



Racine EAA Chapter 838  
Monthly Newsletter  
December 2015 Volume XXVII Issue 1  
<http://eaa838.org/>

Meetings Third Thursday's 7:00 pm  
Social at 6:30 pm

Welcome to ***your*** EAA Chapter 838 monthly newsletter. I will need your assistance with articles. Please email anything that you would like me to include in a future newsletter to me at [newsletter@eaa838.org](mailto:newsletter@eaa838.org).

Dave Finstad has taken over the membership chairman. Do not forget to send in your membership renewal unless you have recently renewed. If you have questions about when your membership expires, please email Dave at [membership@eaa838.org](mailto:membership@eaa838.org).

## **President's Corner**

Welcome to 2015. This is absolutely the worst time of the year for flying, but that doesn't mean we have to all our aviation dreams on the back burner! I'm going to keep the fire going by any means possible.

My first objective is to make that long put off trip to the EAA museum. I love going, the smell of the oil and old fuel, but I don't make the time to go up there. It's only a 90 minute road trip. I'm going to do it..

My second objective is finish my instrument rating, starting with the written. I got half the flying done a couple of seasons ago, so I'll need to 'do over' most of it. In addition, my panel has gone through 2 upgrades since then. I also want to get some sim time using our Chapter simulator. It's another tool we have available, and I need to take advantage of it. I have to get this done!

My third objective is to explore a new aviation museum. I've been to quite a few in the US, but there's many more to see. I'll find a new one and report on it here.

The weather may be cold, but we can keep the spirit alive!

Blue skies,

Daryl

**Byron L. "Bud" Bossart** Age 85, died peacefully on Tuesday December 30, 2014.



Bud joined EAA Chapter 838 many years ago. Before he moved to live with his daughter in Northwest Wisconsin, he was helping Roy Stuart with his Sonex. He spent many years as one of the tram drivers at the Aviation Explorer Base in Oshkosh during AirVenture.

To see his obituary, please go to:

<http://www.legacy.com/obituaries/journaltimes/obituary.aspx?n=byron-l-bossart-bud&pid=173729987>

I put Bud's obituary notice on the Aviation Explorer Base Face book page. The following comments were made

- A class act who knew how to say the right thing to make us laugh!!! We'll miss his honky of the horn!! – North Carolina
- Many fond memories of Bud. Will miss him. – Wisconsin
- Gods peace be with his family. – North Carolina
- He was a great & funny man, he will be missed. Kansas
- This breaks my heart!! He'll always be alive in our fondest Oshkosh memories!! – North Carolina
- "Speedy" Bud Bossart. You will be missed. Well maybe not by the Tram Nazi! – Wisconsin
- Wow. Such sad news. RIP Bud. You always knew how to make us laugh. - Illinois
- He will be missed. - Illinois
- Very sad! Miss him already! - Illinois
- Oh no! RIP Bud! You will be missed. We'll see you at that big air show in the sky one day. – Washington State
- I too remember him from base camp..RIP Bud..God bless your family from post 727 Greensboro North Carolina
- Thanks Bud, Rest In Peace. – North Carolina
- Wow, the guys from John Deere will miss his "fine tuning" of their tractors.... Everytime the horn blows for that first tram run of the morning, we'll all think of Bud. Unfortunately, the "newbees" at the camp won't won't appreciate what the sound will mean to the rest of us. – Illinois
- Bud was great fun and a real asset to the base. He will surely be missed. – Illinois
- Hate seeing things like this. He will be missed. I can still hear that dang horn! - Indiana

## **Special Recipe from Geraldine Dwyer**

Glad you all liked the treats I brought to the EAA Dinner in December. Please pass this recipe onto the baker in the family! Geraldine

I think this is the best method and easiest!

Heat oven to 400°.

Line 17 x 10 baking sheet with tinfoil and spray with Pam.  
Arrange small pretzels in a single layer.

Into a heavy duty saucepan put  
2 sticks of butter  
1 C soft brown sugar

Cook over low heat until caramelized - to 240°. This will take about 7 - 10 mins.  
Stir often and watch carefully, as it can burn quickly.

Pour caramel evenly over pretzels. No need to spread it, as it will spread by itself once it is baked.  
Put in oven and bake for 5 minutes.

Remove from oven

Sprinkle a 12-oz pkg semi-sweet chocolate chips evenly over pretzels.

Put back in oven for 1 minute.

Take out and immediately use off-set spatula and spread the chocolate evenly over the pretzels.

Sprinkle with a couple pinches of coarse sea salt.

Leave to cool completely in fridge.

Break into pieces.

Serves a lot, or just one - if you want it all to yourself!!!

If you want to use milk chocolate chips, you must first cool the caramel. Do not refrigerate it at this stage. Then very carefully melt the chocolate chips in microwave - 25 secs., stir, then 15 secs., stir, and so on until they are almost melted. Keep stirring gently and the rest will melt. Do not over heat, or the chocolate will break down.

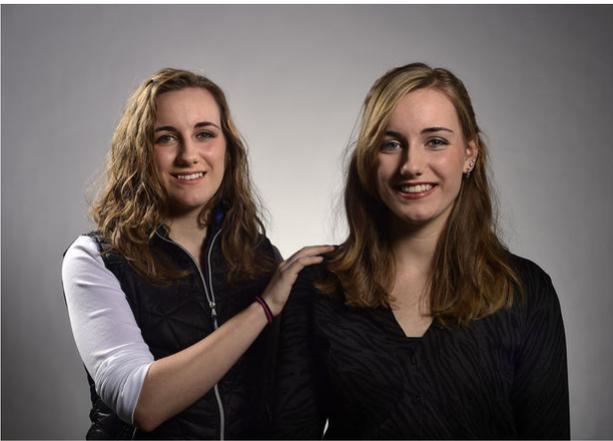
Now pour the chocolate over the caramel pretzels and spread with an offset spatula.

Now you can refrigerate the pan until it's is set.

Previous Explorer Post 218 officer, Lt. Col. Mark Bass sends a greeting to Racine, Wisconsin from Osan Air Base for Holiday Season 2014.



[http://www.dvidshub.net/video/371928/lc-lt-col-mark-bass?fb\\_action\\_ids=10204441385947890&fb\\_action\\_types=og.comments#.VJI60uk5A5s](http://www.dvidshub.net/video/371928/lc-lt-col-mark-bass?fb_action_ids=10204441385947890&fb_action_types=og.comments#.VJI60uk5A5s)



### **Standout Seniors: Twin sisters side-by-side in activities, academics**

Chrissy and Kinzie Kujawa, the first two young adults to have participated in all four EAA Chapter 838 Youth programs: Young Eagles, both as participants, and as instructors; YAE, now called AEC, which is our 11-13 year old program; Aviation Explorer Post 218, which is our 14-21 year old program; and Young Aviators, the one week summer program. Check out the Racine Journal Times article about them.

[http://journaltimes.com/news/local/standout-seniors-twin-sisters-side-by-side-in-activities-academics/article\\_03962b74-0c82-55ea-8f15-18e83dd23d10.html](http://journaltimes.com/news/local/standout-seniors-twin-sisters-side-by-side-in-activities-academics/article_03962b74-0c82-55ea-8f15-18e83dd23d10.html)



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## **Monopoly Night Fun and Games 2015**

The seventh annual Monopoly Night, EAA Chapter 838's 2015 Fall Fundraiser will be held on Saturday October 10<sup>th</sup>. Mark this on your calendar so you do not commit yourself to something else. We hope that you can join us this year.

See you then.



## **Chapter 838 Young Eagles for 2015**

Remember that we have our Young Eagle Rally's the second Saturday each month from March through November. This is a great time for you to inform any relatives, neighbors, or friends that are between the ages of 8 and 17 about Young Eagles.



## **Aviation Explorer Club Post 5218**

This is part of our youth education, and is for co-ed middle school students.

We will be sending out invitations for the 2015 class in spring. If we do not get a sufficient number of young adults, we may not have anything planned this year.

Once again, if you know someone ages 11 to 13, please inform them about the program, and let Ken Sack know.



## **Aviation Explorer Post 218**

This is another part of our youth education, and is for co-ed high school students.

September 25th Bob Greco

Bob Greco (furthest left), a past Post 218 member, who is now an engineer at Insinkerator, came and spoke to our group. He started out with telling us about his college and work experience as an engineer. He then moved on to an activity where we were all able to use physics equations to figure out what type airfoil shapes are best to use for different flight situations. We worked in teams, and whoever was able to create the most lift with the least amount of weight "won." Bob Greco explained to us how different airfoils work for different functions, such as efficiency, creation of lift, and maneuverability. We really appreciate that one of our Post alumni has made it full circle to be able to teach all of us about aviation.



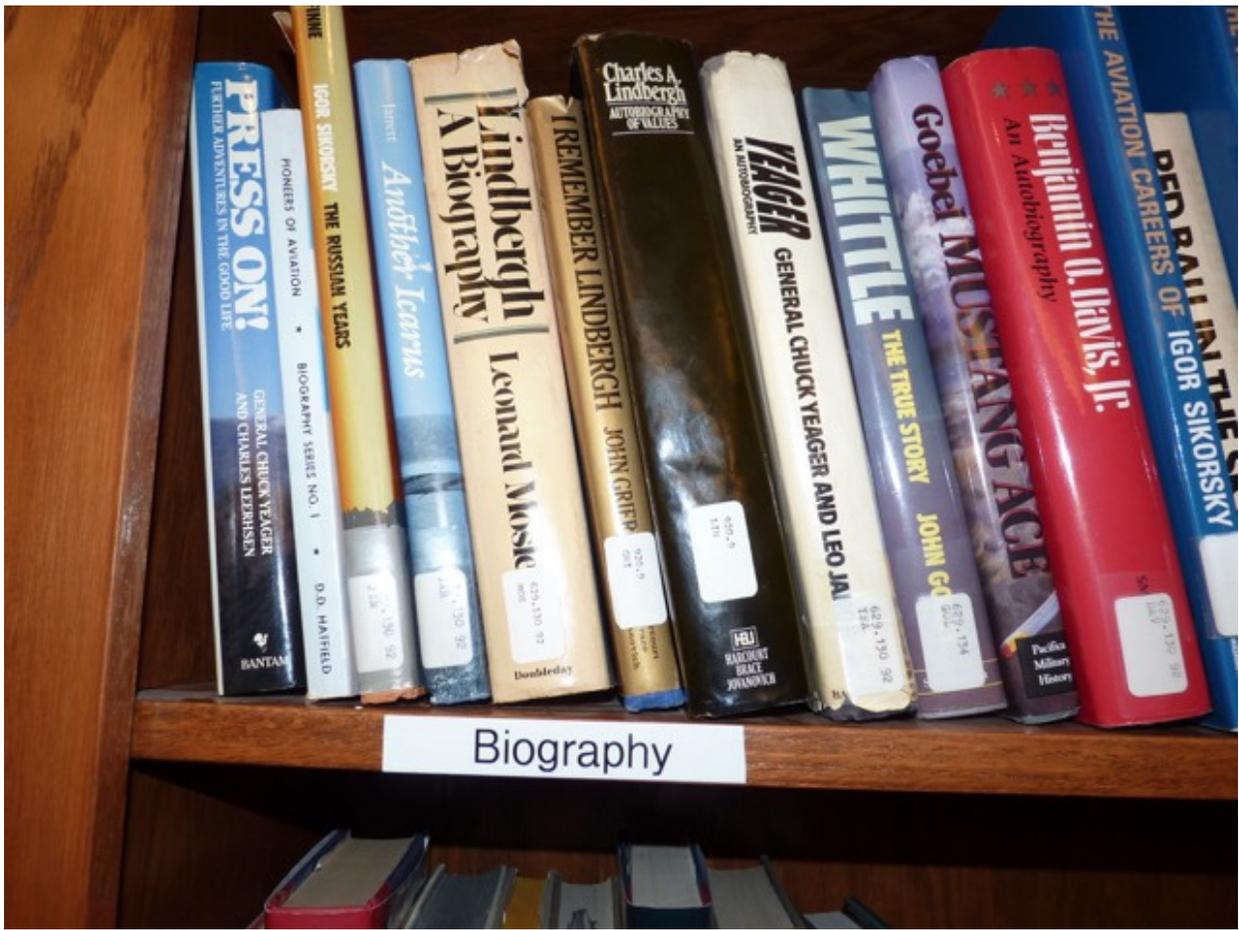
## **EAA Chapter 838 Library** by Eddy Huffman

One of the little-noticed benefits of membership in our Chapter 838 is our library. Yes, that's right, a library of books. I know you remember books. And we have some books in our collection that you are not likely to find in other sources.

I re-organized our library after consulting with the librarian at EAA headquarters in OSH. She suggested that we simply group books by subject and let members browse the titles without concern for any particular order within an aviation subject.

I considered a greater number of subject groupings, but I settled on the one you will find there today. I bought a label-making machine, so the results will be readable. If you find a volume you wish to borrow, all we require is that you sign it out on the clipboard that is on the shelf below the books.





## Grass places worthy of a spring visit

*RG Blocks*

Rarely do we, that is Marge and I, want for places to visit. There are so many delightful places to investigate. One of our favorites is Lola's 68C. Easily accessible by air or car, 68C is on electronic databases, Wisconsin maps and 117 Nmi from KRAC.

Bill Kinsman, Airport Manager, Chief Cook and Bottle Washer, is joined by about a hundred of his closest friends for lunch each Friday. Our old EAA 838 buddy, Paul Johns can be found joining Bill each week. Below, Bill is holding court with regulars in the Community Hangar at 68C one fine Friday afternoon.



If you're not ski equipped, wait until late spring. Even then, ask the briefer about snow cover. I watched a 172 land in several inches of snow without skis and not flip on his nose. He made a bad choice of vehicle on that particular day; but, folks get hungry and Lola serves perhaps the finest lunch at Friday noon. The locals, after shaking their heads in wonder, packed the snow-covered runway with their trucks and he managed to depart with a full stomach without further aviating troubles.

The 68C airport advisory notice says, "Runways at 68C are not plowed during the winter snow months. The airport is closed to wheeled aircraft when runways are covered with ice or snow."

Say you're fond of a fishing, boating, canoeing, sailing, sun bathing weekend and want to land on grass. These are not entirely winter sport. After lunch at Lola, fly up to Three Lakes Muni, 40D a delightful grass strip. You can camp under your wings, or with a little planning have a hotel, motel or B&B / Resort weekend ahead of you. There are three places to eat and four for drinking within a stone's throw of the north end of the runway. This is Wisconsin: northern Wisconsin. The runways are not plowed during the winter: but the grass is good beginning late spring.

Always check NOTAM before flight. 40D is closed for the winter as I write these notes. The grass is generally rolled and trimmed early in the spring: know what you're about to encounter by asking the briefer.

Grass runways are more prevalent 'up north'. However, there are some fine ones in SE WI, near Racine as well. Palmyra, 88C only 35 Nmi from KRAC is one of the finest and an interesting alternative and a delight if you wish to eat all meals at grass airports. Well used year round it is typically well groomed and offers a fine 'roadside diner' only a couple hundred yards directly south of the airplane parking area between the larger hangars near midfield.

Just south of the WI – IL border and 42 Nmi SE from KRAC is Dacy Airport, 0C0 at Harvard, Illinois. Here, step back in time: drink a Coke on the porch, watch Stearman aircraft, enjoy the moment. They plow during the winter and their turf is not quite up to what I might call typical of Iola or Three Lakes. But, it recovers nicely due to exceptional soils south of our moraine rubble and sand based turf runways in WI.

A few thoughts come to mind regarding grass runways that might be kept in mind.

Don't stretch your luck by flying with wheel-pants. They collect grass, moisture, sticks and assorted stuff and add to your potential to lock up a wheel, skid and ruin your day. Break gently. Grass is slick even when dry. Wet grass is like a grease job on your tires. On the positive side: your tires will last years longer landing on grass.

Wheel pants also add an element of danger at temperatures near freezing. They pack with slush, snow and assorted snirt. My advice: junk 'em and you've eliminated one entire family of safety concerns.

If you stay over night on grass fields you'd best take along tie down stakes and ropes. Also, bring a pitot tube cover to prevent sand daubers from plugging your orifice before morning. Close your vents to keep bugs out of the cockpit. Then before takeoff check your tail feathers for rodent visitors and bird nests.

A downside problem needs to be addressed at airports that don't trim their grass regularly. I've been told to 'candle my prop' before landing at fields with grass long enough to 'green the prop'. The idea is that the wax will prevent undue prop edge wear from both grass and the sandy soils we typically encounter in Wisconsin.

We're all trained to understand that long grass adds to takeoff roll. Check your aircraft operator's handbook for best procedures, flap settings, length of roll, etc.

We should expect that turkeys, moles, voles and rats are among the animals and birds that might make fist size or larger holes in an airport's turf surface. Beaver, prairie dogs, skunks, coyote and badger can make holes sufficiently large to damage small aircraft.

Practice makes you a better pilot. Cindy Guntley Memorial Airport, 62C in Franksville WI is a favorite spot for repairs, annuals and an occasional grass field landing and only 12 Nmi west of KRAC. Sylvania Airport, C89 at the Interstate offers both grass and pavement and 7 Nmi west of KRAC. There are others: go enjoy them.

These are my thoughts for fine spring – summer flights that includes grass. Start planning. It's never too soon.

Roger G Blocks, December 25, 2014.

# Density Altitude and the M in STEM

By Seán G. Dwyer

Low enrollment is a problem for EAA 838 youth programs. Are parents afraid to get their child interested in what appears to be an expensive hobby? If so, what these parents are missing is that our goal is to get kids to appreciate STEM. Aviation is just an appetizer. STEM is the main course. Consequently, our programs are as valuable to future journalists as they are to future astronauts. Furthermore, aviation STEM applies to many fields. I even used it with toilet cleaners. Did that get your attention? I'll get back to it later. This article is about the M in STEM.

Readers of *Contact* know that STEM means Science, Technology, Engineering, and Math. But do they understand that Math is just a language whereby the other three communicate? If you think about it that way, math becomes more important. Obviously, you can't do engineering without math. However, without engineering, science would be just a hobby. Without science and engineering, there would be no technology, as that is the output when science and engineering are combined. Airplanes, toasters, and iPhones could not exist.

Focusing on math, let us take the example of humidity, and how it affects airplane performance. For starters, which is heavier, dry air or moist air? Intuitively, most people believe humid air is heavier, because you can feel it on your skin. Think of a 100° day in New Orleans or downtown Chicago, with the humidity around 90%. The air feels so muggy, it has got to be heavier. Right? Wrong! Let's review the science and do the math.

What does science have to say? Avogadro's Law speaks directly to the matter. *Equal volumes of ideal gases, at the same temperature and pressure, will contain the same number of molecules.* This means that, for the total number of molecules to remain the same, any additional molecules of water due to higher humidity must replace molecules of some other gas. But are the displaced molecules heavier or lighter than water (H<sub>2</sub>O), which has a molecular weight of 18? Since air is 72% Nitrogen (N<sub>2</sub>), with a molecular weight of 28, and 21% Oxygen (O<sub>2</sub>), with a molecular weight of 32, the average molecular weight of air is about 28.6. It actually varies as a function of the amount of water in the atmosphere, which changes with meteorological conditions. Since lighter H<sub>2</sub>O molecules displace either heavier N<sub>2</sub> or O<sub>2</sub> molecules, then humid air must be less dense than dry air. Let's crunch some numbers.

Type the words as shown into an Excel spreadsheet, and then enter the three number-crunching cells as shown below:

B8 =145457\*(1-(1.95467/(B4+459.7)^0.23494)\*(0.01+(B3^0.19025-0.000013125\*B2)^5.2564)^0.23494)

B9 =IF(B5<31,0,2.88315-0.1267\*B5+0.00223\*(B5)^2)

B10 =145457\*(1-(1.95467/(B4+B9+459.7)^0.23494)\*(0.01+(B3^0.19025-0.000013125\*B2)^5.2564)^0.23494)

The output tells you that on a hot and humid summer day, the density altitude in Racine airport (elevation 683 msl) would be 3,032 feet with no correction for humidity. However, if you correct for humidity, then the effective temperature would be 8 degrees higher, and the humidity corrected density altitude would be 3,524 feet. Not a big deal in an airport like Racine, but what if you were in a high elevation airport like Denver? That brings me back to my toilet cleaner problem.

	A	B
1		<b>Input</b>
2	Field elevation in feet msl?	683
3	Airport altimeter setting?	29.92
4	Temperature in °F?	94
5	Dew point in °F?	85
6		
7		<b>Output</b>
8	Density altitude =	3,032
9	Temperature increase due to humidity =	8
10	Humidity corrected density altitude =	3,524

One day I was presented with a toilet "Drop-In" in a crushed blister pack. The blue duck shaped toilet Drop-In was fine, but the overall appearance was unacceptable. Had perfume leached out? Was the product evaporating? Clearly, the product's chemistry was to blame. Or was it? As the ranking chemist, I needed an answer. The weight and performance of the product were OK. Was the package the problem?

Shortly before the distorted blister packs arrived on my desk, I had written a series of articles called "Computer Corner" for *Contact*. They included the equations in the nearby spreadsheet. To cut a long story short, I called the company Flight Dept. and asked for the weather report on the last flight to the factory where the blister packs were sealed. The field elevation of Toluca Airport in Mexico is 8,466 feet msl, and the temperature and dew point that day were 96° and 86° respectively. Plug those numbers into the Excel spreadsheet and you will find that Toluca airport (and the nearby factory) had a density altitude of 13,009 feet under those conditions. That is roughly two miles higher than the density altitude in Racine on a hot summer day. It's no wonder the blister packs collapsed. It was like the bloated potato chip packages served on commercial airplanes, except in that case the pressure inside the package is higher than the ambient pressure in the airliner cabin. Not only did it explain why the blister packs looked crushed when they arrived in Racine, the density

altitude that day was above the ceiling of my Cherokee N4500R!

See what I mean about aviation STEM being relevant in other fields? If you want to read more on this, click on <http://sites.google.com/site/seangdwyer/>

## Welcome New Chapter Members

Jeff Carlson (High Winger)

## Monthly Meetings

Board Meetings: Second Wednesdays 7:00 pm

Chapter Meeting: Third Thursdays

Social 6:30 pm

Meeting 7:00 pm

Shop Night Every Monday 7:00 pm

Explorer Post 218 Second Thursdays 7:00 pm and Fourth Thursdays 7:00 pm

Young Eagles Second Saturday 9:00 am (March - November)

## Upcoming Meetings & Speakers

Jan 15th To be Announced

Feb 19th Peter Bianco and Larry Stys of the local CAP unit. The topic will be Interception in Restricted Airspace – What to do and not to do. Peter and Larry have been involved in several practice intercepts with the CAP and USAF and will show and discuss what happens if you find yourself flying in restricted airspace. They will also talk about their work in the CAP unit.

Mar 19th To be Announced

Apr 16th The speaker will be Jim O'Connor who will do a presentation on Drones, their history since the 1700's and current issues with their increasing numbers in the sky.

May 14th To be Announced

## Officers

President Daryl Lueck ..... 414-333-4228

Vice President: Vacant

Secretary Tracy Miller ..... 847-420-5098

Treasurer Steve Jenkins ..... 262-681-2491

Foundation Jerry Baker ..... 262-939-0091

## Committee Chairpersons

Programs Rick Goebel ..... 262-886-4171

Monday Shop Jerry Bovitz ..... 262-639-8583

Librarian Eddy Huffman ..... 262-639-8301

Membership Dave Finstad .... 262-752-0086

Newsletter Ken Sack ..... 262-554-9714

Young Eagles Tracy Miller ..... 847-420-5098

## Directors

Jim Hantschel..... 262-637-3376

Ken Sack ..... 262-554-9714

Roy Stuart ..... 262-884-0371

Eddy Huffman ... 262-639-8301

## Chapter Messaging (262) 634-7575

**Location: 3333 N. Green Bay Rd. Racine, WI 53404**