KNOX COUNTY RADIO CONTROL

AMA #594 • 3204 Williams Bend Road • Knoxville, TN 37932 • 35.94829 • -84.23314
Web: www.kcrctn.com • Facebook: https://www.facebook.com/groups/180339530666199

April 2023 Newsletter

President's Corner

By Warren Oliver

Flying season is really off the ground now. There have been some beautiful spring days at the field. We are really lucky to have such a convenient, beautiful place to pursue this hobby. The great atmosphere of cooperation and comradery that has been a hallmark of our club continues. I cannot count the times that I have seen other members converge on a flyer having some trouble helping him get back in the air and enjoy the day.

We do have a few issues concerning the upkeep of our field that need attention. The most pressing of these is the repair of the roof on the large shelter (see minutes below). We need to get up there and put in a bunch of screws. Most of our members are of an age where they have no business climbing around on a roof. We will be getting an estimate of the cost to do this but if some younger member wants to pitch in, this is an opportunity!

Speaking of comradery and fun I have just attended the first Senior Pattern Association meet of the year in Americus, Ga. The meet was held at a private full-scale airport with great facilities. A number of competitors camped at the site and enjoyed the whole weekend together. Jimmy Russel and I represented KCRC effectively in the expert class. Ellis Newkirk came all the way from Dallas Texas to join in. The weather cooperated and we got 5 rounds of competition in 5 categories on Saturday and finished up on Sunday. There were just north of 20 competitors. While everyone is competing, the level of cooperation still shines through.

Tod Thompson continues to get things together to get us right with the FAA. It seems to be a slow process, but it is moving along. As part of the process, we are reengaging with the Knox County Parks folks to get a new lease (the old one is out of date) in place to include as part of the documentation needed. Joel Hebert is working with the county on that process.

Basically, things look great for another year of enjoying model airplane flying at KCRC. If you have not been out to the field recently, come on out - we are having a great time!

April Meeting

By Richard Love

KCRC Meeting Minutes – April 11, 2023

President Oliver opened the meeting at 7:01 PM.

The meeting was held at Fellowship Church with 15 members in attendance.

Minutes for the prior monthly meeting held 14 March were approved.

Joel Hebert presented the treasurer's report for March, and it was approved. A contact list of paid

members is available from Joel. Currently we have 73 paid members. Some are family memberships that include a total of 11 children.

Safety officer Phil Cope had no incidents to report for the past month.

Old Business:

FRIA status - No update to report.

Shed Roof Status – Member discussions revealed that our initial repair attempt will require additional work. Some rotten wood was discovered, and most fasteners will need to be replaced.

Joel will put out a call in our next newsletter/Email for a potential voluntary work group. Simultaneously, President Oliver will obtain a quote for repair by a contractor.

Fire ants – Craig Dieter has found 7 or 8 active fire ant hills at the field. Warren will get a quote for extermination of the ants.

Flight line gravel - Steve Patterson has relayed that more may be involved than just putting down gravel. It may also have to be groomed the same as the driveway. Phil Cope will contact Steve and investigate further. Also, Joel has a contact for gravel and will pursue that channel for information.

KCRC 2023 events update

Jimmy Russell provided the following updates:

June 3rd - Fun Fly Bash - Jimmy Russell CD - Sanction requested and date cleared with surrounding clubs. Cookout lunch, fewer Funfly tasks this year. We will have an open fly by lunchtime.

June 17 (proposed) KCRC Spring Family Cookout/Funfly. Winter Build challenge showoff. All models are welcome.

July 1 Cubfest. Need CD/EM aka Cat Herder. AMA Sanction optional. The first 2 weekends in July are fairly clear in the area.

August 12-13, SPA contest. Sanction request on the books. Jimmy Russell CD, Warren may help.

Note: Jimmy added that Brandon Drummer may organize a Warbird and a Jet Fly event.

Warren and Joel will contact the Knox County Mayors office to seek publicity for the Cubfest event.

New Business:

Mowing - Joel to set up the next mowing before the grass gets too high.

Model of the Month:

Steve Bayless displayed his Fletcher Class Destroyer he built mainly with balsa, plywood, and plastic parts. He used a smaller plastic model of the ship for scaling. It has two motors, one for each shaft, and can reach a maximum speed of a brisk walk. Features include navigation lights, search lights, and gun turrets that can rotate under remote control.

Our next meeting will be held on May 9 at 7:00 PM at the field.

The meeting was adjourned at 7:55 PM.

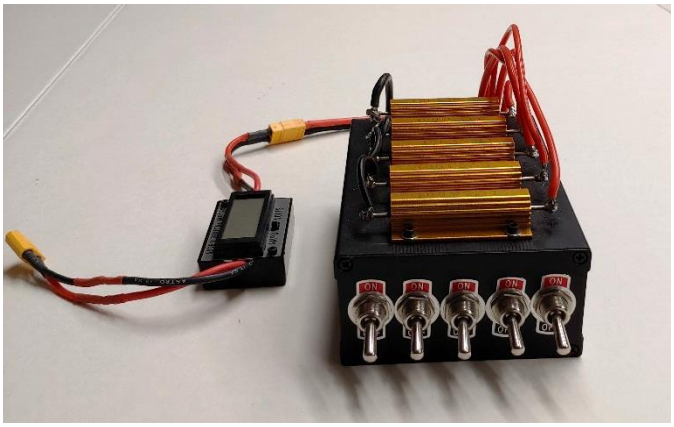
Meet Ron Clayman

Ron is new to RC, and he has been learning to fly his Aero Scout pusher. Progress has been good, and you will soon see him flying it solo. He is a full-scale pilot and has been in the pilot's seat since the 1960's – Cesena 150 and 172s – so he is familiar with the rudimentary concepts of flight. Now he is learning to fly by standing on the ground rather than sitting in the seat, a bit of a perspective change. Say hi to him the next time the weather is good enough to take you to the field.

Battery Monitoring

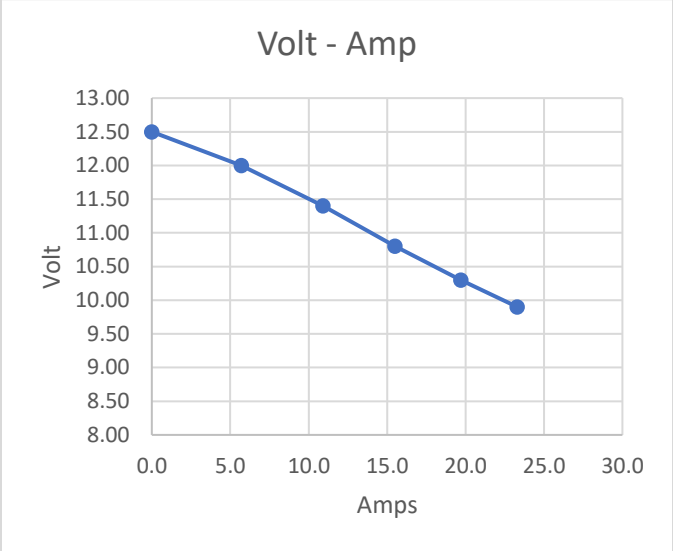
By Bob Morris

Like many of you, I have wondered about the condition of my batteries over time, so I constructed a passive battery discharger to do a few checks. I made up a circuit of five 2-ohm 100-watt resistors that could be switched in parallel as a battery load. I monitored the voltage and current as each resistor was switched into the circuit for a 3 cell 2200mah battery pack. You must be fast as this thing gets really hot!

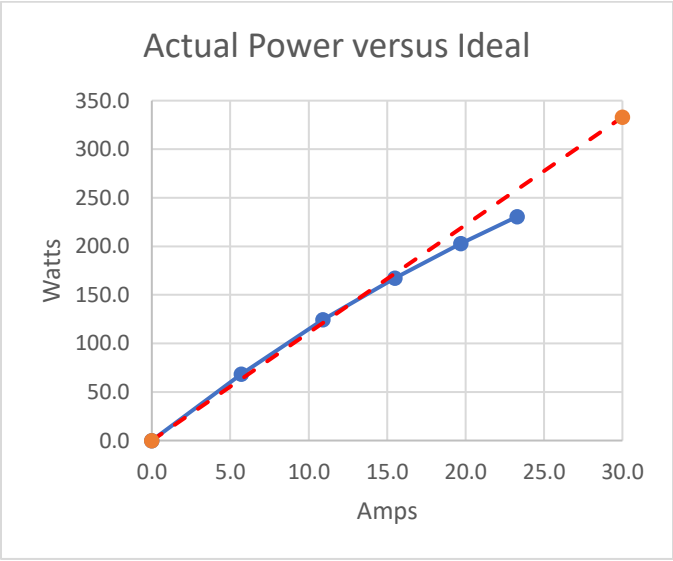


Each resistor increases the current by about 5.5 amps and the battery voltage drops a little. I measured the change in voltage from step to step and divided that by the change in current to determine the battery internal resistance; because the circuit was passive resistors, I didn't have to worry about any other changes. If you decide to make one of these, consider adding a fan and mounting the resistors on a beefier metal plate. I used an old Astro volt/amp meter from the 90's for monitoring.

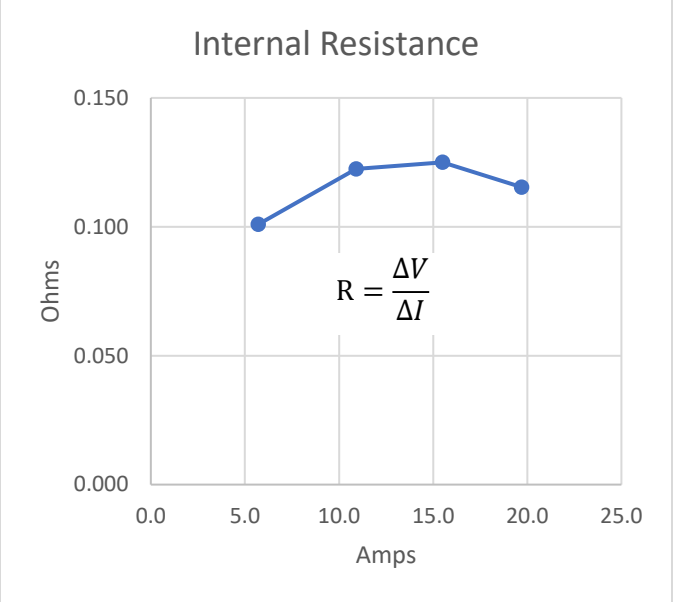
An example of the testing (Oct 2022) for a pack that had been used for a while, but was still working well is this:



As you can see the voltage drops off as the current increases. You can compare this to a perfect battery in the next graph. The red line is what you would expect from a perfect battery, 3.7 volts per cell, and the blue line is what the battery actually delivered. Not too bad really; the curve starts to drop off at about 160 watts with notable sag at about 225 watts. Not bad for an old brand X battery!

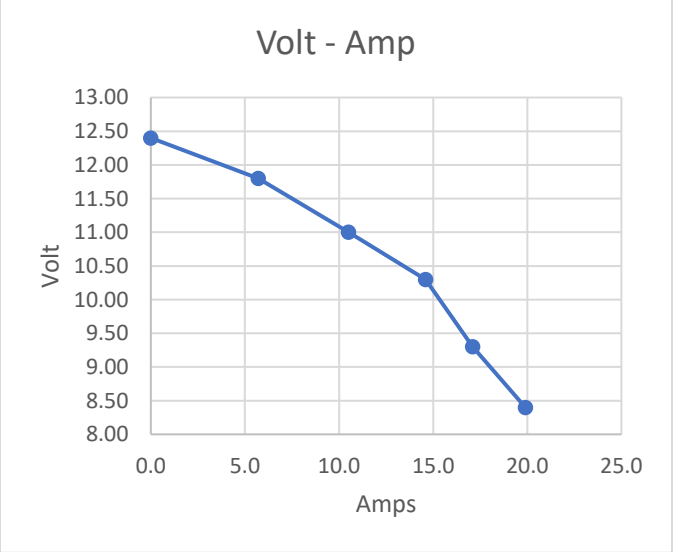


Here is a plot of the internal battery pack resistance as determined by $\Delta V/\Delta I$ (I used central differencing to get the 4 points):

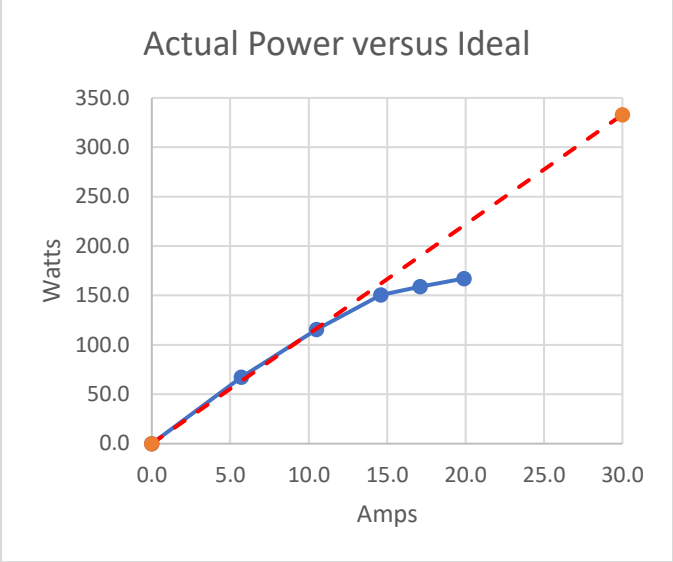


So, the average internal resistance was about 0.116 ohms.

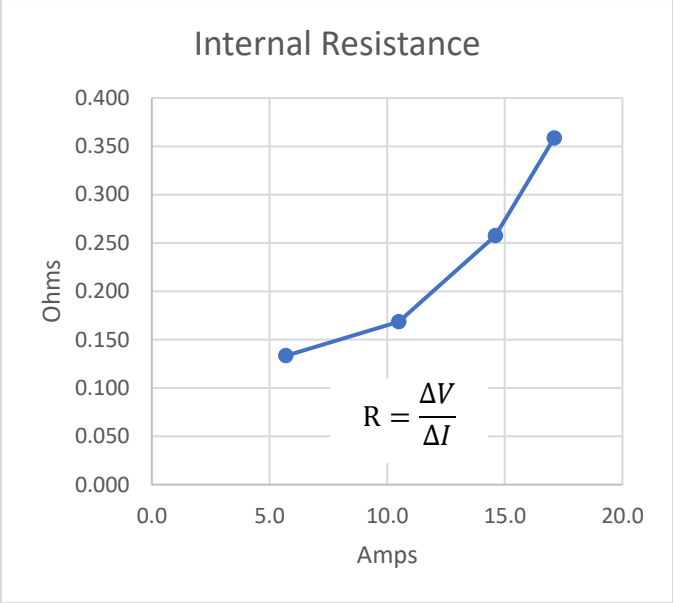
One day in February 2023 I had to cut a flight short because the power was really sagging. I cycled the battery, and its capacity was only about 1200mah, so something was wrong. I then did the same tests on it. The voltage curve sagged a lot when compared to the earlier test and indicated that the internal resistance had increased quite a bit in addition to the capacity decrease.



The power comparison told an even worse story – the sag began sooner and was more apparent:



Finally, the internal resistance increased:



As you can see, the internal resistance went way up and became a strong function of the current. So, this battery went into the scrap bin.

Overall, this was an interesting exercise and showed that you can test and measure your batteries with some simple equipment; at least you can check them out when something goes bad and assure yourself of the state of the battery rather than just guessing.