT EVENT

Chili Cook –Off, Fly-mart & Annual Membership Meeting

PRESIDENTS COCKPIT **STEVE JONES**

Making a Difference. Join us November 16th, 9AM to 1PM at Kelly Field as EAA Chapter 35 anchors the Port San Antonio Youth Aerospace Exposition. Chapter 35 will offer a Young Eagles experience for up to 150 young men and women. We'll also field an information and water sales booth to educate, inform, and hydrate the public. The expo will feature military, GA, experimental and commercial aviation; showcasing among other things, the RV-12is under construction by the Southwest High School Supreme Dragons Aviation Team. We are making a difference! This chapter rocks.

Elections! Your chapter is on the move! Not content to rest on its laurels, the members and executive team of EAA Chapter 35 made great strides reaching out to our community to show the benefits of experimental aviation and to show our youth the possibility of a career in the air. If you think we've done something here, you haven't seen anything yet! Come out November 9th and make your voice heard as we elect a new executive team (President, Vice President, Secretary, Treasurer) to lead Chapter 35 for the term 2020-2021. The nominating committee, headed by Kris Kelly, presents a slate of candidates as follows:

- for President: **Darren Medlin** (current vice president)
- for Vice President: **Chuck Fisher** (current member of the board at large)
- for Treasurer: **Dee Brame** (incumbent)
- for Secretary: **Paul Wurster**

Young Eagles. The Kelly Field Youth Aerospace Expo is coming and we need your support! Mark your calendars for November 16th. We'll be flying upwards of 150 Young Eagles, and we'll be selling water and providing information on EAA Chapter 35 activities and membership. As a chapter, we need to make a big showing at this event. Get your best chapter duds ready because we'll be providing chapter information, ground support, aviation knowledge, water, and Young Eagles flights from 9AM to 1PM.

The Women in Aviation Day Camp at Stinson was an outstanding event. Chapter 35 Young Eagles Coordinator Phil Vaneau organized eleven pilots and a ready cadre of ground support volunteers to provide an amazing flight experience to 78 young ladies. One youngster, smitten with the flight, waited to the end of the day and begged to go again. Chuck Fisher, on the last flight of the day, provided her second Young Eagles flight experience. Folks, we made an impact.

VMC Club. This month, we focused on vertigo and spatial disorientation, and we learned it happens more often than you'd think!. These meetings are a great opportunity to share our experiences, talk about aeronautical decision-making, and to learn from one another. Join us again Friday, November 15th, 6:00 PM for the next installment. For more information on the EAA VMC Club, see: https://www.eaa.org/eaa/pilots/EAA-pilot-proficiency/vmc-club

Pancake Breakfast Fly-In. For this event, we held back the strategically important crew-served weapon of mass consumption, the Memorial Mike Logan Grinnin' Griddle. You never lead with your Ace card if you can help it. (we actually hid it from the weather like a B-2 bomber) Cold, blustery, chance of rain, low ceilings. As you can imagine, turn out was light, but the runway was lined with interesting aircraft all the same, from a Cherokee 180 to an AutoGyro Calidus gyrocopter. A well-sorted Merlin GT even made an appearance. For those who came, thanks! We had a great time. For those who held back, we'll see you next time.

Coming up: Chili Cookoff! This is our third and final installment in the great Chapter 35 food wars. It's almost winner take all, except…it isn't. We value community and camaraderie, so there's bragging rights for third place, second place, first place, and for the coveted People's Choice award. Fire up your stock pot and show us your interpretation of the best chili this side of the Pecos!

Grounds Manager. We said we needed a leader, and Tim Carter answered the call. Tim has volunteered to be our new Grounds Manager. He'll be looking to you to sign up for a month of maintaining the grounds, primarily cutting and trimming the grass as needed. There will be opportunities to jump in to help manage our xeriscape and flowers around the Chapter building and flag pole. Tim calls Elmendorf home and it's a bit of a drive to San Geronimo Airpark, so be sure to step up and volunteer.

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

CHAPTER BULLETIN BOARD

HELP is NEEDED!!!

Chapter 35 needs your help

!!!! Young Eagles Pilots and Ground volunteers needed November 16th Kelly Airfield !!!!

November Chili Cook Off

It's here!

The Chapter 35 Annual Chili Cook Off returns November 9 th 2019. Are you ready?

It's run-what-you-brung for a chance to win braggin' rights for 2020. Judges will select 1st, 2nd and 3rd place winners, then you, the members, will hoot and holler for the REAL winner, the People's Choice award.

Main Course: Competition Chili! This will be served with cheese, onions and sour cream.

Side Dishes: requesting your favorite side dishes, especially the secret family recipe corn bread. (Chuck Cluck, this means you)

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

Judges: Do you have what it takes to be a good judge of chili? We don't follow ICS or CASI rules, so beans are allowed and so is just about anything else that passes health department approval. <shudder> If you think you've got a keen palette and are a fine judge of chili aroma, color, flavor, texture and after burn, come see Freda Jones first thing when you arrive at the November meeting.

Shout Out: Thanks everyone who participated last month for the October pancake breakfast fly-in. We had an interesting turn out and a great time!

Peggy Fisher – flapjack flippin', and server
Roxanne Beavers – grill master and server

(Continued from page 1)

replaced with a new guide. Automotive folks can knurl the valve guides to extend their service life, but (to my knowledge) knurling is not done on aircraft engines.

Photo 3: Continental A-65 exhaust valves.

Photo 4: High performance Titanium valve

So what about the actual valves? Photos 3 and 4 show some exhaust valves.

Although they don't look terribly special, determining the size, shape and alloys in these valves took hundreds, perhaps thousands, of hours of engineering and experimentation.

Photo 5 is looking up inside a cylinder. The two spark plug holes are visible as well as the two valve seats. The exhaust valve and seat are smaller than the intake because the hot, high pressure, energetic exhaust gas travels very quickly compared to the intake air-fuel charge. Notice that the valve seat is chamfered to more or less match the valve face. If the valve and valve seat do not make good contact with each other, the valve can't dissipate heat very well.

Photo 5: Inside a (nasty, old, worn out, rusty) cylinder.

Ponder heat transfer a bit more. We have exhaust gasses reaching temperatures of 1500 degrees F and we have an exhaust valve capable of handling about 1000 degrees. How can that work?

The valve is actually closed during ignition and therefore during the highest pressure/temperature inside the cylinder. Once the piston reaches bottom dead center a great deal of the pressure and temperature has been reduced. (Recall your gas laws.) Now on the exhaust stroke when the valve is opened the hot gasses do indeed rush past the valve and make it quite hot, but the valve closes again and transfers that heat to the valve seat. Furthermore, some heat is carried away by the valve stem and that heat is, in turn, transferred to the valve guide. So heat is being produced and carried away in a constant, repeating cycle. When everything is in good working order heat is controlled and metal is not being melted.

> Some of us have Lycoming engines with Sodium filled valves. Actually, the valve stem is hollowed out and a plug of Sodium is placed inside, partially filling the hollow. Since Sodium melts at 208 degrees F and boils at 1621 degrees F, the sodium is liquid at engine operating temperature and it can travel about inside the valve carrying heat from the valve face to the valve stem. This technique is about 90 years old.

But what happens when things are not all in working order? What happens when valve train pieces start to wear out? The answer is: Bad stuff happens, but usually not all at once and not in a catastrophic manner.

Probably the first thing to go wrong is that the valve seat begins to get dirty. Carbon and lead build up and prevent the valve from closing tightly. That causes exhaust gas to travel around the edge of the valve before the valve starts to open and that means the metal gets too hot. Erosion damages the valve and seat. One reason for doing the compression test at every annual inspection is to detect this condition before the situation causes too much damage. If caught early, just lapping the valve and seat may correct the problem and restore compression.

The second most common problem is for the valve guide to wear beyond limits. Think about that for a second. If the valve guide is too tight, the valve will stick. If the valve guide is too loose, the valve will wobble. Neither situation is good. A worn out valve guide will allow exhaust gas to escape past the valve stem and find its way to the rocker box. Photo 6 shows what this condition looks like.

Photo 6: Exhaust coming up through the exhaust valve guide is cooking oil and making sludge. Finding this on an annual usually means it is time to overhaul the

(Continued on page 5)

(Continued from page 4)

cylinder. Lycoming specifies a valve "wobble check" every 400 hours to determine if the valve guides needs to be replaced.

When a valve guide wears enough, it then allows the valve to close just a little bit offset and not make a tight seal. In this circumstance, hot exhaust gas is blasting past the edge of the valve on every ignition sequence and the metal in the valve head is being toasted.

Photo 7 shows a perfectly OK exhaust valve in situ. This photo was taken with a 180 degree articulating borescope. The color of the valve shows that it gets hot – no news there! The round, bullseye shape of the colors shows that the valve is closing and sealing well. The shiny stuff in the center of the valve is lead. You may recall that lead scavenges and goes overboard at certain temperatures but it condenses and sticks to stuff at cooler temperatures.

Photo 7: Good exhaust valve in situ.

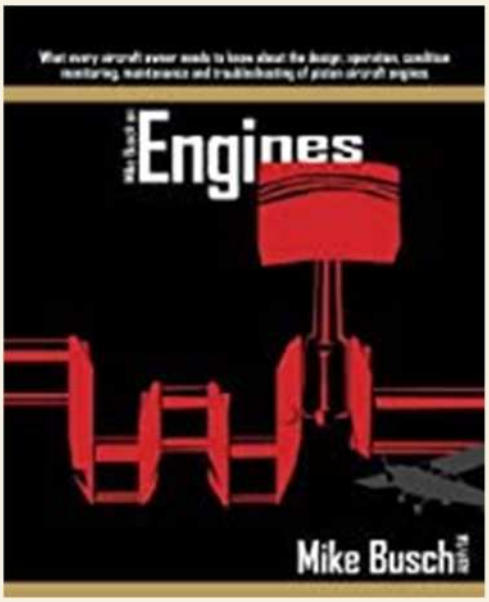
Photo 8 shows an exhaust valve that was removed from service. The valve guide was worn out and the valve was closing at a slight angle. One side of the valve was getting cooked. The coloration is not a bullseye. The greenish color screams that this valve was going to let go and make expensive scrap metal out of a cylinder very soon.

Photo 8: Badly damaged exhaust valve

How about one more valve malfunction? Photo 9 shows a valve that has "cupped out" over many hours operating time. As the valve face and the valve seat came together thousands upon thousands of times the valve face wore from a flat face to a curved face. The engine was probably running just fine as long as this valve and its respective seat were matched together. This valve has enough "meat" left on it to be re-faced. Most likely, the matching valve seat could be re-faced as well.

Photo 9: Cupped valve face.

Finally, let me make a strong recommendation. Get a copy of Mike Busch's book. ENGINES. A good friend gave me a copy and I read it with great interest. It is 50 years of engine smarts – yours for a couple long evenings of reading. Excellent. You may know of Mike from his columns in various aviation publications. This book is a compilation of hundreds of columns. You want to understand Lean of Peak operation? Read this. You want to understand how to interpret engine monitor graphs? Read this. How about oil analysis programs? You get the picture. Get the book. Amazon has it.



What does a Hatz, Pitts Special and Horse have in common?

By Andrea McGilvray

When I first started to fly the Hatz, it was an amazing handful and it even had me in tears with frustration/anger and it right out intimidated me. I have no idea what happened to my Hatz, but she has changed!!! Now she is the sweetest, kindest, and most gentle airplane. HUMM.. Since no one did any "work" to the airplane, there must have been some work done to the pilot.

I flew it today in a gusty 14-knot (16+-mph) windy day and it was as boring of a flight (besides bumpy) as could get. Not that exciting was what I was looking for. In fact, I was only doing a test flight/landings to see how my new tailwheel arm/assembly was going to work and if it was going to cause a shimmy or behave. AND it behaved.

So, What happened. AND I have honestly given this lots of thought and it still sooo surprises me how "different" this wonderful airplane is now. Here is my conclusion.

To have an airplane that you were/are struggling with, fly something faster, harder/more difficult and it will cause your abilities to become faster/heighten and your muscle memory to be quicker and more accurate. OK.. That is it! So now what!

So there is a story of life here, just in case you don't see/read it. DON'T STOP learning, because every time you learn something new, the next thing will be easier and the things you thought were hard were only your "thoughts" of it being hard, not realty.

Now I need to fly something faster, harder and more difficult than the Pitts and perhaps the Pitts will become a gentle boring airplane.. HUMM.. I wonder what type of airplane that would be? My "Lit'l Bit" is still full of you know P and V and her snaffle is not yet to be replaced with just a binder twine halter, but I also don't need a curb with a spade bit for her either.

The reason I compare this airplane to a horse's bridle is that it just is true. AND you would have to have worked with young and old, sweet and stubborn or challenging horses to know the differences. I have. The only difference between a horse and an airplane, is that the "brain" of the horse is attached to the horse, the "brain" of the airplane is the pilot, and the airplane does what the pilot asks it to do and the horse.. well at times it does what it wants to do and takes the rider with them.

Many times people say that the "Airplane" did xyz, well it does nothing without the input or lack of. Some airplanes just push that envelope to a max of being sensitive, but then again, they are the most fun to fly because they are reacting by your thoughts (almost).

I played a short game one morning. Took my hands off the stick and just say, LEFT, guess what, it started slowly turning left, then I said RIGHT, the same thing, Up and down and then I started to laugh so loud that we had to do a roll. How fun is that!

My need for playing in the sky is just that, it makes me want to live, and to play and be able to do anything that my imagination wants to do, must be done in an airplane that is safe to do it in.

The Pitts Special is just that, the best thing to play within the sky. with some training and don't forget the spin training. It is not hard, not scary, it just has a personality that you have to learn about and learn to be good with it. The fun factor is worth it!

So to wrap it up for today. I love my different airplanes. They all have their own special place. None are better than the other, just different. This is like us humans, we are all special, just different than others, that makes us unique! Let life and love life and everyone would be happier.

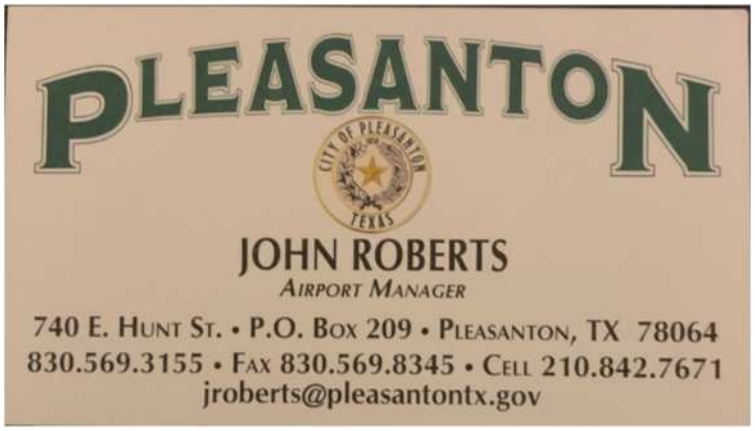
Next month, Ill will let you know of my adventures to KIER in the HATZ, it was a "Ladies Love Taildragger" flyin and 2 flyout.

AND if there is room, Ill give you a rundown on my 1st Pitts IAC competition blow/by blow report in the Sportsman category. It won't be long!

A GREAT RECEPTION AT PLEASANTON (KPEZ)

By Darren Medlin

Recently I landed at Pleasanton Municipal Airport for a pit stop. As I walked toward the small FBO building a gentleman in a bright pink polo shirt walked out to intercept me. As we got closer, he announced "I started your car for you and you're ready to go." After I stuttered a non-response, he introduced himself as John Roberts, the airport manager.



[John Roberts, Pleasanton Airport Manager]

By that point I could read the name badge sewn on his shirt. He'd heard me on the radio as I landed and had fired up one of the available crew cars for me to take into town. You could have knocked me over with a feather. I've heard of friendly service, but this was enough to put a smile on my face the rest of the day. He showed me the vehicle sign-out log just inside the door and the hooks for returning the keys.

[Key Hooks]

I know some of our members are breakfast regulars at Pleasanton (I'm looking at you Danny B. :-) but for those of us that don't go there often the town's airport rolls out the red carpet with two courtesy cars and an FBO building that was being spruced up while I was there. John said to call ahead (see his business card) if you want to make sure a car is there, and he'll take care of you. Their repurposed city vehicles even have an airport logo on the side, how cool is that!

John told me the city has secured a "90/10" contract with TxDOT to improve the runway. I learned this meant TxDOT is paying 90%, and the city is paying 10% to have the runway resealed and new stripes painted. The city has also applied for a TxDOT administered Routine Airport Maintenance Program (RAMP) grant for additional improvements to the parking areas. There is a new fire station with a helicopter ambulance on the field and the FBO building is being repainted inside and out. Look out for NOTAM announcing the runway work at KPEZ.

[One of Two Courtesy Cars]

If you've not been to Pleasanton in a while stop in and say hi to John. He's friendly, enthusiastic and the kind of airport manager I'd like to see everywhere I fly. More details at http://www.pleasantontx.gov/visitors/municipal_airport.php

If you have a good visit flying somewhere pull out your cellphone and take a couple of pictures. When you get home add a paragraph or two for your newsletter and send it to

Andrea at

[Wall Art]

EAA35news@gmail.com. It's fun to read about other people's experiences.

SOUTHWEST HIGHSCHOOL

By Andrea McGilvray

The children at Southwest High School are amazing. I had the privilege of bending all their ears for 2 separate classes. This opportunity that has been provided them all, is amazing and the classes are very well attended. They will look back one day and say, "wow" we were very lucky. I talked about the word "Lucky" and I told them that luck is when "Preparation meets an Opportunity." They all listened intently as I discussed the adventures of my flying and aerobatic experiences. The good part is that one of the young ladies that was having a hard time keeping her eyes open before class started was wide awake at the end. So, that says something. The % of women/men was consistent with the country's normal. I told the class that is what to expect and not to get discouraged and help each other. BUT I also told the young ladies that they will do extremely well since women, in general, are more gentle and are able to fly smoother. I had one young man Sterling that stayed after class and wanted to talk with me about going flying. So that is promising. He loves B17 and all those airplanes of that vintage. He wants to be a technician/ mechanic but also wants to fly. I look forward to meeting up with him and giving him the Hatz Smile!

I feel very fortunate that perhaps something I said will make a difference. Tim Carter also came and is now going to volunteer and help with the project. Jane, Darren, Frank, and Ron are very dedicated and the children sure are all respectful. Well done !!!

—SEE MORE AT https://www.facebook.com/eaa35/ AND ON E-VERSION PAGE 22












Runway 35 — The Official Newsletter of EAA Chapter 35—San Antonio, Texas

– **SEE MORE AT** https://www.facebook.com/eaa35/ **AND ON** E-VERSION PAGE

October 2019, Stinson Girls Aviation

Runway 35 — The Official Newsletter of EAA Chapter 35—San Antonio, Texas

EAA 35 Safety Brief

From Ron O'Dea

Be Prepared

by Joe Shelton

Angel Flight West believes that we should share what we learn about our missions and the airports we visit so that we can learn from each other. So, with that in mind...

A couple of years ago I was flying a young man to Quincy, CA (2O1), an airport located near his home in the mountains of Northern California. Quincy has no weather reporting, no instrument approach, and is located deep in a narrow valley. The weather was nice, mostly VMC, but, as is often the case, there were afternoon clouds over the Sierras

My passenger and I had discussed the possibility that because of the clouds if we couldn't reach our planned destination we would have to land somewhere else. We agreed that Chico would be a good alternate. It would take a couple of hours for his ride to reach him if we had to divert.

The flight was comfortable and the broken layer of clouds was high enough that it seemed that we could reach our destination safety. I was on an IFR flight plan and on top, but found a hole through which I could see the "main" and only road to the town. I cancelled IFR and comfortably descend below the broken ceiling. So far, so good. Using a combination of GPS and a Sectional, I followed the road up a rising valley to the airport. As is often the case in the mountains there were strong winds and significant turbulence.

At this point, the trap was sprung. The valley was so narrow and the turbulence strong enough that maneuvering was a challenge. To add to the challenge, the airport is at 3415 feet MSL and, beginning across the road from the airport is a mountain that tops at almost 7,000 feet just a little over 4 miles from the airport. I overflew the airport and the windsock was sticking straight out, 90 degrees to the runway. My first thought was to go back to Chico, but I watched a high wing Cessna land. I talked to the pilot and he said that the winds on the ground weren't as bad as they seemed. With close to 2,500 hours in the low wing Comanche I owned then and the fact that I often fly into an airport with similar winds and turbulence I decided I could safely land as well. It might be interesting to note that one of the two times I have chosen not to land at an airport because of winds was at that other airport. I was IFR and decided that the winds were too strong and, even as a high wing Cessna landed, I negotiated a clearance back to my home airport. The other time was landing at another airport and at 50 feet I decided the winds were too strong and departed for another airport to refuel.

So I maneuvered to the downwind side of the valley an initiated a turn into what was then a headwind thus decreasing the size of the turning radius. I flew a long stable final approach but I was spring loaded for a go around and departure to Chico. The landing was smooth with a slight weathervaning from a gust as I touched down. But it was pretty much a non-event.

While waiting for my passenger's ride to arrive it was obvious that the winds were increasing. When he was safety on his way home, I planned my departure. The winds now favored taking off toward the west and rising terrain. But that was opposite to the direction that I needed to go to get out of the mountains and opposite the recommended take-off runway because of the rising terrain. The broken stratus clouds had solidified somewhat meaning that I was undoubtedly going to have to remain below them until reaching clear skies. Of course, if the situation warranted, I was prepared to climb through them to safety on top. I had the frequency for the center controller dialed in and was prepared for that possibility.

Even with the winds, I wasn't as concerned with the take-off nor the rising terrain as I was determining how I was going to reverse course to follow the valley and the road back to lower terrain. The plan was to once again parallel the downwind side of the valley using take-off flaps and about 10 knots faster than Vx to allow for the turbulence. I planned to again make a minimum radius turn back toward the east and into the winds. The take-off was fine, but the turbulence was worse making a low speed turn more risky. Here's a hint that I recently heard from Barry Schiff: trust your gut! On that day, my gut said don't turn. So I continued straight ahead aiming for a narrow pass in the mountain ridge ahead. Climbing at best angle of climb speed, the headwinds gave me adequate time to climb safely through the pass. Once on the other side, I circled to gain altitude and when I had sufficient altitude I reversed course and began following the road out of the mountains. Other than a breathtaking view, the remainder of the flight was straightforward.

Here's what I learned on this mission. First and foremost, be very cautious when flying into an environment where there is no weather reporting. If I'd known the winds, I would have initially gone straight to my alternate. Second, don't feel you have to complete the mission at the original destination. Rather than attempting to land with strong crosswinds, I could have elected to fly to Chico and that would have been a solid decision that nobody could question. Third, have a plan for each stage of your flight and continue to evolve it as changing conditions warrant. Finally, trust your gut. Many times over the years I've had this little feeling in my gut that warns me of impending risk. If you ever have that feeling, trust it and go for the safe response.

Read more at https://www.angelflightwest.org/pilot-page/a-culture-of-professionalism/safety-articles/be-prepared/#LHsI7sPVcuhkx6Yb.99

Country Store

BRIAN GOODE

This could be my last input to the newsletter as manager of the Country Store. Rick Vinas has agreed to take over the reigns next month. It has been great working with the membership in providing some classy Ch 35 logo merchandise, since 2013. With your purchases, the Country Store has provided a significant amount of revenue to your Chapter.

On the road again,
Brian & June

The shirt is 100% ring-spun combed cotton pique. Solid dark blue back.

The 36" long X 34" wide apron is made of stain resistant material. It has 2 pockets on the front and a thermometer/pencil pocket on the bib and an adjustable neck strap.

TEXAS FLAG POLO SHIRTS	Sold Out - Can be ordered	$39.00
TEXAS FLAG FISHING SHIRT	One Medium- Men's	$46.00
YELLOW POLO SHIRTS	One Small	$31.00
	One Medium	
YELLOW FISHING SHIRT	ONE Small Men's	$40.00
KHAKI FISHING SHIRTS	ONE MEDIUM	
	ONE LARGE	
TEXAS FLAG APRONS	3 left	$26.00
Additional Items available		
BASEBALL CAPS (with logo)	SIX NEW ONES	$12.00
CHAPTER 35 DUFFLE BAGS	Only 2 left	$31.00
COFFEE MUGS	EIGHT	$7.00
REMOVE BEFORE FLIGHT KEY TAGS	Plenty	$5.00
KOOZIES	Plenty	$4.00
BUMBER STICKERS, DECALS AND PATCHES	Lots of them	$1.00 - $3.00
ALUMINUM WHEEL CHOCKS	3 Double sets	$40.00
WASH WAX PRODUCTS	Limited supply	$8.00 & up

OCTOBER MYSTERY PLANE REVEALED

DOUG APSEY

It did not take long for Charlie Brame, Ira Wagner and David Baker to correctly identify our October mystery airplane as the YFM-1 "Airacuda" built by Bell Aircraft Corporation.

The prototype Airacuda first flew on 1 September, 1937. In all, Bell built thirteen YFM-1's, one prototype and 12 production aircraft. The streamlined design was a radical departure from other military aircraft of the era with its pusher propellers and compartments for two of the gunners in the forward section of the engine nacelles. Although designated as a fighter, the Airacuda was rather large with a wingspan of 69 ft, 10 in. and a fuselage length of 44 ft. 10 in. Empty weight was 13,376 lbs while gross weight was 17,333 lbs. Three different versions of the Airacuda were built, including three with tricycle landing gear. The majority were powered by twin Allison V-1710-23 engines that developed 1,150 hp. each. Maximum speed was 277 mph and normal cruise was 244 mph.

Bells' concept for the Airacuda was to develop a long range flying anti-aircraft platform or "bomber destroyer." It was intended to intercept and destroy enemy bombers that were beyond the range of single seat fighter interceptors. Its primary armament faced forward and consisted of two 37 mm cannon and two 30 caliber Browning machine guns mounted in the forward compartment of each engine nacelle. The crew consisted of a pilot, co-pilot, a radio man and two gunners. While the crew members in the nacelles could aim the 37 mm cannon, their main job was to load the cannon. The cannon were controlled by a fire control system operated by the copilot, who also served as the navigator and fire control officer. It also carried two 50 caliber Browning machine guns in side blisters for defense against enemy fighters attacking from the side or behind. These were manned by the radio operator. The airplane could also carry twenty 30 lb. fragmentation bombs.

Unfortunately, the Airacuda had many flaws and shortcomings that resulted in its short operational history. The design proved too heavy and slow to really be effective. It was slower than most of the bombers that it was meant to intercept and lacked the maneuverability required for a true fighter aircraft. The 37 mm cannon also proved ineffective due to their low muzzle velocity and limited range. One major design flaw was the inability of the gunners in the nacelles to bail out while the props were spinning. The initial plan was to feather the propellers prior to bailout which would at least improve their chances of surviving. A subsequent solution to this problem was to use explosive charges to jettison the propellers but it is unclear whether this modification was ever added to the operational aircraft. It was also reported that the nacelles would fill with smoke when the 37 mm cannon were fired. Engine problems, especially cooling issues, also plagued the design. This was so serious that the airplane was often towed to and from the runway with the engines shut down. The test pilots also quickly discovered that the airplane would almost immediately go into a spin when operated on one engine. It was also quite unstable in pitch when under power.

Despite all of its shortcomings, one Airacuda squadron was established and was operational from 1938 to 1940. Two aircraft were lost to accidents during this time and by 1940 the airplane had developed a reputation as a real "hangar queen" due to the persistent mechanical issues and inherent design flaws. ... *(Continued on page 15)*

NAME THE PLANE

DOUG APSEY

November Mystery Airplane

Chapter 35 member David Baker sent me a web site with a long list of unique vintage aircraft from around the world. Our November mystery airplane is from that list – thank you David!

Who will be the first to email me at dapsey@satx.rr.com with the following information about this month's mystery airplane?

1. What was its designation/name?
2. Who designed and built it?
3. What year did it first fly?
4. How many were built?
5. What was the primary purpose of the design?

CLUBHOUSE NEWS:

Welcome New EAA35 Members

Please welcome:

Aiden Allen

Aiden is a student from San Antonio who has joined EAA National, wants to become a pilot, so has joined EAA Chapter 35.

Jack and Jen Dial

Jack and Jen are from San Antonio where Jack is retired Air Med pilot and is a past Manager of the Air Force Flying club. Additionally he is the owner of a Mooney M20B and is an ATP/Commercial Pilot with helicopter and Seaplane ratings. You may contact Jack at: m20bdriver@mail.com

David and Jessica Granc

David and Jessica are from San Antonio where David is a Project Manager for VT SAA. He has joined Chapter 35 to meet other like minded aviation folks and to learn more about building aircraft. You may contact David at: davmonkey@yahoo.com

Darin and Tracy Hoover

Darin and Tracy live in San Antonio where he is serving with the USA. F. He also has done research on Simulators and Aircraft Training Technologies. He flew as a researcher in an I-29 Delphin while in college. You may contact Darin at: darin.hoover88@gmail.com

Justin and Kristen Marshall

Justin and Kristen live in San Antonio where he is an Airline Pilot flying CRJ 200/700/and 900 aircraft. He holds ATP/Commercial ratings and is a CFI/CFII/and Ground School Instructor. You may contact Justin at: justinclay@hotmail.com

Michael and Heather McCoy

Michael and Heather live in Fair Oaks where Michael is retired from the Air Force and is now a pilot for Delta Airlines. He was a check airman for F-16's and now flys an RV-8, 767-400 and AT-6 aircraft. Michael also hold ATP/Commercial, CFI, CFII, Ground Instructor, and Light Sport Repairman ratings. You may contact Michael at: bonesF16@att.net

Semmie and Jennifer Rush

Semmie and Jennifer live in San Antonio. He is a student pilot who enjoys flying drones and airplanes when he can. You may contact Semmie at: Semmie.rush@gmail.com

Mark and Rassel Anderson

Mark and Rassel live in Castle Hills. Mark is a Private Pilot and a Software Engineer. He hopes to build and fly a Zenair 750HD. You may contact Mark at: mark@markfsanderson.net

Danny and Elayne McCormick

Danny and Elayne are retired in San Antonio. He owns a Mooney M20 and is building a VP1 which is almost finished. He is one of the founding members of EAA Chapter 35 who has recently re-joined the Chapter. You may contact Danny at: d.mccormick468@gmail.com

Young Eagles!

Fellow Volunteers,

We are planning two large Young Eagles Rally's.
The first is in less than 2 weeks on November at Kelly Airfield

This event will be a first for us. The Port of San Antonio will be having a Youth Aviation Expo at Kelly Field on November 16th. Chapter 35 will conduct a Young Eagles Rally during the Expo.

To plan these for these LARGE events properly, I need a list of ground and pilot volunteers IN ADVANCE. Please email pvaneau@gmail.com to sign up.

THANK FOR VOLUNTEERING

Thank you for your support and in helping our chapter make a difference in the local community by exposing youth to Aviation.

Thank you Tim Carter for taking on the Grounds Keeping! *Lawnlower off with you..—Pun intended!* PLEASE let him know when needs to come since he does not live near the airfield. CALL HIM: ! **210-289-1780**

OCTOBER MYSTERY PLANE

(Continued from page 14)

By March of 1942, the remaining airplanes were scrapped.

Sources for this article include:

https://en.wikipedia.org/wiki/Bell_YFM-1_Airacuda
https://www.militaryfactory.com/aircraft/detail.asp?aircraft_id=662

www.fiddlersgreen.net

CLASSIFIED ADVERTISMENTS

If you are interested in having your own compact tractor, or know somebody who might, the Branson tractor that has served San Geronimo Airpark for the past 15 years is now FOR SALE.

2004 BRANSON 2810

For Sale Price: USD $8,500

More info: https://www.tractorhouse.com/listings/farm-equipment/for-sale/list/?pcid=4034121&dlr=1&crmid=17859618&if=1

DON'T forget to bring your items for the Fly-Mart at our Meeting in November!!

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*

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

NOVEMBER	9	**ANNUAL CHILI COOKOFF** **EAA Chapter 35 Fly-mart** **Annual Membership Meeting and Election of Officers**	**EAA Chapter 35 Clubhouse** **10:00 – 11:30 am** **11:30 am** **Immediately following the meeting**
NOVEMBER 	**16**	**1st Kelly Airfield Fly-in** **and Young Eagles Event**	**Kelly Airfield (KSKF)** **Volunteers and Pilots needed**
DECEMBER 	14	**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 EVENTS

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

November 2, 99's 90TH Birthday Celebration! 9 AM – 1 pm
Burnet TX (KBMQ)
The Austin Chapter of Ninety-Nines would like to invite us to our 90th birthday celebration of the 99s on Saturday, November 2, 2019, at the Commemorative Air Force (CAF) Hangar at KBMQ. SEND a email to: flyingqalpacaranch@yahoo.com if you want to go! JUST so they have enough food!

November 9, Fall Wings & Wheels Fly-In!
190 Pershing Ln, Kingsbury, TX 78638
Old Kingsbury Aerodrome Airport (85TE)
North side of runway is a little bit rough, but otherwise good grass. 9:00 AM - 03:00 PM

November 15, VMC Club, EAA35 Clubhouse
Subject: Getting smoke in the cockpit in-flight. We will also discuss emergency checklists and procedures, and end up with an open discussion so you may share some of your recent experiences and discoveries as a pilot. . . 06:00 PM - 07:00 PM

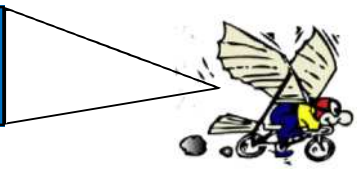
THIS IS A BIG 1st EVER Young Eagles at Kelly EVENT!!! All the help that is possible, please come!

November 16
1st Kelly Airfield Fly-in and Young Eagles Event
Starting 9 am till ....., General Public Flying 9 am till ...
Military Static display,
Kelly Airfield (KSKF—Delta Airspace)

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*

Board of Directors

Past Presidents		**At Large**	
Nelson Amen (2012-2014)		Chuck Fisher	
210-834-1991	*nelson.p.amen@gmail.com*	*210-878-5561*	*eaa35news@gmail.com*
Dave Baker (2010-2012)		Brian Goode	
210-410-9235	*iflyaerosport@sbcglobal.net*	*727-709-1159*	*ladybgoode@msn.com*
Andrea McGilvray, Director		Ron O'Dea	
210-413-7392	*cowgirlcapital@att.net*	*210-488-5088*	*r2av8r@gmail.com*

Chairpersons

Facilities:	Freda Jones	**Newsletter Publisher:**	**Chuck Fisher**
(210) 570-9435	*eaa35facility@gmail.com*	*210-878-5561*	*eaa35news@gmail.com*
Air Academy:	Maarten Versteeg	**Newsletter Editor:**	**Andrea McGilvray**
210-256-8972	*maarten.Versteeg@sbcglobal.net*	*210-413-7392*	*eaa35news@gmail.com*
Board Advisor:		**Builders Academy:**	Lew Mason
		210-688-9072	*lewnan@sbcglobal.net*
Young Eagles:	Philip Vaneau	**Aircraft Builders:**	
210-887-3135	*pvaneau@gmail.com*		
Tool Crib:	Lew Mason	**EAA Hangar:**	Lew Mason
210-688-9072	*lewnan@sbcglobal.net*	*210-688-9072*	*lewnan@sbcglobal.net*
Public Affairs:	Jose Garcia	**Membership:**	Ron O'Dea
	eaa35pr@gmail.com	*210-488-5088*	*r2av8r@gmail.com*
Website:	Jose Garcia	**Country Store:**	Brian Goode
	eaa35pr@gmail.com	*727-709-1159*	*ladybgoode@msn.com*
Safety Officer:	Ron O'Dea		June Goode
210-488-5088	*r2av8r@gmail.com*	*727-439-1159*	*junegoode@msn.com*

Flight Advisors

RB 'Doc' Hecker		Mark Julicher	
210-391-1072	*tcflyingdoc@yahoo.com*	*210-382-0840*	*mjulicher@earthlink.net*
Ron O'Dea			
210-488-5088	*r2av8r@gmail.com*		

Technical Counselors

RB 'Doc' Hecker		Mark Julicher	
210-391-1072	*tcflyingdoc@yahoo.com*	*210-382-0840*	*mjulicher@earthlink.net*
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

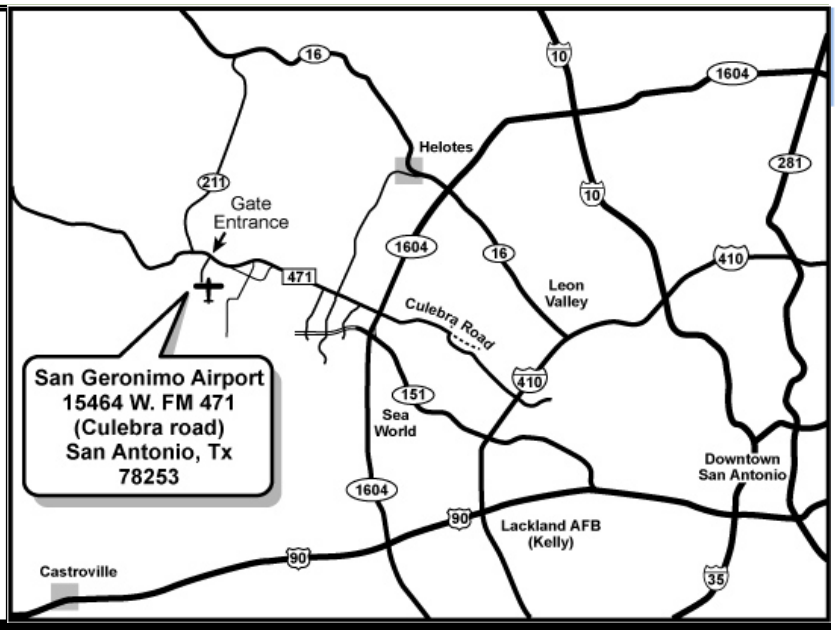
SEPTEMBER 14

LUNCH MEETING

EAA Chapter 35 Clubhouse

Lunch 11:30 am

Meeting/Program 12:30 pm



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

Paste Address Label Here

ALL You Need to Keep it Looking New!

Water-Based, Non-Corrosive, Alcohol & Ammonia Free. Meets Boeing Aircraft Spec. D6-17487P & D6-7127M

Wash Wax *ALL*
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®

Sold By:

THE EAA CHAPTER 35 COUNTRY STORE