

The Wright Flyer



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Newsletter of the WRIGHT FLYERS R/C Club

Website: www.joeld.net/wfrc

Meeting Highlights

by *Leo Davids, WFRC Secretary*

On Tuesday, March 8th, the Wright Flyers held the monthly membership meeting at the Monticello Middle School, room #29.

The meeting was called to order by vice-president Tom Springer at 7:15 PM. There were 10 people in attendance, including 4 club officers, 5 members, and a guest.

Leo Davids read the minutes of the February meeting as published in the March newsletter. The minutes were approved as published with the correction that the meeting was held in room #29 of the Monticello Middle School.

Perry Dziuk gave a treasury report. There was a \$150 membership dues deposited last month, and a check issued for newsletter expenses of \$4113.94 to bring the current account balance to \$4597.92. Paid members for 2011 total 25 people so far. In 2010 we ended up with 36 members.

Tom inquired if we had an alternate date for the field cleanup on April 16th. It was decided to make Sunday, April 17th, the alternate if the weather was inclement on the 16th.

Tom offered to be the food chef for the float fly scheduled for Lake Orono on Saturday, May 7th.

John Kossieck reported that he has an in-law who has access to the old paper mill belting that is sometimes used a runway matting. Based on the discussion at the meeting, John was encouraged to see if he could line up enough of the belting to do at least a 50x100 foot runway. Currently, John cannot say if or when this material would be available other than it

The next meeting is scheduled for
7:00 PM on Tuesday, **April 12th**,
2011. It will be held in **Room 29** of the
Monticello Middle School.

should be at no cost to the club. If the initial quantity would not be enough, it was felt that we could take some and either put down a small strip for evaluation and hope to accumulate more for another year's expansion.

Tom Springer reminded everyone that the AMA campaign with the FAA to keep them from regulating model aircraft flying is being waged on many fronts. There will be a comment period of 60 days when FAA issues the proposed regulations in a month or two but a preemptive movement has started where congressmen in the federal government have a chance to support clause in an FAA funding bill to keep them from regulating model aviation. Tom found a template of a letter being offered from Tower Hobby was to his liking to send to his representatives and recommended that anyone concerned about FAA regulation of our sport contact their representative in congress .

At the TCRC auction last week, Tom met a Wade Wendorf who started a company call Tech Laser that will custom laser cut a wood kit for any model that you can get a set of plans for. If our club is interested in a presentation Tom would see if Wade would come to our next meeting. Tom got an affirmative from the attendees so he will see what he can arrange.

The meeting was adjourned at 8:06 PM.

Show & Tell

by Leo Davids, WFRC Secretary

Ron Bredeken brought in his latest purchase, an RTF electric powered Pitts Biplane from Banana Hobby. It is one of their Blitz RC Works brand and included a 2.4 GHz 4-channel radio system. The package also included a CD that contains software to install a simulator on your PC, although Ron has not had any success installing the simulator on his computer. The basic specs are 33.5 inch wingspan and 24 ounces all up weight. The battery is a 3s 1800 mah pack with a 970 KV motor powered through an 18 amp ESC. The instruction manual is in English but Ron said the contents lacked any details on the parts that needed to be assembled. They did give the recommended CG. One of the big problems Ron had was missing parts and trying to contact Banana Hobbies to get them. Most of the missing parts were aileron control linkages. When Ron tried phoning, there was a 25 minute wait in the queue every time due to high traffic. He tried email and got an automated reply that due to high email activity there would be a 2 week lag in response. He then wrote a letter sent through USPS and got a reply that they would send



the parts. However, the parts they sent weren't complete and so Ron made up some of parts that were still short rather than go through another communication hassle. Ron also found a couple of design problems that required re-engineering to get the plane assembled. The struts that attach the top and bottom wings didn't have enough length so he had to inset the strut from the fuselage more into the top wing to let the outer struts fit without springing the wings. Finally Ron showed two hinged hatches on the belly of the fuselage. The forward most hatch was for the battery but the compartment fit the battery so snugly that there was nowhere to make the plug connection to the ESC. And to boot, the ESC wire and plug were in the aft compartment with no path to get to the battery compartment inside the fuselage.

Upcoming Events

WFRC Field Cleanup Day - The annual day for field work is scheduled for Saturday, April 16th; Sunday, April 17th, if inclement weather. This falls on the weekend after the monthly club meeting so that some preplanning can be discussed as meeting business. Depending on the weather conditions as April unfolds, the field rolling could occur before or after the cleanup date.

Big Sky Hobby Swap Meets have evolved into one of the largest RC events in Minnesota. The store is located on 3402 Federal Drive in Eagan. This is just east of the Pilot Knob and Yankee Doodle Roads intersection. The next swap meet, Sunday, May 22, 2011 is from 8am to noon. The store will be open, and a complimentary brunch will be available inside. Plus, They will be giving away some prizes. The main venue is a huge parking lot that goes all the way around the store- it really fills up, along with parking on the street.

Monticello Senior Hobby Day - The Annual Senior Hobby Day will be held at the Monticello Community Center from 9 am to 2 pm on Friday, May 6th. It's an opportunity to share the hobby with the elementary school age kids and get them interested at an early age. If there is anyone who wants to volunteer to assist Leo with this event, please give him a call. We're also looking for any model aviation magazines that you might want to get rid of. The kids love getting freebies and the magazines go over really well with them. Turn them over to Leo if you have them and they will be used at the hobby day.

Current Field Conditions

by Leo Davids, WFRC Secretary

The portable toilet returned to Hays Field at

Montissippi Park on March 30th. Garth Landefeld called to have the service start on 4/1 but business must have been slow so it got done 2 days early. Took a lot of chipping of ice and snow but it has been secured with lag bolts for the season.

Tom Springer and Roy Wood got the field weather station back up and running as of March 27th. You can access the weather station information from the club website shown at the top of this newsletter.

The parking lot is a muddy rutted mess but the road in is in good shape except for a couple spots of potholes and washouts.

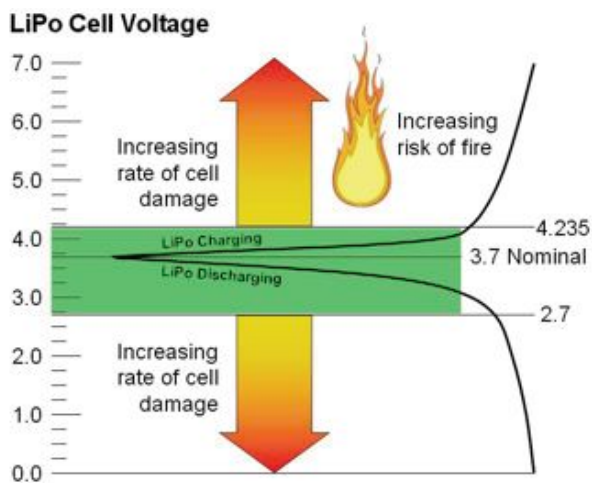
As of the 31st of March there was still snow cover on much of the field but with all the melting going on it shouldn't be too long now.

Importance of Balancing Lithium Polymer Batteries

by Dave Buxton, Clark County Radio Control Society, Washington

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:

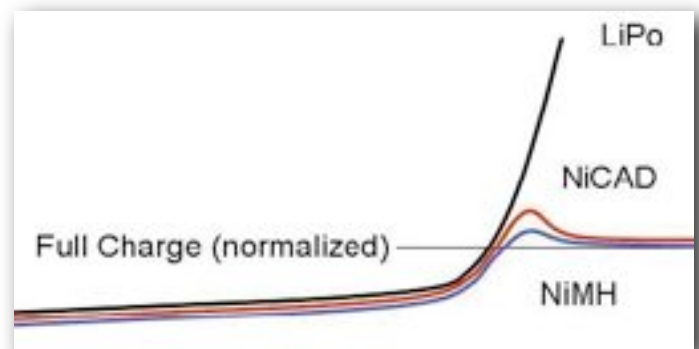


- Imagine two 5-gallon buckets. One has been used for mixing paint and has several layers of it coating the inside.
- The bucket with reduced capacity (painter's bucket) will fill faster and will empty faster if the flow rate for each is the same.
- Normal aging and cell damage are like adding layers 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.



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- 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 led 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

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Want club logo apparel & other items? Shop here:
<http://www.cafepress.com/wrightflyersrc>.

If you have news or ideas for articles you would like to see, you can email me at jedweb@charter.net or call me at 763-263-3577. Jean Davids

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.
