



RADIO AMATEUR NEWS & VIEWS

The Official Journal of the Radio Amateurs of Northern Vermont

January • 2012

An ARRL Special Service Club

Vol. 22 • No. 1

NEXT MEETING: JANUARY 10

“TRANSCIVER DESIGN PART I LEARNING DESIGN TOOLS”

RICH LANG WIELL WILL BE GIVING A TWO-PART PRESENTATION on his current project: Designing and Building an HF Transceiver. He will discuss and demonstrate the design tools he will be using and explain the goals and constraints which are guiding his design decisions. Additional details can be found in the December '11 **NEWS & VIEWS**. Part I will be in January and Part II in March.

Following the presentation will be snacks and a chance to catch up with folks.



PITCAIRN ISLAND DXPEDITION

OPERATORS JACQUES F6BEE, NIGEL G3TXF, GILLES VE2TZZ, MICHEL FM5CD, and VINCENT F4BKV have announced a major DXpedition to the famous, mythical Pitcairn Island (OC-044, CQ Zone 32) in the heart of the Pacific Ocean. Efforts will be made to give this extremely rare entity to deserving DXers on as many bands as possible, but especially on the low bands. The team's plan is to be active as VP6T between January 20th and 29th, 2012.

Activity will be on 160–10 meters, including the 30/17/12 meter bands, using CW, SSB, and RTTY. The VP6T log will be uploaded to LoTW during the operation if possible; if not, immediately after the operation. They will try to update their VP6T log on “ClubLog” several times a day during the operation. This will help you track progress across the bands.

QSL Manager is Nigel, G3TXF. In addition to the usual routes (direct QSLing, QSLing via the Bureau, and e-mail requests for Bureau cards to QSL@G3TXF.com), they will also be using the new “Online QSL Request Service” (OQRS) provided by ClubLog.

For more details and suggested the frequencies, visit the VP6T website at: www.vp6t.org.



ODDS & ENDS

- ♦ The Flea-Table will be back at HAM-CON once again—Think about your thinner-than-you'd like wallet and how you might fatten it up! Got unused stuff lying around or tucked away? Time to re-home it and, with a bit of extra jingle in your hand, check out the HAM-CON vendors and see what you can find. You might even find that treasure right on the RANV Flea-Table next to your own stuff! Questions? Contact N1WWW@arrl.net. As always, no charge to sell at the table!
- ♦ The latest Fair-Rite Products <www.fair-rite.com/> catalog is an excellent source of material on ferrites. Another very good resource for identifying toroid cores (and many other useful functions) is DL5SWB's Mini Ring Core Calculator <www.dl5swb.de/html/mini_ring_core_calculator.htm>. This program has data on toroid cores from all identifiable makers, including dimensions and color coding which are usually the best parameters to check first. (ARRL Contest Updater, 8/31/11; Thanks, Carl KM1H, Jim K9YC, and Ian GM3SEK)

BIG EVENTS START OFF THE YEAR

MITCH W1SJ

TWO BIG EVENTS WILL START OFF the New Year. In what has become an annual event, the *Ham Breakfast* will take place Saturday, January 28th, 9:00 AM until Noon at JP's Deli, 39 River Road (Route 117), 1.4 miles east of the Five Corners. The first hour is devoted to eating and meeting. That is followed by a semi-organized discussion on some aspect of amateur radio. With 30–40 folks showing up, it is like a mini-hamfest. Make plans to join us the last Saturday morning in January.

AND SPEAKING OF HAMFESTS, the highlight of the winter season is HAM-CON, to be held on Saturday, February 25th at the Holiday Inn in South Burlington. The program is being put together as you read this and will be finalized in early February. Check the website (ranv.org/hamcon.html) for new information as it changes. One thing which we need everyone to do is to sell the show! Contact as many friends (both ham and non-ham) as you can and have them come to the hamfest. A great method to get pals to the show is to carpool. That way you can talk about the show before and after and easily get together for lunch afterwards. In today's world, it is not enough to put up some posters and send out e-mails to promote an event. The method which always works the best is for people to personally invite others. Please do all you can to get other hams (particularly those who have gone inactive) to attend the show and have a great time!

Advance-sale tickets for both regular (after 0800) and early admission (before 0800) can be purchased online now: www.ranv.org/hamconpay.html.



RANV: SECRETARY'S REPORT

JEFF NIYD, SECRETARY

The Holiday Party

Eighteen people made it out to the home of Mitch W1SJ for our annual holiday party. As usual, it was a great success, with food, conversation, music, and other fun.

The music this year was from WEVT, a low power commercial-free FM station. All of WEVT's content comes from a computer in Mitch's radio room. The website describes it as "Where all the good songs have gone," and it is a welcomed change from the usual commercial stations. The computer sends the music through the Internet to a transmitter in Enosburg.

I brought my crystal radio, and we tried to make it work with a natural crystal instead of a germanium diode. We used a piece of galena and probed it with a bronze wire. With a little fiddling, it worked!

Thanks and congratulations to Mitch and everyone else who made the party a success. Well done!



IN HONOR OF FESSENDEN AND HEISING

WHILE MARCONI'S NAME is most well known, from the early history of wireless, the names of Fessenden and Heising are only rarely mentioned.

As early as 1900 Reginald Fessenden was experimenting with the direct transmission of human speech. While, during WW1, Raymond Heising was developing a method of constant-current modulation that was one of the earliest forms of AM.

Since I have been one of the active CW 600m stations as part of the ARRL's Experimental License project for some time now, I decided to take a step or two further into the realm of early radio transmissions. One of the transmitters I have used for 600m CW and QRSS work has been a vintage homebrew design that could support traditional CW and Heising AM. Since the ARRL's Part 5 license only supports CW and narrow-band digital modes, the Heising modulator went unused until a new idea came to mind.

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MANY ON-AIR ACTIVITIES

MITCH W1SJ

WITH THE HOLIDAYS AND ALL OF THE CRAZINESS OVER, many of us are sitting around with not much to do. The lull of winter is a great time to get on the air. There is nothing like the warm glow of big vacuum tubes in the amp to warm a shack on a cold winter's day. This, of course, assumes that you have an amp with tubes and even have a shack!

The big event for us is the *Vermont QSO Party* on February 4-5th. RANV is hosting the event this year and we are pushing to get a lot more activity going. Plan on getting on and throwing out a few CQs mid-day. Even with a modest station you should get some action on 10 meters! Or, if you do not have a working station of your own, I will be hosting a multiop at my station and all operators are welcome to help out. The QSO Party is fun in that there is hardly anyone else on contesting (except for a couple of other state contests) and CQs will attract a good deal of attention. And if you want to spend more time ragchewing with a contact, you can do that too! Details on the Vermont QSO Party are on the RANV website.

Another fun contest is the *North American QSO Party* (NAQP) on January 21st. This is fun because it is a relatively short contest—only 10 hours. It starts right after lunch at 1 PM and, for single operators, ends at 11PM, in time for the late-night news. Being a smaller contest, the bands aren't as crazy, but there is certainly a ton of activity at the peak times. If you are Technician licensee, you can instead opt for the *VHF Sweepstakes* on the same weekend. Many of the mountaintop groups are off the air for this contest, but if you listen carefully, there are more guys at home operating.

If you are a CW operator, consider the *CW version of the NAQP* on January 14th. Same rules as the phone contest, but CW only. If you enjoy the Top Band, you will certainly want to focus on the *CQ Worldwide 160* meter contest on January 27-29th. This is Friday and Saturday night, all night! The CQ 160 contest brings out all the big gun DX stations, so it is a good time to pick up those European contacts. And a mere 3 weeks later, the ARRL *DX Contest CW* takes place. With 10 meters still hot, it promises to be a busy weekend.

And one of my favorite contests I can't operate in is the *CQ Worldwide Phone* contest on February 24-26. I can't operate in it because I have to get up early and make HAM-CON run! And a week later is the big one—the ARRL *DX Contest Phone*. If you are looking to work other countries, this is the weekend to do it!

So there you go—8 big contests in 9 weeks, not counting a myriad of other smaller activities. No reason to be bored this winter. And the good news—except for the nominal cost of electricity to run the radio—it don't cost 'ya anything to play!



Bookmark our backup site:
www.hamclass.net/ranv

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113 Patchen Road
South Burlington
The O'Brien Civic Center

Repeater: 145.150, PL100; *WBIGQR*

New Hams, Mentoring:
RANVMentor@gmail.com

THIRST QUENCHING ANTENNA

MITCH W1SJ

AS YOU MAY KNOW, I'M A TOP BAND ENTHUSIAST, which means I'm active on 160 meters, mostly during the ARRL and CQ Contests. I don't have a particularly competitive station, although my full-size dipole can hold its own with anyone while working short hops in the Northeast. However, I can't really recall ever setting anyone's receiver on fire in Europe. The big boys with their 200 foot high dipoles or phased verticals rule the band and I can only hope for the crumbs when they're done.

More than being heard, my biggest problem is hearing distant stations, particularly those in Europe. They are usually strong enough, but unfortunately the prevailing noise is usually stronger. Trying to copy anyone in Europe who doesn't have a monster station is a frustrating process of busted call signs and many repeats.

Serious Top Band enthusiasts use Beverage antennas to receive. Contrary to popular belief, a Beverage antenna is not made of beer cans. The name comes from its inventor H.H. Beverage. The Beverage is essentially a very long wire (1–2 wavelengths) pointing in the direction you want to receive. On 160 meters, this is VERY long—the wavelength of where I operate is 540 feet! The Beverage is very lossy and cannot be used for transmitting. In fact, signals are a couple of S-units weaker on it. However, the noise is even weaker still. It is the noise cancelling characteristics which make the Beverage so useful.

For years, I thought about deploying such an antenna. I even asked my neighbor if he would mind moving his house so that I could put a Beverage pointing west. He declined. However, to the Northeast, I have woods, and that's where I planned something.

I remembered that I had several hundred feet of 2 conductor twisted-pair wire which was used to connect the old Field Phones that we used for inter-tent communications during Field Day (how many of you remember that?). I pulled off 600 feet of this wire, shorted the two conductors together and ran it out the shack window, up past the tower, out East for a bit to get around the neighbor's backyard and the remaining 400 feet ran Northeast down the path in the woods. I set the wire to go through trees and branches which held it up some 10–20 feet above ground, which is a typical height for a Beverage. In the shack, I fed the wire into my little MFJ tuner so that the antenna matched the 50 ohms of the receiver. I invested all of an hour to string all this up. But with no one on 160 meters during the day, I had to wait until nightfall.

Later on, I tuned around on 160 meters using both the dipole and Beverage. With the Beverage, signals were quite a bit weaker and the antenna didn't seem to help readability much. However, these were all stations in the U.S. Finally, I found one signal which was tough to copy on the dipole, but it was magically lifted out of the noise on the

Beverage. And this signal was from Europe! Eventually, I found another signal from Europe and the same thing happened. I was ready to try it in the contest!

I worked a couple dozen European stations in the ARRL 160 meter contest and it was a pleasure to work them as opposed to

the struggles I've had over the years. When I realized that a DX station was calling, I quickly flipped the antenna switch to the Beverage and they popped right out of the noise. This was great! I even tried the Beverage on a VE9 in the Maritimes, which is in the same direction as Europe and his signal was much improved too.

I read in the literature that to work properly, a Beverage must be carefully planned and not just tossed into the air. Either the author is a stickler for details, or else I was very fortunate in my project. Certainly the antenna can be improved by keeping it running in one direction, not tying it around the rain gutter, and by using the proper terminating resistor at the end (I left mine open).

So if you are looking for a way to hear better on 160–40 meters, and have woods or sympathetic neighbors with treed lots, and have lots of wire, the Beverage just may be the trick you need to work more new stations!

If the writing seems strange in this article, in an insane stroke of multi-tasking, I am writing it while operating CW in the 160 meter contest!



Fessenden & Heising

Fessenden's early work includes a very unique 1906 Christmas Eve transmission of him playing the violin, a recording of a "Ombra mai fu", and him reading a Bible verse. An idea was thus born to apply for an FCC STA (Special Temporary Authorization) for 600m operation that is for amplitude modulation, in particular the Heising modulation. With the cooperation of commercial coastal CW station WNE and the FCC's OET (Office of Engineering Technology) the STA with call sign WF9XIH was granted for AM transmissions until March 1st, 2012 with a center carrier frequency of 472.5kHz. The plan is to begin a series of evening test transmissions the week of December 18th, 2011 with a special recreation of Fessenden's Christmas Eve transmission at 0200z on Dec 25th. (That would be 9pm EST Dec 24th, 2011).

Since the likelihood of a 5w AM signal being heard much beyond a few 10's of miles, a 500W solid state linear PA will be used for best DX. WF9XIH is licensed for up to 20wERP (just like the WD2XSH stations) and every effort will be made to run as close to that ERP as possible. The same antenna (a 160m dipole feed as a Marconi-T against ground) that has been used for WD2XSH/31 will be used for WF9XIH.

Commercial station WNE is currently running CW marine weather transmissions at 2200z & 0100z daily. So you can sharpen your 25WPM CW skills at those times too. WF9XIH transmissions are being coordinated with WNE and any changes to the WNE schedule will alter the WF9XIH operating times.

The current plan is to at least make a Heising AM transmission most evenings at 0200z. Audio loops of speech and a series of stepped audio tones will be used most of the time. The stepped audio tones will make it easier for DX listeners to demodulate in CW or SSB mode even when they are well beyond the range of the AM signal.

Information about WD2XSH/31 can be found at: <http://w4dex.com/500khz/wd2xsh31.htm>

If you copy any of the transmissions, please be sure to log them at www.500kc.com

73, Brian Justin, WA1ZMS/4 & WD2XSH/31 & WF9XIH



[http://www.southgatearc.org/news/december2011/in_honor_of_fessenden_and_heising.htm. Brian is from VT and is a GMWS member and was a RANV member for a while too.]

VE Exams

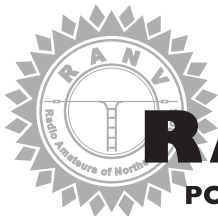
Every 2nd Friday
6:30–8:00PM

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, and the exam fee (\$15—exact amount only please).

Directions:

barcv.net/directionsarc.html
CARL AB1DD@arrl.net



RANV

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NEWS & VIEWS

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Upcoming, Notices, & Other Misc

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- HAM BREAKFAST—1/28, JP's Essex Junction
- VT QSO Party—Feb. 4 & 5
- HAMCON—Sat., 2/25, Holiday Inn, S. Burlington
- Steering Wheel: 3rd Tues, 6:30-8:30
Ninety-Nine Restaurant, Taft Corners
- Dues due? Pay online at www.ranv.org/ranvpay.html
- VT Ham Radio Calendar www.vthrc.net

NEXT MEETING

TUESDAY • JANUARY 10 • 7:00^{PM}

O'Brien Civic Center

113 Patchen Road • South Burlington

“Transceiver Design”

www.RANV.org