



# EAA Chapter 166 Greater Hartford, CT



EAA 166 Newsletter

Vol. 44 – Issue 3

March, 2008

## Experimental Aircraft Association Chapter 166

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## Next Meeting

Sunday March 30, 2008 at the P & W Customer Training  
Center

Meeting starts promptly at 7:30 PM (19:30)

Please try to be on time as we have to accommodate P & W security

This month's program is:

A presentation by Dr. Robert Dodenhoff (AME) about the FAA  
medical exam process. Dr. Dodenhoff will accept questions from the  
audience afterwards.



## New directions to the CTC (map & text)

There are new traffic patterns in place on the P & W East Hartford campus. You cannot exit the way you came in if approaching the CTC from I-84 or Silver Lane.

Inbound from I-84: Follow the **Yellow** arrows to the CTC  
Leaving for I-84 (East & West): Follow the **Red** arrows past Cabelas  
Leaving toward the South: Follow the **Blue** arrows to Main Street.

## President's Message

Well Spring is here!!!...You know how I can tell???...The sump pump in the basement is running...and when I go out to feed our sheep there is a good chance that the 'boot sucking mud' will have me barefoot before the job is done...

The other way I can tell spring is coming; I'm starting to get AirVenture 2008 posters and handouts from Headquarters. I'll be bringing the material to the meeting on the 30<sup>th</sup>. It's quite a package this time. I'll have posters; five 17 minute DVD's narrated by Harrison Ford on an insiders look at the people who share the passion of aviation, to distribute to the members; and rack cards and holders publicizing the event. I will be looking for members willing to take some of the posters and rack cards to the local FBO for display and to get the DVD's out where they can be viewed by the maximum number of people.

Also from Oshkosh we got notice of a builders' service from Headquarters titled 'Hints for Homebuilders' Video Online'. This is a series of 6 minute on line videos you can watch with the topics of; General; Sheet Metal; Tube and Fabric; and Wood. I've looked at a couple of them and they are quite good. Like many of you I've spent plenty of dollars on 'How to Do' videos. Now the EAA will provide this service on-line. Being a 'builders' chapter I'm quite excited about this service.

From Headquarters on this new service, "EAA has always been about sharing knowledge among members, and these new video tips are just another way of doing that, taking advantage of the opportunities the Internet provides," said Charlie Becker, director of EAA's member programs. "We're hoping to develop an entire catalog of tips, tricks, and alternative methods that will be valuable to EAA members." The link to the site is:

<http://www.eaa.org/video/homebuilders.html>

Staying with the 'homebuilder' topic, Al Cross sent out a note from Joe Gauthier about the attack on the Homebuilder rights by the FAA. The FAA affirms that it wants to preserve the 51 percent rule and 14 CFR part 21.191(g), the homebuilt aircraft regulations. The agency is questioning whether "quick-build kits" result in aircraft that are compliant with the original regulations, even though the agency has consistently approved such aircraft. One of these approved aircraft is my Sky Arrow.

The FAA has frozen the list of approved kit aircraft. My opinion is that there may be pressure on the FAA from the 'certified manufactures' to control the incursion into their market. Kit built and assisted built aircraft have become quite a fur ball in last few years. This has been exacerbated by the introduction of the Light Sport Aircraft. Go to: [http://www.eaa.org/news/2008/2008-02-28\\_arc.asp](http://www.eaa.org/news/2008/2008-02-28_arc.asp), there is a link for a .pdf for a draft letter you can use to send your comments to the FAA.

While we are on the topic of the FAA, pilots have been directed to replace their paper pilot's license with the tamper-resistant plastic card by March 31, 2010. The fee is \$2.00, the same if you replaced a lost or destroyed license. Photo identification may be in the

future. You can be requested by FAA, TSA or other homeland security people to produce a photo ID. And you don't even have to want to have to buy a pack of cigarettes.

Finally, it looks like our Young Eagle event for May 10<sup>th</sup> (rain date: May 17<sup>th</sup>) will be well attended. Larry Gagnon, Jack Hilditch and myself have been working with the New England Air Museum Director of Education, Caroline d'Otreppe, to fly as many as 30 of her Youth in Aviation students. Jack has been working on some other organization that may have additional Young Eagles for us. As the event gets closer we will have a better handle on requirements. For sure we will need people on the ground to usher the Young Eagles around and demonstrate pre-flights and orientate them to the program. We will most likely need several multi-seat aircraft to handle this large number of Young Eagles. There will be further discussion at the meeting.

Remember, generally speaking, you aren't learning much when your lips are moving...

Happy skies and smooth landings...

Ken Benson, President.

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## (Updated) Regional 2008 Calendar

### EAA Chapter 1310

#### March

29<sup>th</sup> - Daniel Webster College/New England Safety Expo in Nashua, NH (Saturday)

#### 30th 166 Meeting

#### April

April 2, 2008 7:00 – 9:00 PM  
FAA Safety Meeting – East Windsor, HS – **Top 5 Mistakes Pilots Make**  
8 – 13th – Sun-N-Fun (Tues – Sun)

#### 19th Pancake Breakfast (Saturday)

#### Tour Bradley's tower/TRACON

#### 27th 166 Meeting

April 19-20, 2008  
ELSA repairman course for fixed-wing  
ELSA aircraft in Brick, NJ (see notice)

### EAA Chapter 166

#### May

3<sup>rd</sup> - Fly-in & 'Blessing of the Fleet' at Skylark

#### 10th 166 YE event (KHFD)

#### 14th – Meeting (Wednesday evening)

#### 17th – Pancake Breakfast (Saturday)

#### 17th 166 YE rain date (KHFD)

17 & 18 (?) – Hampton Fly-Market (Saturday/Sunday)

Mini-Safety Seminar with flea market/fundraiser

#### 18th 166 Meeting

#### 31<sup>st</sup> FAA Mini-Safety Seminar and fly-in at Skylark

**Chapter 1310 will be circulating a sign-up sheet for the visit to the Bradley Tracon shortly. Group size is limited and this mandatory sign-up sheet MUST be completed 30 days prior to the visit for security clearance purposes.**

**Please contact Susie Williams, chapter 1310 Program coordinator, for signup information via email at: [susiewilliams531@comcast.net](mailto:susiewilliams531@comcast.net)**

## Get Ready for Spring Flying at an ASF Safety Seminar

- April 2, 2008 7:00 – 9:00 PM – East Windsor, High School

[http://www.faasafety.gov/SPANS/event\\_details.aspx?eid=17750](http://www.faasafety.gov/SPANS/event_details.aspx?eid=17750)



It's sad but true: In an average year, three quarters of all accidents are caused by pilot error. And the mistakes that lead to those accidents? For the most part, they're the same ones pilots have been making for decades. ASF's latest seminar takes new aim at those old mistakes. They have identified the most common fatal errors pilots make and put together a show that's full of practical tips for avoiding them. From steering clear of weather to maneuvering safely and much more, if you're looking to minimize your chances of being involved in a fatal accident, you'll definitely want to attend this seminar! <http://www.aopa.org/asf/seminars/seminar.cfm?FA=SS>

## Reports

EAA Chapter 166  
**Treasurer's Report**  
March 2008

Checking Account: \$ 3,797.46

Deposits: \$ 96.00 dues

Total Deposits: \$ 96.00

Total bills: \$ 25.00 incorporation tax

Balance in Ck \$ 3,868.46

Petty Cash: \$ 00.00

Plus decals, & etc.

Chapter Scholarship Fund ACCOUNT

Balance: \$ 1,880.07

Deposits: \$ 00.00 – Flt Str

Bills: \$ 00.00 DAR expenses

Balance: \$ 1,880.07

Duly reported by Dave Armando, Treasurer

*Our Treasurer has asked me to remind the membership that it is March already and quite a few dues delinquencies remain on his roster. All those who have been tardy please send your \$16.00 in to Dave Armando, 1765 New London Turnpike, Glastonbury, CT 06033. Thank you.*

EAA Chapter 166  
**Secretary's Report**  
March 2008

There were a number of progress reports discussed during the meeting. Dave Armando continues working his helicopter, with 259 hours to date. He is currently working on the instrument panel and wiring, and hopes to be flying by this summer. Larry Gagnon is down to checklist items on the RV-6. The panel and upholstery are complete, and he is currently working the cowling and baffling. Russ Beers has his Glastar up on the landing gear, and has the doors and windows installed. Jack Hilditch has the boxes for his RV-9A in the garage waiting for warmer weather to be unpacked. Ken Benson continues to make progress on the Sky Arrow, continuing work on the instrument panel. Ken has decided to use the Approach Fast Track system for his panel to simplify installation. It will be interesting to hear his experiences with this system. Finally, I continue work on the RV-10 at a painfully slow pace. My RV-8A has a basic VFR panel, which was much simpler than the IFR panel in the RV-10. My initial plan was to complete the wiring over the December holiday, while the latest estimate is completion sometime in May.

In other business, there is a Young Eagles event currently scheduled in May. A number of local schools have been contacted, so there may be a heavy turnout. Anyone interested in volunteering to fly should contact Larry Gagnon.

Ken Benson is still looking for the Chapter banner. If anyone knows where it is hiding, contact Ken directly.

There is a fly-in scheduled at Skylark airport on May 3. There will be donuts in the morning, and hotdogs and hamburgers for lunch. All money raised will be donated to the Young Eagles.

Finally, if you have not yet paid the 2008 chapter dues, please send to Dave Armando.

Duly reported by Aaron Gleixner, Secretary

### **Young Eagles – (Larry Gagnon)**

We are closing in on the Spring Young Eagles event to be held on May 10, 2008. We hope to secure a sizeable group for the May YE day and will need volunteers. Please mark **May 10, 2008** on your calendars and turn up to help make this a success. There will be signup sheets available at the meeting so please step up and help out.

- Dates **May 10, 2008** at Brainard – Rain Date **May 17, 2008**
- Volunteers needed, can you help out?

- Pilots, Ramp Crew, Hanger Staff, Food Service?
- A number of 1310 members have volunteered. Several are bringing aircraft including a Tiger Moth
- We have contacted Manchester HS, Howell-Cheney Tech and Kingswood-Oxford schools and expect a reasonable turn out.

## CHAPTER PROJECTS

### Glasair Sportsman 2 + 2 – Russ Beers



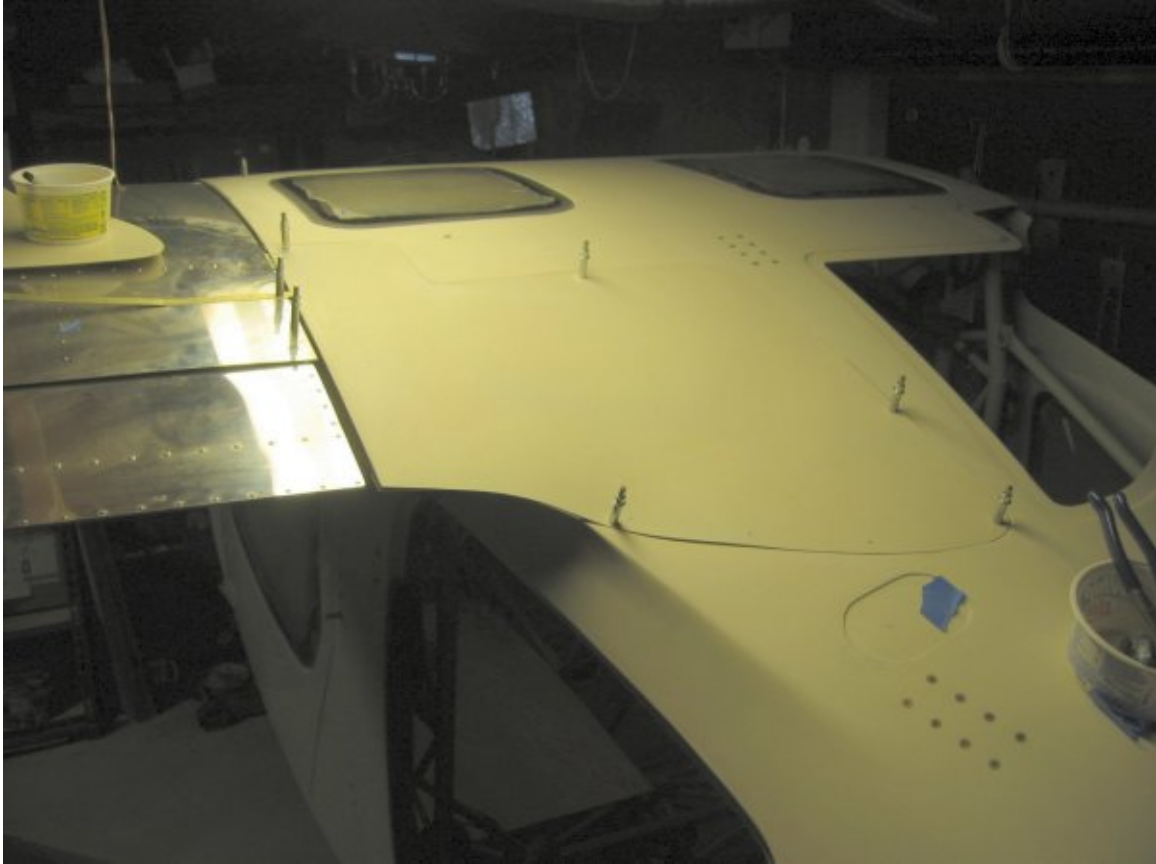
(Picture 46a-One wing)

I currently have a single wing attached to the fuselage. Without having to move the fuselage, I was able to get the left wing attached in order to work on the wing fold hatches (or at least the left one for now). The Sportsman, like the Glastar before it, is capable of having the wings fold back along side the fuselage when completed. This allows the use of smaller hanger space, and/or trailering the aircraft when necessary. In order for the wings to fold, however, the fuselage has to be able to accommodate the flaps. Since the pivot point for the fold is at the rear spar, and that is in front of the flaps, the flaps would pivot into the side of the fuselage without a design to allow them someplace to go. In the first picture you can see the wing attached and the large hatch that needs to be fitted on both sides. The wing needed to be attached so that the hatch can properly fit to the wing profile and create a proper gap.



(Picture 128a - Hatch bonding)

The next step was to carefully remove material from the hatch pieces (there is an upper and lower portion) in order to get a good fit with the fuselage shell, and to get it to line-up with the trailing edge of the flap itself. Once that was done, the parts were sanded and bonded together using a resin and mill fiber paste. That included a careful application of a fillet to the interior of the trailing edge, between the two hatch halves. In my case, I needed to apply a bit of upward pressure to align the trailing edges, so I simply wedged some scrap wood under the trailing edge while it bonded. After that cured, two layers of glass were added on the inside over the fillet made in the trailing edge to further strengthen the joint between the two.



(Picture 127a - left hatch –  
(yes, I know the picture numbers look out of order - a by-product of resizing them  
without great care...)

Here is the final product. The next step will be to remove the left wing and get a few people over to help move the fuselage outside, turn it around, and put it back so that the right wing can be attached and the whole process can start again! In the meantime, I have worked on a few items related to the gear leg fairings. I have shaped the foam that will be bonded to the aft edge of the tube steel gear legs that will create a much better aerodynamic fairing. These will be bonded in place before the airplane shuffle, since the gear legs will be removed for that part...

### **General Information**

According to the Glasair Aviation website, “The Sportsman is the Glastar’s big brother”, said Ted Setzer, V.P. of Research & Development at Glasair Aviation, and the project manager on the Sportsman. The Sportsman has a nearly 1,000 pound useful load, and, with 2 pilots and full fuel, the Sportsman will not only haul over 300 pounds of gear, cargo, or extra passengers, it will easily handle all of the bulky stuff you never thought you’d take with you in your airplane – 2 sets of golf clubs, snow skis, 9’ fishing rods and reels, folding tables, chairs, aluminum framed backpacks, all kinds of camping, hiking and scuba gear and lots of it!” said Setzer. Taking all of this with you, you can cover 600 miles in 4 hours and still have a ½ hour fuel reserve.”

<http://www.glasairaviation.com/kitcontentsportsman.html>

## **Construction Corner - Greg Prentiss**

### **Comments regarding the installation, feeding and care of an STEC 30 autopilot in a Glasair III.**

The **STEC 30** is a unit that provides roll and tracking functions along with altitude hold capabilities. It will follow a heading bug, track a VOR station (in conjunction with a compatible OBS indicator) track a GPS output and provide wing leveling when necessary. The system consists of the roll/primary computer, pitch computer with static sensor, and the roll and pitch servos. The main unit is combined with a Turn Coordinator in a common instrument and thus conserves valuable panel space. With the exception of power, all functions can be controlled by a multifunction switch located on the unit. In the simplest of terms, it controls the bank of the aircraft by monitoring the turn indications of the Turn Coordinator. The altitude hold is accomplished by monitoring the static pressure.

The installation of the components is straightforward and basic. In my case, in addition to a power switch, I installed three momentary push-button switches that control Mode, Altitude Hold, and A/P Disconnect. It's common to put them on the stick but in my case they're on the panel. Some day perhaps I'll move them. As noted, the primary computer is combined with a turn coordinator so all that's necessary is to remove the existing T/C and mount the STEC. A couple of cautions: Before you sign up for one of these, check the clearance behind the panel. It's 9" long including the connector that mounts on the rear so make sure it'll fit. It's also a bit heavy (2.9#) so make sure your panel can support it. The pitch computer, a separate box is small and light (1.1#). I choose to put mine aft of the baggage area in close proximity to the Pitch Servo. It needs to be within 10 degrees of level. Other than that, it could be anywhere that you want to run a harness. There's also a small pressure transducer that needs a static source. The Pitch Servo on the Glasair is also mounted aft of the baggage compartment and is attached to the elevator bell-crank via a bridle cable and capstan arrangement. It's a bit heavy (2.9#) so watch your weight and balance. It also could be mounted elsewhere as long as you can get a link to the elevator linkage. The only caution is the mounting. Make sure it's rigid. Any play or flex will cause all sorts of ghosts in the system. The Roll Servo likewise carries the same cautions about mounting. In the Glasair it's located in the left wing out at the Aileron bell-crank. But, again, it could be located anywhere you choose as long as it's rigid and you can get a push/pull rod or cable on the linkage.

The wiring is a bit challenging but easily accomplished with a bit of patience and common sense. If you managed to build the airplane you can certainly handle the wiring. If you choose an STEC, a harness is included in the price. However, you need to layout your components and tell them the lengths of each leg. Plan ahead. I believe that it took six weeks to get mine. As far as the wiring is concerned, a lot of it controls indicators. The actual servos only have 4 wires each and as long as you get them right the unit will function. Interfacing with OBS indicators, GPS units and the like is also simple. Two wires. One for left, one for right.

After you get it all hooked up there's a series of tests that check everything out. Things like blow into the static, stick aft, suck, stick forward, left turn, left aileron up, right, well you get the picture. After your satisfied all is well, go flying.

It should be noted that most autopilots are somewhat universal in nature and some fine-tuning will probably be necessary to work well with your application. In my case there was a bit of a "wing wobble". Nothing scary, just a rhythmic oscillation. After a bit of conversation with the tech folks down at STEC it was determined that a resistor value that controlled how fast the unit responds needed to be changed. The problem was that we didn't know which way to go. The solution, we hooked up a variable potentiometer and went flying. With autopilot engaged we then adjusted the potentiometer until the oscillation went away. Back at the hangar the resistance value we ended up at was measured the variable pot removed and the appropriate resistor installed.

I now have 3 years and 200 hours on the system and all is well. It may be possible to fly a sport plane like the Glasair III, by yourself, on instruments; but I'd hate to have to do it for very long. Autopilots also provide a nice security blanket should one (not you, of course) blunder into a low visibility situation. Just throw a 180 to "George" and let him take you back to clear skies. And, it sure impresses ATC when you're dead on course and altitude.

The cost for the STEC 30 system: about \$6,000.00. But remember, the STEC is certified. There're many new systems now on the market just for the Experimental gang. Had something like these been available back in 1993 when I started building, I sure would have looked into them.

If anyone has any questions, comments, or whatever about any of this, I'll be happy to expand exponentially on the lesser details.

### **Interesting Links** (From YouTube)

*Disney Wartime Animation training film demonstrating flush riveting methods*  
<http://www.youtube.com/watch?v=5DVPG8go4Jk>

*RV-4 Being Built from the ground up (Quick Time Lapse Sequence)*  
<http://www.youtube.com/watch?v=ujLOzOpy1iY&feature=related>

*Embry-Riddle Piper Arrow with Mistral Rotary in Flight*  
<http://www.youtube.com/watch?v=aLY139b65a0>  
<http://www.youtube.com/watch?v=7l9enVS3yYY&NR=1>  
<http://www.youtube.com/watch?v=3JQVeMoKBT0&feature=related>

*Embry-Riddle Piper Arrow with Mistral Rotary Landing*  
<http://www.youtube.com/watch?v=Lo1TqhQqOkg&feature=related>

## NO to USER FEES



**Remember, the battle is not finished. There are some in Congress and the Administration who are still trying to ram this unpopular legislation through. Contact your Senators and Representatives to voice your displeasure.**

To confront airline rhetoric and lobbying, every participant in general aviation must rally against user fees. For sample letters to send to Congress, visit [www.EAA.org/govt/sample\\_letters.html](http://www.EAA.org/govt/sample_letters.html).

To follow EAA's proactive advocacy on your behalf, visit [www.EAA.org/userfees](http://www.EAA.org/userfees). Questions? e-mail [govt@EAA.org](mailto:govt@EAA.org) Don't delay ... Act *TODAY!*

### **ELSA Repairman's Certificate Course Offered**

Ken,

This is to let you as a chapter president know that Sport Aviation Specialties will be conducting our FAA-accepted 16-hour ELSA repairman course for fixed-wing ELSAs in Brick, NJ on April 19-20, 2008.

The discounted tuition for EAA, USUA, and ASC members is \$349.

Could you please pass this information on to your members? Anyone interested in attending the course may call or email me as listed below.

Also, my website has lots of information about the courses and the other sport aviation services we provide.

Thanks very much!

Mike

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