



**Next Meeting: Thursday, January 15, 2009
7:30 PM at the EAA 113 Aviation Center**

EAA Chapter 113
Mark Freeland
42636 Faulkner Drive
Novi, MI 48377

EAGLE'S PROPWASH

January 2009 Issue



CHAPTER 113

"The Backyard Eagles"

.....
Mettetal Airport (1D2), Canton, Michigan



First flight of the Crooks's Champ 01/03/2009

Our Web Site: www.eaa113.org

**Meetings: 7:30 p.m. the 3rd Thursday of each month at the
*EAA113 AVIATION EDUCATION CENTER!***

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Mission Statements Chapter

"EAA Chapter 113's major focus is on the relationships with people who have diverse aviation interests, centered around their love of flight, fellowship, learning and fun. Chapter members have a passion for flying and are willing to share it with others. Chapter 113 provides the opportunity for exchange of information as well as the interaction that leads to friendships that last a lifetime."

Board

"The Board of Directors are to provide both advice and assistance to the chapter officers on an ongoing basis."

President's Podium



Dave Buck (734) 453-5375
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January 2009

Happy New Year to all! I hope everyone has a prosperous year, great friends, good health, and tailwinds wherever you go.

Last month's Chapter Christmas Party was another success with many friends, old and new, in attendance. Thanks to all who helped by bringing a dish or a desert. Special thanks to Bob & Lou for cooking the turkeys and to everyone who helped setup, clean, and tear down afterwards.

Are you working on a project? Have you completed a project? Have you purchased an aircraft? If the answer is yes to any of these, send some pictures along with a short description to the Webmaster. The *projects* section of the chapter website (www.eaal13.org) needs updating with your information. This is your opportunity to be published and become famous. E-mail the information to webmaster@eaal13.org, or click on the email link on the website.

Attached to this newsletter is information on the *Chapter 113 Experimental Aircraft Association Aviation Studies 2009 Scholarships*. Applications have been distributed to local schools and colleges; however, chapter members may also sponsor anyone outside of the local school districts.

The Chapter's Annual Awards Banquet will be held on Saturday, March 21st. Save the date and invite your family and friends to join us for an entertaining evening. Details to follow.

Don't forget now is the time to pay your 2009 dues.
Dave Buck

Calendar of Events

Friday Night at the Movies EAA 113

First Friday of the month 8:00am

Saturday Morning Breakfast

Every Saturday 8:30am at the Coney Island on Lilley Rd. across the street from Mettetal airport.

EAA 113 – YAHOO! To access our YAHOO Group Site, go to <http://groups.yahoo.com/group/EAA113/> New users click “SIGN UP.” Already a member of a YAHOO Group? Click “JOIN THIS GROUP” You’ll have to sign in every time to access all the features. Contact Donna Monson for further information.

Builders Project Corner

Mike Scovel (313)608-7202
ezdriver@sbcglobal.net

Another new year is upon us and as we are all still cozy in our little warm homes waiting out winter that is with a few exceptions (Sean, Ron, & Sara Crooks, myself, Randy Hebron, Pat Charles, Pete Waters and a few other hardy souls). Some of us have turned to planning what they would like to start in the Spring, either as a new project, or what part of the existing project will they attack when the weather breaks. Maybe, who or where they can help someone on their projects to gain some experience before they tackle their own project, or find a medium that they are most comfortable to work with. All good things! This now leads me to the “Builders Project Corner”. Surely you have heard of it, you know, that meeting that takes place on the first Thursday of the month and starts at 7:30 PM at the EAA 113 Chapter Hangar.

Last year was the inception of the Builders Project Corner, even without the best of planning AND advertising (actually none), we still had a fairly good year. I can’t say for all, but I had a good time and actually learned a lot from the speakers we had. I also came to appreciate the level of support in our Chapter, something I was fairly sure of, but this solidified my thoughts! If you haven’t attended any of the meetings last year and are planning to build or are already building, these meetings should be considered must attend events!

Ok, a new year and we need to plan what we want to cover in our meetings this year. Like what kind of topics, guest speakers, demonstrations, or visit other member’s projects, show and tell, project updates, cries for help. Enough for 11 well planned AND advertised meetings. I am looking for all of the help I can muster. A small committee would be nice, and if enough interested parties gather

together, it shouldn't take long to put 11 meetings on the agenda and then start the planning of the meetings.

Since the first meeting of this New Year is the February 5th meeting (obviously no agenda yet), timing is of the essence. All interested parties (Volunteers), please contact me either via email, or my cell phone. We need to set a date and time for the planning meeting. Let's get this puppy rolling and have some FUN!

Mike Scovel

I remember when;

One day we had an NOR extended day lay-over in GRB. Art Roeske was the Captain and decided not to go to the motel during the day layover. However, the stewardess and I chose the motel trip for the time-off in a comfortable setting.

When we returned to the airport in the crew car we noticed the American flag was flying at half mast. Neither of us had any idea about the unusual position of the flag. We soon learned that President John Kennedy had just been murdered. Of course, Art was well aware of the news and gave us an account ASAP.

Upon return to the CV-440 airplane, we continued our trip to OSH, MKE and ORD. Art began the continuation of the flight while I ran the radios. Our first stop was OSH. It was a clear day and the OSH stop was not unusual. Many years later, I met the OSH tower operator who directed our landing and taxi at OSH; LaVerne Olliver was the lone tower operator. When Ollie and I began our visit at an airport in Salome, AZ, we remembered what we were doing on that fateful day. Ollie worked our flight at OSH and since it was the middle of the day, there was only one tower operator on duty. He vividly remembers the occasion.

Ollie lives on airport in Golden, MO and still owns and fly's his Piper Tri-Pacer often. Ollie, his wife Thelma and I still visit each other at every opportunity. Lots of people remember what they were doing on that day and Ollie and I are no exception. –Warren Branscomb

THE FIRST F(R/L)IGHT

The garage is now available for Rita to park her car. This has happened twice before, when the projects are finally completed and they need to be released into the elements. Now comes the first flight, and that is some experience.

This time it was the rebuilt AVID FLYER, which got crunched due to a shorter than expected emergency runway at Northville Downs! Someone built a wall, just after I made ground contact, which brought the roll out to a fast stop. The plane needed a new front end and I figured to update it to the new version, while cutting and welding the mess. The mods were a longer fuselage by 16 inches, as the 300 odd hrs I had flown it, showed that a longer back end would help the pointy end keep on course. This was easy to do, and I also built a new landing gear, with more track. The other addition was installation of differential aileron bellcranks to help the adverse yaw from the flapperons, and I also added a larger fuel header tank with a warning gadget for low fuel!, which was the cause of the emergency landing.

Per the FAA advisories, I ran all the tests then trucked it to Cackleberry, (2E8), for the BIG DAY. So, full bore down the runway, holding full up, a quick squint at the instruments and after reaching about half the length, there was no positive indication it was going to fly! Whoa horses, let's try with up trim in. So, back to the end, and in goes the throttle, full rpm, and about 45mph at the mid point, and still a lead sled! Let us think about this. The experts with me muttered and measured, and finally figured the bumpy strip and the extended fuselage was not giving enough positive attack, plus the wings have 4 degrees of washout which reduces the effective lift from the wing. Now we have no tools, but the ingenuity of the three of us used the trailer hitch and Kenny's weight..... to straighten the tail spring. This lowered the back end about 6 inches, so off we go again! Belting down the runway, and still stuck to mother earth! The ground speed seemed to reach close to 50mph, but, again, the bumps were popping the tail up and down, and... well we decide a hard top runway was needed.

Fold the wings, get the trailer, and off to Livingston County (Fowlerville). This has a HUGE new runway, 1 mile long and WIDE too, but the south side taxiway has no entries except at the ends, which made long taxis to the west end.

A couple of days later, with many prayers and sacrifices to the earth gods (jammy donuts), it was off to the east end and have at it. Zooming down the blacktop, oops, it's airborne, good engine numbers, 1000ft a min climb, but the ailerons were very "heavy" and spongy too. Strange, as this was not a problem before the rebuild. OK, carefully guide it around the pattern, and all engine dials were in the green. Elevator trim was slightly down to kill the climb, and cruise with 4000 rpm (Rotax has a gear box), was 70 mph. One more loop around the pattern, and time to end the circuits and bumps for the flight. I had Captain Dave call out the landing heights, and we settled down nicely.

Thinking it over, I dug out the destructions and there was an update! This plane and others with "flapperons" use a mechanical contraption to provide aileron control and flap, but in reality, they are "Trimerons" as using too much flap input reduces the effect of the aileron control and will cause control reversal with too much flap deflection. AVID warns not to use more than 15 degrees, but they also suggest starting with a negative 6 degrees to provide more trim effect, rather than use the elevator trim. The verbage also said that this would make the aileron control HEAVY! AHAH..... back to the first set of blurb, and they say to use minus 3 degrees, which I reset them to. I also made certain I had just 13 degrees of travel, as the flaps don't work like conventional do.

Looking at the washout, I found it was more than 4 degrees relative to the root... why? OK, when I ordered the kit, it had several choices of wings, STOL, Heavy Hauler, Speedwing/aerobat, so I ordered the Speedwing. When I framed up the wings and mounted them on the fuselage, I was struck by the shortness of the span, as it looked like a bipe with no bottom wing yet! The Kitfox was also designed like this, being by the same designer, and also had the option of extra tip sections plugged in. Avid sold such a kit, and I install these extensions, which also extended the flapperons. As the original wings were built

with washout, now the extra span increased the amount..... and tra la la, my problem. Fortunately, I also changed the strut end on one wing, as the other had an adjustable heim control end, and I welded a fitting so both my wings could be tweaked. I have removed one degree from each tip, and am evaluating the change.

The spongy action was resolved by adding a plastic guide to the aileron push rod from the control stick to the mixer, as the "Z" bent tube was flexing.

I now have 12 hrs of flight time, and still learning how to slow it down on the approach. I use full flaps and full up trim, then try to keep it at 50 on final. The problem is the need for a higher landing gear, as then I can hold the nose higher without putting the tailwheel down first. The stall is 40 mph, and nice and gentle. I also installed Vortex Generators on the wings and under the tail, at the hinge line. The climb is a cool 1000 to 1200 ft per minute at 55mph.

With winter near, I have the cabin heat re-installed, and aluminum taped over part of the radiator to get the heads OK. The oil system has a radiator and a temperature switch, which works very well, so I plan to get some flights in before Snow Birding mid January.

I guess, its a lot of fun and a great learning experience to build and fly your own creation... but the first flight is one whizzbang feeling. The very first time, climbing to pattern altitude at Willow Run, I muttered "I must be bloody stupid". Naw, just a crazy aerobod.

Pete Waters

UPCOMING CHANGES: 121.5MHZ AND 406 MHZ ELTS

On [Feb 1, 2009](#) the COSPAS/SARSAT satellite system will no longer listen for a 121.5 MHz signal anywhere in the world. It will only listen for the 406 MHz signal, for which, incidentally, it has been listening since about 2000 in the military world. The US will continue to require (per United States Code 49, Section 44712 and in the Federal Aviation Regulations at Part 91.207) the installation of a fixed 121.5 MHz ELT in many US registered airplanes, even though the only way that it will be heard after February 1 is by a passing airplane or nearby Fed facility - maybe. So, we will have to keep our current ELT in place, and follow the requirements of 91.207 in spite of the fact that almost nobody will be listening on 121.5MHz. There is currently no U.S. present or future requirement that a fixed 406 unit must be installed in US registered airplanes for domestic flights, but there could be in the future. US-registered airplanes will however, be required to have a 406 unit on board on any international flight to a country observing the ICAO regulations, including Canada. Some of these may have a phase-in time period, and some may not. Canada will have such a period – see below. The reason for this strange state of affairs in the US is, in my opinion, that Congress, not the FAA, created the requirement for an ELT. So the Feds are saying "it's not our problem" and intend to leave it up to Congress to fix. In the meantime, FAR 91.207 governs.

I made an inquiry to the Canadian authorities regarding the ELT requirements for US airplanes entering Canada, and received the following response, copied directly from two emails received. No changes were made to the spelling or syntax in their emails.

The proposed regulation will apply to all aircraft operating in Canadian airspace including US registered aircraft. The proposed transition period will also apply to US registered aircraft and will allow up to two years to have a 406MHz ELT installed for aircraft flying in southern parts of Canada. During the transition period aircraft will still require to have a 121.5 MHz ELT. Aircraft flying into northern Canada (above 50 degrees Lat. east of 80 degrees Long. and above 55 degrees Lat. west of 80 degrees Long.) must meet the

regulatory requirements on February 1 2009.

. the regulation only speaks to the need for a 406MHz ELT and is not specific as to whether a integral GPS is also required. We are proposing to have a 2 year transition period for aircraft operating in southern Canada and during this period a 121.5MHz ELT will be required until such time as the 406MHz ELT is installed or and alternate means of compliance is on board the aircraft using an electronic locating device that has the same performance as a 406MHz ELT.

As you can see, the proposed Canadian regulations will extend as of Feb 2 two years from now to airplanes passing through Canadian airspace as well as landing in Canada. Also, the two year grace period does NOT extend to flights in northern Canada. Lastly, the 406 ELT will not have to have an onboard GPS installed in the proposed legislation.

You [may](#) also be interested to know why the change is being made. The biggest reasons that I found given are a) the huge number of unintended activations annually in the current system, and the difficulty of determining the location of a downed airplane. The 406 beacon technology offers very different and much superior technology over the current system. It provides a means of quickly determining the veracity of a signal, and can pin the location of the beacon down very quickly, unlike the current system. This is in part because the satellite that will receive the 406 signal is in a geo-stationary orbit which covers pretty much the entire northern hemisphere, and because the 406 signal has “improved oscillator stability” which allows the system to determine the real location of the beacon 95% of the time. The purchaser of a 406 unit of any kind will provide the aircraft “N” number, Aircraft Model, Country of Registration and Aircraft 24 bit address (if applicable) to the seller at the time of sale. Some or all of this info will be encoded in the unit that is shipped to the purchaser, and at least some of this info will be sent to the satellite by the unit (together with its GPS position, if the unit has an internal GPS) with each transmission in the event of activation. All 406 units transmit a half-second burst signal every 50 seconds, and should last longer than our current ELTs, which, as you know, transmit continuously upon

activation. Additionally, 406 MHz beacons transmit at five watts versus 75 milliwatts for 121.5 MHz beacons.

In addition to the above information that is supplied to the manufacturer, the buyer is required to register the ELT with NOAA/SARSAT prior to its first use, and to supply information including the number of seats and color(s) of the airplane, the 15 digit ID of the ELT (its unique address, printed on the unit), the aircraft's home airport, the address, telephone number and email address of its operator or owner, and phone numbers for at least two other people to be contacted in the event of an emergency activation. In the event of an activation this data is available immediately to the SARSAT people, who are receiving the aircraft "N" number and address of its ELT every 50 seconds.

The registration is free, can be done very conveniently on the internet, and **must be renewed every two years, and updated whenever the airplane or ELT are sold, stolen, destroyed, or taken out of service.**

In my opinion, carrying a portable 406 unit in addition to the installed 121.5 unit may be a reasonably good interim option in the U.S., at least until our government gets around to requiring a 406 beacon. The only issues that I see with portable units are a) a crash will not activate the unit, and the occupants of a crashed airplane **may** not be able to activate it; b) a requirement for a fixed 406 beacon **may** (and probably will, after our government resolves its issues) come along in the future; so you will have purchased two units when you could have purchased only one, and c) your airplane will not be able to fly into, or over, Canada after **Feb. 1** of some year with only a portable (i.e., non-fixed) unit aboard, depending on the final Canadian regulations.

I am purchasing a fixed/portable AK 451 that transmits on 121.5 and 406 MHz. It is a drop-in replacement for my current AK 450; comes with a fixed and a portable antenna, and will cost me about \$850, incl tax and shipping. (The unit comes with a lithium battery, which is classified as a hazardous material, so will cost extra to ship.) So I get to use my current attaching mount and fixed antenna bracket, and the thing automatically activates in a crash. It complies with present ICAO

and (presumably) possible future U.S. requirements, and I can legally fly into or over anywhere in Canada (assuming that their proposed regulations do not mutate while becoming law) during the transition period or anywhere else with it from the day I install it. I can also remove it from the airplane, rig the portable whip antenna, and carry it through the woods. Lastly, it will use a lithium battery as mentioned above – not the D-cell six-pack that has had problems that users of the AK 450 are familiar with. I do wish it had an internal GPS (available for two – three times the money I am paying, which I cannot afford), and that it cost less in general, but overall it is far superior to the current ELT I now have in my airplane.

I have just completed the installation, which generally consists of five operations:

1. The purchase of the unit. I sent in a check. A form requesting the data described above was emailed to me by the seller (and the completed form was returned to the seller by email) when my check was received. The manufacturer then sent me the unit with the info installed.
2. The registration of the unit, which is done by filling out a form which is then faxed, emailed or mailed to NOAA/SARSAT or by completing the same form on the NOAA/SARSAT website. I did the latter, which was immediately accepted and the collected information was promptly sent back to me for review and changes if necessary. Very intuitive and easy to do. I was told that I would shortly receive in the mail a small registration sticker which I was required to affix on the new ELT.
3. Install the unit. My original AK-450 did not come with a tray, so I had fabricated one. This tray was not used with the 451, as it comes with its own tray. The screw/bolt patterns are exactly the same for both units, so the install wasn't a big deal. However, the new antenna is just over 11 inches longer than the old one, and since I had installed the old one inside the canopy, I had to provide anti-chafe protection both where the new antenna touches the metal back of the passenger seat, and at the tip, which is very close to the plexiglass canopy when it is closed. I should add that the new fixed antenna that comes with the

unit is NOT designed to be fixed on an external surface of the airplane. Is far too long and light. A person installing an AK-451 and intending to mount the antenna on an external surface will need to purchase another antenna from Ameri-King which is designed to be installed externally.

4. Perform the two self-tests outlined in the installation manual. These consist of a test of the ARMED function, and two tests of the activation of the unit; one using the master switch located on the ELT and one using the ON and RESET function of the mandatory Remote Switch mounted (in my airplane) at the right bottom side of the instrument panel. A small horn is also installed there. Successful completion of the tests is accompanied by loud sweep sounds on (in my case) a handheld set to 121.5 MHZ in the case of activation, and specific patterns of blinking lights on the ELT and on the Remote Switch, and beeps of the horn. The activation pattern is different than the armed pattern; is the pattern the pilot will see and hear upon activation if the unit is ever activated; and complies with the requirements of FAR 91.207.

Other than by viewing two lights, and listening to the horn, there is no assurance that the 406 signal exists. The self tests of both switches (the one on the ELT and the one on the Remote Switch unit) will take less than five seconds each if the 121.5 MHz signal is to be kept to a maximum of three sweeps, and the first 406 signal will not leave the ELT for at least a half minute after that, if the tests are conducted according to the test procedure in the installation manual. The 406 MHz signal is NOT (as in NEVER) tested by the owner. It is activated only in case of a hard impact or manually upon need. If the owner desires to test it, the unit must be shipped back to the manufacturer.

5. Installation of the small registration sticker/decals from NOAA/SARSAT. Mine came in the mail about five days after I registered the ELT on the internet. The AK-451 has the outline of a small rectangular box on its bottom where the installer is directed to place the decal, so that's where I put it. .

Some last thoughts. The original AK-450 always looked like a Tinker-Toy to me, and I found corrosion twice in its D-cell battery pack, and

had one activation during the course of a normal smooth landing. The new unit looks more professional, with an improved switch and what appear to be better-fitting seals around its parts. However, it is held in its tray by two Velcro straps that are poorly designed and too small. Each strap is made of two pieces of Velcro that are attached by some presumed application of glue and heat, and each failed at this joint under only moderate pressure during the course of the installation. I had to make my own Velcro straps before I was finally done. The 406MHz Airtex ELT is advertised as using the same screw/bolt mounting pattern as the AK-450 (which also makes it presumably a drop-in replacement for that unit) and from advertising photos, appears to have a much larger single velcro attachment strap. I recommend that anyone looking to upgrade either an Airtex or AK unit take a careful close look at both units before spending any money.

There is a neat web site available from which most of the above was shamelessly stolen: www.cospas-sarsat.org. The stuff in there about the difference in how the satellites work in the two systems is way cool – and will leave you wondering how anyone using a 121.5 ELT has ever been found.

T. Doyle

12/17/08 (the 105th anniversary of the Wright Brother's first successful powered flight)