

# Experimental Aircraft Association



Chapter 23



Salt Lake City, Utah

## NOVEMBER 2008 NEWSLETTER

### Minutes of Last Meeting

**10<sup>th</sup> October** - The chapter meeting was held at the CAP building. The program was a display and demonstration of a Fowler flap mechanism for their plane being constructed by the Cosman team.

### Next Meetings

**14<sup>th</sup> November** – The meeting will be held at 7:00 pm in the CAP building, 2<sup>nd</sup> Floor, 640 N. 2360 W. Salt Lake City International Airport, with a presentation by the women who live and work with the men relating to their experiences in building and flying with them.

**12<sup>th</sup> December** – This will be the Christmas Potluck Dinner. More details will be forthcoming.

**9<sup>th</sup> January** – This will be the Annual Dinner with a guest speaker. Start time will be 6:00pm. More details will be forthcoming.

### Upcoming Events

- Young Eagles – The October Fly-In at Mesquite, NV was cancelled, and has been rescheduled for February 28, 2009.

- **Air Academy**

Young Eagles Camp - Ages 12 and 13

Session 1: June 15 – 19, 2009

Session 2: June 21 – 25, 2009

Fee: \$675 for non-EAA member

Fee: \$600 for EAA member, or member in family.

Basic Camp - Ages 14 – 15

Session 1: June 27 – July 2, 2009

Session 2: July 6 – July 11, 2009

Session 3: July 13 – July 18, 2009

Fee: \$875 for non-EAA members

Fee: \$800 for EAA member, or member in family.

Advanced Camp - Ages 16, 17 and 18

Session 1: July 21 – 29, 2009

Session 2: July 31 - August 8, 2009

Fee: \$1,075 for non-EAA member

Fee: \$1,000 for EAA member, or member in family.

Applications and scholarship information:

[www.young eagles.org/programs/airacademy/](http://www.young eagles.org/programs/airacademy/)

### Articles

#### **\*\* Mooney Mite Wing Load Test**

I posted the following information on the Mooney Mite Site, and I thought Chapter 23 members might also be interested.

*November 2007*

How many of you wonder each time you fly if your wing is still as strong as it was when it was new? Many of you already know that I have a wing that was built by an amateur builder that I plan to use on my Mite that I am re-building. I have authorization from the FAA to register it as an experimental amateur built airplane with the home built wing. I have serious questions about the structure of this new wing. It looks good on the surface. The workmanship is acceptable. It seems to be built to specifications according to the plans. But, the builder was deceased before I bought the wing so I never had a chance to talk to him to find out about the processes he used in building the wing. His family didn't know much about it either.

So, I am in the process of designing a static load test to verify that the wing is strong enough to fly on confidently. When I am finished I will either have a very expensive pile of firewood or a wing that I don't have to worry about. The problem is that I am not an engineer. When I started this project I don't know anything about structural formulas or loads or stress test. Do any of you know about these things? I am interested in any suggestions at this point. If you know of any articles or have any expertise in the processes that I am facing I would love to hear about what you know. I will report to you guys from time to time about how things are progressing.

*April 2008*

I finally found someone with the right credentials and experience to give me some advice on the way to perform the wing test. I had to promise not to use his name for liability reasons. We talked about the purpose for the test and the procedures and loads to use. My advisor finally said that he would be comfortable with the process I have listed in the attachments. This guy has a really good resume and I trust his recommendation.

The test loads are fairly low because this is not intended to be a destructive test. I do want to fly on the wing not

break it. The repetitive loading and inspections for deformations should reveal if there are any structural flaws in the workmanship on the wing. The amount of deflection under weight and the distribution of the deflection from wingtip to wingtip should show whether the strength is adequate.

#### *Test Process for Mooney Mite Static Load Wing Test*

1. Build a test stand for mounting the wing. The wing will be mounted bottom up at an angle representing cruise angle of attach with the weight bearing on the main spar and Aux spar as it would if it were mounted to the airframe. The test stand will be tall enough to allow for 36 inches of deflection at each wingtip.

2. Prepare for the test. I will mount 2-foot wide strips of ½ inch plywood to the bottom of the wing to protect the wing structure from damage from the sandbags. The strips will be attached with 2sided tape to prevent sliding. I will use removable supports under the wing tips to support the test weight while it is being loaded.

3. Load the wing. I will distribute sand bags equaling the calculated weights along the bottom of the wing to simulate wing loading.

4. Test. Briefly remove the wing tip supports, measure the deflection at the wing tips and two additional stations along the wing and photograph the wing under load.

(Repeat steps 3 & 4 with 50% of test load, 75%, 90% and 100% of test load.)

5. Secure the wing. Replace the wing tip supports and remove the sand bags and plywood strips.

6. Inspect for potential damage. Measure Deflection, if any, and compare to pre test shape of the wing. Visually inspect joints, surfaces and rib members for damage.

7. Analyze the test data and evaluate the condition of the wing.

8. Final disposition. Either cut the wing up for firewood or proceed with assembly of airplane.

*September 2008*



I finally got 80, 40 lb bags of concrete out to my hangar and loaded most of them on top of my wing which was mounted upside down in a jig for the stress test. For those of

you who had faith in Dave Grubert's building skills, your faith was validated. The load test was designed for a 4g load but I went all the way to 5g's and the wing did great. It deflected evenly and returned to its original shape just like it is supposed to. It did make some unsettling noise form time to time but I had been warned that it would and that the noise was normal.

I am so glad to have this test over with. Now I can go back to working on my Mite knowing that I have a good wing for it. It will be so nice not wondering if the wing is any good every time I fly.

PS: I should thank Lowe's Home Improvements for supplying the bags of concrete. I went to them and explained fully my need for the weight and asked if I could pay a fee or some kind of rental for short term use of their inventory. They said that I could buy the bags and return all that I didn't break, with no charge. I returned all of them and they graciously helped me unload them back at the store. They have my business.

Contributed by Scott Royall

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#### **\*\* FAA Extends Duration of First- and Third-Class Medical Certificates**

In the July 24, 2008, Federal Register, the Federal Aviation Administration (FAA) announced its final rule on the requirements and duration of medical certificates and amendments to medical certification procedures. Pilots under 40 years of age are most affected by the changes to Title 14 Code of Federal Regulations (14 CFR) section 61.23.

A first-class medical certificate is required, when exercising airline transport pilot privileges, and at least a third-class medical certificate, when exercising private pilot privileges. Effective as of July 24, this rule extends the duration of first- and third-class medical certificates for certain individuals. For pilots under age 40, the first-class medical certificate is now valid for 12 months. For pilots over age 40, it remains six months for the first-class medical certificate. Third-class medical certificates are now valid for 60 months (5 years) for pilots under age 40 and 24 months (2 years) for pilots over age 40. The second-class medical certificate durations are unchanged, regardless of age.

In addition to extending the duration of certain medical certificates, this final rule also adopted amendments and editorial changes to the medical certification procedures. These are effective August 25, 2008. The intent of this action is to improve the efficiency of the medical certification program and the service provided to medical certificate applicants.

To view the final rule, visit <http://edocket.access.gpo.gov/2008/pdf/E8-16911.pdf>.

From the FAA AV News Update for September 2008

#### **Classifieds** (usually run for 2 newsletters)

*November Ads*

CAPELLA XS for Sale



Two-place side-by-side taildragger with Rotax 912-UL 80hp engine. Light Sport / Sport Pilot ready. Registered ELSA Always hangared. No damage history. Polished aluminum wings with vortex generators. Includes King KT-76A transponder with mode C alt encoder, ValCom 760 radio, elec. turn & bank, ALT, ASI, VSI, tach, hours, volts, amps, CHT, Oil temp & pressure, coolant temp, fuel gauge, G-meter, dash mount magnetic compass, ELT, multiple 12v outlets, elec. pitch trim with panel indicator, 4-position flaps, wingtip strobe/nav lights, rear position lights on belly and top of cabin, hydraulic disc brakes, cabin heat, gear leg fairings, fiberglass drooped wing tips, smooth running 3-blade ground adjustable IVO prop, high capacity 35 AmpHr sealed battery, portable intercom, oversized wheels/tires, baggage area behind seats, skylights in cabin roof. Has provisions for folding wings. 533 hrs TTAE, and being flown regularly. This is a truly great flying plane, well equipped, built with care, and well maintained. In air handling qualities are wonderful, and a very forgiving taildragger on the ground. Engine starts easy, runs smooth and powerful. Everything is sound and in excellent shape. Only selling because I have another Capella kit under construction that I need funds to finish. Currently hangared at Ogden. Asking \$24,900. Email Mike at mmaurer@warpspeed.net, or call 801-876-2711 x3291.

#### *October Ads*

##### Paradise Aircraft

My name is Christopher Regis, a fellow EAA member here in Florida. I represent Paradise Aircraft, a certified Light Sport Aircraft manufacturer here in the US. Paradise is a very successful company in Brazil with over 25 years in the aviation market.

We are new to the US market and we are getting ready to display our P-1 S-LSA model at next months Copperstate Expo in Arizona and I would like to invite your entire chapter to visit us and possibly schedule some demo flights. Our P-1 is a beautiful all metal high wing aircraft that is very safe, comfortable and economic!!!

It's manufactured in Brazil and assembled here in Sebring, FL. I also would like to invite you to visit our website at [www.ParadiseAircraft.us](http://www.ParadiseAircraft.us)

Thank you for your time and I hope to see you all at Copperstate.

Christopher L. Regis Sales & Marketing  
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446 Hendricks Field Way, Sebring, FL 33870

[www.ParadiseAircraft.us](http://www.ParadiseAircraft.us) or, [sales@ParadiseAircraft.us](mailto:sales@ParadiseAircraft.us)

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