

the

Ampeer

August		The EFO Officers	2006
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Ampeer subscriptions are \$10 a year US & Canada and \$17 a year worldwide	<p>The Next Meeting: Date: Sun., August 13 Time: 10:00 a.m. Place: PMAC field (www.pmac.us), White Lake, MI</p>		

What's In This Issue:
 Low Cell Detect Circuit Two, Correction – LCDC info in the Ampeer - Upcoming Portage Aeromodelers Electric Mixer - The Mid-Am 2006 Report - Update on Hobby Lobby "Delivery Issues" - My Foray into Li-Po Land – Upcoming Events

Low Cell Detect Circuit Two – Correction

By Bob Kopski
 25 W. End Dr.
 Lansdale, PA 19446

I've discovered an error in the July *Ampeer*. So far I've had no inquiries about it, but for the record, on page two, right hand column, at the bottom, right above "Any discrepancies must be resolved before proceeding." - the three instances of "4.7K + Ra, within 5%" should all read "5.26 + Ra, within 5%".

(The versions online have been changed; if you printed the earlier version and plan to build the LCDC, please update your version now. KM)

Some readers may find the attached spreadsheet graph of some interest. It is accumulated data for a specific plane / power system, Li-Po, and LCDC set to about 3.4 Volts per Cell. The pack is a CSRC "10C" 3S1P 3.85 AH.

Each of the 19 flights graphed were flown to about as long as the LCDC permitted and then I recharged the pack with a 109 and Blinky. I wanted to see

how uniform the discharge / recharge behavior was with the LCDC in place, and so I have graphed the charger-indicated recharge value for each flight.

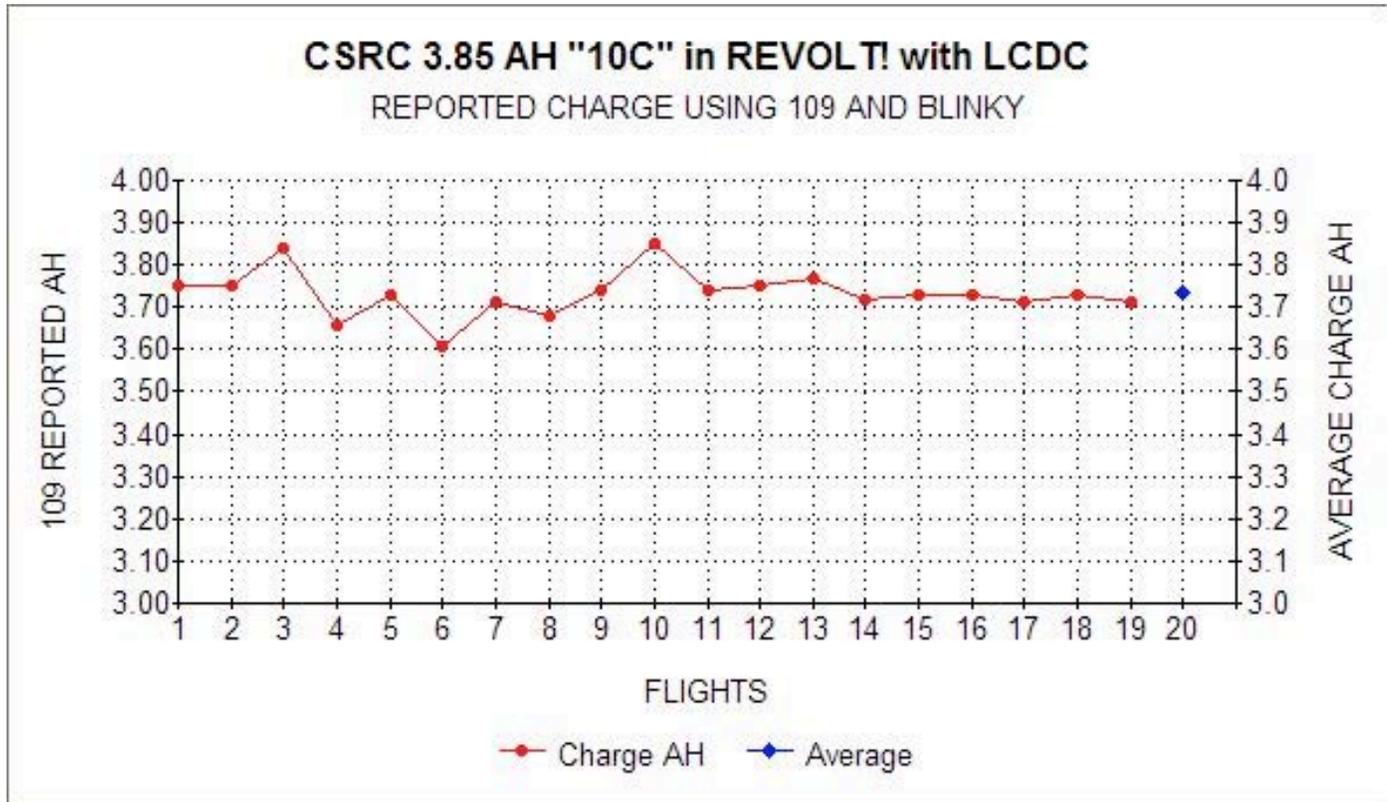
I began to suspect that the earlier larger variations in this data were mostly due the "end of flight" not being always clear-cut ("should I try one more go-round or land?") and so I decided to "standardize" the "end" level. Beginning with flight 11 after landing I ran the system down to about 3000 RPM. Note the data has so far noticeably smoothed out beginning with this flight. In fact, the indicated recharge value has become remarkably consistent, I feel.

I don't know what a comparable curve would look like using a normal ESC LVC. Rather I'm just reporting what's happening when using an LCDC in this plane. In effect, I'm simply accumulating data with this pack operating "bounded" both in charge and discharge during which no cell is allowed to stray outside the set limits, as above. I realize so far this is not a lot of pack cycles, but my intent is to continue adding data points just to see what happens. Maybe I can report a new,

updated graph after a few months as follow-up.

Cordially,
Bob

EVENTS:
Electric Event 609
CLASS A Sailplane/Battery Allotment
Electric Event 612



LCDC info in the Ampeer

(1) The topic was presented in the April issue. It is a discussion including significant operational performance data - the graphs - plus all the words to go with them. These early graphs answer a lot of the questions about this unit.

(2) The June issue LCDC construction article was prompted by three *Ampeer* readers getting in touch with Bob.

(3) The July issue contained the LCDC construction with higher cutoff voltage as an "extension" of the original article.

Upcoming Portage Aeromodelers Electric Mixer August 26, 2006

Location: Ravenna Thunderbirds Peck Road Field
Jetway Airport
7600 Peck Road
Ravenna, Ohio.

CLASS B Sailplane Limited Motor Run.
Bring your Zagi, Electra, Accent, Up-Star, Spectra, or anything that looks like a glider with an electric motor.

Come fly, compete, and have fun. Ni-Cad, Ni-MH, and Li-Poly batteries are allowed.

\$10 registration fee

Pilots Meeting 9:45 AM.

Competition Starts 10:00 AM.

Prizes for 1st, 2nd, and 3rd Places of each event

Contact: Bob Ferrante CD

1066 Brittingham Dr

Ravenna OH 44266

PH:330-297-8955

email: ferrantes2twins@yahoo.com

The Mid-Am 2006 Report

The Mid-America Electric Flies (Mid-Am) has always been a "pilots" meet, and on Friday, July 7, they started rolling in. The 74 pilots attending this year's meet came from all over the US and Canada; Michigan, Ohio, Indiana, Illinois, Iowa, Pennsylvania,

Kansas, Maryland, Missouri, Florida and Ontario, Canada.



Keith Shaw's CzechMate landing (Ken Kaiser Photo)

In the January 1999 issue of Model Airplane News, Larry Marshall summed up the Mid-Am when he stated in the title, "Mid-America Electric Fly: Keith and Ken throw a quiet little party..." "To this day, that is exactly what Keith and I feel this meet is, a quiet little party!"

Of course it is not just Keith and Ken that make this party possible. It is the very hard work of the volunteers of the three clubs hosting this event that make it all possible.

Midwest RC Society

Jim Lapham – mowing, setup & tear down

Marty Jasin – setup & concessions

Randy Smith – concession head

Paul Susalla - parking

All the Midwest members & wives who helped at the concession stand!

Electric Flyers Only

Dave Stacer – setup, tear down & registration!

Paul Sockow – setup, tear down, go for!

Jim Maughan – tear down

Ann Arbor Falcons

Bill Higgins, Warren Plohr,

Robyn Rissel, Jim Beagle,

C.J. Wysocki, Ken Bates,

Bob Foran - impound

Ken & Doug Jablonski - teardown

The weather could not have been more cooperative for July in Michigan. All three days proved to be quite bearable temperature wise and the winds quite cooperative!



Martin Irvine's Nieuport 12
(photo Mike of Warren, MI via RC Groups)



Jim Beagle & his Fokker D VII
(photo Mike of Warren, MI via RC Groups)

Each day had plenty of time for opening flying so that the pilots could show off their latest creations and piloting skills. There were demonstration flights on Saturday and Sunday about noon. Keith Shaw, Dave Grife, Al Mrock, Gerg Cardillo, Chris True and Terry Nitsch put on quite a show. (I may have missed someone, as I used this time on both days to grab a bite to eat. If I missed your flight, contact me and I'll get you added to the list!)

Saturday's All Up/Last Down was not without incident! There was some concern by the pilots that there might not be good lift. Just the opposite proved true! The lift was all over and everything was up. Getting out of thermals proved to be disastrous for two of the pilots. Rick Sawicki's plane almost made it back to the ground safely after blowing an outer

panel trying to get out of a thermal. You did notice the word almost, didn't you? Corky Boyd, from Florida, literally lost his plane and all components when it broke up and landed we know not where.



Chris True's Awesome Viper (Ken Kaiser photo)

The Saturday night potluck provided a brief respite, good food and good "table" talk. Many folks took a leisurely supper and then went back to flying, some until after dark.



The Foss family, Pete, Carolyn and Samantha (Sam) are all pilots and are representative of the wonderful pilots and friends that attend the Mid-Am. (Ken Kaiser Photo)

Sunday was a day of laid-back flying and a lot of fun. While the number of pilots is always down on Sunday, it allows many of the pilots to take all the flights they want.

The Awards

While this is not a competition type event, we do give out a few awards in recognition of some of the outstanding planes and pilots at the meet.



Don Belfort's B-36 (Ken Kaiser photo)

Saturday's Awards

- All Up/Last Down – **Ken Bates**, Saline, MI
- Best Scale – **Martin Irvine**, Kingston, Ont. Nieuport 12
- Most Beautiful – **Jim Young**, Brighton, MI – Comet
- Best Ducted Fan – **Chris True**, California, Maryland – Cougar
- Best Sport Plane – **Terry Nitsch**, Columbus, OH – F-18
- CD's Choice – **Chris True**, California, Maryland – BVM Viper



Jim Young's resurrected Skybolt

Sunday's Awards

- Best Scale - **Jim Beagle**, Manchester, MI – Fokker D VII
- Most Beautiful – **Jim Young**, Brighton, MI - Skybolt (resurrected!)

Best Mini Electric – **Jack Swint**, Brighton, MI -
Panther

Best Multi-motor – **Don Belfort**, Cincinnati, OH – B-
36

CD's Choice - **Terry Nitsch**, Columbus, OH – his
gaggle of Foam Ducted Fan plane!

The Charlie Spear Award

Charlie Spear was a fine gentleman and an early electric columnist spreading the Electric word, along with his good friend and partner, Dr. John Mountjoy. When Charlie passed away, Keith and I decided that we would honor the memory of this fine man with this award. Before the Mid-Am Keith and I discuss some possible nominees and decide who will receive this prestigious award. This year we selected Chris True. Chris has been perfecting electric ducted fan type aircraft for more years than we can remember. His models have always been cutting edge and a delight to watch go streaking by. He is an outstanding "E" modeler and a true leader in this field. This innovator is the person that people go to to have their e-ducted fan questions answered! We are proud to add his name and contributions to the plaque along with Ken Myers, Dr. John Mountjoy, Bob Kopski, Bob Boucher, Martin Irvine, Jim Ryan, Jim Bourke, Bob Aberle, Doug Ingraham, Dave Grife and Don Belfort.



Al Mrock's big Sikorsky (Ken Kaiser photo)

Our Sponsors

We would like to thank all of the suppliers and vendors you supplied prizes for our Pilot's raffle. When you think it is time for another e-flight purchase, you should really check out these folks first!

SR Batteries, Inc.
Radio Controlled Models, Inc.
Vinyl Graphics by Greg

Tower Hobbies
AirAge Publishing (Model Airplane News)
Boca Bearing Company
Flying Models
Radical RC
Cambria Tool/Chris Balser
Classic Aero
Astro Flight, Inc.
BMK Designs
Dynamo Electrics.com
Riders Hobby Shop of Ypsilanti
TeeRific Jet Models

My Reflections

It has been 21 or 22 years for this meet now. The earliest videotape I have of what I believe is the first "joined" Mid-Am Event at Saline, MI is from 1986. The first meets, probably 1984 and 1985 were individual club meets held at the Union Lake Flying Organization (UFO) field on Wise Road in Union Lake and the Ann Arbor Falcon's field in Saline. They were held on the same weekend so that our distance travelers didn't have too far to travel between them. The meet appears to have become two single day meets at the same field starting in 1986.



Keith readies the Stomo for the noontime demo. A twenty plus year tradition! (Ken Kaiser photo)

What a wonderful tape that 1986 record is! In some ways, we have come a long way, but I do believe that many of you would be very surprised by the performance we were getting back then! Only the duration was not as long as today.

My interest has always been in the sport planes and the sport-flying category. This year I noticed a lot of the ARF type planes in this category. They look very nice and fly very well, but I was very happy

to see John Lewis's highly modified Sig Four Star and a few other modeler-built sport planes here as well.



Thomas Bacsanyi with his much flown P-51
(Ken Kaiser photo)

For the very first time, I saw a ducted fan that I consider a true "sport plane." Terry Nitsch has a line of smallish foam ducted fan type jets that look to be just a ball to fly as sport planes. They have an extremely wide flight envelope and fly very well. You can check them out at <http://teerificjets.com>. I am seriously looking at one of these little fliers to add to my "sport" fleet.



A couple of Dave Grife's planes. (Ken Kaiser photo)

One of the things I really enjoy at the meet is getting a chance to "spot" for someone new, someone I'd never met before. It is a great way to get to know them and their plane.

The Saturday night potluck is so much fun for me because I can sit and chat with old friends I've not seen in a long time. This year was no different. I

really enjoy talking planes, but that is not all that we share. It is all about life and how we feel about certain issues and just being really alive and enjoying each other's company.

I was very pleasantly surprised when I flew the Fusion on Friday night and again during the meet on Sunday. Several folks either have them and haven't built them yet or were just interested in it. It is a great plane, fun, and flies so smoothly! If you don't have one, you have to get one. You can get info on the Fusion at <http://www.electroflyng.com> and find out how to get one for yourself. You have to build it, and that is just the first half of the fun. If you have one, build it NOW! Don't let this great plane set in the box! I'll have my report soon, promise!



(Ken Kaiser photo)

I was most surprised at the questions and comments that I got about the Hobby People Low-Stik conversion. It flies fine, nothing exceptional, but there was a lot of interest in it, especially when some of the pilots found out that the ARF plane, Li-Po battery, motor and speed control cost less than \$262, shipped to my door. Add onboard radio system and it

is complete for maybe \$350 - \$375. There will be more on this conversion soon. The conversion can be seen in the photo with the new fuselage – oops wrong plane selection on Eclipse 7.

While the attendance was down a little the enthusiasm sure wasn't. I did not take the somewhat lower attendance as a "bad" thing. The Mid-Am has never been a "huge" meet with hundreds of pilots. Actually, we've tried to keep it to about the level that it is. Both Keith and I really enjoy knowing almost everyone by name, and those we forget or just meet, we try and hold in our memory bank, but it is getting harder since we've both reached 60. ;-) We try to provide our guest pilots with a great experience, a chance to learn and share what they know. Of course we think it is a wonderful meet, just right for us and all you who joined us for the first time this year, or have been with us "forever."



A look down the flight line from the transmitter impound (Mark Wolf photo)



Add the sound of a twin to this shape and you have Keith's Bugatti, a beautiful plane indeed! (Ken Kaiser photo)

Thanks to all of the pilots who came. Thanks to those who enjoy this meet enough to come even though gas prices are through the roof. Keith and I truly appreciate it!

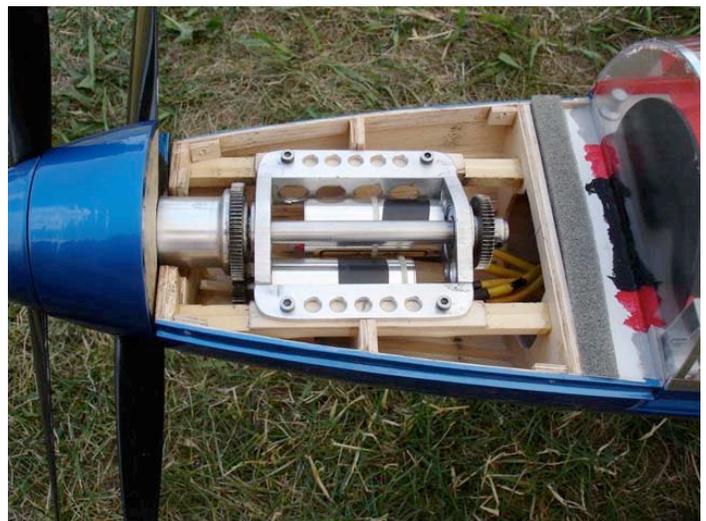


Don Belfort's Fleet (Mark Wolf photo)



We may be a bit grayer now, but we still love this hobby! (Pete Foss photos)

More Mid-Am Photos



Bugatti Drive System (Mark Wolf photo)



Jim Maughan's Mountain Models Dandy GT (Jim Maughan photo)



Cutlass (Alan Biggerstaff photo)



Keith Shaw's Bugatti on the ground (Jim Maughan photo)



CzechMate landing (C.J. Wasocki photo)

Bonus Movie Video

For those of you with fast Internet access, you can see Ken Kaiser's video of Keith Shaw's CzechMate and Stomo at:

<http://homepage.mac.com/kmyersefo/Sites/czechmate.wmv>
and

<http://homepage.mac.com/kmyersefo/Sites/stomo.wmv>

Update on Hobby Lobby "Delivery Issues"

From: One of the respondents to the poll in the Ampeer

Hi Ken,

Perhaps Hobby Lobby listens to EFO surveys after all! I recently swallowed hard, held my breath, and ordered Hobby Lobby's new V-Diamond ARF plus motor and speed control. All the pieces of the order were packed and shipped the same day as the order, and everything arrived at my house in 3 days for a shipping cost of \$7.99! What a turnaround from my original "complaint" of several months ago, and good for them! (and it's an excellent flyer too!)

Just thought you would want to know.

My Foray into Li-Po Land

By Ken Myers

As *Ampeer* readers know, I have not been an early adopter of Lithium Polymer batteries. I purchased my first Li-Po battery, a Kokam 3S1P 2100mAh 20C pack about three years ago. It has never been used. Shortly after that, I purchased an Astro Flight 109 charger.

Ken's tip #1: Never buy Li-Po cells until you are ready to use them! ALL rechargeable cells start to "die" from the time they are manufactured.

The battery sat around for a long time and then this past spring I asked Keith to put some taps on it so that I could check the voltage of each cell. I had become aware of how important the voltage of each cell is and that balancing the cells is necessary!

After Keith put the taps on for me, he gave it a charge, and today, July 19, 2006, the cells are reading 4.00v each and they have been sitting around for at least six months since that charge. I will be getting a project started for this pack soon, before it is dead on the shelf.

Ken's tip #2: Each cell of the pack must be tapped so that a balancer can be fitted to the pack. Unfortunately each manufacturer/supplier taps them differently. Good luck!

Last fall I purchased an ammo can, drilled a hole in the top (vent for thermal occurrence) and two holes in the side for some 12-gauge wire to pass through with Anderson Power Poles (aka Sermos connectors) on each end. I only use APP connectors. I do not fly tiny planes, less than 250 sq.in., nor high current systems, so APP connectors work just fine for me.

Ken's tip #3: Charge Li-Po cells in a fire safe container. NEVER become complacent in their charging! Charge in an area with NO combustible material present.

I didn't intend to fly Li-Po batteries this season. I had ordered my original 16 cells for my Fusion from cheapbatterypacks.com. They are the CBP 3300 NiMH cells. When I decided to order a second pack for another project I was working on, the cell was no longer available. I decided that I would purchase 16 Elite 3600mAh cells, since they were the next closest cell in capacity and price at \$4.60 each. The pack would cost (16*\$4.60)+\$9 shipping or \$82.60. Fortunately, as it turns out, they were not available when I wanted them.

On the RC Groups site I ran into a reference to True RC. He (<http://www.truerc.com>) had a 5S1P 4000mAh 10C for \$85 + \$5 for taps and \$5 for shipping or a total of \$95 at my door. The bonus was that the taps are setup to use with my Astro Flight Blinky balancer right out of the box. Since the cost was not a whole lot more than the NiMH cells I crossed my fingers and purchased the pack.

In the meantime the motor for my other project came and I found out that it was best not to run it on a 5S pack. The True RC 5S has been flying in my Fusion since then.

I needed an affordable 4S pack for the new motor, a TowerPro 3520-7 and remembered talking with Mike Gray of Skyshark RC at Toledo about his batteries. (<http://www.skysharkrc.com>) I ordered his 4S1P 4000mAh 10C pack for \$84.95. That price included taps that matched the Blinky and shipping.

On the fifth flight of the Low-Stik with the Skyshark 4S pack in it, I tried to fly with the wrong plane selection on my transmitter. The resulting "crash" destroyed the ARF's fuselage, but, worst of all, created a dent in one of

the cells. Dang! The dent was caused because I used a nut, not blind nut on the firewall, and the combination of the nut and slight protrusion of the screw cause the dent in one cell upon impact.

Ken's tip #4: Make sure that whatever the battery is going to slam into during a crash has no protruding parts! Li-Pos are fragile!

Ken's tip #5: Check and double check that you have the correct plane selected on programmable transmitters! Carefully check that all surfaces are moving in the correct direction not just moving!

I ordered my second Skyshark 4S 4000mAh pack. I have been flying that new pack, as well as the dented pack to this date. The dented pack has required a lot of extra work to maintain, but it is still going strong and doing a good job. It was flown again just last night, and shows no difference in flight when compared to the "new" pack.

When I did the AF 19 direct review in last month's Ampeer, I purchased a Skyshark 3S1P 2100mAh 15C pack, again with taps and shipping, for \$49.95. (Their price has since gone up to \$59.95.) It is also doing well in that application.

I have my static amp draw set to 32-amps to 35-amps using the 10C 4000mAh cells from both suppliers and in the 25-amp range for the 2100mAh pack. I am not expecting more from these cells than they can provide, and

I am very happy with the price and performance to date.

I have kept a battery log and here is some of the data that I have collected so far:

3S 2100mAh, 21 flights, average amp draw 8.75 based on Ah input via the 109 charger, cost per flight \$2.38, average Ah returned to battery 1.424Ah

4S 4000mAh #1, 15 flights, cost per flight \$5.66, other data unavailable because of bad cell

4S 4000mAh #2, 14 flights, average amp draw 16, cost per flight \$6.07, average Ah returned to battery 2.465Ah

5S 4000mAh, 14 flights, average amp draw 13.4, cost per flight \$6.79, average Ah returned to battery 1.805Ah

It can be seen that I am not taxing these batteries. I do not fly to the Low Voltage Cutoff (LVC) of the ESC. I have no desire to see how long I can fly. I was doing about 8 minute flights on each battery, but now I have settled on two five-minute flights per battery charge for each of them.

Ken's tip #6: If you constantly fly to the ESC's LVC, use Bob Kopski's LCDC or at least a commercially available type like the FMA Cell Pro Discharge Protection Module (DPM).

I will keep you posted on my adventures in Li-Po Land as they unfold. The most interesting thing will be what happens to them during the "winter" layover.

Upcoming Events

August

12-13 Electric Fun Fly Hosted by the Cedar Rapids Skyhawks of Cedar Rapids, Iowa. flying site located at 3125 "C" Ave. extension NE, Cedar Rapids, Iowa. For driving instructions, please see the field map at: 216.15.238.56/skyhawks/funfly/fieldMap.html
Pilot's Fee \$5.00 each day, with good catered food at the field. Proof of AMA Membership is required for pilots. Pilots briefing 9:00 a.m., Contact Event Chair Kerry Lawrence at 319-390-3570, or email at kerrylawrence@mcleodusa.net
Complete info can be found at:
www.foxcoins.com/skyhawks/funfly/index2006.html

13 Pontiac Miniature Aircraft Club Electrics over White Lake Electric Fly-in, info at pmac.us (**This will be our EFO flying meeting for August**)

26 Saturday BATTLE CREEK Balsa BEES 3RD ANNUAL OPEN ELECTRIC FLY, Contact Event Chair at

269-979-9272, or email at NSCALENUTS@AOL.COM, The Balsa BEES flying site is located SOUTH OF I-94 EXIT 100 (Beadle Lake Road) approx. 5 1/2 miles to D Drive South, then WEST approx. 3/4 mile. Follow Beadle Lake Road past Beadle Lake, Harper Creek High School, Binder Park Zoo. **WATCH FOR THE SIGNS!!!** Cell phone help will be 269-275-9272.

September

9 & 10 E-FLI-OWA, Flying commences at 08:30 AM both days, Ends at 7:00 PM on Sat. - 4:00 P.M. on Sunday. AMA Required, This will be a fun-fly only. NO competitive events. Buy, sell or trade is welcome. For more information contact: Jon "Wrong Way" McVay, 319-895-6527 or Togflier@AOL.com or visit: rc-dymond.com/efliowa

17 Radio Control Club of Detroit Electric Fly-In, into at rccd.org

November

11 & 12 SuperFly V - Las Vegas, Nevada, For more information contact Event Chairman Rick Stone at 702-360-5654 or lvsoaring@peoplepc.com



The Ampeer/Ken Myers

5256 Wildcat
Crosswell, MI 48422

<http://members.aol.com/kmyersefo>

The Next Flying Meeting:

Date: Sunday, Aug. 13 **Time:** 10:00 a.m.

Place: PMAC flying field, E-meet, www.pmac.us
White Lake, MI on White Lake Rd. east of Teggerdine