



EAA Chapter 790

Lake in the Hills, IL

790.eaachapter.org

April Chapter Meeting



- ◆ Tom Solar presented Ron Liebmann an appreciation award for his many years of service to Chapter 790. Thank you Ron!



- ◆ Rob Nelson showed a video produced by School District 155. Stars included our own Brad DeLisle and Alex Priester. Rob has set up a ground school evening course for High School Students 15 or older. The video will be shown to all District 155 students and parents who may be interested in attending a credit course this September. Nice going Rob, Brad and Alex.

In this Issue

- Young Eagles Event go-no-go phone 847/468-9437 This Saturday May 6
 - Sun and Fun
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 - Lancair ES Plane Kit For Sale
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- ◆ Ole Sindberg talked about his exciting trip to Sun and Fun. It was a thundering trip.



Paul and Ole



Jim Roosee's new Lotus

Editors note: **Don't forget to nominate youngsters for the Chapter Scholarships. Entry deadline is May 15th. See Scholarship application in this newsletter.**

Our Sun 'n Fun trip 2017

By Ole Sindberg

We - that is son Paul, son-in law Bjarne, and me Ole, took the Prescott to Sun 'n Fun earlier this month. It was an interesting trip with actual IFR, a line of thunderstorms blocking our way, a bird-strike and significant head winds on the return trip. The event itself was also interesting with great performances by the Blue Angels and F16s.

But I am getting ahead of myself. Departure was set for Tuesday April 4th at 5 AM; this early so we could make the 2 PM closing of the airport for the airshow. The airplane was carefully loaded with a cabin load totaling 690 lbs. including luggage, tie-downs and other airplane equipment and the three of us. Adding 48 gallons of fuel, which is about 5 gallons short of full tanks, brought us up to a take-off weight of 2820 lbs. which is the max. limit for two. Ceiling was about 900' so we were in the soup within a minute. ATC kept us relatively low and IMC for about an hour, and we then climbed to 11,000' VMC. In order to make our fuel stop at Monroe-Walton County just east of Atlanta, we were using a new economy cruise enabling us to have a TAS of 170 MPH at a fuel flow of just 9 GPH at that altitude. For the most part we had a bit of tailwind, enabling us to get about 20 miles over the ground per gallon. After fueling we launched towards Lakeland, but the XM radar showed a line of thunderstorms across northern Florida. It was reaching well into both the Atlantic and the Gulf, and since we did not want to fly a whole lot over water, we landed short at Tallahassee, where we stayed about 2½ hours.

A few adventuresome souls eventually made it through to Lakeland, and we decided to make a go at it. We started out at 7000' on an IFR flight plan, and proceeded on a 110° heading for quite a while before turning southbound. There were a number of heading changes for cell avoidance and altitude changes to stay in the clear, and there was significant turbulence, but we made it through just fine – however, we were too late for going to Lakeland,

and instead landed at Winter Haven. This was actually OK with us, because we had a rented house waiting for us in Winter Haven. We had lots of company in similar situations at the airport, but we were likely the only ones with a place to go to in Winter Haven. Hobbs or actual flight time for the day was 6.7 hours and fuel burn was about 71 gallons.

Wednesday morning we went to the airport, got some fuel – limited so we could land at Lakeland at or below our max landing weight, and made the short flight to Lakeland. The procedure is easy and handling after landing went well, and we were soon parked in the Homebuilt area. Then we were off to the exhibits and the show. There was lots to see, and a lot of walking, but nothing like at Oshkosh. My goal was to learn more about ADS-B and the choices available. In rough numbers, we could spend anywhere from about \$ 600 to more than 28,000, and I attended seminars and spent time at the Garmin and the Dynon exhibits. It was a somewhat frustrating experience, on account the number of people that were in a similar situation, and who were competing for the few representatives, who had the required knowledge.

But there were other things to do, and we had a good time. I met my hangar neighbor Jim Nikodem, who was there with his Swift. Both Paul and Bjarne met up with friends, and we wound up having dinner at the American Airlines Union Family Awareness site, where we met with other acquaintances. A great time was recorded and eventually our borrowed vehicle was located, and we returned to our house in Winter Haven.

Thursday was spent doing more of the same, but we also enjoying the airshow and the activity at the Ultra-light strip for the low speed participants. The climb-out performance of some of these ships was impressive. When we checked on the Prescott, we met with another Prescott owner. He had purchased his airplane partly finished and he was delighted to meet with us and the promise of know-how and training that we can provide. I expect to see him here sometime.

(continued on page 3)

SUN AND FUN FLY-OUT 2017

(continued from page 2)

Friday was a really nice day with clear skies all the way to Chicago, but with strong winds out of the North-West. This meant turbulence at low levels or increasing headwinds as we climbed. The econ cruise does not work well with strong headwinds; we tried different altitudes, but with time, we had to go higher to avoid the turbulence. Towards the end we flew at 8,500 with about 50 kts. of headwind. Average for the day was about 40 knots of headwind. We had not fueled at Lakeland on account the price, so our first stop was at Waycross GA. Bjarne was flying and upon main gear touchdown we hit a turkey with a glancing blow on the left. My angle of attack vane is on the left front, and this is where the bird impacted us. The vane arm was bent, but still cleared the fuselage, and remained operational. There was tissue, feathers and blood on the AA vane and downstream, but no other damage. The people at the airport identified the bird as a turkey based upon the feathers; they went

looking for it, but were unsuccessful. Once home I was able to straighten the vane arm – repainted it and all is well again. But now I am concerned with the possibility of a bird-strike on the windshield at a place far from home.

We had to make another fuel stop at Russell County KY, Bjarne got to make a crosswind landing there with winds gusting to 25 kts.

I flew the final leg to Lake in the Hills – still clear skies and the winds were finally diminishing. Hobbs time for the day was 7.6 hours and we burned about 89 gallons. The headwinds had a real impact, but I also recall my times flying the big Boeings, where 150 knots of headwind were not unusual.

Overall this was a great trip – with some frustrations, but also with some highs. Looking forward to other cross country trips.

Keep the blue side up.

Ole

CHAPTER AVIATION SCHOLARSHIPS

2017

Crystal Lake EAA Chapter 790 is offering two scholarships for Youth in Aviation. One is a \$1,000 scholarship paid directly to a certified flight training facility and the other is a two or three day Aviation Camp in Oshkosh, Wisconsin EAA Air Academy in June or July. Applicants to submit a written one page essay on why they are interested in Aviation and their Aviation objectives. A Chapter 790 Scholarship committee will review the essays and inform the lucky winners. You must be 14 to 20 years of age and with the consent of a parent or guardian. It must be typed double spaced using 12-point font. Please have at least 3 paragraphs to your paper; introduction, body and conclusion. Use focus and any relevant evidence to support your ideas. Use conventional standard written English. Ideal candidates should be well rounded, have a high school GPA of at least 2.00 on a 4.0 scale, be involved in school and community activities, as well as have a proven interest in aviation.

Please provide 2 references along with your paper.

Submit your application by May 15th to:

Paul Ranieri-President EAA Chapter 790
P.O. Box 1206
Barrington, IL. 60011

ELECTRICS IN THE NEWS

Within the past several years Electric Aviation Systems have progressed exponentially.

Pipistrel, as reported in earlier articles, is no longer the only Aircraft Manufacturer which has tested, flown and produced Electric Aircraft. Cri-Cri is an earlier single seat aircraft all be it for limited and Fun functionality who along with Airbus E-Fan has flown across the English Channel. One of our local manufacturers, Sonex has had a wonderful legacy, though sadly short lived with the passing of Jeremy Monnett who was a firm believer in the future of Electric Aircraft. Now with the recent announcement of the CAFÉ Foundations release of even more Electric Aircraft in the offering the future is brighter than ever. Due to the many entrants and space limitations, some of these will be highlighted in future issues of WINDS ALOFT.

Pipistrel once again, leading the way, has sold aircraft to a training group in California. Three communities have embraced Electric Aircraft for Environmental, Ease of Maintenance and Initial Costs Considerations. They have applied to the FAA for a permit to run a trial of Electric Aircraft for Training Purposes. Someone has to be the leader. Congrats Pipistrel.

This issue of Winds Aloft Electrics in the News will focus on Battery Technology Improvements (see the following page). Thanks to Tesla for his Gigafactory in Nevada, Lithium Iron Batteries will have a high quantity supplier for Auto's and home storage usage. Tesla has stated that an electric jet is definitely viable. This was a first for me. Using gimbal control as in rockets would eliminate the need and drag of the rear empennage elevator and rudder, all be it CG would definitely have to be adjusted. There are other companies which are conducting studies on the use of Electric Jets for commercial transportation. This will also be reported in future editions.

Batteries-ActiveBMS is designed to stifle lithium-ion battery degradation mechanisms, such as growth of the SEI layer, anode cracking, and temperature growth by continuously adapting bursts of energy during the charging process. This unlocks new functionality within the battery, without altering how the battery is manufactured - only how it's controlled inside of an electrical device." (from GBatteries, Ottawa, On. Website)

Another Battery Manufacturer All Cell Technologies, LLC here in the Chicago Area has developed a method of keeping cool Lithium Ion battery packs. From an article by Kaitlin Schuler, march 2016. "When the U.S. military approached the Illinois Institute of Technology for help designing batteries to withstand extreme temperatures, professors Said Al-Hallaj and J. Robert Selman took the lead and sparked the beginning of AllCell in 2001." "The professors and a small team of graduate students worked with the Department of Defense's [Future Force Warrior Program](#) to design "small, lightweight batteries that could withstand high discharge rates in extremely hot weather,"

And the March goes on. *(See more about Batteries on the next page)*

The CAFÉ Foundation (Comparative Aircraft Flight Efficiency) will be coming to Oshkosh this summer at the University of Wisconsin Oshkosh, Alumni Welcome and Conference Center on Saturday and Sunday July 23-24th.

Write up by, Tom Solar

Is The Latest Lithium Battery Too Good To Be True?

The creator of the first lithium-ion battery has just [released](#) a new battery cell that could mark the next stage of battery development, offering a huge boost for the electric car industry and beyond.

The solid-state cells that John Goodenough and his team have developed use glass electrolytes instead of liquid electrolytes like the lithium-ion batteries currently use. This means they are incombustible, overcoming one serious problem with other lithium-ion batteries: the so-called dendrites that appear when a battery is being charged too quickly, causing a short circuit and killing the battery.

And that's just the start. According to the researchers, their battery has at least three times the energy density of other lithium-ion batteries, it has a longer life cycle (a minimum of [1,200 charge-discharge cycles](#)), and it charges more quickly – in minutes instead of hours. On top of all of this, the low-cost battery—yes, it's cheap—can work in both sub-zero temperatures (-20 degrees Celsius) and major heat (60 degrees Celsius).

The implications of such an invention are numerous for all devices and systems that use rechargeable batteries. Yet the most important ones seem to be linked to the electric car industry.

For now, electric car adoption is slow; not just because of often prohibitively high prices, but also because of the time it takes to recharge a vehicle. Plus, there is the problem with the dendrites, which automatically means you need to buy a new battery—and a new battery still doesn't come cheap, even though prices have been falling steadily.



(Click to enlarge)

One additional benefit of the new glass batteries is that they don't necessarily use lithium: glass electrolytes also work with sodium, which is much more widely available than lithium and can be extracted from seawater. The researcher who began the whole glass electrolyte project and later teamed up with Goodenough and other University of Texas scientists to advance it, Maria Helena Braga, also notes that sodium is cheaper than lithium, thus bringing the price of the final product even lower.

It may sound too good to be true, and lithium miners would certainly hope it is, but Goodenough and Braga are working on several patents, and their battery could hit the market some time in the future.

[Related: Did The Banks Just Give U.S. Shale A Carte Blanche?](#)

Meanwhile, another company is also working on a safer lithium-ion battery. American Lithium Energy is working on a technology dubbed Safe Core, which, according to a [media report](#), is not much to look at, but does not explode. The company is keeping its cards close to its chest. What's public is that Soft Core was developed as part of American Lithium's work for the U.S. military, which needed reliable batteries to power electric vehicles without the danger of having them explode due to a short circuit or explode when the vehicle crashes.

There's an obvious trend for cheaper, more reliable, and longer-life batteries—there is no other way to make electric cars and energy storage systems mainstream. Future developments would certainly be interesting to watch, as more inventions are likely on the way.

By Irina Slav for Oilprice.com (April 9, 2017)

Ole has volunteered to Present Aviation Challenges Periodically so here is his First

Challenge no. 1

Percival Pembroke.

Early in my career I flew for the Danish Air Force – part of the NATO alliance. After a stint flying the F84G, I transferred to the rescue service. My primary job was to fly Sikorsky helicopters, but I also did a bit of flying as a co-pilot in their Percival Pembroke airplanes.

The Pembroke is a British built twin engine high wing airplane powered by two Alvis Leonides radial engines of 540 HP each. We were using it for VIP transportation and as a search and communication aircraft when the helicopters were beyond VHF range during offshore rescue operations. It was a very conventional aircraft and served well for the above purposes.

When we first took delivery of these airplanes, a few technical types were assigned the job of rewriting all checklists so they would be suitable for our purposes – that included incorporating the equipment installed for the unique roles the airplanes were acquired for.

During pilot check-out it was desirable to do some single engine flying, and one of the first flight doing this ended badly.

The airplane was cruising at about 8000' and the pilots shut down the left engine using the checklist. After the engine had stopped rotating there were some clean-up items, such as: Close the cowl flaps, cross feed open, mags off etc. At about this time they received a descent clearance to 4000' and still on single engine they descended to 4000'. After flying level at 4000' a few minutes, it was decided to restart the left engine. The checklist was followed meticulously and the engine was unfeathered and the instruments checked.

RPM was normal; as was manifold pressure, oil pressure, fuel flow etc. All perfectly normal – all except the cylinder head temperature, which was decreasing! It was decided that the gauge must be malfunctioning, everything else seemed just fine, - but the airplane was losing speed and eventually altitude – and it required right rudder.

Something was definitely wrong. Gear and flaps were still up – and they were still losing altitude. More power, more RPM, instruments still perfectly normal - except the cylinder head temperature. Even at max power they could not maintain level flight and the airplane was eventually landed in a farmer's field with very little damage.

So what went wrong?

First correct answer explaining in some detail what went wrong, sent to oleeva@sbcglobal.net wins a ride in my airplane or free beer at the next meeting where we both attend.

Keep the green side up.

Ole

Chapter Calendar

- May 6-This Years First Young Eagles Event LITH
- May TBD-Pancake Committee Meeting
- May 20, fly-out to Peru, IL TBM's
- May 23-Chapter Meeting LITH Airport w/BBQ
- June 3 Young Eagles LITH
- June 6-Board Mtg LITH
- June 25th-Chapter Pancake Breakfast LITH Airport
- June 27-Chapter Meeting
- July 1-Young Eagles
- July 14-16 Door County Fly-Out
- July 15th Washington Isle Annual Fish Boil Fly-In
- July 23-30-AirVenture
- Check the Chapter Website "<http://www.790.eeachapter.org/>"
for any additional details and a list of local chapter events in the area

CHAPTER FLY-OUTS

The Chapter fly-outs for breakfast has been a success; the last one to Madison was attended by 16 people arriving in 6 airplanes. We had these fly-outs scheduled for the first Saturday of each month, but in May we start up again with Young Eagles for those dates. Therefore we are moving the fly-outs to the **third Saturday** of each month and it will stay that way even after the Young Eagles activity stops for the winter. The first such fly-out will then be May 20 and it is going to be a bit different. This is the day for the big TBM gathering at Peru airport (Illinois Valley regional – KVYS). Because there will be lot of airplanes flying in for this, we need to get there early, so let us shoot for getting there at 8:30 AM. Put a sign in the windshield showing "CHAPTER 790" in the window for the marshalls to see. The goal is for us to stay together, and eventually have a something to eat – together. There are no real restaurants, but a number of places where food is available.

As before, if the weather is not cooperating, we will have breakfast at Andy's in Crystal Lake at 9:00. If so, you will be notified by email the night before; for this to work, I need to know if you are coming, so call or email me sometime during the week preceding the Saturday in question. Include seats available or if you need a seat. I also need to let the destination restaurant know how many are coming, so do let me know. The 3 day fly-out to Door County has been pushed back to July 14 – 16, and will likely involve the Galt Chapter and possibly going to Washington Island. Details to follow in due time.

Keep the blue side up

Ole Sindberg
847 639-5408

EAA Chapter 790 Membership Form - 2017

or sign up on the Website under Chapter Membership

First Name: _____

Last Name: _____

Spouse: _____

EAA Membership Number: _____ (Must be an EAA member)

Street Address: _____

City: _____ State: _____ Zip: _____

Home Phone: _____ / _____ - _____ Cell Phone: _____ / _____ - _____

Email Address: _____

Own Aircraft: yes or no Model or Type: _____

Aircraft Project: yes or no Model or Type: _____

For Young Eagles

If you have completed Youth Protection training, what was the date _____

If you have completed the background check, what was the date _____

Dues

\$25.00 Family/Individual Renewing Membership _____ \$10.00 Family/Individual First-Time Membership _____

\$10.00 Out of State Membership _____ \$10.00 Student Membership _____

Please make checks payable to "EAA Chapter 790" Bring this form and payment to a members meeting, or mail to:

EAA Chapter 790, PO Box 1206, Barrington, IL 60011

Send any of your aviation adventures, pictures, articles or humor you would like to appear in the Newsletter to:

"tomsolar@sbcglobal.net"

FOR SALE

by Chapter Member Dave Boone

LANCAIR ES KIT • \$55,000 • **ACCEPTING OFFERS** • Lancair ES "Fast Build" kit for sale (still in crates). Purchased 2001. Stored in hanger. This kit has all components except engine and interior. A&P owner has completed the horizontal tail. Fast Build firewall, wings and tail . Wing mate. Construction tables available. I am getting ready to move and have no place to store the project. Project located in Northern Illinois. • Contact David A. Boone, Owner - located Crystal Lake, IL USA • Telephone: 815/540-8327 . 815/455-4555 • Posted December 7, 2016 •



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