

# ***EAA Smilin Jack 866 Chapter Newsletter***

## ***March 2017***



***Christine Toevs flew this Gyro down from Wichita, Ks to Sebring. Chapter mbr Laura Wood in back seat waves goodbye as they leave SJ breakfast.***

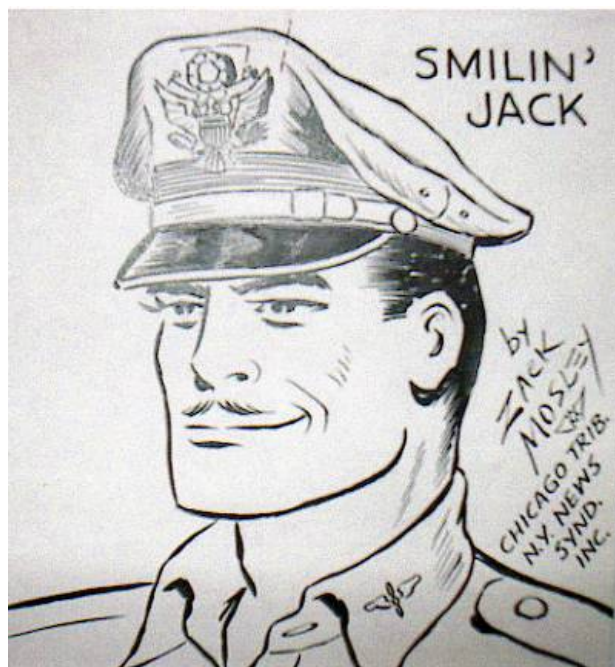
***Greetings Members and Friends of EAA Chapter 866,***

**Well Folks, the Flap-Jacks were really Flyin' at the February *Smilin' Jack* Flap-Jack breakfast!! We served around 220 hungry folks and we're calling that a record turnout! (At least its more folks served than any of our volunteers can remember serving in recent years!) We also counted around 40 airplanes and other flying flivver machines that flew in to have breakfast with us. We can't do it without the Great Job by all of our Chapter 866 volunteers who work together so hard to make it look so easy.**

**This past month, we also had a Chili and movie fun night at the clubhouse. We think there were around 35 people (including several guests) who came out on a Friday night looking for a good excuse to do something fun with a few friends. Thanks to everyone who volunteered to bring food!! There was plenty of Great Chili and fixins to go around. The movie we watched was the untold story of the Miracle on the Hudson. Most folks seemed to enjoy the movie and the evening in general. One of my favorite lines in the movie was when Capt. Sully**

corrected one of the accident investigators by saying, “*It wasn’t a crash, it was a forced landing!*” True that! Well done Cactus 1549!

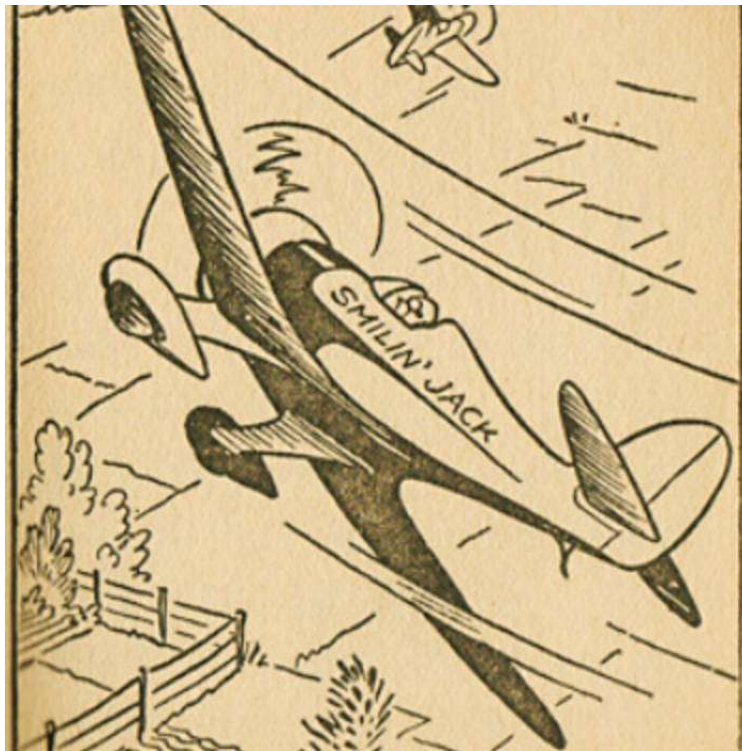
OH, by the way, is it just me or has anyone else noticed a resemblance between Capt. Sullenberger and our Chapter hero *Smilin’ Jack*? Check it out . . . same steely eyes, same narrow grin, same slim mustache, same confident persona, and same taste in hats and lapel pins . . . sure makes ya wonder if Sully ever read the *Smilin’ Jack* comic strip when he was a kid. I bet he did!



Things have been pretty busy recently at Arthur Dunn Airpark! Several folks are finishing up their annual wintertime condition inspections on their airplanes, and others are getting their machines ready to fly for the first time.

I specifically wanted to mention that Debra’s newly completed airplane, the *Silence Twister*, is now taking up residence at Dunn airport for some initial ground testing. A couple of chapter members and myself were fortunate enough to get to see Deb’s new plane all assembled the other day when we stopped by their new hangar space. All I can say is that it’s simply a beautiful looking airplane and they both are justifiably proud of all their hard work over the past 5 years or so. Deb has spent countless hours sanding, painting & polishing the project, and what a fabulous paint scheme it is! Richard has worked some of his electrical wizardry and engineered some nifty electronics into the cockpit. From the outside, it looks like a World War 2 era reconnaissance / scout plane, but on the inside it looks almost like a Space Shuttle control panel (no doubt inspired partly by Richard’s thousands of hours of time logged in Space Shuttle cockpits). In fact, the only thing that seems to be missing is a grapple hook fixture to allow the plane to latch onto the bottom of a Zeppelin Airship in flight! Our whole chapter wish them the very best as they move from the project management phase of building an airplane into the all-important flight testing phase. With its classic curvy lines and military inspired paint-scheme, Deb’s Twister is exactly the type of airplane that ol’ *Smilin’ Jack* would really get a kick out of flying!





Deb's Silence Twister is eventually headed for movie stardom playing the role of the P-77 reconnaissance fighter in the screen adaptation of the novel "ZRS".

You can find out more about that here: [http://zrsthemovie.com/?page\\_id=669](http://zrsthemovie.com/?page_id=669)

#### **PANTHER PROGRESS REPORT:**

There's been a fair amount of interest from folks in the chapter and at the airport regarding the Panther kitplane project that Bob, Ed, and myself have been working on recently. So I'll go ahead and give you a Panther Project report here in the newsletter and save a little time during our next chapter meeting.



**Photo: Panther Prototype in flight**

First of all, I'd like to apologize to anyone who may have dropped by the hangar to check out the project and may have left not feeling very welcome. Just consider it an unintended consequence of making progress. We certainly do welcome any visitors and interested folks, and we enjoy talking about the project, but in the interest of pushing

forward on it quickly, we've tried to stay focused on tasks, keep our distractions to a minimum, and so we have not stopped for very long to jaw-bone with folks. This workman-like approach has paid off big as we have currently completed nearly all of the major airframe structures! Our pile of parts left to install in the plane is getting smaller and smaller. First, let me take you back in time a few weeks to the start. We took possession of the kit on January 13<sup>th</sup> (of this year), and the next day (1/14) was our first full day of building. As I write this at the end of February (2/26), only 44 calendar days have passed, and we have logged almost 600 total man-hours since we began the project. We're keeping a log of our time mostly for fun, but also to see what it really takes to get a small, simple, well-engineered machine like this into the air.

At this point in the project, we have essentially completed ALL of the major structures of the airframe, including empennage, both wings (including fuel tank installation), all control surfaces, and the fuselage (minus the final installation of the forward side skins for better access). The landing gear is attached to the fuselage and most of the control mechanisms are installed in the fuselage. There are still many small details left to do, but this past weekend we fit-checked the wings into the fuselage for the first time, and although they took a little finessing, they generally lined up very nicely. For those who do not know, the Panther is designed with folding wings to permit easy trailering, or to allow for hangaring with another aircraft and thus keep ownership costs low. This is a really nice feature, but it adds a few man-hours and some additional parts to the overall project.



Photo: Panther prototype – only 7 feet wide with wings folded

We already have our engine (a nice used Lyc. O-235), and we should be installing it and fitting the cowling over the next month, as well as planning out the instrument panel, working on the canopy installation, and final painting many of the major structures. We will also be working through a lot of those little bits & details that any big project has. Don't let our speedy progress fool you, this IS a big project, and a lot of work is involved. However, with most of the structure completed and the fuselage now resting on its gear, it's starting to feel like we're reaching that proverbial stage of being 90% done, with 90% left to go!!

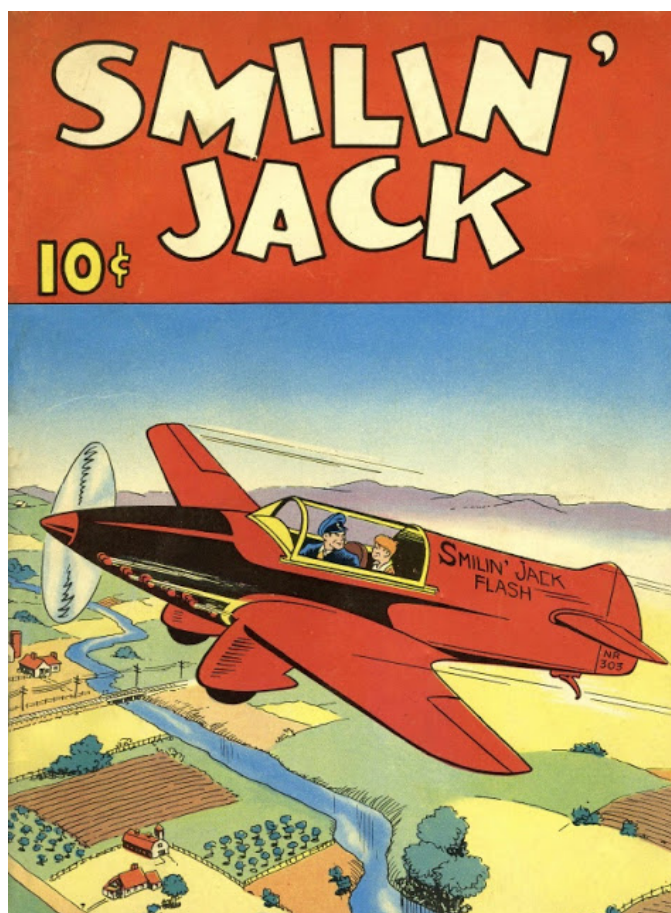
We have had 3 or 4 guest builders drop by and spend a few hours working with us to experience the thrill of airplane building. Besides that, we have had countless chapter members and airport regulars drop by to see the machine and check out our progress. Most of them seem to be impressed with the quality of the kit, and the speed of our progress. It's always nice to have someone stop by and offer up words of encouragement. I should probably mention that Bob, Ed, and myself are not first time builders. We all three have technical backgrounds, and all have previous building experience with our own personal projects. We also collectively bring a fairly complete set of aircraft tools with us, so there has been little time wasted waiting for some special tool or drill bit to arrive in the mail. In addition, we made several decisions about the project very early on to help it move along



faster, including our choice to use a simple straightforward aircraft engine for the powerplant, our decision to use protruding head rivets to save time dimpling skins and frames, the use of a simple instrument panel and electrical system, and our choice of a simple single-color paint scheme. We have naturally found tasks that we're good at, and have divided up portions of the kit in some areas so that we can work in parallel, and we have worked as a team in other areas of the kit.

When Bob, Ed & myself began this effort, we thoroughly discussed things like our expectations for budgets, timelines, our personal time available to work on the project, and our personal objectives for building this particular airplane at this particular time. Speaking for myself, the project has fully exceeded my expectations in terms of budget and timeline, at least up to this point. Doing a project like this as a team really helps to move the thing along! In fact, the old adage "*Many hands make light work*" comes to mind. On more than one occasion, one of us has gotten stumped on a particular task or set of instructions, and we were able to talk it through together and quickly resolve the issue and move on. Also, learning new building skills and techniques from each other is another unexpected consequence of working on a project like this as a team. I knew going in that this was essentially a fast-build kit, but I honestly did not think we would be this far along this fast! I'm happy that we are, and can't wait to get back out to the hangar and make some more progress.

Say, do you think *ol' Smilin' Jack* would like to fly around in a flaming red Panther Sportplane? Yep, me too!



Well, it sure looks like we've succeeded in accomplishing the 5 F's for the month of February . . .  
Friends, Flying, Fun, Fabricating (our flying machines), & Food

I hope you will make plans to join us this week for our March chapter events!  
Les Boatright (EAA #563003)  
President EAA Chapter 866,  
The *Smilin' Jack* Chapter  
"Keep Flying & Flippin those Smilin'-Flap-Jacks!"

Some reminders about upcoming events:

<b>Date</b>	<b>Event</b>	<b>Place/Info</b>
Mar. 1	Regular Chapter 866 Monthly Meeting	Building 10 / 7 pm
Mar. 4	OUR 866 Monthly Pancake Breakfast	Building 10 / 8-10 am
March 6-12	Women of Aviation Worldwide Week A week is designed to raise awareness of aviation opportunities available to girls of all ages while celebrating the accomplishments of past and present women of aviation.	<a href="https://www.womenofaviationweek.org/">https://www.womenofaviationweek.org/</a>
Mar. 10- 12	Valiant Air Command's Warbird Airshow (40 <sup>th</sup> year) <a href="http://www.valiantaircommand.com/airshow">http://www.valiantaircommand.com/airshow</a>	TICO Arpt (KTIX) / Gates Open 8:30 AM, Show starts 1:00 PM
Mar. 18	Valkaria Chapter 1288 - Pancake Breakfast (3 <sup>rd</sup> Sat.)	Valkaria Arpt (X59) 8-10 am
April 1	OUR 866 Monthly Pancake Breakfast	Building 10 / 8-10 am
April 4-9	Sun-N-Fun Fly-In ( <a href="http://www.sun-n-fun.org/">http://www.sun-n-fun.org/</a> )	Lakeland Linder Arpt (KLAL)
April 5	CANCEL Regular Chapter 866 Meeting	CANCEL due to S-N-F conflict
Apr. 10-	Brevard County Schools Spring Break	

14	Week	
May 1	FAA "BasicMed" reform goes into effect	<a href="https://www.aopa.org/news-and-media/all-news/2017/january/12/aopa-details-basicmed-rule">https://www.aopa.org/news-and-media/all-news/2017/january/12/aopa-details-basicmed-rule</a>
May 3	Regular Chapter 866 Monthly Meeting	Building 10 / 7 pm
May 6	OUR 866 Monthly Pancake Breakfast	Building 10 / 8-10 am
May 20-21	90 <sup>th</sup> Anniversary of Charles Lindbergh's New York to Paris flight	<a href="http://www.charleslindbergh.com/history/paris.asp">http://www.charleslindbergh.com/history/paris.asp</a>
June 3	OUR 866 Monthly Pancake Breakfast	Building 10 / 8-10 am
June 7	Regular Chapter 866 Monthly Mtg	Building 10 / 7 pm
July 24-30	OSHKOSH – EAA AirVenture 2017 (Blue Angels) ( <a href="http://www.eaa.org/en/airventure/aaa-airventure-tickets">http://www.eaa.org/en/airventure/aaa-airventure-tickets</a> )	Wittman Regional Arpt (KOSH)
Oct. 27-28	2017 AOPA Fly-In Location #4. Tampa, FL ( <a href="http://www.aopa.org/fly-ins">http://www.aopa.org/fly-ins</a> )	Peter O. Knight Arpt (KTPF)

### ***February Breakfast***

The biggest ever! What a perfect day it was! Weather was a Chamber of Commerce day and the folks came to Dunn Airpark for our monthly breakfast on Feb. 4<sup>th</sup>! About 44 aircraft flew in and found places to park thanks to Greg Smith who is always around the flight line to help. Many people showed up in cars, motorcycles and walk ins too. Deborah cooked 366 eggs, Bob cooked 25 lbs of bacon and over 200 sausage patties. The pancake maker (me) and the mixologist, Kip produced 450 pancakes! We used 12 gals of coffee, 6 gallons of OJ. Loretta made over 150 biscuits plus a couple gallons of sausage gravy and grits. On top of all of this between Donna, Deborah and Loretta there was an amazing amount of breakfast sweets. The amazing thing is that we had just enough of all of the essentials and didn't run out of anything. The count of eaters, 225!



John Porter was around with his camera and provided me with over 600 pictures! He has a good time shooting aircraft arrivals and departures and the breakfast crowd. I will have some of his pictures attached to this newsletter that you can view if you want to.

## ***Member Andrew Watkins Checks in!***

Hi Everyone,

This is Andrew Watkins writing to you from Liberty University up in Lynchburg, Virginia (it's smack in the middle of the state right in between Roanoke and Richmond). I was a member of the chapter last year and thought I'd take a minute to update those of you that may want to know what I'm up to now. As some of you may know, I began attending Liberty as a declared aviation major this past August after graduating high school and earning my private pilot license. Liberty has a rapidly expanding School of Aeronautics that was recently recognized by Textron Aviation (parent company of Cessna) for their quality of training and was one of four schools selected to participate in their Top Hawk program. Liberty also has an excellent safety record. Right now there are around 500 students in the school working towards Aeronautics Degrees with tracks in either Commercial Aviation or UAS Operation. The training fleet currently consists of 20 C172 SP Skyhawks and 4 PA-44 Seminole, all equipped with G1000 avionics. Lynchburg Regional (LYH) is the home airport and is conveniently located about 5 minutes away from the main college campus. It is mostly comparable to KTIJ as far as runway size and facilities, however it does have a small passenger terminal for a few scheduled commercial flights into the field. One cool thing about the School of Aeronautics is the Dean is a retired USAF F-15C fighter pilot who was stationed at Patrick AFB for a few years during his career. He knew right where Titusville when I mentioned it one time I was talking to him.

As far as training goes, I unfortunately didn't get to jump right into flying my first semester due to having to work out some financial arrangements. However, this semester I am back in the saddle with it all. Liberty has a very relaxed policy for incoming students like me that already have their private pilot certificate, so I was given credit for several classes counting towards my major upon starting. Due to Liberty being a Part 141 flight training school, everything is standardized and training is broken up into stages based on their FAA approved TCOs. At Liberty the typical progression is Private Stage 1 & 2, Commercial Stage 1, Instrument Stage 1 & 2, and then Commercial Stage 2 & 3. All training is in the 172's up until Commercial Stage 3 which is when all of the multi-engine training is done in the PA-44. Completion of all these stages is the minimum for graduation and upon completion one will hold a Commercial Pilot Certificate with Multi-Engine and Instrument ratings. However, I have found that most students continue on to get their CFI, CFII, and MEI certificates so that they can begin instructing to build up hours for the airlines. Due to Liberty being a collegiate level program, the FAA allows graduates of the Aeronautics program to be eligible for a Restricted-ATP rating at either 1,000 or 1,250 instead of the normal 1,500 depending on the number of classes taken from Liberty. While the reduction is definitely nice, there still is a lot of time that has to be built up.

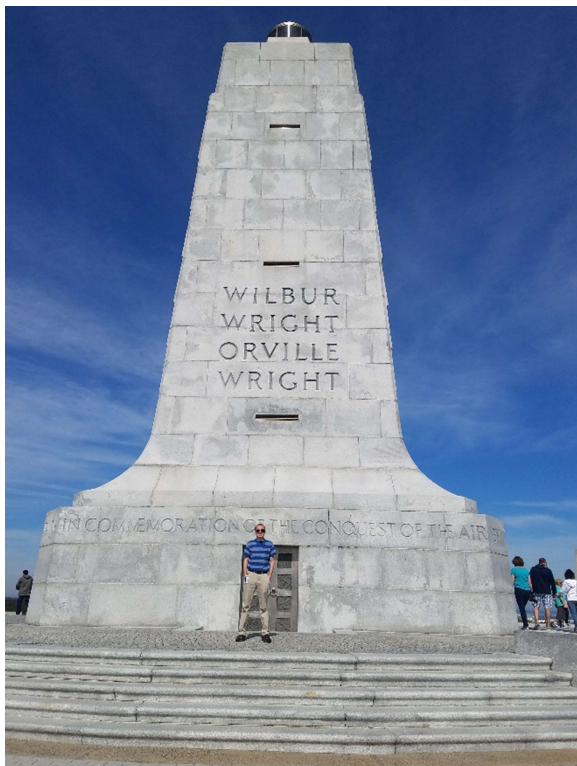
Since I finally started flying this semester, I was able to jump right into Commercial Stage 1 training after a simple proficiency check flight. All of the planes I had flown before coming to Liberty had round dial avionics, so I have had to learn the G1000 system and transition into using it. The learning curve wasn't as steep as I was expecting and I am already coming to enjoy it, however it does have its occasional oddities. As far as the actual flight lessons go, Commercial Stage 1 is almost all cross-countries into relatively large airports and then concludes with some basic instrument training. At the time of my writing this, I have already completed flights into Raleigh-Durham Intl (RDU), Richmond Intl (RIC), Yeager field (CRW) in Charleston, WV, and First Flight (FFA) in Kill Devil Hills, NC. All of the trips have been amazing so far and I have gotten some excellent radio practice talking to controllers at bigger airports and also operating in busy airspace. My remaining trips will be to Easton/Newnam Field (ESN) in Maryland, Washington-Dulles Intl (IAD), and Charlotte-Douglas Intl (CLT). After I finish those, I'll have a few lessons in the flight sims preparing me for Instrument training. Weather permitting, I should be done with Commercial Stage 1 by late March. While we have had unseasonably warm and dry conditions for the past month which has been wonderful, the biggest frustration weather wise has been gusty winds and turbulence. For safety purposes all flights get grounded if winds consistently exceed 25 knots (including gusts) or SIGMETs are issued in the area. Also, in case anyone was wondering why Liberty has students skip going into Instrument training after private and doing the first stage of commercial, it is because they mostly use the first stage to have students build up the hours needed for an Instrument Rating and also refine their skills more after private. In the long-run it saves money and I personally think it is a great idea. Overall, I am really enjoying training up here and I am glad to be taking my interest in aviation further than private.



That is a quick update from me. I have already told several of my friends and even some of the instructors up here about the chapter and some of the planes that have been built. Everyone so far has thought it's the coolest thing. My school year ends in early May, so unless I decide to stay up here over the summer to knock out my instrument training, I hope to be able to rejoin you all and attend some of the breakfasts and chapter meetings for a few months before school starts back up in the fall.

Until then, fly safe and blue skies,

Andrew Watkins



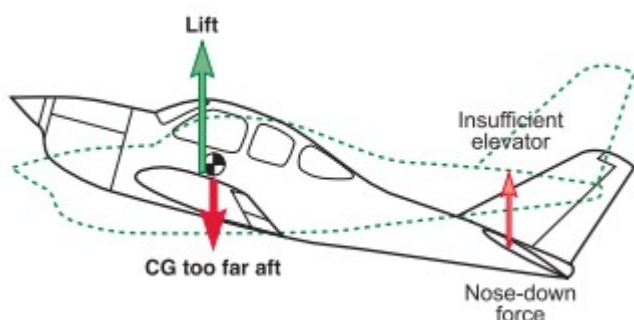
Wright Brothers Monument



Recreated Scene of the Successful Powered Flight

## FAA-H-8083-1A, Aircraft Weight & Balance Handbook

Just in case you've ever wondered about why the weight and balance is important when flying an airplane



[Figure 1-2]

As long as the CG is maintained within the allowable limits for its weight, the airplane will have adequate longitudinal stability and control. If the CG is too far aft, it will be too near the center of lift and the airplane will be unstable, and difficult to recover from a stall. If the unstable airplane should ever enter a spin, the spin could

become flat and recovery would be difficult or impossible. Figure 1-2. If the CG is too far aft at the low stall airspeed, there might not be enough elevator nose-down authority to get the nose down for recovery. If the CG is too far forward, the downward tail load will have to be increased to maintain level flight. This increased tail load has the same effect as carrying additional weight; the aircraft will have to fly at a higher angle of attack, and drag will increase. A more serious problem caused by the CG being too far forward is the lack of sufficient elevator authority. At slow takeoff speeds, the elevator might not produce enough nose-up force to rotate and on landing there may not be enough elevator force to flare the airplane. [Figure 1-3] Both takeoff and landing runs will be lengthened if the CG is too far forward. Figure 1-3. If the CG is too far forward, there will not be enough elevator nose-up force to flare the airplane for landing. The basic aircraft design assumes that lateral symmetry

An aircraft loaded to the rear limit of its permissible CG range handles differently in turns and stall maneuvers and has different landing characteristics than when it is loaded near the forward limit.

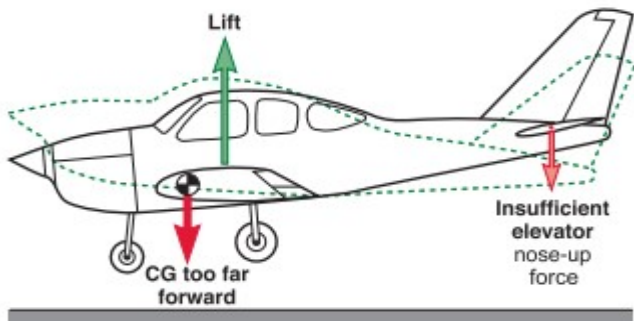
The forward CG limit is determined by a number of considerations. As a safety measure, it is required that the trimming device, whether tab or adjustable stabilizer, be capable of holding the aircraft in a normal glide with the power off.

A tailwheel-type aircraft loaded excessively nose-heavy is difficult to taxi, particularly in high winds. It can be nosed over easily by use of the brakes, and it is difficult to land without bouncing since it tends to pitch down on the wheels as it is slowed down and flared for landing. Steering difficulties on the ground may occur in nosewheel-type aircraft, particularly during the landing roll and takeoff.

To summarize the effects of load distribution:

- The CG position influences the lift and AOA of the wing, the amount and direction of force on the tail, and the degree of deflection of the stabilizer needed to supply the proper tail force for equilibrium. The latter is very important because of its relationship to elevator control force.
- The aircraft stalls at a higher speed with a forward CG location. This is because the stalling AOA is reached at a higher speed due to increased wing loading.
- Higher elevator control forces normally exist with a forward CG location due to the increased stabilizer deflection required to balance the aircraft.
- The aircraft cruises faster with an aft CG location because of reduced drag. The drag is reduced because a smaller AOA and less downward deflection of the stabilizer are required to support the aircraft and overcome the nose-down pitching tendency.
- The aircraft becomes less stable as the CG is moved rearward. This is because when the CG is moved rearward it causes an increase in the AOA. Therefore, the wing contribution to the aircraft's stability is now decreased, while the tail contribution is still stabilizing. When the point is reached that the wing and tail contributions balance, then neutral stability exists. Any CG movement further aft results in an unstable aircraft.
- A forward CG location increases the need for greater back elevator pressure. The elevator may no longer be able to oppose any increase in nose-down pitching. Adequate elevator control is needed to control the aircraft throughout the airspeed range down to the stall.

. Figure 1-3



**One more thing about CG forward of limits not mentioned in the article, your airplane will stall at a higher airspeed!**

**The reason for this article is that there has been a lot of discussion about the subject of weight and balance at our hangar in February and this may help understand the importance of operation within the balance limits.**

Larry

### *Movie Night*

**Feb. 17 was our second movie night for Chapter 866 and we had a great turnout. Good movie (Sully), good food (chili) and great fellowship. I hope we do this some more.**

### **For Sale**

**Experimental LSA, Explorer Airplane, 583 Rotax (2 stroke engine) Contact Luis Journett 321 228 6458**







*Sad News*

Wayne Bullington who was a longtime Smilin Jack chapter member passed away Sat. Feb. 25.

**Monthly Meeting**  
**Weds. March 1, 2017, 7 PM**  
**Bldg 10, Dunn Airpark**  
**Titusville, Fl**

**Monthly Breakfast**  
**Sat. March 4, 2017, 8 AM**  
**Bldg. 10, Dunn Airpark**  
**Titusville, FL**