



The Bend High Desert Flyer of Chapter 1345

WEBSITE: <http://1345.eeachapter.org/>

KBDN AWOS 134.425

November 2015, VOL14, #11

PREZ SEZ:

Last month, we were treated with Sonja's showing off of her home made, home built and self designed motor glider; quite an undertaking that turned out a great looking airplane! She plans to have it inspected soon and I suspect it will be a great flying aircraft as well.

Speaking of inspections, the "High Desert Flyers, Builders Group's" RV-12 has been inspected and passed! It's officially a "real" airplane now, complete with all the documents in hand. We are waiting to have the insurance in place before the "1st Flight"! If all goes well, the 5 hours may even be flown off before our November meeting! And it's for sale if anyone is interested (hint hint).

Last month we also watched a movie about Rex Barber. I have a small library of videos available so this may be another reason to join us after our meeting. Thanks to everyone who brought sides and supplies for our "Chili Night" at the October meeting. Lots of good food was available for everyone.

Our Christmas meeting/ dinner is again being held at the "Black Bear Diner". EAA Chapter 617, Central Oregon, Oregon Pilots Association and the "99's" have all been invited to join us. We do need to tell them in advance, how many are coming so, email either:

Charles Brown (cbshomebiz@gmail.com) or myself (maxfly55@gmail.com) with how many are coming.

This month's meeting is again being held at the Bend Builders Assist/ Robertson's hanger on Wednesday November 11th, starting at 6 o'clock with burgers & brats and the meeting @ 6:30.

Dale's "Young Eagles" meeting will start at 5 o'clock so if you know of any young adults that are interested in aviation, bring them down!

We'll also be talking about plans for next summer's flying season and an "Airport Day"! Lots of things to get involved with so, come on out!

Thomas Phy, President

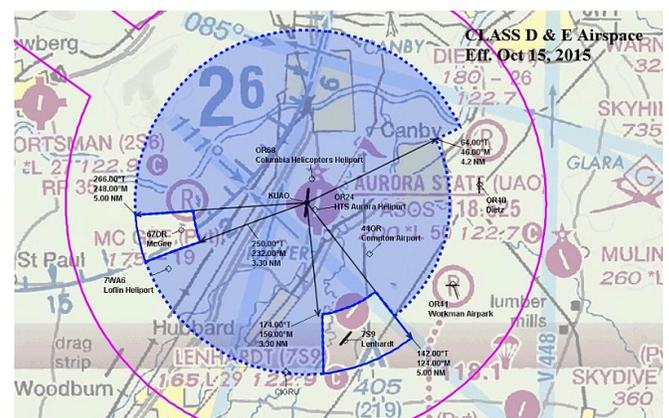
Treasurer's Report

Financial: For period 01/1/15 to 10/31/15

TOTAL INCOME	\$1019.50
TOTAL EXPENSE	\$35.52
NET INCOME (loss)	\$983.98
TOTAL CASH IN BANK	\$2206.66

Includes \$390 IRS refund for 501C(7) to 501C(3) filing

Jack Watson, Treasurer



In case you didn't know that KUAO now has a tower on 120.35 with ground 119.15, and ATIS 118.525.

October Meeting Minutes

Minutes of a regular meeting of The Chapter held on October 14, 2015, at the Robertson Hangar at the Bend Municipal Airport.

ATTENDEES

There were some fifteen in attendance including: Tom Phy, Jack Watson, Dale Anderson, Mike Robertson, Ed Frederickson, Charles Brown, Henry Graham, Jeff Thompson, Sonja Englert, Layne Bogulas, Forrest Seale, Jim Mateski, Mike Bond and Chris Tilton.

PROGRAM

The meeting was called to order at 6:00 pm by President Phy, who explained that our guest speaker was under a time constraint to return her plane to her hangar at the north end of the field prior to sundown, hence the 6:00 pm start of the meeting and the dispensing with the normal introduction of guests, etc. He then introduced Sonja Englert, an aeronautical engineer, who gave a presentation on her recently completed Motor Glider project, the culmination of some ten years of work with the design and construction of her project which included building Plaster of Paris molds for the construction of the wings, fuselage and empennage in her back yard.



At 6:15 pm, following Sonja's presentation, those in attendance adjourned from the hangar for an inspection of her aircraft, which was parked on the tarmac in front of the Robertson hangar. Subsequent to our walk around and inspection, and following a somewhat delayed departure due to a cranky engine start, Sonja taxied off to her hangar at 6:34pm



The Group inspects Sonja's motorglider

DINNER

Beginning at 6:35 pm all hands partook of Thomas Phy Chili and Ann Bond Corn Bread, accompanied by Burgers & Brats prepared by chef Robertson, concluding with several flavors of cookies.

ANNOUNCEMENTS

President Phy then recounted his attendance at Member Bud Candland's funeral and our intention to place, in Bud's honor, a memorial bench with placard, in the grass area between the Pro Air facility and the Gibson Hangar and solicited for volunteers to sand and refinish the existing bench.

Tom then advised that he had received paperwork from the FAA that will allow for our RV-12 project to receive DAR inspection which brings us very close to the conclusion of the project.

He finished up with an announcement concerning our annual Christmas party which will be held on Wednesday, December 9, at the Black Bear Diner with invited participants from other local aviation groups.

ENTERTAINMENT

All attending then sat back and enjoyed a movie about local pilot Rex Barber titled "The Yamamoto Mission." Rex is credited with shooting down Admiral Yamamoto's bomber in his P-38 during WW 2.

With no further announcements, the meeting adjourned at 8:15pm.

Jack Watson, Secretary/Treasurer

Solar Impulse 1

A great construction and performance description by our own Sonja Englert who visited the SF Bay Area before launch ...



Seeing the Solar Impulse was very interesting. They really maxed out light weight construction and I could not see how they could have saved another gram anywhere except on the rudder pedals, which were metal. The ribs are made from carbon tubes the size of pencils, sandwiched between two plies of carbon, which is extremely light and strong. The lower skin of the horizontal tail is translucent so I could see how it was built. The ribs are lined up on a square carbon spar. The wing is built the same way; it is divided into three segments, a center piece and two outboard wings so it can be disassembled and transported. The fuselage is a carbon tube structure, covered with Oratex, with a removable foam fairing for the cockpit. It really looks like an oversized model airplane, but you will have to climb up on a ladder to reach the cockpit. The airplane is so large that even with this big hangar, they had to put it on dollies and push it in sideways.

I did not see it fly because they flew it Friday morning very early, at 5am. Afterwards they just parked it in the sun to recharge the batteries. I talked to Andr, Borschberg, one of the pilots for quite a while on how it flies. He said that in smooth air it is easy, but in any kind of turbulence the pilot gets quite a workout. It is steered with a yoke and at full deflections, the aileron forces are 30-40 lbs. The ailerons have full span tabs to reduce the forces, but because they are so large, they are still heavy to operate.

At first they had spoilers on the wing tips but they turned out not to be necessary and were made inoperative after the first tests. To add drag, large trailing edge flaps can be extended for landing. The have to be cranked down with a hand crank in the cockpit, again a bit of work for the pilot. The L/D in the clean configuration is about 32, maybe less than what one would expect with such a wing span, but it was designed for a low sink rate rather than best glide performance. Its normal cruise speed is 35 kts, which is about the minimum speed of my SF28A. The gear arrangement is similar to my motorglider, with a central main wheel and two outrigger wheels.

On the Solar Impulse, the outriggers are so far outboard that they do not fit on any taxiway and need to be held by a helper during taxi.

They need a ground crew of about 10 people on the runway for take off and landing. The max wind for that is 10 kts, with a 4 kts crosswind limit. Liffoff is at 25 kts and the rate of climb is only 150 fpm, which is what I get in the SF28 at high density altitude, but it can fly level on 2 engines. The props are fixed pitch, and the geared motors only turn them at 400 rpm. During night flight descents, because the props cannot be feathered, they turn them slowly for zero thrust.

This airplane could fly nonstop across the US, but because the cockpit is so small, like that of any single-seater, it would be impossible for the pilot to stay airborne for that long. It has no autopilot. The next airplane, is being used for the around the world flight, and has room for 2 pilots .

The Impossible Turn?

"How does one determine a safe altitude to return to the airport in the event of an engine failure on takeoff? Practicing this emergency does not seem feasible."

There is an altitude at which a safe return can be made to an airport when an engine failure occurs on takeoff. The trouble is, it is not the same altitude for every pilot in every aircraft on every day! So, if you don't know what that altitude is when the engine failure occurs, do NOT attempt to return to the runway - the price of failure is severe!

Having said this, you can practice the return to the airport maneuver safely at altitude with your instructor to get a sense of what the maneuver involves.

(At a safe altitude) select an imaginary runway behind you as a target. Fly directly away from it at departure airspeed and configuration. Smoothly retard the throttle to idle (don't forget carb heat if appropriate) and lower the nose to pick up the designated airspeed for engine failure in your aircraft.

Remember, a simple 180 degree turn will not align you with the runway. And, you will most certainly have a tailwind. Consider the challenges of looking over your shoulder for the runway at low airspeed while maneuvering with a failed engine. Might your recent proficiency come into play?

The correct procedure for engine failure on takeoff is to lower the nose and land straight ahead. But there is a safe altitude for every pilot to attempt a return to the airport. Practice can help you determine this altitude, but it should include a generous safety margin due to the complex nature of this maneuver and its disastrous downside!"

Pilot's Tip of the Week

from Pilotworkshop.com

"When most pilots take off the right wing dips upon becoming airborne. What causes it and how is it overcome?" - Gerold P.

Wally:

"My observation is that most pilots have a slight drop of the right wing just at lift off. Watch some take offs at your local airport and see if I am correct.

Remember the four left turning forces we all learned when we started to fly? In a nose wheel airplane, when a pilot rotates for liftoff one of those forces kicks in. That is the P factor. This adds an additional left turning force.

Further when the nose wheel leaves the runway, we lose the nose wheel steering which was also helping us in part to compensate for the other left turning forces. Pilots often fail to correct this with additional right rudder and as the airplane begins to drift left of the center line they instinctively apply right aileron. Then as the airplane lifts off, the right wing drops momentarily and is usually corrected quickly by the pilot which can look like a left wing dip.

This is easy to see as a right seat passenger. Next time you ride with a friend watch closely as they rotate the plane for takeoff and you will see the nose move left if they do not get that rudder in. Then watch what happens with the yoke.

So remember the rudder keeps us on the center line. The ailerons should be neutral unless we have a cross wind."

Food for thought -- the EmDrive ...

... is magical, at least given the available data. There is no proof that it works, and you don't have to be a scientist to understand why.

First, the experimental results so far contain two important and potentially damning facts. When the power is turned on, the engine "thrust" builds slowly, and the supposed "thrust" continues for awhile after the power is turned off.

This suggests that heat is affecting the results. We can't believe that the EmDrive really works, and it incidentally shatters quite a few basic laws of physics, until the thermal effects are eliminated.

Second, the amount of thrust measured in the experiments is incredibly small. A quick on-line check shows that experimenters measure thrust of around 50 micronewtons to about 720 micronewtons. By comparison, the smallest model rocket engine made by Estes Industries, the 1/4A3-3T, produces a peak thrust of 4.9 newtons, or 49,000 micronewtons. One of the most influential positive tests of the EmDrive actually measured both positive AND negative thrusts of around 20 micronewtons. Measurements that small are incredibly difficult at best. This again suggests that the thrust measurements are experimental artifacts and not dependable results.

One more point. A lot of people will, no doubt, respond to this post by pointing out that people scoffed at Galileo, Pasteur, the Wright Brothers, etc. This is true, of course. But one of the characteristics of pseudoscience is the "unrecognized genius" syndrome. The lesson is this: proof is everything. Just because nobody agrees with you doesn't mean you're right.



In case you didn't know, Sonja Englert also has written a book on trouble shooting piston engines

Sonja has more interesting stuff on her website: www.caro-engineering.com, under News

Would You Like to Be a Pilot? Have You Dreamed of Flying an Airplane?



EAA Chapter 1345 High Desert Flyers

Young Eagles Flights



What: Kids ages 8-17 fly for free to learn about being a pilot. You can learn more at this link:

<http://www.1345.eaachapter.org/youneagles.htm>

When: Saturday, June 13 from 8am to noon, weather pending

Where: Bend Municipal Airport, Gibson Air Service (Red Hangar)

What to bring: a parent or guardian to register/sign registration form



Contact: Dale Anderson at 607-591-1714 or daleanderson779@gmail.com

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