EAA THE SPIRIT OF AVIATION

RUNWAY 35

The Official Newsletter of EAA Chapter 35, San Antonio TX

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Next Event

9 July 2016

FLY (or drive) IN

0900-1200

Chapter 35 Clubhouse

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That One July

Chuck Fisher

There are certain days we remember. For most 911, for a few of us Pearl Harbor for a few of us, and for many of us July 20,1969 at 9:56 PM. Huh, you say, what was that?

http://guardianlv.com/wp-content/uploads/2013/08/neil-armstrong-650x406.jpg

That evening I was planted in front of our black and white television. I got to stay up late that night, and although I really didn't understand everything, the events of that night and years of work before and after helped to guide my future. Looking at the group of aviators and rocket scientists in our organization, I'd say I was not the only one.

On that evening, 47 years ago this July, Neil Armstrong stepped off the mushroom shaped pad of the Lunar Landing Module onto the dust of the moon, and into history.

I had the opportunity to meet him briefly, and to hear him tell his story as he wanted it told just before he unexpectedly passed away. I was mesmerized with the back-story, the part that the news didn't report, or at least if they did I was too young to understand. But now decades later, I have come to appreciate the final moments of the lunar descent as a story pilots should know. Because, it is all about being a great pilot in a pinch.

The Astronauts in the first two groups, the Mercury Seven and the Gemini Nine, were all selected from among the best pilots in the United States. Most were test and combat pilots selected from the military services. Neil Armstrong was a former Navy combat pilot who went on to be a civilian test pilot for the National Advisory Committee for Aeronautics (NACA).

(Continued on page 4)

PRESIDENTS COCKPIT

Steve Jones

July. The air is electric with excitement. AirVenture 2016 is right around the corner. Across this great country, and indeed across the world, experimental aviation enthusiasts are preparing to converge on Wittman Regional Airport, Oshkosh Wisconsin, making it for one week a year, the busiest airport in the world! Old Friends will meet each other again, strengthening the bonds of comradery. New relationships will be forged between enthusiasts, builders, pilots, spouses and vendors as we move forward with this awesome experience. Chapter 35 members who plan to attend may wish to pass along your contact information to Chuck Fisher at eaa35news@gmail.com. He has graciously offered to compile a phone roster of attendees so we can reach out to one another and coordinate actions.

Do you like the Sonex, but think it's a tad tight? Sonex Aircraft has heard you. Unveiled at Sun-n-Fun, the Sonex series of aircraft have evolved to Model B. The previous versions now receive a 'Legacy' moniker. Freda and I are looking forward to checking out the new model at AirVenture.

Closer to home, Chapter 35 friends and enthusiasts converged on the Day residence at San Geronimo Airpark to help set Bob and Betty Day's affairs in order with an estate sale. Unfortunately, the doors were closed. At this hour, I'm not sure what happened, but do please accept my regrets that it didn't happen as we were informed. As I learn more, I'll get the word out to the membership.

Our June Membership Picnic was a rousing success! If you were among the 54 members, guests, or NEW members who joined us for this annual event, I thank you for attending. The menu was basic picnic fare, with hamburgers and hotdogs, chips, potato salad and condiments. What made this special was the response from our members. The homemade potato salads, that exquisite Cole slaw, the pies cakes and other desserts transformed this from good to great. Thanks everyone! I wish to thank our Facilities team and all the volunteers, too! I saw the receipts, and I could not believe how this team delivered this meal at this quality on the budget they allowed themselves. If this team ran the Government Accounting Office, this country wouldn't be in debt right now.

Chapter 35 still needs you! The grounds immediately surrounding the chapter building are our responsibility to keep mowed and in good order. If you have time, a mower and an inclination to pitch in for the common good of man, please contact our Facility Manager, Freda Jones.

Things look different at the Chapter 35 Clubhouse. After years of service to our members, the Bob Day Massive Griddle and Grill (BFG) was retired and carried away to be recycled into something equally cool. Special thanks to Bill Lofton for spearheading this project and to the members and guests who lent a shoulder to load this onto Bill's truck for departure. With regret, I mark the passing of a man who made his mark on the experimental aircraft community. Todd Silvers, of Todd's Canopies passed away following the crash of his Mooney M20E. Also lost were his mother and son. His daughter, the sole survivor of the accident is now attending to the sale of the business. What's the latest on Pilot's Bill of Rights II and Class 3 Medical Reform? Nothing really. As the National Defense Authorization Act moves forward, we'll track and report any updates. Now is a good time to reflect on this bill's impact to our Airman Medical Examiners. This bill will have a lasting effect on this vital segment of our community. These doctors have committed to a career of service to our pilots. It's not the money, it's the passion. I've talked to AMEs and I've seen some numbers. They do it for the love of the adventure of flight. Remember that as you're cheering for reform. Our pilot-doctors are awesome.

We're now inside three and a half years to comply with mandatory ADS-B Out equipage for flights through Class C, B and A airspace. As the summer progresses, we'll be tracking exciting developments in hardware and regulations to meet this mandate. The FAA is starting a program to reimburse aircraft owners $500 to install conforming ADS-B equipment. For more information, visit the FAA page here: http://www.faa.gov/nextgen/equipadsb/rebate/

Chuck and Peggy Fisher are hosting the July Fly-in Breakfast. On the menu: breakfast tacos! The Fishers plan to donate the meal to support our Air Academy student. Thank you, Chuck and Peggy!

See you at AirVenture! Please, fly safe and have fun doing it.

MEMBER NEWS

Chapter 35 continues to grow! Please welcome:

Nancy and daughter Billie Alkema. Nancy is an educator who heard about EAA's Young Eagle Program. Daughter Billie is interested in aviation and is looking forward to her "Young Eagles" ride! You may contact Nancy at 916-597-6442 or anncie.d29agmail.com

WeJay and Patricia Bundara, Jr. WeJay is retired from USAF, has a commercial and instrument rating, and is a Deputy Sheriff for Bandera County. He owns a Mooney M20C and is looking forward to helping with the Young Eagles program. You may contact WeJay at 210-325-3165 or wejaybundara@att.net

Brian Cheney Brian is a private pilot who built and owns an RV-9A! His hobby is building and flying airplanes. You may contact Brian at: 210-758-0002 or bcheney370@yahoo.com

John and Isabelle Timms John is retired USAF who owns a popular Day Spa. Additionally, John is commercial instrument pilot who owns a Cessna 206.You may contact John at: 210-473-7456 or jjt1234@sbcglobal.net *(editor's note: ...and Peggy loves their spa!)*

Robert P. Ryan Robert is retired from the US Army. He is also retired from Continental/United Airlines. Robert is an ATP ME, a CFI, CFII, is rated in Seaplanes, Helicopters and Gliders and is an A&P! He has built (2) Grumman Albatross's, is type rated in the B-737, BH-204, G-111 and Lear Jet. Additionally he knows radial engines, Russian Aircraft and speaks fluent Russian. You may contact Ryan at:713-907-7591 or rpryan@wt.net

CHAPTER BULLETIN BO

FLY IN MENU

The menu for the July Breakfast Fly-in is Breakfast Tacos and Pancakes!

Think you'll be hungry on Saturday morning? Make sure you save the date: Saturday, July 9th, 9:00AM – Noon.

Chuck and Peggy Fisher are hosting this southwest breakfast for fly-in and drive-in enthusiasts and donating the meal to support our Air Academy program.

We'll be manning the griddle to make pancakes for those who prefer those sweet, heavenly fluffy flapjacks. This was a last-minute addition to the menu, so it's pancakes and, well, more pancakes. (whoops)

For you drinkers out there: coffee, orange juice and lemonade will be served. Nothing alcoholic. See? We're taking care of our pilots!

The June Membership Picnic was a great success! I wish to thank everyone who volunteered their time and those who brought desserts and side dishes. You demonstrate time and again that we can come together as a community and accomplish great things. What could be cooler on a Saturday than a picnic?

Dear Editor

"Squawk 35"

Great AME article by Chuck Fisher in the June newsletter. I've been flying Cubs for the last 12 years so I let my 3rd Class medical lapse. Why bother with the expense and hassle of a medical, especially when I pretty much know if I'm safe to fly on any given day. However, not having a medical has limitations and I sometimes miss the privileges it affords. Chuck's AME article was interesting since a renewal might not be as stressful as I feared. Great job of making a complex subject simple."

Richard Reiley

Editor's Response: Aw shucks...Blush!

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!

YOUR Articles Needed

This Newsletter is YOUR newsletter. I put the articles in it, but ***you*** have to write 'em! Your chapter needs YOUR contributions. Please share your experiences, skills and wisdom, photos, humor and announcements with our membership. What may be common knowledge to you, may be priceless for a new pilot or builder. Even if you are not a Pulitzer level author—send me your words, I'll buff up the grammar if needed. Send input to: **eaa35news@gmail.com**

JULY (CONTINUED)

(Continued from page 1)

Those were the guys who were the predecessor of NASA and whose airfoil designs we still use today. Neil Armstrong flew pretty much everything they had, up to and including the X-15 – the hottest rod out there.


Dryden Flight Research Center ECN-1582 Photographed 1966
Lunar Landing Research Vehicle

He, like others, did not even apply for the initial astronaut group. The thought of being in a Spam Can with no ability to control anything was just not that appealing to a red hot stick and rudder pilot who had flown higher, faster, and glided a wingless missile further than anyone before. Yeah, riding on a bomb in the process of exploding…not so appealing.

Later, though, when the technology proved itself, and it was clear that spacecraft could indeed maneuver in space, he was all in. Whereas Mercury was about lift and launch to orbit – just getting to space -- The Gemini program was all about "flying" in space. The crew had to become proficient at steering the spacecraft across miles of altitude and miles of separation at 17,000+ miles an hour, only to fly tight formation with and rendezvous with other vehicles at inches a second. That skill required delicate and well-honed "stick and rudder skills". On his Gemini 8 flight Neil Armstrong got to prove his pilot skills when a steering rocket stuck on. This immediately began an uncommanded accelerating rapid tumbling roll. Fighting to stay conscious and fighting nausea in the accelerating tumble, he not only recovered the vehicle, but having used one of the main re-entry thrusters to regain control, he manually aligned for re-entry – and was spot on. Talk about an abnormal attitude recovery!

Next up was Apollo. Training for the moon flight, the Apollo astronauts had to learn to "fly" the lunar lander. Remember, this is the 1960's, there weren't GPS units, there were no microscopic internal AHRS systems, gyros and stabilizers as we have in every I-Phone today. The ship they had to fly was a gangly, long-legged, no wing, vertical take-off and descent vehicle that had only pulse/intermittent thrusters on the four corners to guide it. It literally just fought gravity. The glide ratio was absolutely zero. A helicopter is super stable in comparison.

To learn this skill Grumman built a simulator that was at Ellington field. It looked more like a crane than a plane and sure didn't look like it could fly. A central jet engine pointing down created lift and was adjusted to simulate the reduced gravity on the moon or, if you will, to provide at least a little thrust. Small rocket thrusters on the corners allowed steering and altitude control to a degree.

No astronaut practiced more in the thing than Neil Armstrong did. They all hated it and loved it at the same time because it was so darned hard to fly, and so necessary to learn.

Fast forward to July 20, 1969 as we watched the grainy, barely discernible feed on live television. Neil Armstrong and Buzz Aldrin were descending to the moon in their gangly aluminum foil shrouded Lunar Module. The guidance systems were programmed to take them to a large fairly flat area that the crew of Apollo 10 had meticulously photographed and charted during several low level passes. Armstrong and Aldrin had studied these photos and maps over and over again.

Here is where it gets interesting. Armstrong and Aldrin had a tiny triangle of a window to look out, and almost no view downward to the ground until they were at final approach altitude. As we watched on television everything seemed calm and normal – at least to me. But what was really happening was very different.

As they neared the moon, "a 1201 alarm" the equivalent of the Master Caution light flashed on. The guidance control computers were overloaded and dumped. In hindsight we know that there were two guidance systems on the ship. The rudimentary computer had the brain capacity of a digital watch, and had been designed to keep up with only one at a time. But, as any good pilot would, the pilots had powered up both systems in case they needed the redundancy. Anyway, with both systems running on the computer gave up the ghost and the module continued to descend to final approach with a failing re-booting computer as the crew worked the problem (sound familiar?).

The Lunar Module had enough fuel to descend to the moon. Barely. As they neared the surface, the pilots got their first views of the landing area through the tiny window. The jagged rocks and deep craters they were headed toward were not supposed to be there. The Lunar Module was hurtling toward high ground about 4 miles short of its landing site.

Neil Armstrong, reacting in a split second, toggled off the guidance system and took manual control of the Lunar Module. You can imagine the reaction down in Houston at that moment!. As Buzz Aldrin called out obstacles and kept the systems happy, Armstrong hand-flew the spider-like module toward smoother ground using his memory as a map. All those very calm voices reciting "3 degrees up 1.5 right" and so forth, were reading his stick/control in-

(Continued on page 5)

JULY (CONTINUED)

(Continued from page 4)

puts. These were not on the script, though viewers like me assumed everything was normal.

In doing so, the flight was much longer than planned. Fuel became supercritical. Finally, Gene Kranz leaned over to Charlie Duke who as their voice in Houston and told him he'd better tell them they were severely low on fuel. Charlie calmly intoned "lights on". With the relaxed sound of a calm fighter pilot, this was a fighter pilot in Houston talking to a fighter pilot on the moon advising Armstrong that he was out of fuel.

With less than a few seconds of fuel remaining, Armstrong brought the lander down gently on flat ground having successfully flown beyond boulders and ridges by memory. That's what CapCom meant when he commented on the closed loop, "You've had a lot of guys turning blue down here". I always just thought it was a comment about the first landing, and had no idea we were all watching an in-flight emergency.

As a final bit of trivia, as you now go back to watch the YouTube replay at https://www.youtube.com/watch?v=Jg8oHZsv_js , Armstrong and Aldrin had to jump off the lower rung of the ladder. It was about three and a half feet off the ground. That was an accident. The designers built shock absorbers into the landing gear assuming there would be a firm landing. Armstrong touched down with such finesse, though, that the shocks did not compress leaving the ladder so high they had to leap down.

When I had the chance to meet Neil Armstrong a few years ago, he had worked with the Google Earth guys, using the very detailed mapping of a recent high resolution satellite to reconstruct the descent to the moon. He showed us the grainy 46 year old video, and the high resolution "fly over" using Google...err Moon side by side, so we could see what he was seeing through that tiny window. Those last minutes where exactly what you would expect from a pilot. He assessed the problem instantly and grabbed the aircraft. There was no missed approach option. He shut out everything else, didn't have GPS, didn't need a map and didn't have time to look if he did. He simply looked out the window and hand-flew his aircraft to safety using stick and rudder skills alone. At that moment he was not an astronaut – he was a pilot, flying using the same stick and rudder skills he'd have used to glide a J-3 cub safely to landing.

So, as you look into the sky. Remember where you were 47 years ago – as you watched an astronaut-pilot – fly on the moon.

Editor's note: If you enjoyed this little vignette, I'd highly recommend the recently published biography of Neil Armstrong entitled Neil Armstrong, A Life of Flight by Jay Barbree. It is a good read, and I think it is faithful to the facts.

FAA REVOKES PILOT'S AIRMAN PRIVILEGES FOR FLYING A UAV

SO FAR IT IS THE ONLY KNOWN TIME THE SANCTION HAS BEEN IMPOSED

Aero News Network

Pilot David Quinones had a bad day last year on the 4th of July.

The commercial pilot was flying his UAV on the beach in Coney Island in Brooklyn, NY while the Nathan's Hot Dog Eating Contest was underway.

And while Quinones says he was standing on a public beach flying over private property and not anywhere near the contest, police arrested him, confiscated his aircraft, and put him in jail for several hours, according to a report from the website Motherboard.

Quinones was never charged, and New York City eventually dismissed the ticket he was issued for the incident ... but it was not over even then.

In October of last year, Quinones got a letter from the FAA saying his commercial pilot's certificate was being suspended for three months, and he was ordered to surrender his pilot's license to an FAA attorney or face daily fines of $1,100.

It is reportedly the only time that the FAA has actually suspended someone's airman privileges for flying a drone, though that is one of the penalties listed in the FAA's regulations.

Quinones is also the cofounder of SkyCamUSA, an aerial photography company. He told Motherboard that he did not fight the suspension because he did not have the "money for a lawyer or time for this nonsense." He has been flying UAVs exclusively for international clients since his suspension. But he said the FAA "has been abusing their powers. They've been finding people where fines aren't due, changing things left and right. They're like a bully on the block pushing their agenda."

The FAA would not comment specifically on the case, but did cite Order 2150.3B which in its 336 pages does give the agency the authority to suspend manned airman privileges for UAV violations.

http://www.aero-news.net/index.cfm?do=main.textpost&id=e7e366c6-4a1b-426c-81bc-08a73c8df440

FROM HEADQUARTERS

AirVenture Update—More Flying Than Ever!

The excitement continues to build as EAA AirVenture Oshkosh 2016 gets closer! Here are just a few of the many features and attractions you won't want to miss:

- The Canadian Forces Snowbirds' first appearance at Oshkosh in more than 30 years
- Martin Mars, the world's largest operational flying boat and fire fighter
- The Boeing Company's 100th anniversary celebration
- Largest gathering of historic warbirds/current military aircraft
- *Third Eye Blind* to headline opening day concert
- Pearl Harbor 75th anniversary commemoration
- Drone Center/Drone Cage, Innovation Center, and Education and Career Center
- EAA Pilot Proficiency Center with Redbird simulators
- Centennial of Coast Guard aviation
- Salute to World War I aviation
- Boeing Aircraft Company 100th anniversary
- NASA Self-Flying Aircraft and Electric Propulsion Tech forum
- More than 10,000 airplanes and 2,500 showplanes
- Anniversary Fly-Ins for RV-6, Mustang II, C-120/140, Navion, Stearman, Interstate Cadets, Grasshoppers, Chipmunks, Globe Swifts, and Ultralights
- 1,000 forums and hands-on workshops
- World-class daily air shows
- Concerts, movies, and informative programs

This year at EAA AirVenture Oshkosh 2016 we are packing even more into the week's schedule with additional evening flying events.

Monday and Thursday evening WWI military biplanes and triplanes will take to the skies as part of the World War I aviation centennial celebration. Aircraft from the collections of Old Rhinebeck Aerodrome of Rhinebeck, New York, and Golden Age Air Museum in Bethel, Pennsylvania, are scheduled to participate.

Tues and Friday will be the very popular Short Take of and Landing contest. A condensed list of the evening flying schedule is as follows:

- Monday—World War I demonstration
- Tuesday—Valdez STOL competition
- Wednesday—Night Air Show and fireworks
- Thursday—World War I demonstration
- Friday—Valdez STOL competition
- Saturday—Night Air Show and fireworks

AirVenture tickets on sale

AirVenture 2016 dates: Monday, July 25 - Sunday, July 31. You may purchase a daily ticket for any of the seven days, or a weekly pass, which includes all seven days. Click here to purchase

EAA AirVenture Oshkosh 2016 NOTAM Now Available for Pilots Flying to Oshkosh

The Federal Aviation Administration has released the EAA AirVenture Oshkosh 2016 Notice to Airmen (NOTAM), featuring arrival and departure procedures for EAA's 64th annual fly-in convention July 25-31 at Wittman Regional Airport in Oshkosh.

While the overall procedure is similar to past years, there are some changes compared to the 2015 version. Some of those changes include:

- Frequencies for Departure ATIS and Runway 9/27 departures
- Taxiways north of OSH Runway 9/27
- Markings on OSH Runway 36R
- Notification requirement for aircraft over 12,500 pounds
- Internet URLs
- Advisory about separate arrival and departure frequencies

Pilots can acquire a digital version NOTAM by downloading it through the EAA AirVenture website (here). For a free printed copy, pilots can order online or call EAA Membership Services at 800-564-6322.

Let Us Know about Your Achievements!

Have you reached a milestone recently? Passed a checkride, given your first or hundredth Young Eagle flight, flown your homebuilt for the first time? Tell us about it at editorial@eaa.org!

SPORT AIR WORKSHOPS

December 10-11, 2016: Houston, TX

WEBINARS

Registration is required, and space is limited. (click links or check EAA website)

7/6/16 7 p.m. CDT EAA AirVenture Oshkosh 2016 Features and Attractions Rick Larsen & Dennis Dunbar

7/13/16 7 p.m. CDT Airspace Ace - Sampling the Alphabet Soup
Qualifies for FAA Wings credit Prof. H. Paul Shuch

SAFETY NOTES & NOTAMS

BEST GLIDE SPEED AND DISTANCE

The General Aviation Joint Steering Committee (GAJSC) has determined that a significant number of general aviation fatalities could be avoided if pilots were better informed and trained in determining and flying their aircraft at the best glide speed while maneuvering to complete a forced landing.

Ron O'Dea

I ran across this Safety Brief on the FAASTeam web site. It does an excellent job of helping us to determine what the best glide speed is for any aircraft. Especially useful if the information has not been provided in the Pilot Operating Handbook. So I am sending the article in its entirety. So remember "Keep You Brain In The Game"!

FAA
Aviation Safety

What is Best Glide Speed?

Is it the speed that will get you the greatest distance? Or is it the speed that gets you the longest time in the air? Or are these two the same — the longer you fly, the further you go? Well, as so often is the case, best glide speed depends on what you're trying to do.

Going the Distance

If it's distance you want, than you'll need to use the speed and configuration that will get you the most distance forward for each increment of altitude lost. This is often referred to as best glide speed and, on most airplanes, it will be roughly halfway between Vx (best angle of climb speed) and Vy (best rate of climb speed).

Aircraft	Vx	Best Glide	Vy
C172	53	65	73
AA5A	78	83	91
PA 28 161	63	73	79

Keep in mind that this speed will increase with weight so most manufacturers will establish the best glide speed at gross weight for the aircraft. That means your best glide speed will be a little lower for lower aircraft weights.

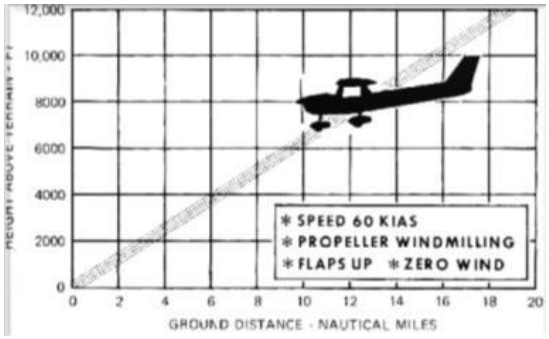
Need More Time?

If you're more interested in staying in the air as long as possible to either fix the problem or to communicate your intentions and prepare for a forced landing, then minimum sink speed is what you'll need. This speed is rarely found in Pilot Operating Handbooks, but it will be a little slower than maximum glide range speed.

What About My Airplane?

If you're wondering about the airplane you fly, you can do some experiments on a dual flight with your flight instructor. Start at Vy or the manufacturer's recommended best glide speed with power off — you did remember the carb heat, didn't you? — and note speed vs. sink rate as you adjust pitch to reduce airspeed. For the most useful results, you should do this as close to typical mission weight as possible. To identify minimum sink speed, look for the highest speed forward that will give you the lowest rate of descent. Knowing these speeds will give you a couple important numbers to have in the back of your mind should a situation ever warrant their use.

How Far Can I Glide?



How many miles you can glide per 1,000 feet of altitude is another very useful thing to know. A rule of thumb for Cessna 152s and 172s is 1.5 nautical miles per 1,000 feet of altitude above ground level. Consider experimenting to see how far your aircraft can glide.

Forced Landing Tips

A good way to prepare for a forced landing is to practice power off approaches and landings at typical mission weights. This will keep your skills from getting rusty. Some pilots will choose a spot between the 1st

and 2nd third of the available landing area for an initial aim point. As they see they can make that initial spot, they'll add flaps and perhaps slip the airplane to move the aiming spot to the 1st third of the landing area. This is done to reduce the chance of landing short or a final approach stall while trying to stretch the glide to the runway.

Position is Key

For any type of gliding approach, you'll want to reach a key position on base from which you'll know you can make a successful landing. Until the key position is reached, keep the airplane configured for best glide. After you pass the key position, add flaps

(Continued on page 8)

SAFETY NOTES & NOTAMS

(Continued from page 7)

and gear to configure the airplane for landing and fly the final approach at 1.3 times the stalling speed in landing configuration (1.3 Vso). The FAA's Airplane Flying Handbook contains several helpful diagrams for different power-off landing scenarios and corresponding key points.

Resources

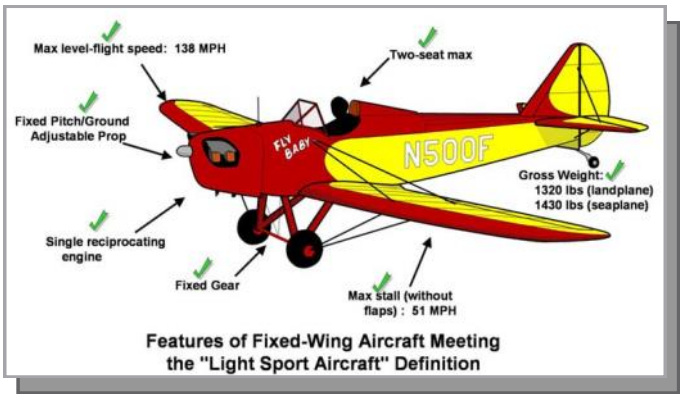
- FAA Airplane Flying Handbook — Approaches and Landings (Chapter 8): http://go.usa.gov/cKaUJ
- FAA Safety Team (FAASTeam) WINGS Pilot Proficiency Program: www.FAASafety.gov/wings

Produced by FAA Safety Briefing | Download at 1.usa.gov/SPANS

BUYING AN LSA—DID YOU KNOW.....?

By James Schlattman

The Light Sport Aircraft (LSA) and its related requirements have been here for over 10 years but there is still some confusion about the "Program". As some of you know, I sold my LSA in mid-March and I quickly started looking for a replacement. Not an easy or quick task! I have since traveled to four different cities around the USA, checking out planes for sale. What an eye opener this experience has been. So far, I have rejected each plane I have looked at for various reasons but I started seeing a common thread between these planes. That common thread was the owner's lack of knowledge of or ignoring the regulations that govern the LSA. Before I go any further, let me explain the difference between a SLSA and an ELSA. The SLSA is a factory built plane and the ELSA is simply an Experimental. The airplane can develop into an ELSA in a couple different ways. First, if it's a kit built, then obviously it's an Experimental. Second, a factory built SLSA can be converted to Experimental, one time!



http://www.bowersflybaby.com/tech/lsa.html

The SLSA's Airworthiness Certificate is issued with a set of written directions, the Operating Limitations. This is where the owner has the potential to make some mistakes. I'm sure the owner's read the Operating Limitations on day one, or shortly thereafter. However, these Limitations are the bible for the operation and maintenance of said aircraft and they MUST be followed. As a matter of fact, there is a penalty for not following the requirements of the Operating Limitations, but I will discuss that a little later. What many owner's fail to realize is that the LSA is manufacturer-controlled for maintenance and inspection. The Operating Limitations state "No person may operate this aircraft in the light-sport category unless it is continuously maintained in compliance with FAR 91.327(b)". That FAR states, in part.....this aircraft is maintained IAW the maintenance and inspection procedures developed by the aircraft manufacturer..... That's quite clear to me; Follow the aircraft's maintenance and inspection requirements. If you are doing an "Annual" you must follow the manufacture's inspection checklist. As true with maintenance, it must be done IAW with the manufacture's maintenance manuals.

I said I would discuss the penalty for not following the Operating Limitations. Some where in the set of Operating Limitations for the SLSA, it probably will say something to the effect of "Noncompliance with these operating limitations will render the airworthiness certificate invalid." It also goes on to say that if this happens, then the owner must apply for a new airworthiness certificate under the provisions of FAR 21.191 with the appropriate operating limitations before further flight. FAR 21.191, explains how to convert to Experimental (ELSA).

These are the main problems I have found while looking for another LSA but, there have been other areas of concern that one would expect to find with any other pre-buy, look-see.

THE BUILDER'S CORNER

CHECK YOUR PAPERS AND YOUR EQUIPMENT

Mark Julicher

We all know that the traffic cop asks for drivers license and registration when we get stopped for an infraction. Well guess what? The same logic follows if you have an aircraft incident. As a minimum you will be asked for:

- Pilot certificate
- Medical certificate
- CURRENT photo ID
- Log entry showing a current Flight Review
- Logbook showing currency for the operation performed (e.g. night landings or instrument approaches.)

Additionally, you will be asked to show aircraft logbook entries for:

- Annual inspection
- Transponder encoder check
- And if IFR, the pitot static check.

One FAA inspector I know told me that 90 percent of incident pilots fail to provide satisfactory paperwork for one or more of the above. Really folks, it is not too difficult, so pull out your papers and check yourself! It is still the pilot in command that is responsible for EVERYTHING and it does not matter if the plane is a rental.

And while you are at it, check your plane's minimum requirements. Refer to CFR 91.205. A VFR aircraft must have:

- Airspeed indicator
- Altimeter
- Magnetic compass (with correction card)
- Approved safety belts with metal latches.
- Anti Collision Light System for aircraft certified after March 11, 1996
- Landing gear position indicator for retractable gear aircraft
- ELT
- Tachometer for each engine
- Manifold pressure gauge for each altitude engine
- Fuel gauge indicating the quantity of fuel in each tank.
- Oil Pressure gauge for each engine using a pressure system
- Oil temperature gauge for each air-cooled engine
- Temperature gauge for each liquid cooled engine
- Flotation gear and pyrotechnic signaling device if operating commercially beyond gliding distance of land.
- Shoulder harness for each front seat for aircraft manufactured after July 18, 1978 and for all seats if manufactured after December 12, 1986, or if a Rotorcraft shoulder harnesses all around if manufactured after September 16 1992.

And for night flight add:

- Landing light (if flying for hire)
- One complete set of spare fuses or three fuses of each kind required that are accessible to the pilot in flight.
- Anti collision lights for aircraft type certified after August 1971
- Position lights
- Adequate electrical power for all radios and lights.

Check all this stuff on your next pre-flight. It might save you some grief. And don't forget that there are more requirements for instrument flight so pull out your FARs and have a look.

Be Aware of Aging Equipment

Have you ever noticed that planes are getting older? That is not news, but think about it some more. If your car is ten years old or more, you know that unexpected stuff is wearing out. The electric locks stop working or the ball joints go out or wheel bearings fail. It happens. Now transfer that thinking to your elderly air machine. Stuff is wearing out. What follows are two interesting examples.

We were doing an annual and as part of that effort inspected the control hinges. Upon giving the rudder a bit of a tug it moved considerably and made a loud clunk. This was sure sign of worn hinges. It may fly OK for a while, but eventually the control surface could begin to buzz or flutter which is definitely not good.

We removed the old hinge brackets from the rudder along with the massive Luscombe hinge pins. Photo one shows the condition of the worn hinges. Notice the daylight showing between the brackets and the hinge pins.

(Continued on page 12)

EAA 35 CHAPTER PICNIC—PHOTOS BY MARTIN VERSTEEG AND DAVE (THE ARTIST) BAKER—THANKS!

EAA 35 CHAPTER PICNIC—PHOTOS BY MARTIN VERSTEEG AND DAVE (THE ARTIST) BAKER—THANKS!

THE BUILDER'S CORNER (CONTINUED)

(Continued from page 9)

The solution in the case of the Luscombe was to call Univair and order parts. Not everyone is so lucky as to have a current supplier, but the Luscombe is supported very well and we were able to turn cash into hinges. In short order we had new brackets and pins. Photo two shows how a new assembly looks.

Example 1 – Luscombe rudder hinges.

We fastened the new hinge brackets the rudder-post and dropped the hinge pins into place and in a matter of an hour or so we had the rudder as tight as it was in 1948.

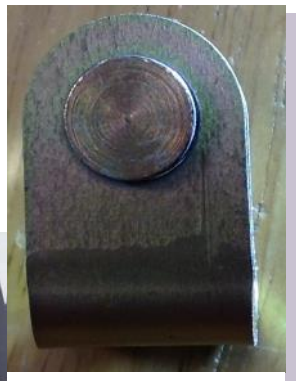


Photo 2: New Luscombe Rudder Hinge bracket and Pin.

Somebody else will have to replace it next time because it will be sometime in 2084.

Example 2 - Cessna 172 Tachometer

Photo 3: Installed Luscombe Rudder

A customer dropped in and told me his tachometer stopped working. Usually this means a simple, broken tachometer cable, but in this case, the tachometer needle was lying in the bottom of the indicator. Keen intuition made me immediately aware that a replacement tachometer would be required.

We obtained a new tachometer and installed it, but upon engine run-up it did not work. Further investigation revealed that the tach did not just break, it seized, and when it did it broke the tach cable as collateral damage. So I must now obtain a tachometer cable and complete the repair. It is annoying, but not terribly difficult. Knowing that the tachometer is a required instrument, the astute owner realizes that the plane is grounded for now.

Many of you know that I get a strange (perverse?) sense of satisfaction from dismembering aircraft parts, so allow me to dissect the offending tachometer for you and show you what went wrong.

In order to disassemble the tachometer this far, the bezel in the upper left of the photo had to be ground off, so please don't go thinking you can casually open up your tachometer and roll back the tach time. At any rate, the interesting piece of this device is at the lower right of the photo, so let's look at that a bit closer.

Photo 4: Dissected Tachometer

Photo 6: The Moving Parts of a Tachometer, Bottom View.

Photo 5: The Moving Parts of a Tachometer, Top View

For you motor heads, there is no difference between this tachometer and a speedometer except the calibrations on the dial face. The tachometer drive shaft screws onto the threaded extension (at the bottom of photo 5.) The drive shaft turns the yoke that can be seen here spanning and bent around a steel cup. Inside the yoke is a bar magnet. As the yoke and magnet spin they set up a whirling magnetic field that drags the steel cup in the same direction. The cup and yoke are

(Continued on page 13)

THE BUILDER'S CORNER (CONTINUED)

(Continued from page 12)

Photo 7: Front of Mechanism Showing the Calibrated Spring.

coaxial, i.e., they are supported on a common shaft but they are not mechanically connected. The rotating magnetic field turns the cup that is in turn connected to the needle. A calibrated spring resists the needle, so the magnetic force opposing the spring force provides an indication proportional to engine speed.

In photo seven you can see the calibrated spring that resists the needle. Remember the needle broke off of this instrument, so it is not shown.

Now on this particular instrument, either the steel cup broke away from the supporting shaft or the yoke bearings wore out. At that moment, the spinning yoke rubbed on the cup, the instrument more or less froze and that broke the needle and the drive shaft. Go back and look at photo six again and observe the shiny rub marks on the outside of the steel cup. Recall also that the spinning yoke is essentially a gyroscope and it is subject to all the forces of a gyroscope. Be advised that spins and aerobatics will wear out gyro instruments much faster than straight and level flight.

Photo 8: The Recording Wheel.

Finally, let me say a word about the recording wheel. It is not a clock! When the engine turns slowly, the recording wheel turns slowly. When the engine turns fast, the recording wheel turns fast. The various gears (visible in photo 8) are set up to drive the recording wheel in real time when the engine is at cruise RPM. So, if you are loafing along at 60% power the Hobbs meter (a clock) will run faster than the tachometer's recording wheel.

JUNE MYSTERY PLANE REVEALED

Doug Apsey

EAA Chapter 35 members David Baker and Charlie Brame correctly identified our June mystery airplane as the Republic XF-84H Thunderscreech. The XF-84H was a turbine powered derivative of the F-84F Thunderstreak. Its first flight was on July 22, 1955. Although the development of the Thunderscreech was sponsored by the Air Force, the original concept for the design came from a Navy requirement for a carrier based fighter that would not require catapult assist for take-off. However the Navy cancelled the program so the XF-84H prototype became a research aircraft to test supersonic propellers at the Air Forces Propeller Laboratory at Wright-Patterson AFB.

The XF-84 was basically an F-84F airframe with a 5,850 hp Allison XT40 turboprop mounted centrally in the fuselage driving a 12 ft. diameter, three bladed propeller. The propeller was turned at a constant speed and thrust was adjusted by varying the pitch of the propeller. The tips of the propeller blades traveled at Mach 1.18. The name "Thunderscreech" was given to the airplane because of the extreme noise from the supersonic propeller and the turbine engine. The XF-84 was plagued with stability issues caused by the propeller torque. Several design changes were made to both the propeller and the airframe in an attempt to overcome this problem with only minimal success. Other significant problems with the airplane included propeller vibration, mechanical failure of the propeller pitch gearing and all too frequent problems with the power plant. One test pilot flew the airplane eleven times, with ten of those flights ending in a forced landing. Another test pilot flew it once and refused to ever get back into the airplane!

Flickriver.com

Military.wikia.com

The XF-84 had a design speed of 670 mph but it appears the true top speed was around 520 mph, although some accounts report that it reached 617 mph. Despite never achieving its' design speed, the Thunderscreech was listed by 'The Guinness Book of Records" as the fastest single-engine propeller-driven aircraft ever built, although that claim is often disputed. One honor the Thunderscreech does seem to hold with little dispute is being the loudest aircraft ever produced. It is claimed that ground crew would often get sick if too close to the aircraft during ground operations.

The extreme noise, frequent mechanical and engine failures, instability issues and the inability to reach design speeds resulted in the cancellation of the XF-84 test program in September of 1956. Only two prototypes were built. The first prototype is on display at the USAF Museum at Wright–Patterson AFB while it is thought that the second one was scrapped soon after the program was cancelled.

The source for this article was https://en.wikipedia.org/wiki/Republic_XF-84H

The following link will take you to an interesting video of the XF-84, https://www.youtube.com/watch?v=UFhSzReWTgs

NAME THE PLANE

Here's your July mystery airplane. Who will be the first to email me at dapsey@satx.rr.com with the following information?

1. What company designed and built it?
2. What was its designation and name? i.e. C-172 Skyhawk, PA-24 Comanche, etc.
3. What was the intended role for the design (i.e. why did they ever build this thing)?
4. What year did it first fly?
5. How many were produced?

Country Store

Brian Goode

The EAA Chapter 35 Fishing shirt inventory has a good selection in inventory, ready to be worn to the next Chapter 35 meeting, so please stop by and pick yours up .

Just when you think you have sold the last of something, the deal falls apart, so that means we still have one FLIGHT BAG left to sell. Only $29.00 U.S. American Dollars and it's yours.

The Country Store is now a dealer for the Wash Wax All aircraft care products. These fine products are manufactured locally by Aero Cosmetics on the San Antonio International Airport.

We have just placed our third order for some additional inventory which will be available at all of our meetings. We will be doing a show and tell of some of the products at a future meeting.

Our prices for EAA Chapter 35 members will be better than other outlets because of our low overhead.

Click here for the complete product line

MERCHANDISE FOR SALE AT THE COUNTRY STORE

"Fishing Shirts" Short Sleeves	Men's & Lady's	$43.00
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Chapter 35 Bumper Stickers		$1.00
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Dave Baker (2010-2012)		Ron O'Dea	
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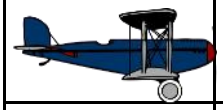
CHAPTER CALENDAR — CONTACT EAA35VP@GMAIL.COM

JULY 	*9*	**FLY-IN BREAKFAST EVENT** **BOD Meeting**	**EAA Chapter 35 Clubhouse** **9:00-12:00 am** **12:30 pm**
AUGUST	*13*	**LUNCH MEETING** **Matt Van De Walle, C5/C5M Pilot**	**EAA Chapter 35 Clubhouse** **Lunch 11:30 am** **Meeting/Program 12:30 pm**
SEPTEMBER	*10*	**LUNCH MEETING** **Richard Elder, Fire Resistant Materials**	**EAA Chapter 35 Clubhouse** **Lunch 11:30 am** **Meeting/Program 12:30 pm**
OCTOBER	*8*	**LUNCH MEETING** **BOD Meeting**	**EAA Chapter 35 Clubhouse** **Lunch 11:30 am** **Meeting/Program 12:30 pm** **10:30 am**
NOVEMBER 	*12*	**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 	*10*	**CHRISTMAS PARTY** **Christmas gathering 11-12** **Lunch catered** **Gift Exchange ~$10 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 Air-shows

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**
Council of Air Shows	**https://www.airshows.aero/Page/ASCalendar**
July 21-31	AirVenture Oshkosh, WI
Sept 17-18	Heart of Texas Airshow Waco, TX
Sep 30 - Oct 2	Ranger Old School Fly-In Airshow No.10 - Ranger, TX. - (204 miles) http://www.rangerairfield.org
Oct 21 – 23	Wings Over Houston Airshow Houston, TX

Gone West

Joanne Warner

Joanne, beloved partner of Norris and long-time supporter of the chapter and aviation lost her long struggle with terrible injuries she suffered in a tragic accident.

She was never able to rejoin us in our chapter after her mishap and she was missed.

She is finally without pain, and though she will be missed by so many, we celebrate her life, in her passing.

Classified Ads

T-Hangar available for immediate lease. Contact Doc Hecker at 210-391-1072 or faaexamdoc@yahoo.com. *(expires Jun 2016)*

Hangar for Rent: 40'w by 32'd, on east end near runway. Electrical and water included with overhead fluorescent lighting, concrete flooring and ramp in front of hangar. Available immediately. Call Dave Baker 210-410-9235 *(expires Jun 2016)*

"**HANGAR FOR SALE,** or rent with an option to buy. 40 ft. wide by 32 ft. deep, with electricity. In the new section of hangars. Available on or before May 1st. Call Brian Goode at 727-709-1159, email to: ladybgoode@msn.com, visit us at the Country Store, or stop by Lot 53 on the Airpark." *(expires Jun 2016)*

"**San Geronimo Airpark hangar for sale:** Unit 7 of new building on west side of entry road. Contact Ulf Balldin (210 663-7391) or Tom Morgan (210 884-4597)."*(expires Jun 2016)*

Mustang II FOR SALE! Built 1970, 1,082.0 TT, 354 SMOH, Lycoming O-320 (160 hp) , Fixed pitch Sensenich propeller, 03-16 Condition inspection, Updated cowling, canopy, E-mags, fuel injector and other mods, Dynon D10A EFIS with auto pilot, Garmin 296 GPS, Icom IC-A200, KT76A Transponder , $38,000 obo or possible trades , ohlson38@gmail.com, 830-765-7481 *(expires Jul 2016)*

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***

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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%

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

The Official Newsletter of EAA
Chapter 35, San Antonio, TX

Chapter 35 meets

Each Second Saturday of the Month

9 July 2016

FLY (or drive) IN

and Breakfast

0900-1200

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 over 50 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]

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

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

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