



## The News Letter of the Burlington Radio Control Modelers Club

Box 85174 Brant Plaza, Burlington, Ontario, L7R 4K4

### Editorial

The flying season is coming to a close, the building season is approaching and the hobby shop anxiously awaits your commitment to several weeks of dedicated labour which you hope will produce yet another "pride & joy."

It's been a great season with lots of fine flying weather. For some of us, it has been a time of learning one thing after another with one or two models making the supreme sacrifice in the process.

Several members attended events here and in the U.S.

**Olean** provided one day of every weather event imaginable followed by a day blanketed in thick fog. Nevertheless, the first day saw some fine models flying under tough conditions.

**Hamburgh**, I am told, was too hot to be much fun.

The **Tri-Club** event, by the Oakville Club, was well done and well attended. The weather cooperated and there were many interesting and, perhaps, unique models flying at the club's north field.

The **Flying Dutchmen** of the Kitchener/Waterloo club put on their annual scale rally with their equally usual excellent organization. Some 20 or so BRCM members attended. It was a very windy day but some intrepid pilots ignored it and put on a fine display. After dark, two pilots put on an incredible display of night flying with their models showing various lighting configurations - sometimes none at all. Truly a sight to see. A boisterous cheering section added to the fun.

Your board of directors is actively seeking ways to simplify membership recording, accounting and reporting chores. A meeting is scheduled this month and we may have something to report at the September general meeting.

Our two flying fields are both under threat. **Bayview** is about to be covered in a meter of fill and **Bronte** is suffering from complaints about flying beyond the nominal boundaries. Hopefully, Bayview will be available for the 2002 season and we hope that measures taken to protect our flying privileges at Bronte will satisfy the park's administration.

This edition of Skywords will be the smallest since I took on the job of editor in January, 1999. It's all too easy to write about my own adventures but that gets to be a bit too self centred. So, let me have your contributions to Skywords. After all, it's your newsletter; I'm just the editor. I can be reached at 416-622-3705 or FAX 416-622-4134 or by E-mail: Lawrence.Cragg@Sympatico.ca or S-mail to suite 2010, 820 Burnhamthorpe Road, Toronto, M9C 4W2

### September Meeting (27th)

**No Idea!**

**(Last year, we had a video and social evening. Maybe this year too!)**

Carl Gross and his Lysander.



### Lets get loaded...

*This from Bill Montgomery*

This article describes an easy to construct external battery load that can be used for testing 4 or 5 cell nicad receiver packs.

With the abundance of small low cost DVMs on the market today it is often tempting to use these to directly measure the voltage of battery packs. The problem with this method is that the readings will only reflect the open circuit voltage of the pack and not the actual voltage as seen when connected to a typical in-plane system.

All batteries have an internal resistance due to the physical and chemical nature of the cell material. This resistance can be thought of as a resistor in series with the actual 'voltage source' in the battery. Because DVMs draw virtually no current when connected to a battery there is no voltage drop across this 'series' resistance and therefore the DVM sees only the voltage source. But, when you install the battery pack into a plane with servos and a receiver there will be current drawn. This current passes

through the battery's internal series resistance and causes a voltage drop to appear across that resistance. This in turn lowers the actual voltage that is delivered to the receiver and servos. Since this voltage is critical for the proper operation of the flight systems we should be measuring the battery pack with a load similar to that found under normal flight conditions. This load will vary depending on the number and type of servos but generally will average around 200 mA (0.2 Amps) in a typical 4 servo sport plane. We can use a 27 ohm ( 1 watt ) resistor connected across the pack or voltmeter to simulate a typical receiver/servos load.

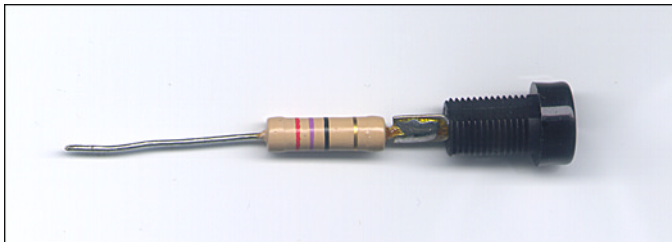
While we will be looking at an external load it is also possible to open up the DVM and solder the 27 ohm resistor across the input jacks. This produces a nice compact meter but does render the meter useless for normal voltage and resistance readings and it is often hard to find sufficient space within some of the smaller meters to mount the resistor. If a 27 ohm 1/2 watt resistor is used inside the meter you should keep your measurements short as the resistor will get quite hot.

### Parts List

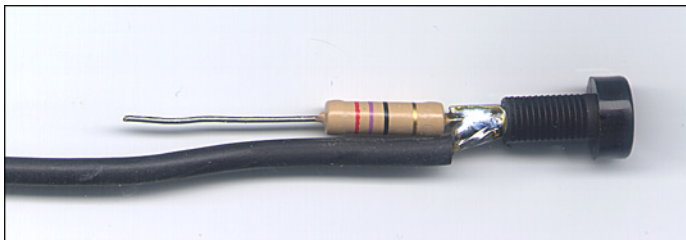
- (1X) 27ohm 1 watt resistor
- (2X) low profile banana jacks (red & black)
- (2X) banana plugs (red & black)
- (1X) 1 3/8" length of 3/8" heat shrink tubing (or electrical tape)
- (1X) 2" length of 1 1/4" heat shrink tubing (or electrical tape)
- (2X) 4" lengths of flexible wire ( 20 gauge min. ), red & black-

### Construction

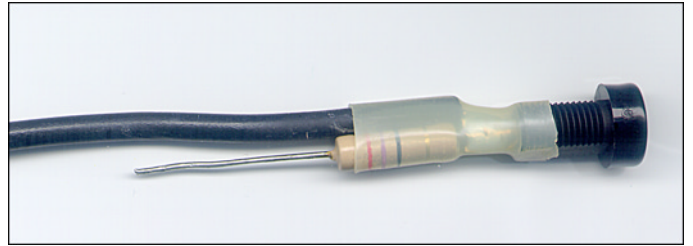
Start by soldering one lead of the 27 ohm resistor to the black banana jack. Keep the lead short as the other lead will later be bent up to connect to the red jack.



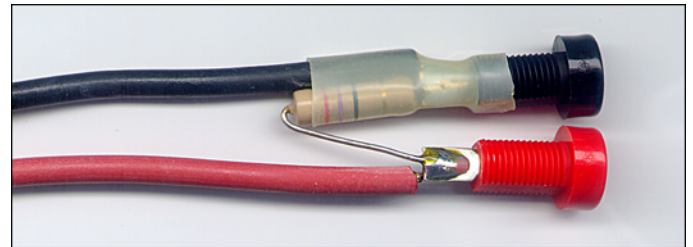
Solder one end of the black wire to the same banana jack.



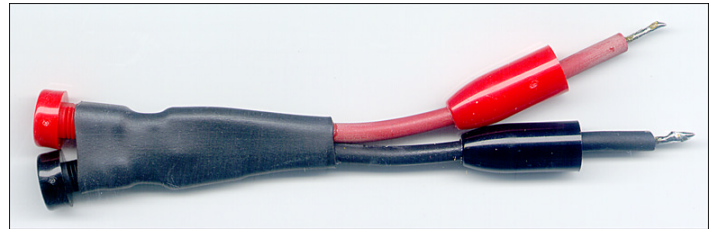
Cover the resistor and connection with heat shrink tubing or electrical tape.



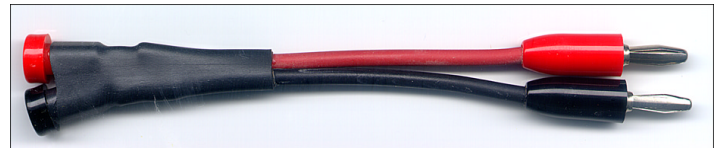
Bend up and solder the other lead of the resistor to the red banana jack. Also solder on the red wire.



Cover the resistor and the threaded portions of the banana jacks with heat shrink tubing or electrical tape. Slip the banana plug covers up the red and black wires in preparation for connecting the plugs.



Solder the banana plugs to the red and black wires and screw on the covers.



### Use

Plug the two banana plugs into your DVM. Plug a receiver pack charging cable into the two banana jacks. Connect to the charging jack on your plane and measure the receiver pack voltage. Typical 4 cell nicad packs will read about 5.1 volts when recently charged and drop to 5 volts after a flight. A 'good' battery pack should slowly drop from 5.0 to 4.8 volts as you have a number of flights. Once the pack voltage reaches 4.8 volts you should consider recharging as the voltage will rapidly drop off from that point.

*Editor's note: Make sure that connecting to the charging jack on your model is the **last** thing you do in the connection sequence! This avoids accidentally shorting the flight battery pack.*