



[WWW.FLYINGAEROS.COM](http://WWW.FLYINGAEROS.COM)

PRESIDENT: Dave Rock 330-530-4866  
 VICE PRESIDENT: Open  
 TREASURER: Dan Mackiewicz 330-219-5795  
 SECRETARY: Lori Hineman 330-876-0334  
 FIELD MARSHAL: John McCarty 330-369-1052  
 SAFETY: Keith Anderson 330-856-5898  
 LIBRARIAN: Cliff Hineman 330-876-0334

Meetings are held monthly on the second Wednesday of every month at 7:00 p.m. From October through April, the location is the basement of First Place Bank, 325 South High Street, Cortland, OH 44410. From May through September, meetings are held at the club field. Direct all correspondence to club president.

FLYING FIELD IS THE ERNIE HALL MEMORIAL STRIP, EVERETT HULL RD. (ACROSS FROM TRUMBULL COUNTY FAIRGROUNDS, OFF BAZETTA RD.) FIELD IS CLOSED DURING THE TRUMBULL COUNTY FAIR.

**FLYING HOURS: MONDAY THRU SATURDAY: 9:00 AM TILL DUSK**  
**SUNDAY: 1:00 PM TILL DUSK**  
**NOTE: ELECTRICS CAN FLY ON SUNDAY FROM 9:00 A.M. TILL DUSK**

FLYING RULES: YOU MUST HAVE A CURRENT FAA AND AMA MEMBERSHIP. YOU MUST FOLLOW FAA AND AMA RULES. ALL FLYING IS TO BE DONE NORTH OF THE FLIGHT LINE. STARTING OF ENGINES IS TO BE DONE IN PILOT AREA OF THE READY BOX.

GUEST: UPON PROOF OF VALID AMA MEMBERSHIP, GUEST MAY FLY IF ACCOMPANIED BY FAA MEMBER, ON LIMITED OCCASIONS PRIOR TO APPLYING FOR FAA MEMBERSHIP.

<b>MEETING MINUTES:</b>	<b>January 11, 2011</b>	<b>LOCATION:</b>	<b>First Place Bank</b>
<b>Called to Order@</b>	<b>07:00 PM</b>	<b>Total Members:</b>	<b>90</b>
<b>Total Attendance: 16</b>	<b>Officers Present: 3</b>	<b>Members Present:</b>	<b>13</b>

**President:** Meeting called to order at 7:00 p.m. All members agreed that minutes were accepted from December meeting.

Our Vice President, Patrick, has resigned for personal reasons. He is also selling all his equipment. We will list the items on our website as well as send email to members. Patrick wanted us to pass along that he has truly enjoyed the time spent with all of you and all the other club members. Patrick says, "I've never known a finer group of friends." We wish Patrick the very best in the future. With that said, we now have the task of electing a new vice president. Please be thinking about who you'd like to nominate. We'll hold an election at our February meeting.

**Vice Pres.:** Not Present

**Secretary:** Nothing at this time.

**Treasurer:** Please contact Dan for details.

A reminder that 2011 dues (\$20) are due by March 1, 2011. Please mail directly to Dan Mackiewicz, 2816 Timbercreek N., Cortland, OH 44410. Any dues not paid

by this time are subject to repayment of initiation fee of \$15. Thanks in advance.

**Field Marshall:** Nothing

**Safety:** Nothing

**Unfinished Business:** There was no formal Freeze Fly on January 1<sup>st</sup>, but Dave R., Mario, and John M. did venture out to the field for some flying. Dave said it was nice, but I guess that there was some “damage” to planes, but the crew didn’t want to talk about it!! Just kidding, guys; glad to see you out flying.

**New Business** Events scheduled for our club and surrounding clubs has been posted to the Flying Aeros website under Events. Check it out. Mario reminded us that we were discussing a 3<sup>rd</sup> event this year. A suggestion was made that perhaps we just include a swap shop at our annual fun fly or that we just have a swap shop at the field when the weather gets nicer. Since we would not be paying for rental of a facility, we could charge less for a “space,” perhaps \$5. We had discussion, also, that if we did want to have an AMA sanctioned event, there might not be a CD available. There are some dates left in June, so the decision was made to make a final decision at our February meeting about whether or not we would schedule a third event. Please come to the meeting and share your thoughts.

One of our members, Ken Coss, is getting out of the RC hobby and has his stuff for sale. It’s listed on our website. Dan visited Ken and wanted to pass along that Ken has some really nice stuff. It is in excellent shape and very well organized and kept. It’s worth a look if anyone needs something.

We have one new member at our meeting this month, Mitchell Paxson from Warren. He flew control lines years ago, but has decided to get back into the hobby. He is building a large balsa, 4 motor, World War II bomber, but a recommendation was made to Mitchell that he should start with a trainer, so he ordered one today. Welcome, Mitchell. One of our previous members, Emil Santo, has returned to the club as well. Welcome back, Emil.

**Show and Tell**

Charley C brought a couple planes; a Pitts special bi-plane that was converted from an OS .15 to an E-Flite R10, and a Super Stearman with a DLE-30 engine and a smoke kit. A hint Charley gave was that he used the wire out of windshield wiper blades to attach the horizontal stabilizer to the fuselage. It’s a very high quality stainless steel wire. A plywood carrying handle kit is included for easy transport.



**50/50**

Won by John Thomas, \$8.

**Closed:** Motion to adjourn made by John McCarty, seconded by Cliff Hineman; and motion carried. Meeting adjourned at 7:31 p.m.

**Our next meeting will be Wednesday, February 9<sup>th</sup> at First Place Bank in Cortland.**

*From the Clark County Radio Control Society, Washington*

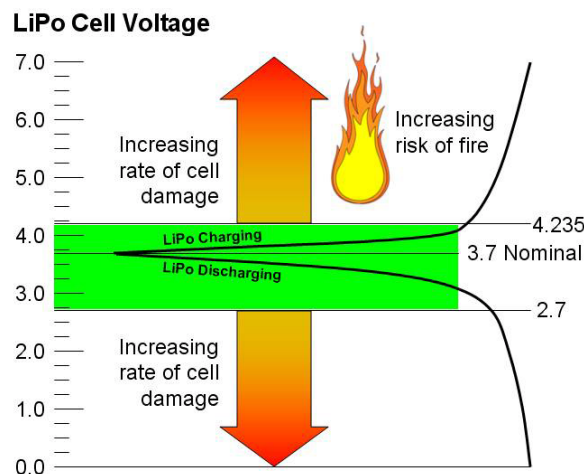
### **Importance of Balancing Lithium Polymer Batteries**

By Dave Buxton

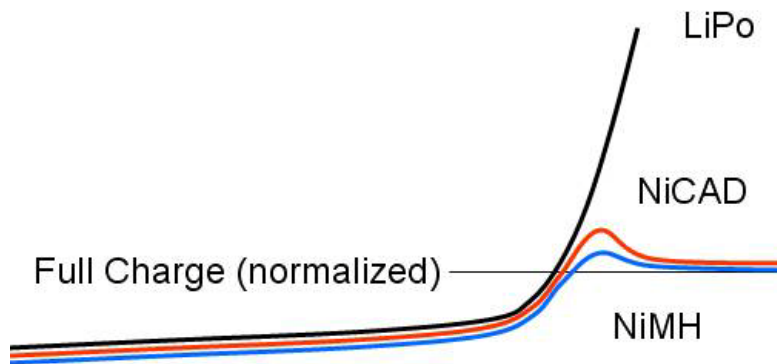
The primary reason for this article is to explain the importance of using a balancer for Lithium-polymer (Li-Poly) battery charging every single time you charge your Li-Poly batteries. Balancing will greatly reduce the risk of your batteries going bad prematurely.

Let's start with an illustration for those who may be electronically challenged:

- Imagine two 5-gallon buckets. One has been used for mixing paint and has several layers of it coating the inside.
- The bucket with reduced capacity (painter's bucket) will fill faster and will empty faster if the flow rate for each is the same.
- Normal aging and cell damage are like adding layers of paint. The cell with less capacity will charge or discharge faster than the other cells in the pack.
- Brand new battery packs can have cells that are poorly matched.
- Cell balancing is like drilling a hole in the bottom of the painter's bucket so it will fill no faster than the clean new bucket. We can put our finger over the hole as necessary to keep the two buckets in balance as we fill them.
- Using a Li-Poly balancer does not scrape the paint out of the painter's bucket.



Li-Poly chemistry accumulates a charge over a fairly narrow voltage range with rapidly diminishing capacity exhibited above and below this range. This explains why the voltage rises or falls more rapidly above or below this chemistry range. Operating outside this range of voltages will at best accelerate the aging process and can result in serious cell damage and even smoke and flame. A battery that could have lasted three years might fade away in less than a week if one cell has a significantly reduced cell capacity relative to its mates. Nicad and NiMH cells self limit at full-charge voltage. At that point they start getting hot, which is why it is very important that Nicad and NiMH chargers detect full charge and switch to a trickle charge rate. Li-Poly cell voltage is not self limiting, which is why you should never use a Nicad style trickle charger. Diagram 2 normalizes the three charging curves so that their respective full-charge voltages appear to be the same.



You may be a newcomer to RC flying of indoor or park flyer airplanes on a very limited budget. This article need not scare you out of the hobby or into purchasing an expensive charging system. The smaller, simpler Li-Poly chargers do not charge batteries all the way to the top, allowing some margin for a cell being out of balance. At least do the following if you don't use a balancer:

- Make sure the charger is charging to an adequately conservative voltage that is less than 4.2 times the cell count.
- Check the cell count each time you use the charger. Wrong cell count is one of the leading reasons for smoke and fire, which has lead to car fires and houses burning down.
- Once in awhile, at full charge, use a volt meter to confirm that none of the cells are being charged to more than 4.2 volts. If a trend is developing in that direction then its time purchase a balancer.

If the above is stretching it a bit, then you should at least add an external balancer (e.g. Blinky Balancer). Consider the following limitations of an external balancer:

- May not be aggressive enough, especially for larger batteries or any battery with cells more seriously out of balance (Blinky balancing cost me an expensive battery).
- An integrated balancer can easily produce an alarm if you dial in the wrong cell count. An external balancer won't do that.
- A charger with an integrated balancer will slow down or even stop the charging process whenever the balancer is not keeping up.

If your flying practice sounds anything like the following, then you should (must) use a charger with an integrated balancing system:

- High battery stress style of flying (e.g. lots of full throttle, hot weather, flying until the battery fades, outdoor helicopters).
- Cell counts greater than three.
- Cell capacity greater than 2100 mAh for which you should at least use a Blinky external balancer.

Some chargers have an external balancer that communicates with the charger. This can be as effective as having the balancer built into the charger. →