#### WINDS ALOFT



## EAA Chapter 790

#### Lake in the Hills, IL

## 790.eaachapter.org

Well things are beginning to open up.



The State is now in Phase 3 of the Covid 19 era. With that stated our Chapter will be holding a social gathering at lake in the Hills Airport on Tuesday June 23rd 6:30. Paul will be serving hamburgers and hot dogs. This is an opportunity to once again get together with our Chapter Members. Those who feel uncomfortable meeting, will be in our thoughts. Paul thought and with the boards occurrence, it was essential we get together. Share your flying adventures and your flying and/or building plans for the summer.



#### Members News

Kolin Stagnito was featured on last weeks AOPA Live.

#### Welcome New Members

John Olsen, Nathan Durrant, Jim Leithest and Barry Sasso

#### IN THIS ISSUE

- June Chapter Meeting
- Member Information
- June Fly Out
- Tidbits
- Engine Out or where do I go now
- Riblett GA Airfoils

#### **FLY OUT**



A fly out is planned for Saturday June 20th to Bessies Restaurant, Janesville, Wisc. JVL. Plan on meeting at the restaurant by 9:30. Contact Paul Ranieri 847/997-0135 if you have seats available, number of pilots and attendees so that reservations may be made. (Yes Wisconsin is open for business).

#### TIDBIT'S

Howard Aircraft was built at both St. Charles and Midway Airports

Check out the latest Aviation Fuel SAF, Sustainable Aviation Fuels from Prometheus Fuels

## Loss of Engine Power after takeoff or can I make it back to the airport

While hibernating this spring I ran across a very interesting article In the May issue of Sport Aviation by Charlie Precourt. Charlie always seems to write about interesting flying scenarios. He mentions something which I had not given much thought, The Sink Rate. Yes we all are aware of the glide distance of our aircraft at a given altitude. (I like to think in regards of1,000 ft increments AGL). Yet the sink rate will determine the time we lose that altitude. I was taught to land straight ahead for the nearest clearing. That is pretty straight forward:) if we only have gained a few hundred feet at the time of lost engine power. But, what if we have climbed to say 1,000 ft or more AGL. Makes one wonder if we can turnaround and make it back to the airport.

So Here is the formula for computing sink rate. Altitude lost per mile X glide speed divided by 60 equals feet per minute sink rate. Using his example of a Cessna 210 which shows one mile of glide while at 620 ft AGL and a glide speed of 85 knots, gives a sink rate of 880 fpm. (620X85 divided by 60). So that's .7 of a minute to land. Now lets make that turn back. Loss of more altitude by lowering the nose to retain the required glide speed of 85 knots. Oops.

Now lets look at the scenario whereby we have gained more altitude before the engine quits. Should be able to make it back? Well we are now further from the airport. Below is a diagram showing 300 ft, 500, ft, 700 ft and 1000 ft AGL upon engine power loss.



Doesn't look good! I think I will choose a landing spot somewhere up ahead. Thanks Charlie for this exercise. While web browsing information on the Bearhawk Aircraft. I came across a Q&A video of Bob Barrows the designer of the Bearhawk. He mentioned the reason for the Bearhawk's relatively high cruise speed and low stall speed was the result of four factors. (1) the large wing and (2) the Riblett GA30-4135 (B model) Airfoil (3) single strut (4) all aluminum wing. Since I never heard of Harry Riblett, I decided to do some research and here is what I found.

The NACA airfoil name was derived from the National Advisory Committed for Aeronautics which was established by Congress in the early 1920's to indirectly subsidize the infant US aviation Industry. Later this agency was combined into NASA. The NACA airfoils were not designed for actual airplane use, but were merely wind tunnel test specimens that were used to investigate the effects of changing various airfoil parameters on airfoil performance.

Enter Harry who asked if NASA would evaluate Airfoils for GA use and was denied their assistance.



Bearhawk 4 place 1100-1500 lb. useful load

Bob Barrows used his C170 to deliver aircraft engines which he overhauls for customers. Finding the C170 marginal for that task, in the early 1990s Bob began work designing and building his four place Bearhawk. Prototype I was powered by an Lycoming O360.



Harry then took it upon himself to determine which are the best airfoils for GA.

The GA Airfoil matrix consists of: example

#### "GA 37A315"

4 series GA 30, 35, 37 and 40. Numbers refer to the position of maximum airfoil thickness, in percent of chord. They are derived from and replace the NACA 4 digit 63, 64 and 65 series.

2 types; xx\_xxx (cusp type) xx<u>A</u>xxx (no cusp)

4 camber levels –2xx, -3xx, -4xx and – 6xx indicating the approximate design lift coefficient in tenths

3 thicknesses, 12%, 15% and 18% thick as a percentage of the chord length.

The GA airfoils are not appropriate for helicopters, flying wings or sailplanes.

Harry Riblett is a Mechanical Engineer retired from Hercules Inc. In Wilmington, Delaware He holds a Commercial ASEL pilot's license and has been active in sport aviation and EAA activities for many years. He has built two homebuilt airplanes, a Starduster II and CUBy which he flies regularly.

Source GA Airfoils by Harry Riblett A catalog of airfoils for General Aviation Use.

This booklet can be purchased from Aircraft Spruce for approx. \$18 and contains 98 airfoils for GA use.



# Newsletter Articles Chapter Event Ideas November Board Member Volunteers

### Calendar of Events

- Fly Out June 20th-Janesville
- Social Chapter gathering Tuesday June 23
- Young Eagles Pending Covid 19 Regs
- Pancake Breakfast pending Covid 19 Regs
- Check the Chapter Website "http://www.790.eaachapter.org/" for any additional details and a list of local chapter events in the area

"Too often we enjoy the comfort of opinion without the discomfort of thought." *JFK* 

4

Δ

## EAA Chapter 790 Staff

#### **OFFICERS**

President

**Paul Ranieri** 

847/997-0135

P.ranieri@comcast.net

Vice President

Matt Van Bergen

847/561-0520

mvanbergen@gmail.com

Treasurer

**Mike Petrie** 

847/987-2708

m\_petrie@live.com

Secretary

**Brad DeLisle** 

847/276-5026

delisle.nx@gmail.com

Flight Advisor

Glen Brisson

847/438-7786

#### Young Eagles

Matt Van Bergen 847/561-0520 mvanbergen@gmail.com Newsletter Editor Tom Solar 847/468-9437 tomsolar@sbcglobal.net Website Tom LeGates 847/462-1791 trlegates@comcast.net

Flight Advisor/Tech Counselor Ron Liebmann 847/352-8282 Mike Perkins 217/725-0628 Ole Sindberg 847/826-1935

DIRECTORS **Paul Ranieri** 847/997-0135 P.ranieri@comcast.net Matt Van Bergen 847/561-0520 mvanbergen@gmail.com Brad DeLisle 847/276-5026 delisle.nx@gmail.com Mike Petrie 847/987-2708 m petrie@live.com **Tom Solar** 847/468-9437 tomsolar@sbcglobal.net Lon Danek 847/381-4286 LDanek417@aol.com **Ole Sindberg** 847/826-1935 oleeva@sbcglobal.net

5

WINDS ALOFT, the six time EAA international Newsletter award winner, is published Periodically by EAA Chapter 790 for the use and enjoyment of its membership and others to whom it is provided. No claim is made to the accuracy or validity of the content presented in this publication. Editorial content is the opinion of the contributor and does not necessarily reflect the position of Chapter 790 or of the Experimental Aircraft Association (EAA). Permission is granted to others to use any non-copyrighted material appearing in this publication so long as credit is acknowledged.