EAA THE SPIRIT OF AVIATION

RUNWAY 35

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Clubhouse

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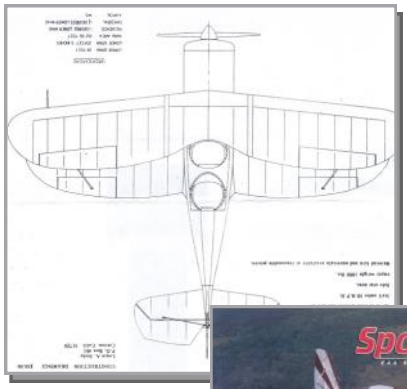
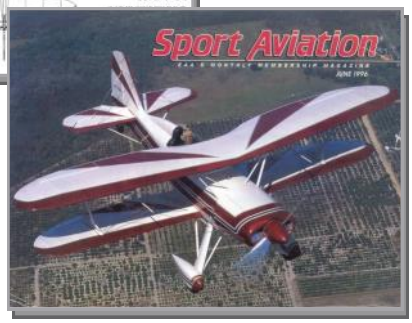
THE STARDUSTER ON MY BUCKET LIST

Jim Humphries

Dreams die hard, and sometimes long. And then there are a few dreams that never die. Such was acquisition of an Experimental category, home-built, sport biplane, the Starduster Too, designed in the nineteen fifties by Lou Stolp at Flabob Airport Riverside, California. This beauty wouldn't get out of my mind, and ultimately made it on to my "Bucket List." The term obviously comes from "kicking the bucket," a comical euphemism for dying. Jimmy Durante demonstrated doing this in the farsical movie, "It's a Mad, Mad, Mad,Mad World." A more inclusive definition is "A number of experiences or achievements that a person hopes to have or accomplish during their lifetime."





I fell in love with this elegant little sport plane in the mid sixties while I was a student in the Air Force Test Pilot School, an entry program for test pilot and astronaut assignments. Needless to say, that school demanded all the time that a line pilot had, and there was none left over for building a years-long project like a home-built Starduster. But I could dream, couldn't I? And one day I made a quick trip to visit Lou Stolp to learn how to build a Starduster.

We drove down to Riverside from Edwards Air Force Base, my wife, Marsha, and my student test pilot classmate, Captain Al Hale. Riverside and its Flabob Airport lay in depression that filled with smog. Arriving at the airport, we located Lou Stolp's hangar and found the designer himself. Lou showed us the Starduster in his hangar, bare-boned without its fabric. I was fascinated. The fuselage was built of welded steel tubing, fleshed-out with wooden cross-sections and longerons to give it it's elegant shape. The wings were most beautiful. The upper one had a 6 1/2 degree sweep rearward, and a semi-ellipical planform reminiscent of a honey bee's wing. The lower wing was straight, but also had the elliptical form. The sweep of the upper wing, combined with a generous cutout above the front cockpit made getting in and out of the front seat

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PREFLIGHT

PREPARING GIRLS TO TAKEOFF

JANUARY PROGRAM

PreFlight Aviation Camp

PreFlight is a nonprofit, five-day aviation camp for preteen girls, ages 11-14, held at Texas State University in San Marcos, Texas

PRESIDENTS COCKPIT

Steve Jones

Automatic Dependent Surveillance – Broadcast. On January 1st, 2020 the mandate to equip our aircraft with 'ADS-B Out' will be fully realized. In short, if you now require a transponder to operate in a class or region of the national airspace system, after December 31st, 2019 you'll require a transponder and ADS-B Out to continue flight operations. Several companies are bringing innovative solutions to market to make this relatively inexpensive and easy. Uavionix, the makers of the Echo UAT and FlySky hardware recently presented by Charlie Brame, are now shipping a novel solution, the SkyBeacon. (http://www.uavionix.com/products/skybeacon/) For $1499 it replaces your pilot-side navigation light and provides navigation lighting and ADS-B Out services. Currently available for Experimental aircraft, look for a multi-aircraft supplemental type certificate in the near future. Note that the Echo UAT provides ADS-B In and Out. The SlyBeacon provides only ADS-B Out.

Holiday Banquet. Fifty members and guests gathered to celebrate the season, enjoy a fine meal, and trade gifts in a spirited exchange. Master Pilot and UFO Jim Humphries led us in an inspired invocation, then your Facility team and volunteers served a meal that took us to new heights. It was phenomenal. We tried something different this year in a bid to help our volunteer chefs recoup their costs and to get a better handle on what it truly takes to prepare such a fine meal. It didn't quite work as I'd hoped – I'll have more information about that elsewhere in the newsletter. We did learn something from this, and it's a testament to the skillful shopping and expert preparation by Freda's team: When all was tallied, Freda Jones and her volunteers spent $479.15 to present a meal for fifty people. That's within 4.4% of the target price of $10.00 per person. If our government could budget and execute like that…well, I need to stop dreaming now. When it came to the white elephant gift exchange, many agreed that we did a fine job of streamlining the process with a simple set of rules. So much so, that Dr. Chuck Fisher offered a glimpse of Christmas Future – a new set of White Elephant Rules of Engagement sure to spark lively debate, flying wrapping paper, and…well, I can't wait. You won't want to miss this!

A Visit by Lancair! Vice President Darren Medlin is coordinating with Lancair to visit us at the February meeting to tell us about their new ownership, their new location in Uvalde Texas, and their new aircraft, the Mako. If weather permits, they plan to fly in to San Geronimo to show off this outstanding new plane.

Movie Night. Outside it was cold and drizzly. Inside it was toasty and full of banter as twelve Chapter 35 members braved the elements to watch several aviation vignettes. Ron O'Dea provided the movies, Darren Medlin and Lew Mason brought the popcorn, June Goode brought a vegetable tray and Freda Jones laid out cheese and crackers, cookies, grapes, tea and coffee for the guests. Darren and his crack team of technologists solved the audio troubles from last month, and we all enjoyed one another's company and some moving pictures. Join us next month for another video adventure! Winter schedule: The Friday following the general membership meeting, 6PM at the chapter clubhouse. That will be January 19th. See you there!

Get Involved. It's here. That New Year is upon us. We're entering our 61st year as an outstanding chapter of the Experimental Aircraft Association. Now let's keep that resolution! This year, stand up and be counted. Your talents are needed! With over 100 members, we have a vast trove of knowledge, experience and skill to share with one another and with our local community. We also have long-standing volunteers who would like to pass the mantle of responsibility to the next generation. Come find us at the next meeting, or wandering the hangars, drop an e-mail or pick up the phone. Let us know where you would like to contribute to this outstanding chapter.

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

Holiday Meal Special Statement. When we started this journey, Darren Medlin and I were charged with infusing a little excitement into Chapter 35. We were encouraged to try new things and shake things up a bit. We experimented. Some things worked, some things didn't. I did this again for the Holiday Banquet, encouraging your Facility Manager to:

* Better control the menu so all members knew ahead of time what would be served. This differs a little from a regular meeting meal which is more ad hoc – pot luck. The pot lucks are fun, however I felt the meal tenor needed to be different for the holiday meal.
* Recognize that this is a banquet and that our volunteers would be cooking more. Their out-of-pocket expenses would be higher. Offer to reimburse our fantastic volunteers for their meal-related expenses. Request receipts or cost estimates for later analysis.
* Ask all to pay for their meal, including our volunteers.
* Analyze the meal cost versus revenue to ensure we were able to deliver the banquet within budget and verify we weren't killing ourselves to manage costs when a caterer could deliver equivalent value.

It was a brilliant plan, with enough good intentions to pave a path to Hades. Here's what happened: Our volunteers answered the call, but many declined reimbursement. To reward their generosity, we asked them to pay for their meal anyway. *This unintended and regrettable* .

We learned from this experiment.

We now have a better handle on the actual cost of the holiday meal. (spoiler alert, it was another phenomenal meal delivered under budget)

We validated once again, our volunteers are awesome.

We confirmed no caterer in their right mind could compete with this!

What we'll do going forward: We will offer our meal volunteers direct reimbursement or a complimentary meal ticket – their choice. Thank you everyone for making this an awesome meal.

CHAPTER BULLETIN BOARD

January Menu

Main Course: Pulled Pork Sandwiches. We discovered something during the Holiday Banquet – slow roasted pork loin is so succulent and juicy, so full of flavor, and it just falls apart it's so tender. Hmmm, how does 'the best pulled pork sandwich this side of I-35' sound to you?

Side Dishes: potato salad, cole slaw, baked beans,

Condiments: dill pickle slices, sliced onion, sliced jalapenos, mayonnaise and mustard

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

To drink: water, soda, iced tea, lemonade and coffee.

I would like to express my gratitude and give humble thanks to the many volunteers who made the Holiday Banquet so special. I could not have done this without you. We're a great team! We tried something different and caught some of our volunteers off guard. Please see the President's Holiday Meal Special Statement elsewhere in the newsletter.

Chefs

- ◊ Roxanne and Danny Beavers – Northern Style Dressing and Steamed Vegetables
- ◊ Freda Jones – Southern Style Dressing, Cookies, Pork Tenderloin and Roast Beef
- ◊ Dee Brame – Green Bean Casserole
- ◊ Darren and Susan Medlin – Potato Casserole
- ◊ Steve Sheppard – Shrimp Cocktail
- ◊ Gail Scheidt – Fruit Cocktail Salad
- ◊ Lew and Nancy Mason – Mashed Potatoes
- ◊ June Goode – Mac and Cheese and Onion Dip
- ◊ Chuck and Peggy Fisher – Green Bean Casserole
- ◊ Jeanette Hunt – Sweet Potatoes
- ◊ Lynn Morgan – Sweet Potatoes
- ◊ Jim Humphries – Deviled eggs
- ◊ Frank and Beth Piez – Chocolate Cake
- ◊ Marie Claire Gaudin - Cake
- ◊ Andrea McGilvray – Peach Cobbler and Goat Cheese Salad
- ◊ Ulf Balldin – TWO Pies
- ◊ Jim and Mary Ann Schlattman – THREE Cakes.
- ◊ B.J. O'Dea – Grand's Biscuits

Shoppers

- ◊ Chuck and Peggy Fisher – Pork tenderloin

Servers

- ◊ Roxanne Beavers
- ◊ Peggy Fisher
- ◊ Mary Ann Schlattman
- ◊ June Goode

Disbursements

- ◊ B.J. O'Dea

These are the people who banded together to deliver an outstanding holiday meal for only $10.00 per person. They are rock stars!

Hangar Space Available

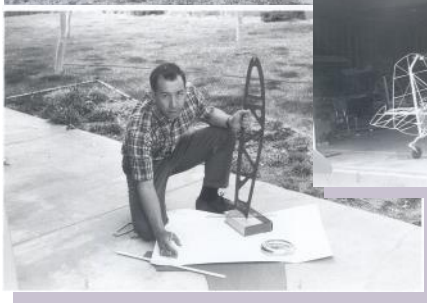
Building a Project? Assembling a kit?

Chapter 35 has a First-Class building space will soon be available for a nominal fee. You are not likely to find a fully equipped wide access hangar anywhere in the San Antonio area. First to contact Lew Mason at *210-688-9072* *lewnan@sbcglobal.net* gets it—hurry!

STARDUSTER CONTINUED

(Continued from page 1)

much easier. I admired Lou's artistic design touch even in the tail surface profiles. His curves outlining the vertical tail and the horizontal stabilizer were intersecting arcs, giving a distinct, recognizable profile that was a characteristic of Mr. Stolp's designs.



The pilot flew the airplane from the rear cockpit, and the passenger would be up front. Each had a windshield. The airplane was designed as a tail-dragger, meaning that it had two main wheels ahead of the lower wing, and a tail wheel beneath the rudder. That was characteristic of biplanes through the years. And why wouldn't this iconic, but modern, descendant be so designed? There's to this day a certain macho effect associated with tail-dragger airplanes. Tail-draggers have a notorious tendency to swap ends during the roll-out from an otherwise good landing. That's because the center of gravity is behind the main wheels, and the tail wants to pass in front as it settles to the runway. Agile foot work keeps this from occurring, but every tail wheel pilot is ever-watchful on every landing so that this embarrassing and often damaging occurrence doesn't happen.

Before leaving Lou, I discussed building one myself. He showed me portions of the plane that he had available as kits. He could provide a welded-up fuselage that would help me immensely. There was a kit for the landing gear assembly ready for the main wheels. That would make the construction so much easier and better. In my euphoria, I remarked, "I'd just have to slap-on the wheels.!" That irked the designer, who replied, "You don't slap-on the wheels!" "Yes, sir!" I'm still embarrassed by that gaff. Nonetheless, I bought a set of plans for fifty dollars, and headed back to Edwards to start building our Starduster. Being a woodworker hobbist with a rudimentary wood workshop, I set about making Masonite patterns for the wing ribs from Lou's full-size plans. The elegance of the elliptical design meant many different wing ribs, with few being identical. I went right to work sawing them out.

All of that was fifty years ago. I had made most of the wing rib patterns and patterns for the wing trailing edges and some of the iron fittings, but I had to face reality. If I wanted to graduate from Test Pilot School, I had to acknowledge that there was little or no time for building an airplane. So, reluctantly, I rolled up the plans and put them back in the tube they came in. I packaged-up the hardboard wing patterns, and put the whole idea behind me. And there it languished for half a century.

Lou's Starduster became more and more popular. Several issues of Sport Aviation, the magazine of The Experimental Aircraft Association (EAA) featured Stardusters on the cover. Each of these glamorous biplanes rekindled my desire to own one. Thirty years separated those magazine covers, but there was no Starduster in a hangar for us.

I finished my Air Force flying career in 1979, and took a full-time job as a production and experimental, engineering test pilot at Swearingen Aircraft, later re- named Fairchild Aircraft in San Antonio, Texas. The flying was good but the years were rushing by, and, though most of my life's goals had been completed, one item remained at the top of my bucket list - a Starduster.

That last job brought an end to my active flying career. There wasn't a lot of spare cash each month for recreational flying, so gradually I let my medical certificate expire, and pretty much hung up my spurs. There were other pursuits that interested me, and I stayed busy, frequently designing and building wooden toys. I even wrote books about constructing these projects, many of which were classic airplanes like the Gee Bee racers from the 1930's.

Then one day, the memory of the Starduster came on strong, and I set about designing and building a solid model of it as a gift to our son, John, who had also added a Starduster to his own list. The red- and white feathered paint scheme on a real Starduster inspired the model's livery.

John grew up in an air-minded military family, being around airplanes and pilots all his young life, and into a career as an Air Force flight test engineer. John retired from the Air Force as a lieutenant colonel ten years ago, and continued flying in civilian life.

About the time I built the Starduster model for him, we agreed that we should actively search for a real Starduster to buy, and both of us could fly it. The price was coming down into the thirties, and there were some thousand or so out there. We suspected that we'd find a few Stardusters at the huge EAA Air Venture event at Osh-

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STARDUSTER CONTINUED

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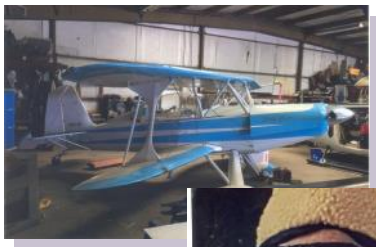
kosh, Wisconsin, and made plans to attend in 2008. Sure enough, a father/son team brought in a beautiful pair of identical, blue Stardusters.



John and I let them know of our long and strong interest in owning one. Graciously, they let us climb into the cockpits and have photos taken while we dreamed of flying one of our own.

After that, the trail went dead, and no more Stardusters appeared. We all had pretty much decided that there would be no Starduster in our futures. More years elapsed, while John and I kept flying one way or another. John qualified as a Certified Flight Instructor (CFI), and In 2016, I was invited to qualify as a UFO pilot (a joke really, in name only). I learned that UFO also stood for United Flying Octogenarians - pilots over eighty. Russ Luigs offered to let me fly his CubCrafters Sport Cub with a flight instructor to qualify to fly Light Sport category airplanes. It required a serious FAA checkout, which I made with Les Bourne.

Then on April 19th, 2017a cell phone text message came from John. "Look what I found! A Starduster Too!" Sure enough, he had discovered a pretty Starduster Too way in the back of a large hangar at Sumter Airport forty miles from John's new home in Elgin.

You can imagine the excitement John 's out-of-the-blue email caused in our household. Text messages began to flow back and forth between John and us. Ed Matter had maintained the airplane for the previous owner, retired Air Force pilot, Colonel Roland "Rich" Richardson, who I'm told, has more flying time in the F-101 Voodoo reconnaissance jet than anyone else anywhere. He flew the Starduster for years after buying it from the actual builder, Mr. Ken Ware. The airplane's N-number is N311JK, indicating that it was the three hundred eleventh Starduster Too built. Ken named the airplane in honor of his wife, Jane, and painted the name on the sides of the cowling. A medical infirmity forced him to give up flying, and the airplane was never flown again. Rich respected his mechanic, Mr. Matter, so much that two years ago he gave the Starduster to him as a gift. The colonel requested payment of a dollar, which made the airplane legally belong to Ed. Ed wasn't a pilot, but he continued to care for the plane for the past two years. And that's the story of the Starduster found at Sumter.

John and I live a thousand miles apart - he in South Carolina, and I in San Antonio, Texas. The questions flew fast and furiously, mostly in his direction. Here was a complete airplane with a beautiful paint scheme. Was it for sale, and what was he asking for it.?

I sent John a text message, "I really hope you can buy this plane. I can't imagine a better situation if we ever want to own a Starduster. Mom hasn't even whispered a caution! If we buy it, I could help with some of the monthly expenses. You can base it where you want to. I'll have another excuse to come visit you."

John agreed to buy the plane for the asking price if Ed was still willing to let it go. Ed was gracious in agreeing to do an annual inspection on the plane. That would assure its airworthiness, and get it running like it should. John wrote, "The condition inspection is still moving along without any significant glitches. The engine is very clean, and the compressions were very high, 77 or 78 [psi] in all four cylinders." Eighty psi was the upper limit, so the engine looked like new.

I couldn't resist hamming it up. I bought an oversize kid's "leather" helmet at the local Pilot Shoppe for ten bucks. Also a neat pair of black flying goggles with a 45 degree bend in the Plexiglas lens to permit side vision. I put on the helmet and goggles, wrapped a dish towel around my neck for a scarf, and had someone take some photos. I sent them to John with a note, "Experienced test pilot. Do you need any help?: Call Old Jim's Starduster Service. No crashes yet."

On May 10th, John wrote, I've already done the engine run, and my first taxi in it. After Ed breaks, we'll put the cowlings on, and I will do some more taxiing and get some pictures for us. Very excited!" John included three new pictures of the biplane. I replied, "What a happy day! Enjoy! and John's wife, Vicki, chimed in, "Woo hoo!" I sent texts and pictures to Les Bourne and Casey Fox, who had thoughtfully flown me in his Hatz Classic biplane, celebrating getting the Starduster, "A fifty-year bucket [list] item checked off today." Les responded, "Way cool!" with a smiley imogee. And Casey wrote, "Fantastic. I look forward to some formation biplane flying when John flies it down."

At last it was time for a first flight of our new Starduster. I had sent John some items to put on his flight test card. I wrote, "Hopefully Ed will bring the airplane out of mothballs, and present you with a mint-condition Starduster Too with new tires, a new battery, and an engine that has been checked and run long enough to prove that it will start easily, idle smoothly, accelerate and decelerate properly, and put out takeoff power. Mag drops will be in limits, oil pressure and cooling will function normally, etc. Check all lights, comm equipment and correct control rigging. Proper friction in throttle, prop and

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STARDUSTER CONTINUED

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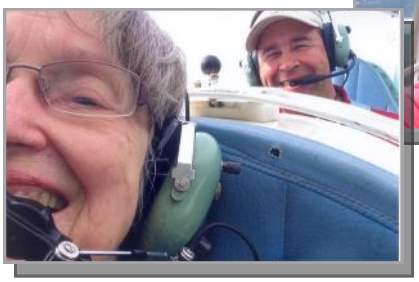
mixture controls. Verify that the manual trim works as designed. Taxi it a long time to check the toe brakes and steering. Make a few high speed runs to see if you can lift the tail without excess stick movement. When you have done enough ground work to assure yourself that the engine/propeller will put out takeoff power [and rpm], then you'll be confident that your airplane will treat you to a good first flight. You're gonna love that nimble little biplane. Looking forward to a few photos when she's ready to have her picture taken. And we hope to see you in June."



As the big day for the first flight neared, John began to have foreboding thoughts about an embarrassing ground loop on landing, or running off the runway for lack of visual references. This was not a small thing. We were planning a visit to John's house in Elgin, SC, on the outskirts of Columbia in early June. Marsha and I hoped to be able to fly with John after he got the five hours solo insurance requirement behind him. So there was mounting pressure on him to fly the plane, get proficient to carry a passenger, and do it without incident.

Sensing his apprehension, I wrote a word of encouragement, "You can be sure you can fly it. Worry about nothing. Just go fly. You're gonna love it."

John replied, explaining his real concern. "Hey, Dad,! Thanks for the encouragement. I think my concern is definitely not the monetary value, but just the threat of damaging a 50-year-old dream.

And then, on May 29, 2017, John bit the bullet and took off in the Starduster. That night John wrote, "The first flight in the Starduster was a success!" It was cut short by a large, approaching storm, but I got to have a pretty good feel for her. She flies very nice, and I think that I will eventually be able to land her OK." He attached a "selfie" taken on the downwind leg in the traffic pattern at Sumter.

As June approached, John flew the Starduster several more times until he had accumulated the requisite five hours flying time before he could carry passengers under the terms of his insurance policy. Finally, Marsha and I flew commercial into the Charlotte, NC, Airport, and John met us to take us to his home in Elgin. On the way, we stopped for lunch at the first Chick-Fil-A either Marsha or I had eaten in.

There was no way John was going to bypass the Sumter Airport on the way home. It was off the beaten path, and out in the Sumter countryside, directly under the Shaw Air Force Base Terminal Control Area, the TCA. It had one long, concrete runway, 5/23, and a perpendicular grass runway, 14/32. We went straight to John's hangar to see the Starduster. He added a little fanfare, having us stand out in front of the closed hangar as he opened the wide, electric-powered hangar door, slowly revealing the Starduster in the sunlight. No words can adequately describe that beautiful airplane displayed before our eyes. It looked brand new.

John put me in the pilot's seat (in the rear cockpit), and had me start the engine. Throttle cracked, prop full increase, mixture rich, master switch ON, two shots of primer, and ignition switch to START. The prop spun, but no combustion. Almost, but not quite. Another stroke of the primer did the trick, and the engine was running smoothly. What a thrill! John partially closed the canopy, and we taxied out and all around the field so I could get acquainted with the plane on the ground. True, I couldn't see any more than John could see, but the trick is to taxi slowly, making S- turns to be sure the way ahead is clear.

The week was filled with a visit to my brother and a one- day side trip to attend my 61st Clemson reunion. But before leaving for the beach on Saturday morning, John drove me back to the Sumter Airport for a flight as his first passenger in the Starduster. This was a big step for John, and he thought about the risk long and hard, periodically listening to the ATIS frequency for local weather reports, particularly the wind speed. Winds were five knots or less, falling below his self- imposed wind limit. He rolled the plane out of the hangar, and said, "Let's go!" John helped me strap into the front cockpit, and put on my headset. Then he climbed into the pilot's seat, started the engine, and we taxied to the grass runway to fly.

The takeoff was quick and uneventful, and John offered me the stick to fly the Starduster. The biplane was solid in the air. Hands off, and the wings stayed level as the plane flew itself. I tried a few turns, left and right, noting how little rudder it took to coordinate a turn. We were constrained by the TCA to fly below 1,500 feet. So we headed east to get out from under Shaw Field's restricted air space.

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STARDUSTER CONTINUED

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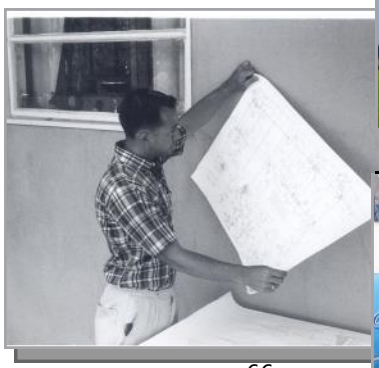
Flying the Starduster was such a joy. Light stick forces, yet it had great control response. Soon I was making steep turns and flying lazy eights and chandelles. I noticed the roll rate was on the slow side at about 60 degrees a second during a six- second aileron roll. I let the airplane dish out too much while inverted, and it accelerated quickly to 180 mph, its maximum speed. On my next flight, I did another aileron roll more like I had intended.



1966

Then we headed back to the field. John took the airplane, and made the landing he had feared. It turned out well, and we taxied back to the hangar, quite pleased with my long-awaited first flight in a Starduster. On the following Monday morning, after the fun weekend at the beach, John drove Marsha and me back to the Sumter Airport, and flew us both - Marsha's first flight, and my second. Photos of Marsha, showing pure joy and delight will illustrate these great times in the sky with John.

During the flight with Marsha, John passed forward his cell phone, and had her take a selfie of the two of them in the Starduster. This one is a treasure that says it all.

2017

A few days after we got back to San Antonio, John sent us photos of the Starduster in its open-cockpit configuration with windshields at each cockpit It is beautiful any way it's configured.

I'm indebted to John for finding the Starduster, and arranging the sale and learning to fly it safely and sharing the gift of flight with us. A new chapter has opened for Marsha and me, flying in our twilight years, and for John, flying a Starduster from a grass strip when the sun is shining and the sky is blue, and the wind is light. It doesn't get much better than that for those who love to fly.

It's been a long road, but I finally have The Starduster on my bucket list

A HANDY HANGAR TOOL OR SOMETHING TO GET PUMPED UP ABOUT

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.

CHAPTER BUILDER'S

Congratulations Allan Inks on earning his airworthiness certification on Pipestril N608US!

He writes: What I was expecting in 2013 to happen in 2014 (or 2015 at the very latest) has finally happened. This is a picture of DAR John Schmidt handing me the Special Airworthiness Certificate for N608US, a motorglider my brother Robert and I built from a Pipistrel Virus SW kit.

I couldn't say precisely how many hours it took to build. I stopped counting at 545.5 man-hours in March of 2015. And I spent the summers of first few years in Ohio, not building. So probably somewhere over 1000 hours. Not bad for a kit that was supposed to be a "200 hour" kit. I'd feel bad, but two other people started building the same kit here in the US within a couple of months of me. One finished his 4 months ago, another has a bit more to go, but hopefully, will be done this coming spring. Anyway, hope to spend the next week or so, depending on weather, doing a lot of flying in a rental Pipistrel Virus SW here at Boerne Stage Airfield to get current again. Really have lost a lot of proficiency during the build...but I guess that's not uncommon, and want to get current in an aircraft that I know will fly, rather than one I hope and think will fly. Then comes flight testing in our airplane. Fortunately, my test area includes San Geronimo, so I should make meetings more regularly now!

DECEMBER CHRISTMAS CELEBRATION AND GIFT EXCHANGE– SEE MORE AT https://www.facebook.com/eaa35/

Ah the holidays! We feasted and partook of great friendship and excellent beverages to our hearts content. Fifty or so of our members turned out for pork loin, roast beef and a veritable feast of sides traditional and some not so. Followed by simply have to indulge in a bakery's delight in pies, cakes and other totally fattening, but oh so delicious treats

This was followed by a gift exchange with a twist that allowed thievery of all sorts. Many were successful. This year the hotly contested item was a planter in the shape of an aircraft. Although 3 times exchanged Phil Vaneau, ticket number one, swooped in for the victorious steal; only to concede to Peggy's pout and leave with a New Years bottle of bubbly. Gifts ranged from toilet spray (really?) to an inflatable snoopy, pictures, and tiny drones. In the end, everyone left clutching something they didn't have before, and with full tummies and warm hearts.

Merry Christmas to all a safe and Happy New Year!

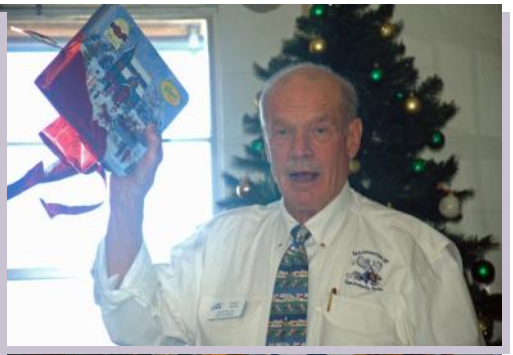









DECEMBER CHRISTMAS CELEBRATION AND GIFT EXCHANGE– SEE MORE AT https://www.facebook.com/eaa35/ **MORE ON PAGE 22 (E-VERSION**










THE BUILDER'S CORNER

Removing a Broken Stud

Mark Julicher

If you work on engines long enough eventually you will encounter the dreaded broken stud, broken drill bit or broken tap. Knowing that it will happen, it is logical that you should also know what to do to remove the broken part. So here is a brief compendium of removal techniques.

First, remember that lubrication is your friend. Just as you used cutting oil when drilling or tapping in the first place, penetrating oil is a huge advantage when removing broken (or rusted) parts. Good penetrating oils creep into the rusted or stuck parts and include:

- Kroil
- Mouse Milk
- PB Blaster
- Liquid Wrench
- Automatic Transmission Fluid mixed with Acetone.

Some would also include WD 40, which is OK but really designed for water displacement and metal protection.

So on to removal methods.

Method One, Some of the broken part is showing:

Recently we were disassembling an engine and upon removing the exhaust manifold we discovered that one exhaust stud was rusted to about ¾ of its original diameter. I don't know how we actually removed the exhaust nuts without breaking it. We soaked the part in penetrating oil and heated it with a propane torch. After repeating this process several times we let penetrating oil soak overnight. It was not possible to make a double nut grab sufficiently onto the stud, so we used locking pliers AKA Vicegrips (tm). Wiggling the Vicegrips back and forth was not showing much progress, so we added another favorite technique – vibration. In this case we used a number two rivet gun and a flat set to firmly tap against the end of the stud whilst wiggling the stud with the vice grips. In short order the stud began to move and extracted easily.

The same principle applies when using a screw knocker. Vibration loosens the grip of the threads and allows the broken part to turn with much less force. Photo 1 is one brand of screw knocker – an invaluable addition to your toolbox for about $40.

Photo 1: Wivco "Shake and Break" screw removal tool. Photo credit: Tyler tool

But what if the broken part is not a screw and is not protruding very far out of the work? In this case it is often possible to use a chisel and carefully tap on the edge of the broken piece. Tap tangentially around the circumference of the broken part and with just a bit of luck, and penetrating oil, it may begin to turn freely.

Method Two: The broken part is flush or nearly flush with the work:

Lets break Method Two into Method Two A, and Method Two B. **Method Two A** is to drill out the part. Essentially this means drilling a pilot hole into the broken bit and then inserting a screw extractor. The screw extractor turns counterclockwise, grips the inside of the pilot hole, and the offending part unscrews from the work. Maybe. Method Two A is assisted by heating and cooling the work a few times and by applying penetrating oil. By the way, many old time mechanics swear by the transmission fluid/acetone mix. There are many varieties of screw extractor for sale at the box store or on Amazon.

The greatest difficulty in using Method Two A is getting a pilot hole down the middle of the broken stud. Studs and bits never break off smoothly. You may need to use a tiny Dremel bit and smooth up the face of the broken part, then center punch the spot to be drilled and finally drill using a holding fixture or guide of some sort (use imagination here) to keep the drill bit centered. If you have any training as a dental surgeon you will find that helpful here. And by the way, use carbide tools. Use a carbide cutting tool in the Dremel to do the smoothing and use carbide drill bits to make the pilot hole.

Side Bar on Drill Bits:

Black Oxide bits; good for wood.

HSS; high speed steel OK for 90% of your drilling re-

(Continued on page 13)

THE BUILDER'S CORNER (CONTINUED)

(Continued from page 12)

quirements. Easily sharpened in your Drill Doctor.

Coated HSS; titanium coating makes the drill bit slippery at least in metallurgy. Stay sharp longer than HSS, but if sharpened the tip is no longer titanium coated.

Cobalt Steel; Cut well in stainless steel. Similar cutting capability as titanium but can be sharpened without losing the alloy on the drill tip. Brittle and more breakable than titanium.

Carbide; Hardest substance other than diamond. Brittle. Used for fiberglass and will cut into hard metal. Masonry drill bits have a piece of carbide on the tip.

Method Two B involved welding something to the broken part. Typically, a steel washer is placed around the broken part and using spot welds, the washer is welded to the end of the broken stud, bit, tap, etc. This works best with a MIG welder because the weld metal is the electrode and can be put exactly where it is needed using only two hands. Welding works even if the broken piece is somewhat recessed in the work as long as you have a steady hand with the welder. Some machinists weld a washer to the broken part and then weld a nut to the washer and then turn the nut to extract the part. There are many good videos of this process on YouTube.

Method Three: Chemical dissolving.

If you have a piece of steel stuck into work made of aluminum then you can dissolve the steel without harming the aluminum. Dissolve alum (that's right, the stuff that cooks use in making pickles) in warm water. Make a saturated or at least highly concentrated solution of alum and hot water, so figure on using about ½ pound of alum powder. Don't do this in a steel pot. Use Pyrex or Corning ware. Place the work into the hot solution and wait. Depending on the heat and saturation it could take a few hours to a day to get the ferrous part to dissolve.

If the work is too large to place into the solution then try to place the solution on the work. Make an appurtenance out of aluminum, i.e., cut up a Coke can or cobble up an aluminum box and make it sort of fit against the work. Use silicone, RTV, to seal the can onto the work in such a way that the solution can be poured into the can and the liquid is held against the work. Pour in hot solution and go away. In a matter of hours the ferrous part will be mostly gone and may be plucked out with tweezers.

This may not be all of the methods to remove a broken stud, but a pretty good collection of tricks for most situations. Don't forget safety glasses and ear protection and perhaps even nitrile gloves when doing this sort of work.

CHAPTER NEWS & FROM MEMBERS

NEW WEBSITE

Dave Baker

Just a reminder, we have a **NEW Website http://eaa35.org** that is being developed by **Kyle Jester** along with input from **Jose Garcia** and Steve Jones. The website will be the primary website for our Chapter effective January 1, 2018. The old website (www.35.eaachapter.org) will still be available for past references of newsletters, photos, videos and other info but will not be updated after December 2017. If you have questions and / or input for the new website or for our FACEBOOK page, please contact **Jose Garcia** (our new Public Affairs officer at **eaa35pr@gmail.com**.

FROM THE HANGAR

For Lou Mason

If you can tune a band-saw, replace a few belts, and tighten up what needs tightening—please let Lou Mason know. We need help to keep the equipment in tip top condition. Contact Lou at 210-688-9072 or lewnan@sbcglobal.net

FINANCIAL

At the beginning of this year, we embarked on a task to review our budget and provide high quality forecasts of our capital requirements. I believe this effort paid amazing dividends. We spent our money wisely and conserved enough to grow our balance sheet by approximately nine percent. I can't speak to our budget vs realized expenses yet, but we're clearly doing something right. I expect this will reflect in our budget analysis as Dee closes the books on 2017. Thank you to our executives, the board of directors, our chairs/coordinators, and especially Dee for staying on top of this. We're stronger as an organization. We can now look at funding initiatives like the Gone West wall, the Forever Remembered expansion plaque at the flag pole, and the Master Pilot/Master Mechanic plaque.

NOVEMBER MYSTERY PLANE REVEALED

Doug Apsey

Congratulations to Charlie Brame for correctly identifying our December mystery airplane as the Harlow PJC-2. The original PJC was designed and built by Max Harlow and a group of his students at Pasadena Junior College (thus the PJC) as a class project. Designated the PJC-1, it first flew on September 14, 1937. This aircraft later crashed after going into an unrecoverable flat spin during initial flight testing by a CAA pilot who successfully bailed out of the aircraft. Harlow and his students modified the original design by enlarging the vertical stabilizer and limiting the aileron travel when full aft stick was applied to provide improved stall recovery. This modified version became the PJC-2. Serial number 1 was certified by the CAA on May 20, 1938. Realizing that his airplane had potential, Harlow formed the Harlow Aircraft Company in 1936 to produce the PJC-2 at the Alhambra Airport in California.

s/n #6 on display at the EAA museum http://www.russellw.com

The PJC-2 is an all metal low wing, four seat airplane and is credited with being one of the first airplanes designed and built in the US with a stressed-skin semi-monocoque fuselage. It is powered by a 145 hp Warner Super Scarab 7 cylinder radial engine that gives it a maximum speed of 160 and cruising speed of 140 mph. Wingspan is 35 feet, 10 inches. Empty weight is 1661 lbs while gross weight is 2600 lbs. A total of 11 PJC-2's were built. Four PJC-2's were used by the USAAF during WWII, designated the UC-80. These aircraft were later used by the Civil Aeronautics Administration. There are currently three flyable PJC-2's remaining and additional two being restored.

s/n #6 on display at the EAA museum http://www.russellw.com

A dual control, tandem two seat version of PJC-2 designated the PJC-5 was built as a potential military trainer. It had a narrower fuselage and was powered by a 165 hp Warner Super Scarab radial engine. The PJC-5 first flew in July of 1939 and a total of five were built. The US military never purchased any of these but in 1941 the Indian Air Force began purchasing the sub-assemblies and components for 50 PJC-5's. These were designated PJC-5A's and were assembled in India by Hindustan Aeronautics. The exact total of 5A's that were built and flown in India is unknown. It appears that no PJC-5's remain today.

Harlow_PC-5 https://en.wikipedia.org

Sources for this article include:
https://en.wikipedia.org/wiki/Harlow_PJC-2
https://en.wikipedia.org/wiki/Harlow_PC-5
http://www.russellw.com/planes/harlow/pjc5.htm
http://www.planeandpilotmag.com/article/harlow-pjc-2/#.Wj3A-LQm6Uk

NAME THE PLANE

Here is your first mystery airplane for 2018. Since we are a group of experimental aircraft enthusiasts, let's start the year with an experimental airplane courtesy of one of our members. Who will be the first to email me at dapsey@satx.rr.com with the following information about this month's mystery airplane?

1. Who designed and built it?
2. What language does this little airplane speak? (i.e. what country is it from?)
2. What is its designation/name? i.e. C-172 Skyhawk, PA-24 Comanche, etc.?
3. What year did it first fly?
4. How many have been built?

Country Store

BRIAN GOODE

The Country Store will be closed during most of the Christmas Holidays, but merchandise will be available on December 29th in time to pick up a few things for your New Year's Eve Celebration,

We have a supply of the EAA Chapter 35 Coffee Mugs at our hangar on 8T8, so stop by and pick some up to use for your holiday toddies.

Some Koozies will also be available at our hangar for the New Year's Celebrations so you can keep your favorite canned beverage cold

60th ANNIVERSARY DECALS We have plenty of the Chapter 35 60th Anniversary logo decals available in the Country Store. They are only now only a Buck a piece.

They are 3 inches in diameter. They can be applied to almost any surface except where your wife says not to, like to her aircraft, her boat, her car , truck or cat.

SHIRT NEWS If you want to pick up some shirts during the holidays, give us a call and we will open the Store for you so you can pick out something to wear to your New Year's Eve Ball.

Year-end request…

If you ordered Shirts or Wash Wax products and have not yet paid for your merchandise, The Country Store is asking you to please send a check in the proper amount, made payable to EAA Chapter 35, to Brian Goode, 15464 Culebra Road, #53, San Antonio, TX 78253.

Wash Wax All : The Country Store sells Wash Wax All aircraft care products at specially reduced prices for Chapter members.

We have instructional literature and videos available as well as information on which product is good for what job, so come on down to the Country Store. You will be glad you did.

MERCHANDISE FOR SALE AT THE COUNTRY STORE

COFFEE MUGS	*CH. 35 logo*	$7.00
"Fishing Shirts" Short sleeves	Men's & Lady's	$39.00
Long Sleeves		$43.00
Polo shirts with Ch. 35 Logo	SM – XL	$30.00
Baseball Caps		$10.00
60th Anniversary decals		$1.00
Beverage Koozies		$5.00
Chapter 35 Sew-On Logo Patches		$1.00
Chapter 35 Bumper Stickers		$1.00
Wheel Chocks – Aluminum	Two pairs = a set	$45.00
"Wash Wax All" Products	See page 21 for selection	Below retail

All prices include 6.75% sales tax For merchandise please call Brian or June @ 727-709-1159 or ladybgoode@msn.com

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

JANUARY	***13***	**BOD Meeting LUNCH MEETING Program: PreFlight Aviation Camp**	**10:30 am Lunch 11:30 Meeting/Program 12:30 pm – 1:30 pm**
FEBRUARY	***10***	**LUNCH MEETING Program: Lancair International introduces the *MAKO***	**EAA Chapter 35 Clubhouse Lunch 11:30 pm Meeting/Program 12:30 pm**
MARCH	***10***	**5th Annual San Geronimo Hangar Tour**	**EAA Chapter 35 Clubhouse Lunch 11:30 Tour to Follow**
APRIL 	***14***	**FLY-IN BREAKFAST EVENT Chef, Prep Cooks, Servers Needed BOD Meeting**	**EAA Chapter 35 Clubhouse 9:00 - 12:00 am 12:30 am**
MAY	***12***	**SPRING CLEANING! Yard/Chapter Building Work Party**	**EAA Chapter 35 Clubhouse 10:00 am – 12:00 pm Lunch Served at Noon**
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

Jan 17 **AOPA Collision Course**: Avoiding Airborne Traffic
Doubletree by Hilton San Antonio Airport, 37 N.E. Loop 410, San Antonio, TX 78216
07:00 PM - 09:00 PM

CLASSIFIED ADVERTISMENTS

For Sale - - N-3 Pup. Engine factory overhauled and then flown a few hours. Then Julius Braun placed it in the hangar at 8T8 for the last 20 years (or so...), where it still resides today. Priced at ~~$6,000~~ $5000and includes a pair of floats and a trailer. Talked to one of the past pilots. It flies well. Call me if interested. Nelson Amen 210-834-1991 (Expires Jan 2018)

Hangar on the runway for rent. Utilities furnished, side door parking and entrance. Call 210-710-6063. (Expires Jan 2018)

For Sale—2 Continental O-65's. Fresh overhaul, one with a whole bunch of brand new parts. One $4000, the other $6000. Call Dan Martinez at 210-688-3037 (Expires Jan 2018)

Aeronautical Engineer's library from the slide rule days. Quite complete, and nearly a pickup load. Price is ***free***, but the "buyer" must take all---I am thinning the herd! Norris Warner 830-510-4334 to make an appointment to view. (Expires Jan 2018)

FOR SALE 1974 172M Cessna Skyhawk II; N1591V Log books available. This was Paco Moore's plane. Make reasonable offer. 830-460-1566 (Expires Apr 2018)

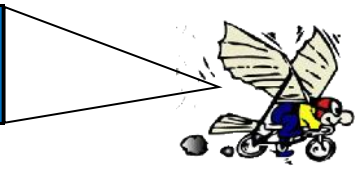
To post a classified—contact the editor at eaa35news@gmail.com

- *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

2016 EAA Chapter 35 Leadership



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210-570-9435	*eaa35pres@gmail.com*	*(210) 875-9971*	*eaa35vp@gmail.com*
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210-289-7445	*mlandis7210@sbcglobal.net*	*210-493-5512*	*DeeB@satx.rr.com*

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Nelson Amen (2012-2014)		Brian Goode	
210-834-1991	*nelson.p.amen@gmail.com*	*727-709-1159*	*ladybgoode@msn.com*
Dave Baker (2010-2012)		Ron O'Dea	
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Website:	Dave Baker	**Country Store:**	Brian Goode
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Ron O'Dea			
210-488-5088	*r2av8r@gmail.com*		

Technical Counselors

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		Lew Mason	
		210-688-9072	*lewnan@sbcglobal.net*

Chapter 35 meets

Each Second Saturday of the Month

Jan 13

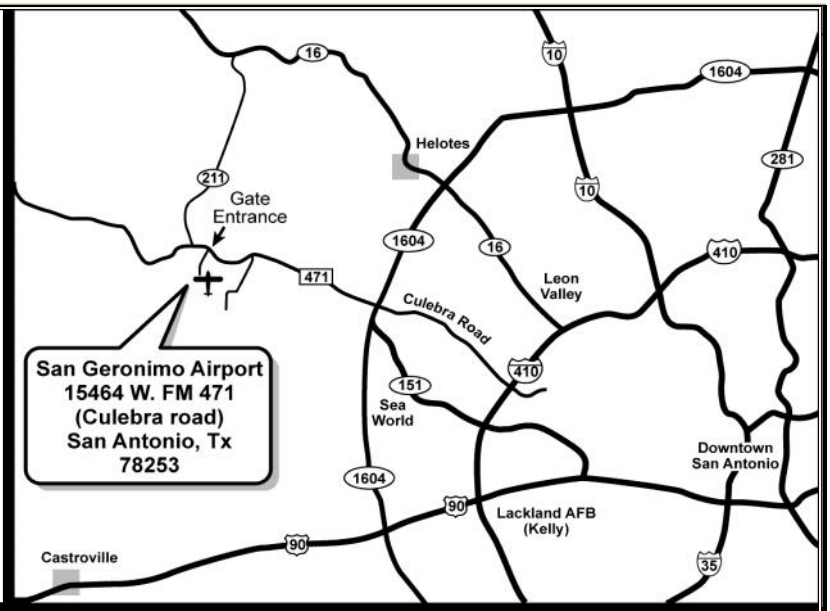
Lunch 1130

Program by:

PreFlight Aviation Camp

To follow

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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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®

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