

2011 Chapter 45 Officers

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Rudy Vogelsberger (Membership Coordinator)
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Paul Jencka (Young Eagles Coordinator)
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Rob Rossi 412 343-6795

Ernie Romito 724 335-4821

Charlie Meyers 412 655-2265

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TENTATIVE CALENDAR OF EVENTS – 2011

Planning and setting of dates are typically done by your board of directors at the beginning of the year and sometimes change.

Unless noted, meetings are held at the chapter hangar at Rostraver Airport. Hangar is C1

Board Meeting 7:30PM October 11th

Oct 15th Saturday – Heli Fun Fly
Cedar Creek RC park - MVRC club
See announcement elsewhere in this issue.

Next General Meeting
October 21st, 7:30PM

November Board of Directors Meeting, November 11, 7:30pm
All board members are encouraged to come to this meeting.

November Potluck Meeting, November 18th, 6:30PM (EARLY START)

No General Membership meeting in December.

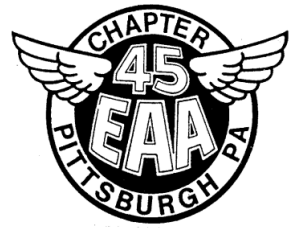
Great picture at left from Fran Hicks; the EAA B-17 in flight.

Cockpit Clutter
Experimental Aircraft Association
Greater Pittsburgh EAA Chapter 45
2 Airport Road
Belle Vernon, PA 15012
Address Service Requested



Cockpit Clutter

EAA Chapter 45 web site www.eaa45.org



Chapter 45 Newsletter

Experimental Aircraft Association

October 2011

Chapter News Update

Well the end of the year is approaching and there are some recent chapter developments.

After a couple of terms as chapter president, Clark Irwin has resigned due to his moving to Richmond, VA. He will maintain his hangar at Rostraver with his hangar partner, Eric Humes.

Chapter VP John Warren moves into the president spotlight. Please welcome John as our new chapter prez.

Also, long time chapter treasurer Diana Collier has also resigned. Her responsibilities are assumed by Board Member Steve Glaeser.

Thanks to Clark and Diana for their long term commitments, and thanks to John and Steve for assuming their roles.

On another note, Eric Humes and Richard Seman are quickly getting to the “finishing” stages of their projects. Eric is completing a Rans S-19 and Richard is putting the adjustment touches on his Emeraude.

Travis Hall has purchased the Grumman previously owned by Don Lewis who is now flying his reconstructed and re-engined CAP-10.

And finally, our chapter patriarch, Ernie Lanyi has suffered a health setback. A recent report locates him living with his daughter in Eastern Ohio. We will try to get more information to pass on.



Above, Eric Humes' early taxi test on his S-19. Way to go, Eric!!

EAA CHAPTER 45 BOARD OF DIRECTORS MEETING Sept. 9, 2011

The regular scheduled meeting of the Chapter 45 Board of directors was called to order by President Clark Irwin at 7:35 PM.

Members present:

E. Lanyi, J. Warren – V.P, J. Mateka, R. Rossi, G. Jasper, S. Glaeser,
C. Meyers, Eric Humes, K. McClelland, F. Hicks – Secretary,
C. Irwin – President, P. Jenka, J. Dernorsek, T. Hall, R. Seman, E. Lanyi, M. Kurtz, D. Collier-Treasurer, R. Vogelsburger

UPCOMING MEETING PROGRAMS:

September – Gary Jasper – Float plane flying, presented by Denny Tolkach
October – Jack Dernorsek – T.B.A. (AMA Chapter 526 Modelers will have a large meet at Cedar Creek Park on Oct. 15. All EAA members are invited)
November – Dinner Meeting and Elections
December – No Meetings (Holidays)

OLD BUSINESS:

Picnic – Discussion was held regarding the outstanding job the airport workers did in preparation of the grounds where the picnic is held. President, Clark Irwin asked that John Mateka compose a letter to be sent to the Westmoreland County Airport Authority commending the workers at Rostraver for the outstanding work they do. John agreed to take care of the letter.

NEW BUSINESS:

The Treasurer’s Report was presented by Diana Collier, treasurer,
Motion was made by Ernie Romito to receive the report, seconded by Rudy Vogelsberger.
Motion carried.

Discussion was held regarding the recent fire incident at the chapter hanger that originated in the electric oven used for forming Lexan canopies.
Motion made by Paul Jencka that a fire alarm system should be installed in the hanger. The alarm is to be designed and fabricated by Rob Rossi and Eric Humes. Eric said he would donate the parts required to build the alarm panel.
Motion seconded by Rudy Vogelsberger.
Motion carried.

Motion made by Chuck Meyers to give a gift card in the amount of \$100.00 to airport watchman, Clifford Simmons who alertly discovered the fire before any substantial damage was done.
Motion seconded by Rudy Vogelsberger
Motion carried

NEXT BOARD MEETING:
October 14, 2011, 7:30 PM @ Chapter Hanger

ADJOURNMENT:
Motion made to adjourn made by Gary Jasper and seconded by Chuck Meyers .
Motion carried, meeting adjourned at 8:45 PM.



Some of you may know this, but I didn't until I found it Saturday evening while browsing the internet. All of the current sectionals, world aeronautical charts, in-route charts, and others are all available to download free from the FAA. Go to:

<http://aeronav.faa.gov/index.asp?xml=aeronav/applications>

You will need an unzip program like Peazip, to uncompress the files. After downloading a chart, I went to <http://posterazor.com/> and downloaded this free program that will take the large image file, and break it down into smaller tiles for the size printer that you have. Use 60" for the page width setting, and the height comes out right. This then generates individual PDF pages which you can print on your printer and tape together. What is nice is that you don't need to carry the whole chart with you. For instance when I fly to Bloomington to see my daughter, I don't need all the Chicago stuff, so all I need to print out is a suitable area on both sides of my route. When I used this technique and printed it out on my HP 3800 color laser printer it came out exactly correct when laid over the top of a purchased sectional.

Hope someone gets some use out of this.

Steve Pletcher Chapter 859



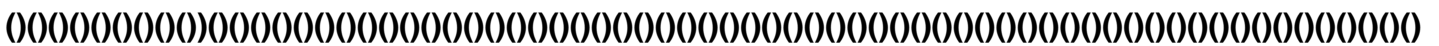
From the MVRC Mon Valley Radio Control Club newsletter

Cedar Creek Park
www.monvalleyrc.com

Oct 15th Saturday – Heli Fun Fly -all welcome

The second annual MVRC/"jsheli" Heli Funfly is planned for Saturday October 15th, 2011. All are welcome to fly, spectate, and/or just enjoy concessions from dawn to dusk. Last year we had 30 registered pilots and this year we're planning for even more! Flying will start shortly after the 9:30am pilot's meeting and continue to around 4pm. EAA 45 members that plan to visit should ask for LEW MARASCALCO, so they can be accompanied around the flight line to get up close to see the machines otherwise they will have to remain behind the flight line with other spectators for sake of safety. Food & drink will be available for a nominal donation.

Oct 16th Sunday -- Tripoli Pittsburgh Rocket Launch directions available at <http://www.tripoli-pgh.org/>



Did you know?

by Ken Greenburg

Recently, John Warren asked what the difference was between 6061 structural aluminum with the suffix of – T6511 and the more common –T6 Here is what I found out on-line:

To get to the -T6 temper, the 6061 is heated to about 990F, then quenched in water, then aged at about 350F for around 8 hours. That changes the typical yield strength from 8 ksi to about 40 ksi- fairly substantial.

But that quenching in water puts residual stresses in the aluminum, since there is a surface-to-center cooling gradient. The -T651 designation means the mill took that extrusion and gave it a 1% to 3% stretching, or permanent set, to get rid of some of those residual stresses. Now we can machine it and it shouldn't distort.

Finally, the final digit in the -T6511 designation (and how I know it was an extrusion, since this only applies to extruded stock) means that the mill is allowed to straighten the extruded bars, like in a press, to get them to meet the straightness tolerances.

Lee Gearhart, metallurgist
East Aurora, New York <http://www.finishing.com/362/40.shtml>

Later, John did manage to find out that the -T6511 designation was for extruded materials thicker than 2", which you would not find on an airplane. KG

Scenes from the Saturday picnic work party...



At left, the Annual Picnic Table Tug O' War contest.

Hanging the Chapter Banner.

But, what is Rudi thinking at right?

Could be, "And these people think they can build an airplane?"

The funniest response wins a prize. Send it to your Editor...



This is an article written by a chapter 45 member. It has several more pages including graphs & pictures. If you are interested in a complete copy, let me know – ed.

LED Anti-Collision Lights

By Jeff Peterson

22 August, 2010

1) Overview - I am building a Lancair 360, which is a low-drag composite aircraft. I wanted to build an LED strobe and position light system that would not increase drag. While there are several bright LED aviation strobe systems commercially available, most protrude from the wingtips. In contrast, the system described here fits inside clear fairings that follow the natural shape of the wings. In addition to reducing drag, by building it myself, I was able to use the latest LEDs, making the strobes brighter than many commercial systems. I was also able to provide large-area heat sinks to spread out the heat produced by the LEDs.

On the Lancair the entire trailing edge of both the elevator and rudder are moving control surfaces. Adding LEDs here would mean adding moving weight, which must then be counter-balanced with lead or tungsten on the other side of the hinge pins. To avoid this weight, instead of putting the LEDs on the rudder, I decided to place rear-facing strobe and white position lights on both wing tips. Seen from behind the aircraft, from any angle, at least one wing tip is always visible. Actually, both wing tips are visible from all but a small range of angles.

I made my own lexan fairings to cover the rear-facing LEDs. For forward facing angles I used LEDs inside the clear wing tip fairings supplied with the Lancair kit. I mounted the LEDs to a heat sink plate made of 1/8 inch thick aluminum.



2) LED choices - I have been working on this project on and off for several years, and have bought samples of quite a variety of LEDs. Recently, LEDs have improved considerably in intensity and also prices have come down. Finally a really nice, economical unit is available. The LEDs I used for the forward facing strobes are type BXRA-C1202-00000 by Bridgelux, available from Newark Electronics for \$17.30 each. These draw 2.2A each at 14.2V according to the data sheet, well below the maximum pulsed current, 2.8A. Assuming about 0.1 ohms wiring resistance and 14.2 volts at the supply bus, the operating current should be about 2.1 amps or almost 30 watts for each LED array.

A look at the I/V curve shows that there is a slight risk of over-current when these LEDs are used directly across a 14 V source. If the voltage regulator fails or is misadjusted to above about 15 V, the LEDs could suffer excessive current. This might burn out the LEDs, but of course 15 V would wreck havoc throughout the electrical system...starting with the battery. I will have a voltage monitor and overvoltage warning in the plane. I assume I would shut down the alternator if I saw 15 V, so I think the risk of over-current damage is minimal. In any event, the LEDs are held in place with screws so they can be replaced if they ever do fail.

For the rear-facing strobes on each wing tip I wanted an LED that did not take up as much space as the Bridgelux devices. I used a series string of three LUW W5AP-MYNY-5P7R from Osram, which I ordered from Mouser for \$11.70 each. I mounted three in a row inside the trailing edge of the wing tip. Unfortunately, this part is now obsolete and if I were starting over I would use W724C0 from Seoul Semiconductor instead. Four of these in series would act very much like one Bridgelux device, drawing about 2 amps without need of a current limiting resistor.

I attached the Osram devices to a heat sink with “Arctic Ceramic” thermally conductive epoxy. These devices have a metal mounting surface that must be thermally attached but electrically insulated. The arctic ceramic does this, but do be careful not to push the LED too hard into the epoxy or it might make electrical contact with the heat sink. Check for isolation with an ohmmeter before the epoxy sets.

3) Strobe Intensity - At 2.1 amps the Bridgelux LEDs each put out about 575 candellas (cd) in the face-on direction. This falls gradually to about half the face-on value at a 60 degree angle from the normal. The circuit I built flashes the strobes in a pattern of two 100 ms pulses on the right then two on the left, repeating each second. Applying the FAA formula for effective intensity to this pattern, the peak intensity is reduced to an effective intensity 40% of the peak value, which is 230 cd, face-on. The FAA requires that the effective intensity be at least 400 candella within 5 degrees above or below the horizontal plane, which means that two or more LEDs must be visible at any position in the horizontal plane. This is why I have three on each side.

For about 10 degrees each side of the forward direction the viewer sees LEDs on both wing tips and would see 4 flashes each second.

In the horizontal plane the FAA regs are satisfied, but if I had more space in the forward facing fairings I would add one more Bridgelux device. Another way to get more intensity would be to use W724C0 LEDs instead of the Bridgelux devices. These would be epoxied to the forward-facing heat sink plate.

For angles outside +- 5 degrees the intensity provided by this arrangement far exceeds FAA requirements.