



# The Flyer



Volume 45, Issue 2

Experimental Aircraft Association Chapter 44

February 2013

## AOPA ASI ANNOUNCES NEXT SEMINAR AT THE SAC

EAA Chapter 44 would like to again welcome the Aircraft Owners & Pilots Association Air Safety Institute and their new presentation "Chart Challenge." It will be held at the Sport Aviation Center, 44 Eisenhower Dr., Brockport NY 14420 on Thursday May 23 at 7 PM. If you fly in, the SAC is located at 7G0/Ledgedale Airpark/Brockport Airport. The event is free and open to the public. WINGS credit is available for participation.

Here is the seminar description from AOPA/ASI: Chart Challenge

What would we do without charts? They're one of the most fundamental parts of flying-but they can also be challenging to interpret, difficult to read, and sometimes head-scratchingly confusing.

Our new live seminar is meant to help you master them. Based on our popular "Chart Challenge" series of online courses, it's a refresher clinic where you, the audience member, get to put your knowledge to the test. We'll quiz you on everything from VFR sectionals to instrument approach plates, and dig into the practical issues that come with them. We'll cover:

- Challenging questions about specific VFR and IFR charts;
- Critical tie-ins with real-world procedures and decision making;
- Analysis of tragic accidents caused by chart misinterpretation;
- Important "gotchas" you need to be on the lookout for.

## WANT TO BE A WINGMAN?

by President Rob Williams

Every so often within the context of organizations the subject of membership comes up with questions of how to attract new members and retain current numbers. It is an old discussion, but a necessary one for the leadership of any organization to consider periodically. In fact, some would argue that it should be a continuous discussion. I can't argue with that.

As we closed out the 2012 year, the chapter Board had such a discussion. Out-going Board member Mike Stoddard initiated the conversation with a review of some of his observations related to this subject. Great Board member to the last.

All kinds of observations were made and a stimulating conversation ensued. For some of us old timers who have served in chapter leadership positions for decades, these discussions are often familiar and we can provide a historical perspective to past activities. It is important not to stagnate with this historical perspective and consider renewing ideas, even if they are recycled from the past. Fresh views and consideration of the needs of the current membership should never be assumed.

One of Mike's observations had to do with noticing visitors/potential new members would make one visit and not return. We seemed to have no formal process in place to assure that these folks are attended to and given active follow-up. So the idea of starting a "Wingman" program developed. It seemed to be a simple thing we could do and a great way to involve any of our members as a small but important way to contribute to our chapter. Here is how it will work.

Continued on next page.

**NICHOLAS GENNARINO III  
EAGLE SCOUT CEREMONY  
TO BE HELD AT THE SAC**

In appreciation for his work on the Sport Aviation Center’s Pilot’s Lounge and Board Room, EAA 44 has offered to host Nick Gennarino Eagle Scout Ceremony on Saturday March 23 at 3 PM.

The event is free and open to the public. EAA 44 members are invited to attend (in chapter shirts) and are strongly encouraged to do so to personally thank Nick and to welcome our first non-aviation, general public group to the SAC.

We have two other Eagle Scout projects in progress. Ben Hare’s outside landscaping and picnic bench-building, and a TBD Scout to tackle finishing the bathrooms.

These projects have been supported by funding from Triumph Aerospace Systems Seattle. EAA 44 member Marty Snow works in their local office and has coordinated these projects with his home office and the Scouts.

**Thank you to Nick and his volunteer team, and to Triumph Aerospace Systems.** Below are before and after pictures of the Pilot’s Lounge and Board Room.



**Wingman con’t**

At the regular meeting we always ask guests to introduce themselves and share with us a little bit about what has interested them in attending our meeting. This seems to be a perfect time to make a more formal connection to the potential member, especially for those who have not come with another current member. It makes sense that when someone is introduced that we ask for a volunteer from the membership to be the new person’s “wingman.” It would be their role to touch base with the prospective member immediately after the close of the business part of the meeting and make a firm contact to answer questions and make them feel more welcome. This would also involve a follow up with the person for attending future meetings, joining, etc.

It is a one-on-one situation that is not a huge job for anyone. Hopefully it would be a different volunteer for each new person so that it is an easy way to involve potentially all members as volunteers and does not require a huge commitment on any one member. I think it is an idea that could work well. So think about it and I will be introducing it more at a future meeting. CAVU.

**OLD GOAT RAMBLINGS**

**by Art Thieme**

If you are old enough you remember the Bede-5 airplane and kits. Hundreds were sold. Very few were finished or flew. Part of the problem was the lack of a proper engine. Bede folded and builders were left with a pile of aluminum. Later years was a jet engine installed and it performed at Oshkosh several years, flown by “Corkey” Fornof. Great show! He would pop the wheels up and down several times while blazing down the runway. Now you can purchase a jet version kit for \$187,500. sold by a man named Karnes. Sorry, no address. Eat you heart out.

**Continued on Page 3**

**Old Goat con't**

WOW! Can you believe that the wings of the Boeing 787 flex 12 feet in normal 1g flight? And up to 26 feet at ultimate load. How would you like a window seat and watch that?

Info from Aviation Week, Dec. 10, 2012

Barry Schiff writes in the January 2013 AOPA Pilot of flying his American Champion following a straight highway while cruising at 500 feet. The airplane's shadow followed along the highway. "My shadow soon began to overtake a large truck heading in the same direction. I carefully reduced my airspeed to match the speed of the truck and laid my shadow directly over it, thus creating unexpected shade for the driver... I then saw him lean out the window and look up at me. He waved. I rocked my wings." Reminds me of when I flew the Champ along the Lake Ontario Expressway. I did the same thing putting my shadow on the cars below. It was a great experience in coordinating speed and direction. No driver ever waved at me. I wonder what they thought. Also some of the drove faster than I could fly.

Low on fuel? Need some altitude? Want some fun? Find a heat generator and circle in the updraft. Where do you find a heat generator? Try a food establishment. Thermals coming up from them tend to come from two sources - heat being vented from the grill/ovens and people and the vehicles stirring up heated air from the parking lots. At least that is what Bob Thomson wrote in the January 2013 SOARING magazine. This source of a thermal may work for a glider/sailplane, but I don't know about a powered craft. I do know that when I took my glider training at Elmira there was a large Hostess bread factory near the airport and it gave off heat thermals. I never circled over it but did experience the lift. Try flying over a McDonalds at Brockport and see if it works. But don't get too low - or paint over your numbers. Remember, you didn't hear it here.

Age doesn't matter unless you are a cheese.

Old Goat, out.

**LITHIUM-ION BATTERIES****BY MIKE CLAYTON**

In the process of working on my Kitfox rebuild, I discovered that the original battery weighed 20 lbs! There ought to be a better solution! I started looking at new battery technologies, inspired by use of Lithium-Polymer batteries in the current crop of electric aircraft.

Lithium-Polymer batteries have a reputation for being hazardous, due to fires that have resulted from inadvertent short circuits of the battery. Monitoring electronics and careful control of the charge/discharge cycle are needed for maximum safety. They are not a drop-in replacement for the tried and true lead acid battery.

There is a new alternative to the Lithium-Polymer battery, and that is the Lithium-Iron-Phosphate battery. These are much safer, and currently can be used on some certified aircraft, as well as passing some very stringent tests related to shipping.

What are some advantages of the Lithium-Iron-Phosphate batteries?

1. **Weight:** A battery better than the old battery used in my Kitfox, weighs 2.5 lbs, vs 20 lbs! A high end, sealed lead acid battery suitable for most homebuilts weighs about 14 pounds.
2. **Power:** A typical Lithium battery such as the one above will provide about 450-500 CCA, and over 20 Ah Pbeq. It will perform extremely well starting an aircraft engine under just about any condition. It works better than lead-acid at very cold temps, as well as hot temps. It recharges much more rapidly than a lead acid battery after a start (a few minutes).
3. **Drop in:** The Lithium battery can be charged and operated safely using the charging system on all aircraft.
4. **Size:** The typical Lithium-Iron-Phosphate battery has dimensions of 4.5x3.5x3.5 inches, compared to a typical sealed lead acid aircraft battery which is 6.7x3.9x6.89 inches.
5. **Life:** The Lithium battery has 2X the life of a lead acid battery.
6. **Static Discharge:** The Lithium battery will keep its charge indefinitely, losing about 10% per year. No trickle charger is needed with Lithium batteries.
7. **Safety:** Lithium-Iron-Phosphate batteries are in compliance with the UN regs for shipping via aircraft. They were short circuited, banged

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## NUTS & BOLTS PROPELLERS PART 1 by Mike Clayton

This is a short article, to share with you what I have learned about propellers over the last few years of reading, talking to knowledgeable people, and listening to lectures on the subject. It will be done in several installments.

Propellers are the transmission for your airplane. If you have ever been into building cars, you know how critical the transmission and rear end are to performance. The propeller is the means to convert the power of your engine to forward motion. The efficiency,  $\eta$  of the propeller in performing this conversion is given by the following equation:

$$\eta = \frac{\text{propulsive power out}}{\text{shaft power in}} = \frac{\text{thrust} \cdot \text{axial speed}}{\text{resistance torque} \cdot \text{rotational speed}}$$

Before you expire from math anxiety, all this really means is that the efficiency is the ratio of the work your propeller actually does to move the aircraft forward, divided by the work done by the engine to turn it. That is, work output divided by work input.

There is one thing you must understand. Propellers have an airfoil, just like a wing. They rotate, and the motion through the air produces lift, which is the thrust that propels an airplane forward. This is the work output. The trick is to come up with a propeller design that has the highest efficiency for converting horsepower into thrust and forward motion.

One thing about wings on aircraft...they produce lift, and also vortices of swirling air at the wingtips. These vortices cause induced drag and waste the power required to generate lift. The same is true of propellers. Propellers are rotating wings. The tip velocities tend to be quite high, approaching the speed of sound. At

these velocities, strong vortices can form at the tips, depending on the propeller design. The strength of the vortex is proportional to the amount of lift demanded of the wing or propeller at the tip. In turn, this is proportional to the chord of the wing or propeller. That is why sailplanes have long wings with a very small chord at the tip. This makes them very efficient in terms of lift and induced drag.

Propellers are different than wings, because the speed at which the air moves past the airfoil shape varies from the center to the tip. The faster the air moves, the more lift a wing of a given chord will produce. So, unless the tip is narrow, a propeller would be like an airplane with a wingtip much wider than the root, in terms of the lift it is being asked to generate. Not very good!



An efficient propeller, having a very small tip chord, essentially comes to a point at the tip. A quick look at propellers used in modern racing airplanes, such as this one at left, shows what general form an efficient propeller needs to have. Hopefully this brief discussion will get you observing and thinking about propellers in a way that you have not done before. We will have a brief discussion of what important parameters need to be considered in selecting a propeller, and in designing a propeller. Also what the forces exerted on the blade cause it to do, and how that can affect the propeller efficiency. More next month.

**EAA Chapter 44  
Board of Directors' Meeting  
8 Jan 2013**

**Board Members Present:** Williams, Hurd, Byers, Nelligan-Barrett, North, Clayton, Peters, and Hazen.

**Other Members Present:** Stoddard

**Reports:**

- President (Rob Williams):
  - Chapter renewal paperwork in is progress.
  - Phil Hazen is stepping down as Young Eagle coordinator; we are looking for a replacement.
- Vice President (Norm Isler):
  - (Absent – Mike Clayton covering)
  - The Board approved the use of the SAC for Nick Gennarino's Eagle Scout ceremony on March 23<sup>rd</sup>.
- Treasurer (Dave Hurd):
  - Paid annual rental fee to airport owner.
  - Report read and approved.
  - The annual safety deposit box lease payment was taken from the Airlift account.
  - Dave suggested that to reduce the chances of the occasional misdirected correspondence we install a mailbox near the entrance to our driveway. The BOD agreed; Rob Williams volunteered to purchase.
- Secretary (Stephen North):
  - Report read and approved.

**Business:**

- Capital Campaign
  - Larry Greeno has agreed to serve as Capital Campaign chairman. Rob Williams and Norm Isler to meet later in January to review plans and goals.
- Building Committee (Darryl Byers / Mike Clayton)
  - Storage building – Working on approval from the town planning board. Rob Williams will attend the planning board meeting on 15 Jan to describe building details and urge approval.
  - Backflow preventer inspection due in February.
  - Bob Nelligan-Barrett proposed that we save the Christmas tree that had been donated for the Christmas party. Eventually this will be stored in the new shed; in the meantime a temporary home is needed. Mike Clayton moved to accept, Darryl Byers seconded, passed, all but North approved
- Old Business:
  - None
- New Business:
  - Discussion regarding future programs.

**Batteries con't**

around, dropped, heated, cooled, and so on, far beyond any reasonable usage, and survived just fine, with no fires or explosions.

8. Price: Only a few dollars more than a good aircraft lead-acid battery. For equivalent performance, the Lithium battery can be had for \$175-\$190 vs about \$110 for one with a lower Ahr rating than the Lithium battery, to \$200 for one with a slightly higher rating. Considering the other characteristics of the Lithium battery, this is a real bargain! **Continued on next page.**

**EAA Chapter 44  
General Membership Meeting  
15 Jan 2013**

**Reports:**

- President (Rob Williams):
  - Greeting and pledge of allegiance
- Vice President (Norm Isler):
  - No report, not present
- Treasurer (Dave Hurd):
  - Report read and approved.
  - Dave passed around a member information spreadsheet for updates.
- Secretary (Stephen North):
  - Report read and approved.
- Builder's Reports:
  - Bouwen Special – Working on fiberglass
  - Hurd Glasair – Avionics coming along nicely

**Business:**

- Capital Campaign (Open)
  - Larry Greeno will be helping to lead this effort
- Building Committee (Darryl Byers / Mike Clayton)
  - The last work session was a general shop cleanup; the space looks really great.
  - Working on building permit for new storage shed.
  - Phil Hazen described the use of the new electronic door lock. Members need to provide Phil with their passcode choice.

• Old Business:

- The Chapter is looking for program ideas along with volunteers to provide the membership meeting dinner main course.

• New Business:

- Tom Bowdler has agreed to serve as coordinator for an AeroCamp, currently scheduled to start on Friday (17 May) and run through the weekend.
- The Young Eagle Flights for the Cosgrove Middle school aviation orientation program are scheduled for 4 May (rain date 5 May).

**Batteries con't**

Sounds too good to be true? In my opinion, It is not. Here is a partial quote from correspondence with Aircraft Spruce, posted on the VAF website, on these batteries:

*"...there are several variations of Lithium Ion type batteries, ... Lithium Iron Phosphate (Aerovoltz Type) and the Lithium Polymer batteries that are in our cell phones and lap tops. Both are very powerful and have great properties that are a good fit for aviation ...but Lithium Polymers are not my first choice due to their ability to burn if they are fully shorted out.*

*Aerovoltz batteries have passed UN-DOT testing ... Aerovoltz batteries have a ceramic board in the bottom of the case where the cells have venting should they get over charged or have a dead short due to a circumstance in the aircraft. This will handle any temperature the battery cells can produce .... The lithium Iron Phosphate is the safest of lithium family and does not suffer the side effects of the polymer type batteries.*

*Cooler temperatures do affect every form of battery .... However, with a slight warm up phase or usage of the battery it will come to life and provide sufficient power to start the engine as long as it was the right battery for the recommended applications. "*

I have decided to get one for the Kitfox, if for no other reason than the weight savings. I can make good use of the 10+ pounds for other, performance and safety enhancing things! I will report on my experience as I get it.

# CONTACT EAA 44



The Flyer is published monthly. For an electronic copy, go to <eaa44.org> and enter your email address where requested. For a mailed hard copy (\$10), contact Treasurer Dave Hurd. For membership info, contact Treasurer Dave Hurd.

Stories and photos by the editor unless otherwise noted. Article deadline is 1<sup>st</sup> Tuesday of the month. Send submissions to Editor Bob Nelligan-Barrett.

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**WE NEED A VOLUNTEER!**

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### EAA 44 is a 501(c)3 organization.

Gifts of cash, securities or other property to the Chapter for the benefit of the Sport Aviation Center are welcome and fully tax deductible.

Contact Treasurer Dave Hurd for details.



**Sport Aviation Center of Western New York**

## REGIONAL CALENDAR

### SUN 'N FUN

April 9-14  
Lakeland FL

### ONTARIO BEACH KITE DAY

May 5, Charlotte NY

### AOPA ASI SEMINAR

at the SAC

“Chart Challenge”

May 23, 7-9 PM

Program description in the February newsletter and <<http://www.aopa.org/asf/seminars/seminar.cfm>>

### AIRVENTURE

60th Anniversary

July 29 - August 4

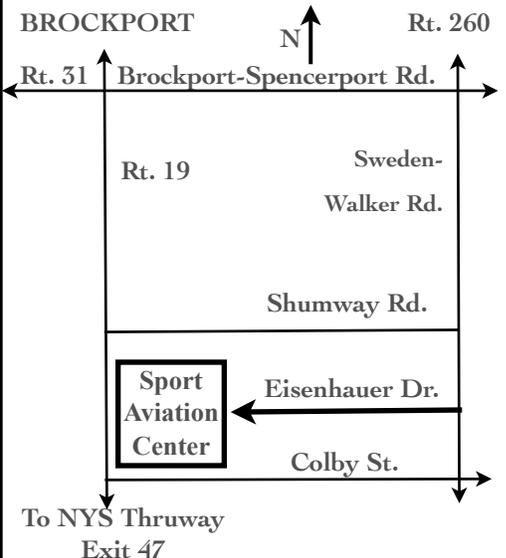
Oshkosh, WI

<eaa.org>

### NATIONAL AVIATION DAY

marking Orville Wright's 142nd birthday.

August 19



## EAA 44 Calendar



### **NEXT GENERAL MEETING**

Our Guest Speaker will be Mike Clayton talking about the acquisition and rebuilding of his Kitfox.

Dinner will be pizza and wings. Please bring a dessert to complement that.

Tuesday Feb. 19  
Dinner 6:30 PM  
Meeting 7:30 PM

**Feb. 23** SAC Work Day

**Mar. 9** SAC Work Day

**Mar. 12** Board Meeting

**Mar. 19** General Meeting

**Mar. 23** Nick Genarrino Eagle Scout Ceremony

**Apr. 9** Board Mtg.

**Apr. 13** SAC Work Day

**Apr. 16** General Meeting

**Apr. 27** SAC Work Day

**May 11** SAC Work Day

**May 14** Board Meeting

**May 21** General Meeting

**May 23** AOPA ASI Seminar

**All activities take place at the Sport Aviation Center unless otherwise noted.**

**Sport Aviation Center**

44 Eisenhower Dr. 14420

Brockport Airport/  
Ledgesdale Airpark (7G0)

**Board Meetings-**

2<sup>nd</sup> Tuesday of the month, 7 PM

**General Meetings-**

3<sup>rd</sup> Tuesday of the month

Dinner 6:30, Meeting 7:30

**SAC Saturday Work Days-**

2<sup>nd</sup> & 4<sup>th</sup> Saturdays, 10 AM

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