



# RADIO AMATEUR NEWS & VIEWS

The Official Journal of the Radio Amateurs of Northern Vermont

October • 2010

An ARRL Special Service Club

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## NEXT MEETING:

### OCTOBER 12, 2010—EME

**E**VER WONDER WHAT'S INVOLVED WITH WORKING MOONBOUNCE? Well hang onto your pocket protectors because we're going for another wild ride with Bob *W1ICW* as he shows us what's involved in working The Ultimate DX, EME. From the first tentative steps using gear you may already have, to assembling an array and everything in between. Join us as we prove you don't need an antenna array the size of a football field to work some real DX on two meters. And all you need is a technician class license or above.

Then it's off to the kitchen to refuel.  
And it's also time to talk about...

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## ELECTIONS—NOMINATE NOW VOTE @ NOVEMBER MEETING

**N**OVEMBER IS ELECTION MONTH and we're not just talking state/national. It's RANV election time!

It's time to put on that little beanie and think about who you feel would represent you well in our elite officers' club. Or, step up and volunteer yourself! It's a pretty heady experience, but, hey! you can do it! In particular, we need a VP/Treasurer. Carl's stepping down due to overload conditions and we have a big gap in our lineup. Please consider it.

We need to see nominations in October so the ballots can go out with the next newsletter.

If you want to volunteer yourself or someone else, and can't make the meeting, contact Bob *KB1FRW* and let him know your thoughts.

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## SPEAKING OF THE NEXT NEWSLETTER...

In order to give folks who can't make the meeting time to mail their vote back, the newsletter will be going out a tad earlier. *Deadline for submissions is October 22.* Projected mail-date is November 2.

## THE REPEATER AT BOLTON

### & WHY IT WAS OFF

**BOB KB1FRW**

**A** COUPLE OF WEEKS AGO the 145.150 repeater at Bolton stopped working. It was OK in the morning and dead that night on the way home from work. I called Mitch *W1SJ*, the repeater owner, left a message and waited and waited and waited. Five days later I call again and he calls back—been out of town for a few days.

We go through the possibilities as to why the whole repeater is dead, no UHF or VHF at all—not even a weak signal. Well either it got hit by lightening, the power supply died, blew a fuse, the controller went out, possibly a 10-volt power supply got whacked, or there was no AC. The lightening strike was quickly ruled out because there hadn't been any recently. The power supply wasn't really on the short list because these are pretty basic and rugged supplies, not known for dying suddenly. The fuses were considered a possibility, but only if something downstream was bad—but what? The controller had been known to have a shorted protection diode on the DC input occasionally and the controller is most likely responsible for the echo heard on the machine lately. A tripped line breaker could also cause this type of failure.

It was now expedition time because the theories have to be tested in person at 3400'. Mitch had to go to a family wedding, I got the 60 lb. spare power supply, a key from Mitch, and a short lesson on remov-

# RANV: SEPTEMBER MEETING SECRETARY'S REPORT

JEFF NIYD, SECRETARY

## Business—

- We voted to spend \$114 to renew our *ranv.org* domain name.
- The repeater has been fixed. Mitch and others made the hard climb to the repeater site and found that a circuit breaker had tripped due to a generator problem.
- Nearfest will be October 15<sup>TH</sup> and 16<sup>TH</sup> in Deerfield, NH. Camping there is \$30.
- Bob will bring snacks to our October meeting.

## Presentation: Hollow State to Solid State

Mike Seguin *NIJEZ*, an engineer with Vermont ETV and Burlington Telecom, told us how he has changed his shack from tube type amplifiers to solid state. Tube amps can have voltages of 2000 to 2400 volts, they are quite heavy, and parts can be expensive and hard to find. Solid state amps are lighter, work at less dangerous voltages, and can be much less expensive. However, they are easily destroyed by bad SWR, heat, or even by "overdriving" with too much input power.

Mike uses a sequencer board from *W6PQL* in his amplifiers to prevent transient conditions that can cause a failure. The same board also monitors VSWR and temperature.

Mike's big transmitter is surplus from Vermont ETV. It was built for 510 MHz, and he was able to tune it to the amateur band at 432 MHz. It has eight output transistors, and gives 650 to 1000 watts of output. The outputs from the transistors run into a "combiner." The combiner sends any differences between the outputs into a "reject load."

Mike also showed us a 222 MHz transmitter that he made from a surplus chassis, and his 2-Meter amplifier which works with 10 watts in and 500 watts out.

### VEC Exams

Every 2nd Friday  
6:30–8:00<sup>PM</sup>

29 Mansfield Ave. • Burlington

Tech, General, Extra Class Licenses. Bring 2 forms of identification, copies of existing license and CSCE (if applicable), pens and pencils & the exam fee (\$15 amateur/\$35 commercial), exact cash only please.

??s Email Ralph *KDIR@arrl.net*  
or the GBA ARRL VE Team  
website at *BARCVT.net*

# PREZ SEZ

BOB KB1FRW

**H**ERE IT IS, HAPPY HARVEST TIME AGAIN. If you are reading this you made it through another busy summer and are probably getting ready for the first flakes to settle on the ground. Wood all stacked, lawn mowed for the last time, you hope, good time to go look at the fall foliage—it is looking pretty colorful this year.

It is also a good time to get that 2-Meter or 440 rig installed and working in your car and at home. I know you changed cars and haven't had time to re-install it or the mike cord is broken or something. Why am I mentioning this?

First, for safety as an alternate communication tool in the event of an accident where your cell phone doesn't work. If you think your cell phone is as reliable and has coverage as broad as 2-Meter FM through the repeaters you need to rethink this. Cell coverage is generally good in the populated areas, but notice I said *generally*.

The second reason I am bringing this up is the low repeater usage as of late (read last 5 years). Ham radio is a community of people with a common interest and the hobby is about communication, experimentation, etc., etc., etc. So as club members there is a presumption that you have some interest in local hamming, (that is why you joined a local club), you want to support the local repeaters, you want to be part of a Field Day group, you like to go to meetings and learn, participate in events to practice for emergencies or some other activity that can only be done at the local level. The only way to participate is to see and communicate with other local hams. Using repeater usage as a measure, it seems that we aren't doing this as much as we used to.

We have discussed the problem of our youth not being interested amateur radio due to the preponderance of electronic gizmos that fill their lives.

We don't seem to be able to show them the usefulness of our repeaters as a tool for learning and communicating. Ham radio is a hard sell these days to kids, but if we don't show enthusiasm it's a fore drawn result that ham radio eventually will fade away. I know the ARRL says we have more hams than ever, but where are they?

This came to mind as I was struggling to get up to the 145.150 repeater site to fix the repeater and was wondering who I was doing this for. As usage drops, repeater owners and maintainers will be asking the same question. Eventually they will go away and then we'll have only cell phones. So get on, get talking and have some fun, learn stuff and get to know your fellow hams.

The ranting and raving is over for now. Our club does a lot of things right and has a bunch of good people in it. I'll see you on the air and at the next meeting which will be Bob Devarney *WIICW* and moon bounce, or talking in the noise.

73

Bob

## CONTACTS

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Web: *www.RANV.org*

Reflector:  
*groups.yahoo.com/group/RANV*

Meetings: 2<sup>ND</sup> Tuesdays • 7:00<sup>PM</sup>  
113 Patchen Road  
South Burlington  
The O'Brien Civic Center

Repeater: 145.150, PL100; *WB1GQR*

New Hams, Mentoring:  
*RANVMentor@gmail.com*

ing the controller protection diode if needed.

I assembled an assault team to take on the brutal job of getting there. My friend Russ who is an accomplished ATV rider and his son, Russ, had shown interest in a ride to the top. Did I mention that big Russ is a pretty rugged fellow to boot, a true asset on this trail.

We loaded my RAD (repeater access device) –ATV onto Russ's trailer at 0830 on Sunday and off to the mountain we went. After unloading and checking in with the mountain staff we were off at about 0940.

The trip up the ski area access road was uneventful, but this is where it starts to get interesting. We turned onto the tower access trail from the top of the main lift and proceeded with caution. Trying very carefully not to damage the terrain anymore than necessary, we proceeded through a couple of swampy areas and came to the bottom of "Heartbreak Hill."

Heartbreak Hill is a nasty piece of very steep slope with a stretch of bare rock in the middle of it, about 30–40' total, and if you screw up you risk serious injury. Russ rode right up it, then took his kid's machine. After I tried and had to back down, he rode mine up too—nice, quick, and easy. Earlier this year Mitch and I used a winch.

The rest of the trip was like wrestling a steer—we constantly had to steer over and around rocks and logs. Finally we arrived in the clouds, had a bit of fun with the lock, got inside, edged past the broadcast transmitters with all the switch toggles sticking out, and go to the generator room where the repeater rack is. I get out my trusty voltage detector and find that there isn't any AC power in the outlet we were plugged into and notice that the room light is out. I go look at the circuit breaker panel and don't see any red flags indicating a tripped breaker; this is important you'll see. What could be wrong? We used a volt meter to check the light socket and wall socket, nothing. This is odd! Back to the breaker box, this time I ran my hand down the breakers and, lo and behold, there is a breaker tripped but no red flag! Why not? Because these breakers don't have them, they just trip to the center and I missed it the first time.

Expecting it to trip again I reset the breaker. It didn't trip. The repeater came to life and Idled. Now we had to find the cause of the tripped breaker. There are two typical reasons a breaker trips, most commonly the circuit is overloaded. The other reason, much less common, is that it has failed. Since overload is the most common

## LOOKING FORWARD TO FEBRUARY

**I**T IS THE END OF SEPTEMBER AND DO YOU KNOW WHAT TIME IT IS? It is the start of the planning cycle for HAM-CON!

HAM-CON will be February 26, 2011, at the Hampton Inn. The planning consists of putting together the program of activities which will occur at the Convention. Contrary to popular belief, they do not happen by magic.

Ultimately, we will fill 8–10 forum slots and set up –3 demonstrations. It is boring just to repeat the same things year after year, so I plan on changing 80% of the program each year. But this is the part where you all come in. What interests you? What forums and demonstrations would you care to see? How much non-amateur radio content is acceptable? Please let me know your thoughts.

The good news is that the feedback from last year's HAM-CON had very little in the "major things to be fixed" category. Any changes you feel should be made? But please don't say the usual, "have more vendors" comment. You want more vendors then we need to double the attendance (and probably find a new location to handle it). Speaking of attendance, the numbers last year were all right, but also disappointing. Yes, I know this is the trend given the state of the economy, but with attendance dropping and convention costs rising, you know where that is heading toward. I can't tell you how many non-amateur events have gone away or are in serious trouble due to financial problems. Let's make sure that we don't even get close to that! Two things you can do now:

1. Make sure you don't plan a trip on the HAM-CON date (February 26<sup>TH</sup>)
2. Tell 10 friends about the show, and *make sure they come to it.*

problem, I started testing the current draw on the machine, .8 amps receive, 1.8 amps transmit. This was a 15 amp breaker, the repeater wasn't tripping it. Either there was an intermittent problem with the repeater or there was something else on the circuit.

Just as I began to ponder what else could be doing this, Russ, who was standing next to the generator, said sparks had just shot out of the engine's block heater. I heard it pop, too, and we saw a small cloud of smoke rise. This is the best kind of intermittent problem: the self-diagnosing type!! Further investigation showed the generator was connected to the same circuit as the repeater and some of the wiring was melted. Oddly enough it didn't blow the breaker this time so after calling the site manager and getting his permission, we disconnected it, got some pictures and model info for the heater so they could order a new one.

Nothing more to do here except lock the door, take the obligatory photo op of the assault crew, mount the ATVs and descend from the clouds. I got a few lessons in downhill riding and let Russ stand by the steepest part of Heartbreak Hill to grab the back of my ATV in case it tried to flip over forward—which it did, slightly. Back through the swamps and down the moun-

tain.

We loaded up the ATVs around 1130 and headed home knowing we would be back, but hoping it wouldn't be for a while.

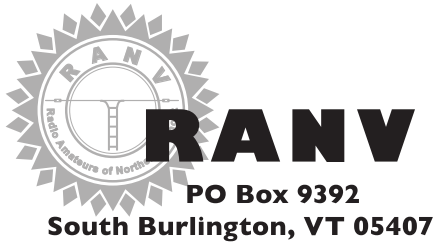
So...

It's fixed!

Now let's hear some activity!!!

### Upcoming, Notices, & Other Misc

- RANV: Next Meeting & Elections— November 9 @ DynaPower in South Burlington
- NEAR-Fest—October 15 and 16
- SET—Saturday, November 20
- Steering Wheel: 3<sup>rd</sup> Tuesdays— Ground Round, 1633 Williston Rd (Rt 2), South Burlington—6:30-8:30
- Dues due? Pay online at [www.ranv.org/ranvpay.html](http://www.ranv.org/ranvpay.html)
- VT Ham Radio Calendar [www.vthrc.net](http://www.vthrc.net)



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[www.RANV.org](http://www.RANV.org)

### NEXT MEETING

Tuesday • October 12 • 7:00pm

O'Brien Civic Center  
113 Patchen Road • South Burlington

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**"EME"**