



GREATER HARTFORD

EAA CHAPTER 166



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President's Message *by Ken Benson*

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Happy New Year all!!!!...This is my first President's Message. If you read the books on leadership and management they say your first message to the members should set the tone for the coming year. I'm not sure about tone but I would like to share my feelings with you. First I'd like you to know I am deeply honored and humbled by the membership selecting me to be President for 2007 with a possible option for 2008. The responsibility of leading the Hartford Chapter with its great traditions and strong membership support is a daunting task that I hope I will measure up to.

I would like to extend my personal thanks and the Chapter's thanks to Preston Kavanaugh and Chris Wilson for their leadership and management over the last two years. Preston has established a leadership style, enthusiasm and networking base that served the Chapter and EAA extremely well. The fly-in's, fly-out's, Young Eagle events and the several projects he has championed are all credit to his personal involvement in the Chapter and motivation of the members that he brought to the table. Preston's new job in Boston will take him away from us on a regular basis but I have been assured he and the PA-12 will still be involved with the Hartford Chapter.

We also lost John Ciolino as our Secretary. John has been the Chapter's Secretary for as long as I've known. John asked that he be paroled on good behavior and has been replaced by the able pen of Aaron Gleixner. I'm not letting John off the hook entirely. I've asked John and Greg Prentiss to head up the coordination of the fly-in's and fly-out's for the Chapter. Larry Gagnon continues to head up our very successful Young Eagles program.

John Shade has picked up the position of Vice President and guru of programs. Assisting John will be Bill Foley, Norm Graham, Russ Beers and Jack Hilditch. The Programs Team has set up speakers for the first few meetings of the New Year. Please feel free to give John and his team any suggestions for meeting topics and areas of interest.

Dave Armando continues as Treasurer. Allan Cross continues as our Newsletter Editor, Webmaster, official greeter, and roster keeper. Both these gentlemen have been the 'cement' that holds the Chapter together and functioning seamlessly.

(Continued on page 3)

Next Meeting

January 28, 2007, 7:30 PM PWA CUSTOMER TRAINING CENTER

Program: Eric Dixon—SeaRay.

Directions: Enter PWA at the Silver Lane entrance, Exit 58, off of I-84. Take next left after UTC Research Center to Training Center.

Secretary's Report

A Board of Directors meeting was held on Jan 6, with 16 members in attendance. The calendar for the year was scheduled, with the monthly meeting remaining the last Sunday of the month with no meeting in July and December. The following events were also scheduled, so mark your calendars:

May 12 – Young Eagles at HFD
 May 20 – Fly-Out to Chester Airport and Visit Connecticut Corsair
 July 14 – Fly-Out destination TBD
 September 15 – Fly-In HFD
 October 4-6 – AOPA Conference in Hartford
 October 13 – Fly-Out to Woodstock
 November 10 – Tentative Banquet Date

Peter Chudy is researching options for a Chapter glider flying experience. This would give interested Chapter members the opportunity to experience glider flying. Stay tuned for more details.

Greg Prentiss has graciously agreed to pick up the Construction Corner Editor. Special thanks to Ken Benson who has been doing a great job for the past few years. Every Chapter member has a unique story or tip to contribute, so don't be shy when Greg solicits volunteers.

The AOPA conference will be held in Hartford on Oct 4-6. This is a big event, with plenty of airplanes, booths, and seminars right in our backyard. It's a unique opportunity for all Chapter members to attend a few seminars, and play with the latest hardware. Preston is checking with EAA National for opportunities to participate in this event as a Chapter.

At this time, it appears there will be no Safety Fest this year.

The 2007 Dues will remain at \$16.00. Al Cross will send out the renewal notice to members and update the membership list. All dues should be submitted to Dave Armando.

In the event of inclement weather, you can check

TV Channel 30 for meeting cancellations. The "crawl line" at the bottom of the screen will announce meeting cancellations. EAA Hartford Chapter will be the tag line.

Aaron Gleixner will be developing a tool form that will be included in one of the monthly newsletters. The intent of this form is to compile a list of tools that Chapter members would be willing to loan to other members for their use. If you have a specialty tool that you would be willing to lend, please fill out the form and return it to Aaron.

Treasurer's Report

EAA Chapter 166

Treasurer's Report October

Checking Account:	\$ 3957.59
Deposits: Banquet & Dues	\$ 927.00
Total Deposits:	\$ 927.00
Checks: Banquet,	\$ 505.46
EAA reg, Insurance	\$ 267.57
Coffee @ BOD meeting	<u>\$ 38.40</u>
Total bills:	\$ 773.03
Balance in Ck	\$ 4,111.56
Petty Cash:	\$ 00.00
Plus decals, & etc.	

Chapter Scholarship Fund ACCOUNT

Balance:	\$ 1,684.38
Deposits: Flight Star	\$ 150.00
Bills: DAR expenses	<u>\$ 0.00</u>
Balance:	\$ 1,834.38

Duly reported by Dave Armando, Treasurer

President's Message *continued from page 1*

Our Flight Advisor, Joe Gauthier, is arguably the most knowledgeable home builder, flight tester and EAA insider in New England and far beyond. I treasure Joe's advice and council. He alone can keep the Chapter and me on an even keel, responsive to the membership needs while following the best path.

Greg Prentiss and Larry Gagnon are our two skilled Technical Advisors. Both are professed 'gear heads' and their knowledge and skill are demonstrated by the aircraft they have built and the sound advice they have dispensed.

The Chapter has an ambitious schedule for 2007. We have been able to secure the Pratt and Whitney Customer Training Center as our meeting place. You couldn't ask for a better club house. The fly-in's, fly-out's and Young Eagle events and locations have been established. The fly-in's and fly-out's were a great success in 2006. It is an ambitious yet doable schedule. Beyond the usual, we plan at least one joint chapter meeting with Chapter 1310 at Skylark. The big event is the AOPA National Conference will be in Hartford in early October.

On a business note, I am asking you all to renew your 2007 EAA national membership. The EAA provides the Chapter liability insurance for our events. In order to be covered we are required to be members of the EAA. Sounds like a small point but if we were ever to need the coverage for any unfortunate situation I would hate to have it called in question because of lack of Chapter membership.

In closing, I would like to say I see my job as President is to serve the membership. I will always be open to your ideas, thoughts and critiques. I can't do it alone. You have given me a great leadership team. I also look to each and every member to be an ambassador for the Hartford Chapter and for the EAA and to be my council and advisor.

Clear skies, light winds and perfectly bucked rivet...

Ken Benson, President
EAA Hartford Chapter 166

Construction Corner *by Ken Benson*

Good day to you all!!!... Hasn't the weather been grand..... Seventy degree in January can't be all bad...if you haven't been flying you've missed a great opportunity to keep the skill sets up and have a helluva good time in mid-winter...

If you've been hiding in the cockpit or buried in the shop building your airplane then you might not know that I was elected President of the Chapter. It's an awesome responsibility that I look forward to as much as my first solo flight. There's a little knot in my stomach, the instructors have done their best, it's going to be a great experience and I hope I don't screw up. But as being President I will be challenged enough trying to do a President's message each month let alone the Construction Corner as well. Fortunately Greg Prentiss has agreed to pick up the Construction Corner. It is only fitting that the column be edited by one of our Technical Advisors, a true 'gear head' and a master of the pros. Greg will be asking for member contributors at the January meeting. The sharing of builder knowledge is one of the great strengths of the chapter and I'm sure you will contribute to Greg as freely as you did to me.

I would be remiss if I didn't thank the 2006 Construction Corner member contributors. For without them there would be no Construction Corner. Our thanks go to:

Greg Prentiss	Jeff Dill
Ken Terrio	Jack Hilditch
Moe Schwartzman	Larry Gagnon
Mel Barlow	Joe Gauthier
Andy Olech	

This month for the beginning of 2007 we hear from Joe Gauthier. Joe says he's had repeated questions on ELT's. He shares with us an article from Avionics West of Tennessee. The web site is <http://www.avionicswest.com/articles/eltupdate.htm>. For links I suggest you go to the web site.

The ELT, Your Safety Net

Recently I had a gentleman send me an e-mail that had some questions about ELT TSO's. He had the understanding that if he upgraded to another type of ELT, the newly installed ELT must meet TSO-91a but he found he could still purchase the older TSO-91 series ELT's new. Here's a little history on ELT TSO's

(Technical Standard Order). A TSO is nothing more than a standard set by the FAA in which a product must meet. The first TSO I could find on ELT's was TSO-C91 written back in 1971. Throughout the years the FAA found that the ELT often failed as a result of a crash, thus no signal was given off. In many cases the FAA found the inertia switch (commonly called the G Switch) failed to activate. ELT's under TSO-C91 were prone to failure and didn't work the one time you needed it. Prior to June 1995, there wasn't even a requirement to test the ELT, only replace the batteries if expired. Around June 1995, the FAA created FAR 91.207 which tells the avionics shop and A&P's just what must be tested to comply with FAR 91.207.

Lets discuss what FAR 91.207 says. Within each 12 calendar months FAR 91.207 must be complied with.

- The inspector must verify the ELT is placed as far in the tail of the aircraft as "practicable".
- The batteries must be replaced if the transmitter has been on for more than one cumulative hour or if the battery date has expired (such as the Narco ELT 10). Many of the newer ELT's that meet TSO-C91a use standard "D" type batteries. These batteries must be replaced when 50% of their dated life has expired. In other words, if the battery says life is good until Feb 2004, you would have to change them in Feb 2002. No biggie, these are standard "D" batteries, just use the old batteries in your flashlight until they die.
- Proper installation, mounting brackets, coax and antenna.
- Corrosion of the batteries or battery compartment
- Operation of the controls (on/off/arm/test), inertia switch
- The presence of a sufficient signal radiated from the antenna

These are items that FAR 91.207 requires to be tested, I'd recommend having your local avionics shop verify the power and frequency output of the ELT. The TSO-C91/91a class ELT transmits on 121.50 Mhz and 243.00 Mhz at 100mW of power on a good day. When this FAR first came into life we found that around 60% of the TSO-C91 ELT's failed to operate due to a defective inertia switch. Imagine, carrying an ELT around for decades and the one time you need it, it's out to lunch.

Lets say your present ELT fails, must you upgrade to the newer TSO-C91a models? If you can find an exact part number replacement then you are allowed to replace your defective ELT with that like part number, new or used. Used TSO-C91 ELTs often can be found, such as the Narco ELT-10, EDO Aire, Larago and Sharc 7's. In fact, many of the TSO-C91 ELT's are still being

manufactured today for direct replacement of the older ELT's. If your old ELT has failed and you can't find a Serviceable or new exact part number, then you must upgrade to the new TSO-C91a model. Any new installation requires the use of the newer TSO ELT as called out in FAR 91.207.

What's the difference between the old TSO-C91 and C91a you ask? Actually they have more differences than things in common. The TSO-C91a ELT has a beefier mounting rack that keeps the it in place during a crash. The case of the ELT is much stronger and durable. Older ELT's had a problem of the transmitter drifting off frequency, the newer ELT's have a better transmitter that is more likely to stay on frequency, thus making it easier to pin-point the aircraft if a crash happens. The biggest update is the inertia (G) switch which had been completely redesigned. As I mentioned above, we found about a 60% failure rate directly related to the inertia switch in the older TSO ELT's. False alarms caused by the newer ELT's is less than 5% as compared to over 90% caused by the TSO-C91 models. The newer TSO ELT's require small annunciator/control panel to be installed somewhere in the cabin. This panel provides a method for the pilot to turn on the ELT if desired, to test the ELT and provide a visual indication via a blinking light when the ELT is activated. These little panels do take some time to install because there's a wire that goes from the ELT in the rear of the aircraft to the front of the aircraft, thus part of the interior must be removed.

Most ELT systems are a matched set. In other words, the ELT transmitter, coax and antenna have been designed together and no manufacturer's parts should be used. In other words, use all the parts provided, don't mix and match ELT parts, you may void the TSO by doing so. There's going to be some "engineer" that will call wanting the specs on the typical 121.5Mhz beacon ELT's so I'll list them now. Oh, its been estimated that world-wide, there's around 600,000 121.5 Mhz beacons in use today. TSO-C91/91a ELT's are scheduled to phased out Feb 1, 2009 to be replaced by the 406 Mhz TSO-126 ELT, a far superior unit. Your ELT can be removed from the aircraft up to 90 days if a placard is placed on the instrument panel that states, "ELT not installed". You'll also need to make an entry in the aircraft records stating the date the ELT was removed along with make, model, serial number and reason for removal. I wouldn't recommend flying the aircraft very far without an ELT.

RG Signal

- Transmit power 50-100mW PERP, I normally see around 100mW

- Transmission life: Normally 48 hours
- Transmit Frequency 121.50 & 243.00 Mhz +/- 6 khz
- Polarization: Linear Modulation
- Sweep rate: 2-4 Hz
- Range: 300-1600 Hz (swept at least 700 Hz)
- Modulation: AM
- Percent of Modulation: >85%
- Duty Cycle: 40%

Just how does the ELT as a system work? The nominal system configuration is four satellites, two Cospas and two Sarsat's. Russia supplies two Cospas satellites placed in near-polar orbits at 1000 km up and is equipped with SAR instrumentation at 121.5 Mhz and 406 Mhz, Russia does not monitor 243. Mhz. We Americans supply two NOAA meteorological satellites placed in sun-synchronous, near-polar orbits up around 850 km. Each satellite makes a complete orbit around every 105 minutes, traveling at a velocity of 7 km/sec. The satellite views a "swath" of earth of approximately 600 km wide as it circles the globe, giving instantaneous "field of view" about the size of a continent. When viewed from earth, the satellite crosses the sky in about fifteen minutes, depending on the maximum elevation angle of that pass. The GEOSAR Satellite Constellation is composed of two satellites provide by us Americans referred to as GOES East and GOES West and one satellite provided our friends from India. These satellites provide the continuous earth coverage.

Lets say you've had a bad day; the family flying chariot just went down and the ELT goes off and works properly. What happens next? One thing to keep in mind is the satellites provide coverage to only one-third of the world, hopefully you will crash in a satellite covered area. Two passes of the satellites are required in order to figure out your approximate location. Two passes could take up to 3.5 hours (with your luck), which is a long time when you are hurt. With any luck at all the best you can hope for is they can pinpoint your position within 144 square miles, often the distance is over 400 square miles because the ELT transmitter may be off frequency. Mission control now sends out the Civil Air Patrol, cops or whoever to find you. Not knowing your exact location could take from hours to days, depending on the terrain. The old TSO-C91/91 systems still leave a lot to be desired but they are better than nothing. Upgrading from an old ELT to the C91a models cost about as much as two aviation hamburgers (1 hamburger = \$100.00), so there's really no reason to be flying around with a questionable ELT. When's the last time you tested your ELT for proper operation? I'd recommend before your next flight you take a peek in the tail of your aircraft and make sure the ELT is properly mounted, the coax is

connected from the ELT to the antenna and the switch (if equipped) is placed in the "ARM" position. Next time you are by the avionics shop, have the boys check out the ELT transmitter for power and the proper frequency. That three pound orange box may save your life some day...

The above article was provided courtesy of Avionics of West Tennessee. Additional information, graphics, and a demo signal may be found at <http://www.avionicswest.com/articles/eltupdate.htm>.

Thanks Joe....appreciate sharing this info with us. To you all I wish....

Happy Building....

Ken Benson

TOOL FORM EAA CHAPTER 166

EAA Chapter 166 Members. This form is intended to compile a list of tools that chapter members would be willing to loan other members of Chapter 166. The logistics of all loans would be the responsibility of Chapter members. Please provide completed forms to Aaron Gleixner (gleixner7@wmconnect.com) or at any meeting for compilation and distribution to Chapter members.

Name: _____ Phone #: _____

Street Address and City: _____

List of Tools and Brief Description Available for Loan:

- 1) Example – HobbyAir Positive Flow Respirator System for Painting
- 2) Example – Engine Hoist for Mounting of Engine
- 3) Example – Compression Tester for Lycoming Engines
- 4) Etc

CLASSIFIED

FLIGHT INSTRUCTION: All types of general flight training and check rides by a CFII. Flexible arrangements. Joe Gauthier (860) 635-4058.

WANTED: Seasoned Aviators - Do you remember that special adult that fostered your interest when you were young? We have a thriving Civil Air Patrol squadron that meets on Friday nights at Brainard. If you want to volunteer your time just once, or on a recurring basis, please contact Jeff Dill at 860-295-8372 (home), (860) 985-4315 (cell), or Dillfamily@sbcglobal.net.

CALENDAR OF EVENTS

Meetings

January 28	February 25
March 25	April 29
May 27	June 24
August 26	September 30
October 28	

No Meetings
July, December

Events

Young Eagles	HFD	May 12
	Rain Date	May 19
Fly-Out—Chester	CT Corsairs	May 20
Fly-Out	TBD	July 14
	Rain Date	July 15
Fly-In	HFD	Sept 15
AOPA Conference	Hartford	Oct 4,5,6
Fly-Out-Flight Design	Woodstock	Oct 13
Annual Meeting	TBD	Nov 10

Chapter 166 Website: www.eaa166.org
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