



# Radio Amateur News & Views

The Official Journal of the Radio Amateurs of Northern Vermont

OCTOBER 2008

Vol. 18 No. 10

## ELECTRICITY 102

### Home Electrical Wiring for the Ham The October 14<sup>th</sup> RANV Meeting

Last month, we were treated to a rare field trip to *Green Mountain Power* and saw how power is generated and transmitted to our homes. If you missed it, that's too bad, because it was special. This month, we follow up on the topic of electricity with *Home Electrical Wiring For the Ham*. We will go into detail what to do with all that power you get from the power company, how to wire it and how to safely handle it.

Mitch W1SJ teaches Electricity courses to both electricians and homeowners planning some do-it-yourself work. He'll touch upon things like circuit breakers, electrical boxes, wire size, receptacles, 240-volt wiring (*for da big amps!*), ground faults, safety and other interesting topics. He'll also show you how to save on your electric bill!

The meeting will start at 7 PM, Tuesday, October 14<sup>th</sup> at the O'Brien Civic Center, 113 Patchen Road, South Burlington. For those interested in culinary pursuits, the crew will convene at Zack's on Williston Road, South Burlington, starting around 6. Hope to see you there.

## NEARFEST

*Nearfest* will be held October 10-11<sup>th</sup> (*Friday and Saturday*) at the Deerfield Fairgrounds in New Hampshire. The show opens at 9 AM Friday and runs until Saturday afternoon. Admission \$10 Friday, \$5 on Saturday, and \$10 to bring a vehicle into the flea market area.

Thursday night camping will be provided outside of the Flea Market area. VE Exams will be on Saturday.

Official hamfest talk-in is 146.70 (88.5). Rocking 146.67 Repeat will be on the grounds. In addition several low power FM and AM stations will broadcast all sorts of fester information. Detailed information at: [www.near-fest.com](http://www.near-fest.com).

## GET ON THE AIR: STARTS THIS SUNDAY!

We've received a few positive comments, so we will give this activity a try. It is called *Get On The Air*. Obviously stolen from ARRL's Field Day designation, this activity strives to get as many people on the radio at one time so we can do whatever we do when we get on the radio.

This is how it works. On **Sunday night**, between the hours of 7-9 PM, turn on the **145.15 repeater** and transmit your callsign. If you do not get a response, keep the radio on for the duration of the period. When someone else comes on, respond to them and start off with a brief QSO.

As others come on the air, they will join the QSO in progress.

**THIS IS NOT A NET!** There is no Net Control Station begging for check-ins and there is no list and no count. It is up to you to turn the radio on and say something. If you don't know what to say, start off with, "Hello. My name is <xxx> and I've been a ham for <xxx> years." And then continue from there. The conversation might be a roundtable or might be short individual QSO's. The topics can be anything you like. You don't have to say much after letting everyone know you are on.

You don't have to stay for the entire period. No rules; just right!

Whether this flies is up to all of us. If 15 people turn on the radio and say nothing, then it is like no one getting on. So it is imperative that you make some noise to let others know you are out there. If this works out, we might try other twists, like moving to other bands or modes, calling up IRLP or perhaps even playing with the times. But we need to see consistent activity before we can do anything fancy. Won't you join us Sunday night 7-9 PM? TV cannot be all that interesting!

## LAST RANV MEETING

by Carl ABIDD, Sec'y

We had a little change of pace for our September 9<sup>th</sup> meeting. We took a field trip to the corporate offices of *Green Mountain Power* in Colchester. After being escorted to a very nice conference room, president Brian N1BQ, called the meeting to order at 7:07.

There were a few announcements. The October 14<sup>th</sup> meeting will be on Electrical wiring in the home. This will be presented by Mitch W1SJ. On October 4-5<sup>th</sup> there will be a Scout Camporee. Contact John, K1JCM if you want to help out with the radio part of this. October 10-11<sup>th</sup> is Near-Fest, in Deerfield, New Hampshire.

Our meeting place at the O'Brien Civic Center will be good at least until the end of the year. Monitor the web site and e-mail reflector for updates on this.

The November meeting is the elections of club officers. If you want to nominate anyone, please have it in by the October meeting so they can be placed on the ballot.

Before we got into the main part of the meeting, we did introductions. Welcome to the newest member, Melanie W1BZD.

The topic of the night was electrical power generation and distribution. This was presented by Ken Couture of *Green Mountain Power*. Ken started off with a review of electrical theory and a technical overview of electrical distribution. He went on to tell us how the power was generated, and the types of fuels used. It was interesting to hear that most of the nation uses coal, while here in Vermont most of the power is generated using hydro and nuclear fuel.

Ken showed some of the lighter (*dumber?*) sides of the business. How many of you would run an electric BBQ in a pool, or stand on an aluminum ladder in a pool and run an electric drill? Some people do. He had pictures! He also showed some pictures of what happens when some of their heavy trucks go amiss.

After the presentation, we were lucky enough to get to go into the control room, on the business side of the bulletproof glass. This is the nerve center for GMP's distribution.

There were monitors that could view the generation sites around the state. Lots of monitoring points showed up on a wall sized display. It was explained to us how the operator could control the entire GMP grid from this point. Very interesting!

After the tour, we returned to the conference room for snacks. The meeting adjourned at 9 PM.

## MILTON HAMFEST 2009?

by Mitch W1SJ

It is less than five months before the Milton Hamfest and this is the time I kick off the events needed to put the Hamfest into place. But there are issues!

Last year, we had a significant downturn of 20% in attendance after holding steady for a number of years. I don't get the sense that this was an anomaly, and given the state of the economy and the non-growth of amateur radio, I have the foreboding feeling that things will get even worse. I can ramble on about how we got to this point, but the fact is that I'm having trouble getting excited about planning for this show. Each year, I thoroughly enjoy planning each aspect of the Hamfest and enjoy trying out new things to make it better. That feeling is not there now. When you put your heart and soul into setting something like this up only to hear things like, "I forgot" or "I had to go to the mall that day", that doesn't give me great inspiration.

Last year's show was tough. Dealing with the school has become very problematic. Getting publicity is like pulling teeth. "*Ham Radio? Oh, do they still do that anymore?*" Dealing with last minute forum speaker changes was stressful. And the weather in the winter is always a nail biter. And for next year, what topics should our forums be on? I haven't the foggiest idea what people are into anymore. Frankly, if we had forums on the Internet and Cell phones, we would probably draw hundreds more. While I don't believe we should sell out, I don't know what direction we should be pursuing. The symptoms for me are obvious. I'm getting burned out.

I've detailed the negative aspects, but it is also important to point out the positive as well. The satisfaction quotient of the Milton Hamfest is quite high – probably one of the highest of any Hamfest. How is this measured? It is not very scientific. I ask a lot of people! Of the folks who remain active in amateur radio, Milton is a favorite destination. It is for this reason and this reason alone I have promoted the Hamfest all these years. And the show has been quite financially solvent, which while this is not my primary objective, it is nice to not worry about this.

The bottom line is that I need help to do this show. I desire to retire to being a consultant and have a group of people handle the details. To break it down into bite-sized pieces, we need a person to handle the forums and program, a person to handle vendors, a person to handle publicity and a person to handle the site logistics and dealing with the school.

I have the feeling that this information will fall on deaf ears, as these things usually do. Gee, I've attempted to quit as editor several times, without success. All of our RANV officers have been doing this for a long time and are ready (*some begging*) to be replaced. If we do not get an influx of new leaders soon, this whole thing we enjoy (RANV) will eventually melt down. And while ham radio will survive, I get the feeling that with no growth and failing organizations, ham radio will survive all that long.

We have been fortunate that there have been very talented people making this club work for a long time. Now is the time to for much needed preventative maintenance and new blood.

# BEGINNER RADIO

by John VE2EQL

One of the things that is not lacking in Amateur Radio is a source of good radio equipment. You can find equipment everywhere: on line, at hamfests, or through personal selling. The choice of all makes and models can be found with a little bit of patience and not too much money. Today, one can find older models, which have fallen from favor because they could use tubes in the final output stage. These radios are mostly solid state, except where the transmitter is concerned. Many of the hams that moved to more modern radios did not want to have the bother of tuning the transmitter finals. These are radios which many people consider trendsetters for their time, and they are solid performing units with many features. Models like the Kenwood TS-520, TS-820s, and TS-830 series, Yaesu FT101 series and Drake are names of popular radios of this vintage.

Tuning up a tube transmitter does not take a lot of time, and there are small things that could be done to speed up the process. Most tube transmitter radios have a "Plate" and "Final" control. Our goal is to try and tune up the transmitter in the least amount of time, and hopefully not create any interference to any other station. Here is what we do.

1. Create a Tuning chart on all the bands that you plan to operate on, and that is supported by your radio. This may be a list of 160 to 10 meters. We want to mark either 50 or 100 KHZ segments of the whole band.

2. Locate a SWR bridge and Dummy Load rated for at least 2 to 3 times the output of the transmitter. If you have a radio capable of 100 watts, ideally a 300 watt dummy load would be able to withstand the output wattage for long durations of key down. If you do not have a SWR bridge and/or dummy Load, ask the club membership who might loan or even sell one.

3. Start from the low end of each band, and tune the transmitter for approximately 80% of full power. Record the dial positions, with the SWR reading hopefully flat 1:1, and the desired wattage output on the power meter. For every increase of 50 or 100 kHz, repeat the same process. Then change bands and tune and record every 50 or 100 kHz. You might want to create some dial label, to place on the "Plate" and "Final" controls if the panel markings are not to your liking.

4. When you change frequency, you only have to set the knobs to your chart. There might be some tweaking to fine tune the transmitter output.

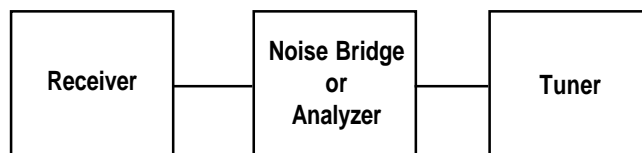
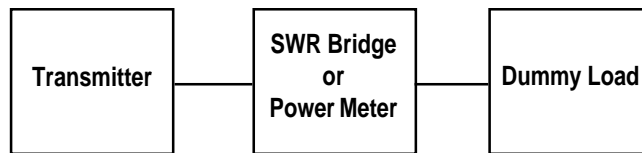
Now that the transmitter is taken care of, it is time to take a look at your antenna matching system. It does not matter at this point what kind, make or what ever antenna you have or are using. For this article, it is assumed that you have a dipole, fed with coax or ladder line to a balun which is feed into an antenna tuner. There are many ways to adjust an antenna tuner; listed are some of

ways a ham would accomplish this. There is some RF associated test equipment that every ham should have or have access to. First, a Noise Bridge, when used between a receiver and your antenna tuner, will allow you to adjust for maximum noise based on a pure resistance of 50 ohms on your adjusted operating frequency. DO NOT transmit when a noise bridge is connected in line or it will destroy it. Second, an Antenna analyzer (MFJ, AUTEK, Palstar) will allow you to adjust your tuner, in much the same way as a Noise Bridge will. But it will give you readings for resistance and reactance and direct frequency read-out. You do not need to connect your receiver in line.

Another way that some hams adjust an antenna tuner, is via maximum received noise or signal strength. Then they would make some final adjustments based on the lowest SWR. Which way depends on what tools are available. Your basic antenna tuner has a control for the "transmitter", and one for the "antenna". Again, a tuning chart identical to your transmitter-tuning chart is required. By making readings every 50 to 100 kHz on your selected bands and recording the dial positions on the tuner will go long way to save time. Once we have your chart of every band, we could remove the noise bridge/analyzer and reconnect the transmitter.

What we have done, is tuned the transmitter to its near rated maximum power output based on a load of 50 ohms. Then we have made the antenna tuner and antenna look like a 50-ohm load. When we connect the two, we are ready to transmit with the near maximum power output. If we have different antennas, we would do the same procedure with each antenna.

An older radio should not scare any beginner ham. With the help of fellow club members, and some basic operating procedures, will provide many years of fun.



Adjust tuner to provide 50 ohm load

## **Contacting RANV**

In Person: Meeting, October 14, 7pm,  
O'Brien Civic Center  
113 Patchen Rd, So. Burlington  
By Mail: PO Box 9392,  
So. Burlington, VT 05403  
By Radio: 145.15 repeater

WW Web: <http://www.ranv.org>

President: Brian N1BQ 899-4527  
n1bq@wulfdn.org  
VP/Tres Bob KB1FRW 434-2517  
mcamp@gmavt.net  
Secretary: Carl AB1DD 482-3878  
ab1dd@arrl.net  
Editor: Mitch W1SJ 879-6589  
w1sj@arrl.net

Please send submissions for the  
newsletter to the editor, W1SJ.

**NEXT MEETING:**  
**“Home Electrical Wiring for the Ham”**  
**Tuesday, October 14<sup>th</sup>, 7 PM**  
**O'Brien Civic Center**  
**113 Patchen Road, South Burlington**

# **RANV**

P.O. Box 9392  
South Burlington, Vt 05407

<http://www.RANV.org>