

# EAA Smilin 'Jack Chapter 866 Newsletter June, 2016



Note the ring around the base of the flag pole at building 10, this is more of Bob Rychell's handiwork. He ringed the stones with pavers so that they don't roll out into the grass where the lawn mower would make ammunition out of to shoot at cars parked in the area! Clever guy that Bob is! Eh?



## *President report*

Greetings Members and Friends of EAA Chapter 866,

**Well, my two girls are really excited to be out of school for Summer break and can hardly wait to go swimming again. Besides going for a splash at your favorite swimming hole, Summertime also means longer daylight hours, more time cutting grass, trips to see grandparents, family vacations, cook-outs with friends, trips to Oshkosh, and also higher Density Altitudes for us pilot folks.**

**When you go out to the airport this Summer to go flying, I know you'll remember to take sunscreen, bug-spray, water and a good hat with you, but will you remember to check the Density Altitude too?**

**High Density Altitude is one of those unseen hazards for pilots and it affects many key performance parameters of your aircraft, including take-off run, climb, cruise, and landing performance. On a hot and humid day, the air is less dense than on cool, dry days. That means there are fewer air molecules in a given volume of air, and the total effect is one where the airplane flies and performs as if it's at a higher altitude than it actually is. The wing becomes less efficient at producing lift, the propeller blades are less efficient at producing thrust, and the engine itself is less efficient at the job of turning fuel into horsepower since it is taking in a fraction less oxygen. As a result, the aircraft will accelerate more slowly down the runway, will need to move faster to attain the same lift from the wing, and will climb out more sluggishly. So more distance is needed for take-off roll and because the**

ground speed is faster for a given indicated airspeed, more distance will be required for the landing roll also. All of these factors can lead to an accident if the reduction in performance has not been anticipated and understood by the pilot. Density Altitude is the altitude that the airplane “feels” like it is flying as compared to normal or “standard” atmospheric conditions. The more technical definition is Density Altitude is Pressure Altitude corrected for nonstandard atmospheric temperature.

#### **Tips for Flying in High Density Altitude Areas or Conditions**

- Fly early in the morning or later in the evening hours when temperatures are lower and the atmosphere is more calm.
- Keep the aircraft's weight below 90 percent of maximum gross weight to give yourself more margin.
- Don't fill the tanks to the top if you don't need to carry the extra fuel weight (see previous tip). This might mean flying shorter legs and making extra fuel stops on a long cross country flight.
- Find out whether your aircraft climbs more efficiently with or without the first increment of flaps extended. Many aircraft do climb better with the first notch of flaps since the benefit of added lift may outweigh the penalty of added drag. BUT results vary by aircraft and that first notch of flaps may add more drag than lift for some types.
- Be familiar with your aircraft's performance charts, as well as the actual performance numbers for YOUR specific machine. Some aviation Apps like ForeFlight will easily calculate Density Altitude for you using local airport weather data, but it's up to you to understand the effect it will have on YOUR aircraft.
- At density altitudes greater than 3,000 feet it may become necessary to lean a normally aspirated engine to get maximum power during take-off. Otherwise, the excessively rich mixture is another detriment to overall performance.
- If you're unsure of conditions, fly around the pattern once without passengers and baggage to test your aircraft's performance.
- If flying to an unfamiliar airport situated at high elevation, call a local flight instructor at your destination and discuss density altitude procedures for that airport.
- Have at least 80 percent of your needed takeoff speed at the runway's halfway point, or abort the take-off. Take-off speed should be judged by Indicated Air Speed (IAS) on the airspeed indicator, not by looking out the window to judge how fast the runway is moving past.
- See this FAA publication on Density Altitude:  
[https://www.faa.gov/files/gslac/library/documents/2011/Aug/56396/FAA%20P-8740-02%20DensityAltitude\[hi-res\]%20branded.pdf](https://www.faa.gov/files/gslac/library/documents/2011/Aug/56396/FAA%20P-8740-02%20DensityAltitude[hi-res]%20branded.pdf)

During a high Density Altitude take-off with light or calm wind, ground speed may be higher than Indicated Air Speed (IAS) which can give you the “feeling” that the airplane is going fast enough to fly, when in fact it is still a little slow, and may be very close to stall speed. So, if you rotate at what “feels” like your normal rotation speed, you may lift off into ground effect, fly along just above the runway and not be able to climb out in time to clear obstacles at the end of the runway. Luckily for us, Florida doesn't have all that many “high elevation” airports, so some of the adverse effects of density altitude are mitigated by our vicinity to sea-level. Just remember that Summertime weather patterns are here and our flying machines don't perform quite as well in the higher temperatures and higher humidity that we'll have over the next few months.

Speaking of Summer, summer break for pilots is coming up in less than 2 months! Yes, I'm talking about EAA Airventure 2016, or just Oshkosh. It will be July 25<sup>th</sup> – 31<sup>st</sup>. This year, the Canadian Snow Bird precision flight demonstration team is slated to be there and also a rare Martin Mars Flying Boat! It's not too early to start making plans to go.

Best Regards,

Les Boatright (EAA# 563003)

President EAA 866, *Smilin' Jack* Chapter

## **A Density Altitude Story**

**Do you have any stories about how you had a flying problem because of high density altitude?**

**Loretta and I flew into a picnic held on a farm with an airstrip on a really hot day in PA. Don't remember the elevation there but it was probably around 2,000'. This was our first time into that field and we had no problem landing and getting stopped. The grass was a little high and the strip wasn't level but kind of rolling. We were not loaded heavy at all but when we took off we saw an outhouse appear off the end of the runway. We couldn't see it on our takeoff roll because of a little rise and a dip that it rested in. We cleared it by about 10'! I was trying to stand up to maybe help the plane to climb. Long grass, rolling runway, and High Density Altitude made this a scary departure! (Density alt 5,293'), 105°F, C172 G 145hp Cont., mixture leaned.**

**That's one of my stories.....Larry**

## ***May Breakfast***

**The count of eaters, according to Herman was 147 which is just about average for the summer months. It was a perfect morning, CAVU!!**

**The grills all fired up and cooking bacon and sausage. Note the time on the wall clock! Loretta, Bob Rychel and Larry show up early and set up what is needed for preparation to serve and make coffee etc. and early enough to get a head start cooking the meat so it is a little easier to keep up with the flow later in the morning.**



**This breakfast we got to put to good use the roll around carts for all of our chairs and tables so that we can roll everything out and set up without making a hundred trips back and forth into the building and carrying each piece out manually. Bob Rychel built three new carts to add to the one that Kip had built a couple of years ago. The system works great! Set up and take down is now only a matter of minutes.**

**Our crew is fantastic and we get a lot of compliments about our breakfast!**

## ***Birthday Celebration!***

**Last meeting we celebrated Ray's 89<sup>th</sup> birthday.**



I have to tell you something about Ray. You know age has taken a toll and he is a little stooped over and maybe doesn't see very well and doesn't say very much. Well, if you want to experience the real Ray Thomas, take him flying and let him fly some. The evening of our chapter party Ray gave me 40 min. of dual instruction and he is in his element when he's at the controls of an airplane! We did Chandelles, Lazy 8s, stalls and steep turns. Ray Thomas in his element!

At the May chapter meeting Loretta decorated the cream puffs she made with the words "Happy Birthday Ray"



Dunn Airpark Capers May 2016

Loretta rides with Rick in Long EZ



**Ben Taxes the little Fokker. Just a little more tweaking, then, first flight!**



**Alberto wrangles his way into Bens Pietenpol for ride**



**Raising the windsock at Dunn. Remind you of anything?**

EAA 1288 Breakfast at Valkaria, Loretta and I flew down. Directions to the breakfast site were a little confusing to me!



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*- Chapter 866 Officers*

President Les Boatright 3640 Fraizer Ct. Titusville, Fl 32780 321 269 1723 [amyandles@juno.com](mailto:amyandles@juno.com)

VP – Edward Brennan 501 Water Side Circle Titusville, Fl 32780 [EJB.USMC@gmail.com](mailto:EJB.USMC@gmail.com)

Secretary – Kip Anderson 5812 Deer Trail road Titusville, Fl 32780 321 269 4564 [kipapilot@cfl.rr.com](mailto:kipapilot@cfl.rr.com)

Treasurer – Herman Nagel 21425 Hobby Horse Lane Christmas, Fl 32709 407 568 8980 [bhnagel@earthlink.net](mailto:bhnagel@earthlink.net)

Newsletter – Larry Gilbert 2002 Malinda lane Titusville, Fl 32796 321 385 1908 [larryglbrt@gmail.com](mailto:larryglbrt@gmail.com)



## **Chapter Meeting**

**Weds. June 1st 7:00 pm**

**Bldg. 10 Dunn Airpark**

**Titusville, Fl 32796**

## **Monthly Breakfast**

**Sat. June 4<sup>th</sup> 8:00 am**

**Bldg. 10 Dunn Airpark**

**Titusville, Fl 32796**