

## February 2014

THE NEXT PROGRAM WILL BE ON MONDAY

**March 10, 2014**

- **Regular Monthly Meeting**
- **7:00 PM, CHAPTER HOUSE, ENTRANCE B, LAKE ELMO AIRPORT 21D.**

## Ground School Success

Thursday Feb, 6th we started the 2014 Ground School class. It is a record breaker. This is the largest class since we began our Ground School program in 2002. There are 18 class members. The class is a diverse group comprised of high school students to retirees and those in between. Some class members have already begun flight training. One already has his airplane and now wants to learn to fly. Another has an empty hanger ready to be filled. Several students are just beginning their aviation experience and others are returning to continue their adventure. All students are very enthusiastic about becoming pilots and feel the class will be not only an educational benefit to them, but also fun. Besides being our largest class, there is another first - three husband and wife teams and three father and son teams. There are several chapter members that have been added to our roster of instructors. Other chapter members will come to help students as they progress through charts, navigation and other topics. All Chapter 54 members are welcome to audit the class. Choose which topic you might want to review and get a refresher. Come to one class, come to all..

### INSIDE THIS ISSUE:

<b>SPEAKER NOTES</b>	<b>1</b>
<b>PRESIDENT'S MESSAGE</b>	<b>3</b>
<b>CHAPTER MEETING MINUTES</b>	<b>5</b>
<b>NTSB SAFETY ALERTS</b>	<b>6</b>

## Sonex Builders Presentation

Our speakers were Sonex Builders: John Koser (member of chapter 25) and Wayne Flury (organizing a local Sonex fly-in for this coming summer).

The fly-in will be at Buffalo, June 7th and is for Sonex owners and individuals interested in building a Sonex. For more information email [wflury@wh-link.net](mailto:wflury@wh-link.net)



John started building his Sonex in 1999, before it was offered as a kit. He bought the plans and raw materials. Wayne started his in about 2000; but sidetracked for a bit and is now picking up where he left off.

The plans include a detailed flow chart outlining every step and the order in which they are completed. Each sheet in the plan provides every detail of measurements and form. John built his plane for about \$22,000.

Sonex sponsors weekend workshops teaching new builders the skills needed to work with aluminum. Both men felt that the workshop was extremely useful!

John's first flight was at Jensen field; he flew about 20 minutes including 2 or 3 passes over the field. The third time around he came in on a low pass, pulled it up and then experienced an engine out. He re-started it and continued flying; it quit 3 more times so he decided to land without the engine. They took the fuel system apart and found some very small debris in the fuel line causing them to believe that the jets were clogged.

They showed a video demonstrating the flying characteristics of the plane and features of the design. The landing

gear is titanium, very sturdy. The whole airframe has about \$1,500 worth of aluminum; the designers worked to keep the design simple and affordable. The cowling and wheel pants are fiberglass.

Construction time will depend on individual skills; they estimate 700 to 1,000 hours for the average person to build a plane. It is designed to be a 2-place plane but can be built as a single seat for a larger individual.

John used a Jabiru engine for his plane; he decided to use straight pipes instead of a muffler to improve performance. His climb out rate is closer to 1200 Ft/min vs the 900 Ft/min that is shown with the muffler. He burns about 4.5 gallons per hour.

Question: There have been some problems with heads on the Jabiru engines – did you have any problems? John answered “no”. The manufacturers require regular re-torquing of the heads and checking valve gaps.

Question: how many hours do you have on your plane? “250 to 300”.

In the course of building, John kept very careful daily records along with photographs. He included photos of every time the tech counselor came to inspect. This record keeping supports the application for the repairman’s certificate.

The original design did not include any fiberglass parts, but builders requested tips for the vertical stabilizer, wings and horizontal stabilizer. This addition has been very popular since the tips are aesthetically pleasing and do improve performance.



The cowling is fiberglass and comes in two pieces; it is challenging. Designing the panel is an individual exercise. Lots of opinions and layouts are available; John used paper cutouts to experiment with placement options and instrument selection.

## 1st Annual Great Minnesota Aviation Gathering

Sponsored by the Minnesota Pilots Association  
 Friday, March 21, 2014 from 9:00 AM – 9:00 PM  
 Saturday, March 22, 2014 from 9:00 AM – 4:00 PM  
 Anoka-Blaine Airport (KANE)  
 Golden Wings Museum

The gathering will feature two days of several excellent speakers as well as exhibitors from aviation-related companies and organizations.

Several FAAST programs will also be presented.

For more information, please visit: Minnesota Pilots Association, Minnesota Pilots Association/ facebook , your local FBO or call 612-231-2153.

<http://www.mnpilots.org>

**The Great  
 MINNESOTA  
 Aviation Gathering  
 March 21<sup>st</sup> & 22<sup>nd</sup>**



Right, Above, Billie Rankin saving her Ford hats at Airventure.

Below, Right Linda Amble and Dave Becker at a Young Eagle presentation at Airventure.

Below, visiting aircraft at Lake Elmo Aviation Day.



## Pilots Lounge

**AERO SKIS, MODEL 1800 • \$1,250 • FOR**

**SALE** • Package deal, \$1250. Aero Ski Model 1800 and ski dolly's for aircraft with gross wt. to 2000 pounds . Rigging for Spezio Tuholer w/ Taylorcraft axle adapter. Excellent condition, no damage history. Will not separate, no over seas sales, CASH only. Possible delivery within 200 miles of St. Paul, MN. • Contact [Danny Bergstrom](#), Owner - located Stillwater, MN USA • Telephone: 651-439-0944 •



## Tailwinds Flying Club Welcomes New Members

Tailwinds Flying Partnership is based at Lake Elmo airport, 21D, in Lake Elmo, MN. We are a non-profit corporation of 38 pilots who equally own three aircraft. Our goal and philosophy are to fly great airplanes inexpensively. We strive for consistency in equipment among our three airplanes. We currently have a Cirrus SR20, Archer II and a Cherokee Six.

To inquire about membership, please send an [e-mail to Mark](#) or call 651-982-275. Visit us at [www.tailwinds21d.org](http://www.tailwinds21d.org) to learn more.





## Chapter 54 Meeting Minutes

### February 10, 2014

### Bettie Seitzer, Chapter Secretary

EAA Chapter 54 Business Meeting Minutes

January meeting minutes were published in the Newsletter for review by members. Treasurer's report is on the website for review by members.

Paul Rankin reported that Ground school started with 17 students, we may add one more. There are 2 members auditing the entire course. 20 people in the room, we could fit 21. This is the largest class we have had! We have 3 father/son pairs and 3 married couples. The group seems very excited and dedicated; they were very attentive. We have multiple members teaching this time. We will poll the class to find out how they learned about the course. We do know that quite a few of them are taking flight lessons at Valters. There were also notices in several of the local papers.

Young Eagles: At the board meeting the board authorized \$1500 toward scholarships for Air Academy. We have a \$350 credit and another gift of about \$650 for scholarships.

Housing: board authorized \$200 for shrubbery. Authorized \$500 for a new laptop which will be set up for use by the ground school.

The board is trying to build an interactive calendar. This is in early stages, but at the least will include important chapter events. We also want to improve communications, considering creating a position within the chapter. There would be internal communications and public relations.

There is a request to publish speakers on the website in advance for meetings.

The day of the BRS tour the weather was awful so only 3 people were able to make it. The tour was very interesting. BRS did a lot of work during the Afghanistan conflict including guided parachutes. The tour included the full construction and assembly process.

The March meeting will feature representatives from Wipaire and there will be an opportunity to tour WipAire as well.

Gregg Adler has a contact with a group of military re-enactors who might be willing to come to our pancake breakfast (Sunday, August 17, 2014) and set up an encampment that could be a good addition to our event. They have restored vehicles that they could bring. We could ask any warbirds on the field to join the display.

Meeting adjourned at 9:13

The Club House has been re-organized for the ground school. Four 8 foot tables and three 6 foot tables have been placed in a school room style. After the ground school is completed we will return to the traditional



## NTSB Issues Five New GA Safety Alerts— Part 2 by Dave Syverson

To start off the new year, the National Transportation Safety Board (NTSB) issued five specific safety alerts for the General Aviation audience with the intent of mitigating accidents/incidents through targeting these hazards and offering practical remedies to address these issues. While people usually think of general aviation as the aircraft with standard airworthiness certificates; experimental aviation, as a subset, is a hugely significant sector of general aviation. The operator of an aircraft with a standard airworthiness certificate essentially operates as the pilot and refers maintenance to certificated mechanics; however, we as experimental aircraft builders and operators are blessed with options and responsibilities as the people who do the maintenance on our aircraft as well as the annual condition inspection if we have our repairman's certificate.



Certainly these five alert points are far from the totality of what issues can bite us in the toches (Yiddish for "rear end" if you are wondering); however, the emphasis which NTSB applies is intended to bring these specific items to attention where they might sometimes be overlooked.

As a subset of general aviation, those of us flying experimental aircraft are addressed by the safety alerts, only a bit more so due to the fact that we do the maintenance on our aircraft.

Here is the official list of new GA safety alerts which can be found on the NTSB website:

- Proper Use of Fiber or Nylon Self-Locking Nuts
- Check Your Restraints
- All Secure, All Clear

The discussion of fiber or nylon locking nut hardware is more like the "nuts and bolts" things we are familiar with as builders (sorry, couldn't help myself). The particular situations documented by NTSB are somewhat ambiguous in some cases since a bolt falling out of a control system due to loss of the nut could be due to either the nut not being installed in the first place; or, as this alert indicates, a fiber or nylon lock nut which has deteriorated allowing the nut to rotate off the bolt. In any case, for those of us with experimental aircraft and repairman certificates, the issues are to assure we are using the correct hardware in the first place (no fiber locknuts under the cowl or on assemblies that rotate on the bolt); and, second, to be sure the hardware, a fiber or nylon lock nut in this case, is doing its job when we do our condition inspections. Available on FAA's website, Advisory Circular 43.13-1b, titled *Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair* contains just about anything a person would need to know about dealing with fasteners in aircraft including proper use and inspection of fiber lock nuts. My inner chemist also reminds me that nylon is very susceptible to deterioration in the presence of acid; and, it is not beyond possibilities that battery acid in the wrong place could make a nylon lock nut ineffective for it's designed task.

Restraint systems in experimental aircraft, while they do not have to comply with the standards for normal certificated aircraft, can often be engineered to be superior to what we see in old Cessna's or Pipers, etc.; however, they are all subject to inspection to assure that the webbing has not been compromised; and to be sure the fasteners both on the service end and the anchor end are correct and doing their job. A major part of the discussion which NTSB brings to the table on this point pertains to the highly recommended installation and use of shoulder restraints in addition to lap belts. Many experimentals that have been built in recent years do include shoulder harnesses. The clarity of the preference for complete restraints such as the 4 point or 5 point anchor systems becomes apparent with a little understanding of the physics of a serious deceleration event where pilot and passengers are restrained only with lap belts. Deceleration works the same only in the opposite direction of acceleration. We love that pushed back in the seat feeling on takeoff....it's not a lot of force and the seat back keeps us out of baggage bay. Now consider the opposite.....if a crew has the misfortune of setting down in a hay field with some of those 1,500 pound round bales spaced too close to miss them all...there is going to be a significant deceleration event....without any restraint device the obvious thing which catches a body in motion is going to the panel and controls...that is simple enough to understand. What might not be as obvious is the fact that with a lap belt only, the effective center of mass the deceleration forces are going to be working on is somewhere in the chest area....considering the moment arm from the lap belt to the effective center of mass and the moment arm of from the lap belt to the head, a lap belt essentially assures one's face will be contacting the panel at a much higher velocity, most



CONTINUED FROM PAGE 6

likely at least double the speed compared to an event where no lap belt is present at all, plus, before that collision, the neck will be snapped back due to the relative mass of the effective center of mass compared to the head with the hinge point of the neck in between. This alert emphasizes the importance of installing and using complete restraint systems and effective inspection of installed restraint systems, both of which are within the options and responsibilities of those of us with experimental aircraft. An adjunct to this is when we are designing and building, we have the opportunity to configure the cockpit, the panel in particular, in a way that is least hazardous to its occupants.

All Secure and All clear has a lot to do with operations regarding loose stuff in the cockpit & baggage area. This safety alert essentially has to do with preventing loose and unaccounted for items from becoming a problem with controls went!" A local story here.....a pilot (a long, long time ago) was getting a weight and balance or contacting one's body during turbulence or maneuvering..."Oh crap, that's where that channel lock currency check in a rental 182. The instructor pilot got on board, shuffled around a bit, got situated and they are off. All the air work, pattern work, an assortment of departures and landings are accomplished before returning back at the FBO. The instructor pilot could not find his carry case he thought he brought on board.....thinking he set it down outside the aircraft he looked around the hangar and gas pumps without locating the missing parcel. After parking the airplane, the item was discovered hiding under the back seat partly in the baggage bay....for extra pucker points.....had the item slid any further back when doing power on stalls with the big continental up front lofting the nose to an impressive deck angle, it could easily have found the tail cone through the opening left ajar at the bulkhead panel following some very recent maintenance work. Cold sweat time..... Now, for experimental flyers, not only can we assure that stuff is tied down; but, we have numerous opportunities to design our baggage bays and cockpits in a manner to make it easy to secure items and assure that there are no open places where stuff can sneak through openings into places where it can mess up our CG or interfere with controls. Some of this might even be procedural....for instance, if we have a floor mounted stick, do we make sure a new passenger knows enough not to park the camera between the stick & seat.....please don't ask me how I know this!

## Women in Aviation

February is African Heritage Month, an opportunity to recognize the contributions of a very diverse group of Americans. Looking at the early days of women in aviation, the story of Willa Brown stands out. She was the first African American woman to receive a private pilots license



in the United States and was instrumental in training over 200 pilots who went on to be Tuskegee Airmen.

## EAA CHAPTER 54 TREASURER'S REPORT *BY PAUL RANKIN*

*EDITORS NOTE: AS DISCUSSED AT A RECENT BOARD OF DIRECTORS MEETING, THE TREASURER'S REPORT WILL NOW BE ON OUR WEBSITE AT*

[WWW.EAA54.ORG/MEMBERSONLY](http://WWW.EAA54.ORG/MEMBERSONLY)



## Chapter 54 Directory

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Chapter Historian: Jeff Hove

Chapter members meet on the second Monday of every month at the Chapter House, Entrance B at Lake Elmo Airport (21D). The House is at the base of the airport beacon. The newsletter is published about a week after the meeting..