Carrier Wave

Newsletter of the Phantom Flyers R/C Club http://phantomflyersrc.com

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July 2005

Upcoming Events/Important Notices

July 20, Club Meeting at Flying Field

July 23-24. Electric Fly

August 17, Club Meeting at Flying Field

August 27-28, Pattern Contest

Notes from the Editor

Family BBQ and Build a Plane was a success. Congratulations and thanks to all that help bring it together and who attended.

Articles, pictures, and tech notes for publishing in the Carrier Wave are always appreciated. If you need photographs, I have the photo equipment and will gladly volunteer to help as will several other club members.

Thanks,

Dave Evans

AMA Club # 393

Phantom Flyers

St. Martin, Mo

RC Club

Meeting Minutes for Jun 15, 2005

President Herb Johnson called the meeting to order at 7:09 pm. Fifteen members were present. There were no new members present.

Secretary's report – A motion was made and approved to accept the minutes of the May 25 meeting as printed in the Carrier Wave.

Treasury report - A motion was made and approved to accept the treasurer's report as presented. We are still waiting for the insurance check from the robbery. We are assured the "check is in the mail". The exact amount is not known.

Recreation report – Nothing new to report.

GSLMA report – No report.

Field Managers report – An idea was discussed to build a small root cellar type enclosure to hold first aid supplies and keep them from experiencing temperature extremes. The club is looking for volunteers to help plan the task of installing a concrete pad as the floor of the pavilion. Phil Moore and Frank Thomas refinished the large picnic tables.

Safety report – There was a short discussion of flying lightweight foamie electric airplanes off the ends of the pits. It was felt that this doesn't pose a risk but is in violation of the safety rules as they are currently written. A proposal to modify the rules will be required to allow this type of flying.

Activity report – The Family BBQ / Build-a-plane contest was held on June 12 and was very well attended with 38 attendees. It was a great time and good food. The next event is the Electric Fly-in scheduled for the weekend of 22-23 July. There was some discussion about having food at club meetings such as hamburgers to make the meetings more enjoyable. There was no specific proposal put forward but if you are interested in having some food at club meetings, contact Herb Johnson to let him know of your preference.

Old Business – There was no old business discussed.

New Business – There was no new business raised.

Tech Session – There was no tech session.

The meeting was adjourned at 7:45 pm.

Respectfully submitted, Ed White

Family Barbeque

and

Build a Plane

June 12, 2005

The Family BBQ / Build-a-plane contest was held on June 12 and was very well attended with 38 attendees. It was a great time and good food. A few pictures from the Barbeque are included below. Ben Lanterman supplied the pictures which may explain why all three of his airplanes are pictured.


Focus II




Lots of nice airplanes and good food. Looks like everyone had a great time.

Frank Thomas' Note: At the May meeting, I gave a short discussion of power supplies and chargers. It was suggested that it be published in the Carrier Wave. After the meeting, Ed White told me he had modified a PC power supply for bench use. Later, he advised me that he had published a note in the Carrier Wave for August 2003. I, of course, looked for that issue in my files. Guess what? I didn't have it. So, quite by accident and unknown to each other, we had both found the same article on the Internet. Ed, being the gentleman he is, graciously suggested that it be re-published in the Carrier Wave since it was apparent that many readers might not have seen it, or didn't remember. So consider this to be an update to Ed's earlier article.
Mea Culpa.

Power Supplies and Battery Chargers.

Most of us need some kind of power supply, either on the bench or in the field, or both. I built a regulated laboratory power supply many years ago which now doesn't work.

Tony van Roon has a beautiful regulated supply on his website. Unfortunately, it would be too expensive and time consuming to build for what I need now. If you're interested, look at his website: www.uoguelph.ca/~antoon/circ/circuits.htm. Look down the list for Bench Power Supply (3 parts). Or, you could buy one from any of a host of suppliers for something more than $60, up to several hundred dollars. This no longer appeals to me.

Then, while looking for battery charger circuits, I found this website: web2.murraystate.edu/andy.batts/ps/powersupply.htm. This is the scheme Ed and I used to modify a (pretty much) standard PC computer power supply. These PSs are switch-mode, pretty efficient, and supply lots of current for their size, weight and cost.

Furthermore, they are fairly well regulated, something like 5%, not lab grade but plenty good enough for our purpose. They are available free, if you are willing to pick up old (and not so old) computers being thrown away. I see them all the time. Gateway Electronics has some PC power supplies, in unknown condition and NOT guaranteed to work, for $10. I passed on them. Or you can buy them new at United Computer Technology, Inc. on Lackland Rd. (314) 275-8081, or elsewhere, for around $30 and up. I found 2 old computers being thrown away and salvaged the PSs, both of which worked. So, how long will they last? Who cares when they are free and the supply is almost unlimited. I modified one in accordance with the article cited earlier in this paragraph. It now offers three output voltages: 12 VDC, 5VDC and 3.3 VDC. Because I used parts from my spare parts bins, the cost was just my time. At retail, the parts might run from $3 to $6, depending on the source.

Now, for the battery chargers, which are separate and distinct from bench power supplies. There are many websites offering designs, ranging from simple to very complex. Or you can buy one for $50 to $150. Some of them are powered from AC house power, but most of them need a source input of (usually) 12 volts, and some are specifically designed for field use and are powered from either a car battery or a field starter battery. Most of the DIY circuits are devoted to the control and regulation of the voltage and current into the battery pack and expect the user to provide 12 volt power. That is the reason for a bench power source and a modified PC power supply fills the bill nicely. Ed White mentioned, and I want to emphasize, that this type of power supply should not be operated without the metal case since the internal circuits generate some high voltages, and there is the presence of 120 VAC house power within the supply. The modifications do nothing to alleviate this risk. The modifications are not difficult, but require attention to detail and observance of well established rules and safe practices for higher voltage electronic equipment. If you are experienced, not a problem, if not experienced, find someone to help you who is.

You will need at least two battery chargers, one for NiCad/NiMH and one for Li-Ion/Li-Poly, unless you can find one that will charge both types. As time passes, combination units will become more common. UNDER NO CIRCUMSTANCES CAN Li-Ion or Li-Poly BE CHARGED USING CHARGERS DESIGNED FOR Ni-Cad or Ni-MH.

Since Ni-Cad and Ni-MH chargers are so well known and circuits are available on so many websites, I will deal here only with the Li-Ion/Li-Poly battery charger.

The design is from SH Designs website: www.shdesigns.org/lionchg.html. The designer shows three circuits and claims they will charge both Li-Ion and Li-Poly. Of the three, number 2 appeals to me. Number 3 is the most versatile, but is more complex and more expensive due to the need for switches and more parts. Also, from inspection of the circuit, I think there may be some errors in the circuit diagram. He also claims that the circuits behave according to the Panasonic specifications for their Li-Ion and Li-Poly batteries. I intend to build one of these and test it out. When I do, if I deem it worth the time and effort I will design a wiring board for the selected circuit.

As electric fly airplanes become more common (they are now the fastest growing part of AMA), the need for chargers and power supplies will only increase. Maybe you can benefit from the information herein.

Frank Thomas