



# RADIO AMATEUR NEWS & VIEWS

The Official Journal of the Radio Amateurs of Northern Vermont

February • 2017

An ARRL Special Service Club

Vol. 27 No. 2

**NEXT RANV MEETING - FEBRUARY 14<sup>TH</sup>**  
*TEST EQUIPMENT FOR THE HAM RADIO OPERATOR*  
*Basic and more... with useful applications demonstrated.*

This will include digital multi-meters, watt meters, and antenna analyzers

Members are invited to bring instruments they find useful that are not in the list above for viewing and explaining briefly as time permits.

Brought to you by Bob, KB1FRW.

**HAM BREAKFAST A HIT!**  
*Mitch W1SJ*

The annual Ham Radio Winter Breakfast was held Saturday, January 28th and was another hit. All told we had 31 people come out to chow down and talk ham. Attendees came from as far away as Central Vermont and Plattsburgh. We also acknowledged the oldest and youngest in the group. We tallied 3 octogenarians (over 80) with two attendees within a month of each other at 84 years! Our youngest was under 30.

The discussion was “What you did in Ham Radio Last Year” and “What you will be doing in Ham Radio This Year”. While a few mentioned, “nothing!” we heard many interesting stories of what hams in our area have been up to and what they are planning. And this is a good point for all our readers – try to set a goal to do something new each year. It keeps the hobby fresh for you.

Half the group was RANV members and they included:  
**AA1SU AB1DD KB1FRW KB1LOT KB1MDC**  
**KB1VJD KB1VJE KB1YGP KC1APK KC1CPZ**  
**KI6ISG N1BQ N1WCK W1SJ W1SLR W1ZN W4YFJ.**  
Missed the gathering? Be sure to join us at HAM-CON in 3 weeks!

## CONTACTS

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US Mail: PO Box 9392  
South Burlington, VT 05407

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

Reflector: [groups.yahoo.com/group/RANV](http://groups.yahoo.com/group/RANV)

Meetings: 2<sup>nd</sup> Tuesday • 7:00 PM  
Wheeler House  
1100 Dorset Street  
South Burlington

Repeater: 145.150, PL 100; WB1QR

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New Hams, Mentoring:  
[RANVMentor@gmail.com](mailto:RANVMentor@gmail.com)

## HAM-CON HAPPENINGS– February 25<sup>th</sup>

*Mitch W1SJ*

The ARRL Vermont State Convention, commonly known as HAM-CON will take place Saturday, February 25<sup>th</sup>, 8AM until 1PM at the Holiday Inn Convention Center in South Burlington.

We have a lot of great events planned for you. Our guest speaker from the ARRL will be ARRL Media and Public Relations Manager Sean Kutzko KX9X who will discuss the success of National Parks of the Air, then will lead a roundtable on applying the lessons and skills learned from NPOTA to other portable operating events and programs. Directly following this, Mitch W1SJ will show you how to set up a portable or not-so portable ham station ANYWHERE, including some very exotic National Parks in New York.

Speaking of antennas, we have two great speakers on this topic. Our Skype speaker is Tim Duffy K3LR. If you operate any contests, that call sign should be very recognizable. Tim runs DX Engineering, used to be involved with LTA antennas, helps run Contest University at Hamvention and was a big player at WRTC 2014. He will discuss the antenna systems used at his ham shack. But have you ever wondered what RF looks like to an antenna? Dale Clement AF1T will be on hand to present, "See How Antennas Work". He will actually light up the airwaves with RF showing you how antennas pick signals out of the air.

Not only will we teach you about building antennas, but we will also offer: "Ham Radio and the Law: Getting It Up and Keeping It Up." We are honored to have Fred Hopengarten Esq, K1VR lead a discussion on avoiding restrictive covenants, what to do if you made that mistake, and a controversial update on the ARRL's "parity bill".

If you prefer your antennas to be more along the lines of VHF and UHF bands, we have as special treat for you. Mike N1JEZ will detail how he set up his super VHF station at camp up in the Northeast Kingdom, including details on types of equipment, antennas, generators, and how the Internet has changed the way VHF operators find contacts.

A popular feature at HAM-CON is the ARRL Forum where we all get to find out what's happening at the League and amateur radio worldwide.

We'll also have our Activities Room, chock full of demonstrations, such as the W1V Special Event Station, Satellite demo, DRM/Digital Voice Demo, Equipment Test Bench and any other neat things we can find.

And don't forget to wander over the Vendor Room where dealers and hams will have all sorts of goodies for sale. The show will come to an end with the closing ceremonies where we give away neat stuff, like a full size HDTV. And if you are looking to get a new or upgraded license, we can take care of you at the VE Session.

It's a virtual 3-ring circus of ham radio, all under one roof. HAMCON 2017 – be sure to be there!

Details on HAM-CON are at: [www.ranv.org/hamcon.html](http://www.ranv.org/hamcon.html)

## MISSING NPOTA OR W1AW? MAYBE TRY VPOTA

*Bob H. KBIWXM*

Participating in National Parks on the Air last year was quite exciting, especially activating a park. It was like a mini-Field Day; there were mosquitos, lots of sweating, some poison ivy, and stretches of nice pileups. Except for the winter activations, which included freezing almost to death, extra difficult antenna setup, and freezing to death. RANV arranged several club activations for as many members who could participate, complete with two 500+ watt stations on 20 and 40 meters. For those of us who went to those club activations, or who activated with just one or two hams, we look forward to another similar ARRL sponsored event. It's a good excuse to get outside, set up a portable station and get on the air to make as many contacts as possible. And, no, Mitch, this isn't a contest, the main goal is to have the most fun possible in the span of one day.

Since the League does not have a replacement for NPOTA this year, I propose RANV, and possibly BARC setting up "mini DXpeditions" to Vermont state parks run as Special Event stations, using club call signs. Many club members have portable stations to facilitate the equipment needs for two high power stations, including antennas. All that's needed is the will of enough club members to set forth and "conquer" the state parks of Vermont! If nothing else, this proposal will make for some lively discussion at future club meetings, since no one in their right mind would want to set up a 500w station in the dead of winter in a closed state park.

## FEATURED PLATE OF THE MONTH



**Thank you Brian!**

*Got a ham plate or Amateur related vanity? Send us a picture and we'll feature it one of the upcoming newsletters.*



## RANV ROCK STARS - THE 'OTHER' HOBBY

Kathi [K1WAL](#) and John [VE2EQL](#) met up in Tucson at the many Gem, Rock and Jewelry shows that occur in the area this time of year.

One of the little known facts about John is that among other things he is a licensed prospector in the Province of Quebec. His business partner Suzanne Charlebois is a Gemologist. John and Suzanne came out to Tucson to work in a booth for BS Rocks & Gems at the Keno Gem Show while Kathi was there with her husband to enjoy the shows and do some collecting out in the desert. They had hoped to all go out collecting together but schedules didn't work out.

## ARRL CLUB GAVEL COMPETITION

*Paul N. Guyet AA1SU*

For several years, the ARRL has had a subset of scores in their contest results articles. It is called the Club Gavel Competition. Clubs that are affiliated with the League can compete against each other for bragging rights, and an actual gavel (for Bob). RANV's participation in this has been sparse at best over the years, even though we are tops at Field Day. I would like to see us compete in this area again. These contests make great practice for Field Day and vice versa. The rules recently changed for this competition, so it is a good time to announce it.

There are three categories of club competition. They are Unlimited, Medium, and Local. We will be participating in the Local category. The rules are that we submit between 3

and 10 entries, and that we operate within 35 miles of the club's designated center. This is now calculated with 6 digit grid square locators. The club's designated center can change from contest to contest. Most of us surround South Burlington. However, let's say that Cathy N5WVR of Barre, and Robin N1WWW of Shoreham want to compete in the RTTY Round-Up. I would put the club center in the Bristol area. Then, let's suppose that Adam KB1LHB of St. Albans, and Richard KB1YTO of Johnson, want to play in the 10 Meter Contest. I would put the club center near Smuggler's Notch and so on.

If you plan to operate in any of the 9 ARRL contests listed below, you need to send me your 6 digit grid square ahead of time (available on QRZ). You should also tell me what contests you think you might participate in. From that, I will come up with a club center to start with. Then, I submit a list to the League *before* the contest. My email address is: [AA1SU@arrl.net](mailto:AA1SU@arrl.net).

When you enter your station information into your favorite contest software, you must spell the name of our club out – Radio Amateurs of Northern Vermont. No abbreviations. Then, you just have to submit your score by the deadline. Your software will create a Cabrillo file for you.

Here are the 9 ARRL sponsored contests:

1. January VHF Contest
2. RTTY Roundup (January)
3. (February and March) International DX Contest
4. June VHF Contest
5. August UHF Contest
6. September VHF Contest
7. November Sweepstakes
8. (December) 160-Meter Contest
9. (December) 10-Meter Contest

I will try to send out reminders to the club email reflector before each contest. After each contest, we should post our scores there as well, so we can all see our progress.

Contests are a great way to learn about propagation, ways to improve your station, become a better operator, and to work on awards such as Worked All States and DXCC. So please consider working a few contests this year and getting RANV some more recognition in QST.

## SECRETARY'S MINUTES – JANUARY 2017

Kathi KIWAL

There were 22 in attendance on a windy, snowy evening. Bob **KB1FRW** called the meeting to order. We began by introducing 4 new members: Norm **K1EEX**, Jack **N1XGB**, Jason **KILOL**, and Kevin **KC2GAL**.

We discussed upcoming events: Ham breakfast on 1/28, VT QSO Party 2/4-2/5, and we talked about various forum topics for HAM-CON.

Duane **WL7CVD** generously offered to bring snacks for the February meeting. We were snackless for this meeting but somehow survived.

### Presentation: Low Band Antennas

Mitch **W1SJ** gave an informative presentation on Low Band Antennas. He began with some Antenna Theory. He said Maxwell's Equation is nice but he developed Stern's Law of Antenna Theory.

1. When choosing between two proper antennas, the bigger is better.
2. SWR has nothing to do with signal strength. The right spot has more gain.
3. Location beats any antenna.

Mitch talked about Design Parameters - radiation resistance, SWR & impedance, and ground effects & gain. SWR doesn't affect radiated power but does affect the transmitter if it's too high. He emphasized that height is measured in wavelengths.

The Low Bands are 160m, 60m, 40m, and 30m. Low band propagation is driven by D-Layer absorption. Grey line is best. Low bands are better in the wintertime as the sun affects the D Layer. Long haul DX requires a path of darkness so is best at night and along the greyline. Low band propagation is killed by solar or magnetic activity. The noise level is often a limiting factor in hearing anything. Use the greyline map to figure out when and where to operate.

Some low band characteristics - 40m at night is worldwide band. Daytime is good for medium or short skips. 40m/80m at night offer longer skips but can block local QSOs. 160m at night is good for local QSOs.

When considering low band antennas knowing the vertical takeoff angle is critical. For best results match best antenna with the takeoff angle. Mitch spoke primarily about dipole and vertical antennas.

Dipoles are the best antennas for the least cost. Recall that the length is  $468 \text{ ft} \div \text{freq (MHz)}$ . A Dipole at less than  $\frac{1}{4}$  wave (80m 64', 40m 32') radiates at about  $60^\circ$ - $90^\circ$ . This is good for short skips out a few hundred miles. Dipoles at  $\frac{1}{2}$  wave (80m 130', 40m 94') radiates best at  $20^\circ$ - $45^\circ$ . This is good for most DX, the higher up the better. An 80m dipole

with parallel wire feed will cover all the lower bands. See the RANV logo for an example.

What if a dipole doesn't fit the space you have in your yard? They can be zigzag left and right or up and down, just be sure to keep the bends gradual. Sometimes a deal can be made with a neighbor to run some of the length in their yard. You can always shorten it a little (e.g. 200' instead of 256') but this will make the antenna less efficient.

Vertical antennas have a very low angle of radiation but needs a good ground system. Verticals are usually  $\frac{1}{4}$  wave high. Ground is rarely a "good" ground, especially here in VT and New England. Again, recall that for a vertical antenna the length is  $234 \text{ ft} \div \text{freq (MHz)}$ . Verticals radiate well in all directions and offers good DX when set up correctly with a good ground system.

Mitch went over vertical ground system. Some guidelines are to have radials to  $\frac{1}{4}$  wavelength sowed a few inches underground. 32-64 radials 0.1-0.2 wavelength (50'-100' long for 160m.)

There are some compromises with verticals to make them fit – elevated radials, inverted L

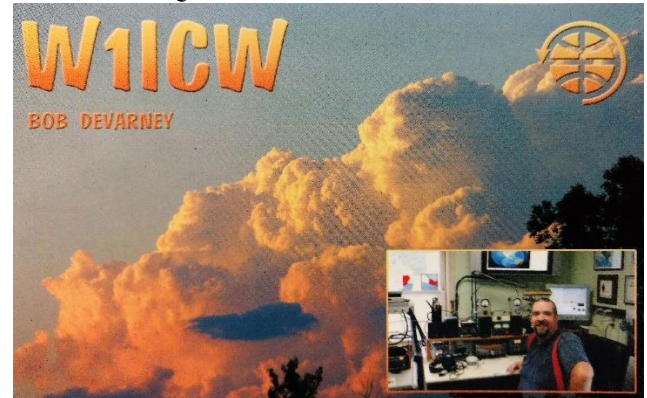
Mitch brought up the problems with receiving on lower bands. While stations can hear you but you can't hear them. Once solution is to have a receiving antenna. Low band receiving antennas such as Beverage Antennas (~1 wavelength) work well if you have lots of land and are very directional. Another option is a receiving loop antenna.

Mitch ended his talk with some good suggestions then fielded some questions.

- Determine your goals
- Choose a good location
- Pick the antenna to get the job done

Amplifiers are good for low bands since dealing with lots of noise.

### FEATURED QSL CARD OF THE MONTH



**Thank you Bob!**

Have YOUR card featured... Send us a copy and we'll highlight it one of the upcoming newsletters.

## WINTER FIELD DAYS – FL DXPEDITION

Brian [WB2JIX](#)

DXHEAT worked for me. I worked five VTQSO Party stations from our Field Day here in Jacksonville Beach, FL including: [KB1FRW](#), [AA1SU](#), [W1KOO](#), [K1VMT](#), and [N5WVR](#) on 20M USB.

Most of the guys at our location had never seen or used open wire line.

We used a tennis ball launcher to shoot a line up into a tall pine tree. On the second attempt, a large Osprey landed right on the branch we were shooting for. I guess he was curious about what we were doing. When he moved on, we were able to get the line just right. We used a 125' doublet as an inverted V.

We attached one end to an old 4x4" post and the other end to a tree. We then straightened out the feedline to get to my balanced input tuner which was being held down on a deck railing by a bungee cord. When I realized the feedline length was 66', I decided to move the tuner so we could shorten it. I didn't want a 66' resonant length of feedline to make tuning on 20M impossible. We cut the feed to about 58', hooked it up to the tuner, put out 5W on 20M to tune it and were on the air. My first contact with 10W was Lithuania. I had some pretty impressed onlookers.

I made many contacts at the 100W level and then was told I needed to "tone it down" since the other guys were all running QRP on 20M SSB, JT65 and PSK31 as well as doing a WSPR demo. It was time to coordinate who was working what at that point. We took turns being on the air.

It was great to work several VT stations. 73! Brian/[WB2JIX](#)

## VT QSO PARTY INITIAL RESULTS

Mitch [W1SJ](#)

The Vermont QSO Party came off very well, despite very lackluster conditions.

Unfortunately, a death in the family required my attendance at a funeral from Saturday afternoon through Sunday. The [WINVT](#) host station moved to [KB1FRW](#)'s shack in Richmond and continued on the air. While Bob's station is similar to mine on 20 and 40 minutes, unfortunately his 80 meter antenna is not that good, so his nighttime operations were very limited after 40 meters stopped producing. Bob did a tremendous job keeping the operation going.

Three hams were trained on the air - Beverly [KI6ISG](#), Bryan [KB1WUF](#) and his son Liam. I am very happy that we were able to continue in our training mission.

Conditions were rough. Normally, I set up shop on 20 meters and run a couple of thousand QSOs. It was clear that this would not be script this year. Nighttime activity was tough - 40 and 80 meters were OK, but didn't produce big rates for very long. On Friday night, I found myself spending a good deal of time on 40, 80 and even 160 meter CW. I had to QSY every 45 minutes or so to keep the rate running along before I worked everyone out.

Morning conditions were also challenging. The Black Sea Contest had lots of Europeans on 20 meters and I did my best to pick out QSO's on both Phone and CW, along with quick runs on 40 meters. Finally, at 10AM, with the sun starting to set over Europe, I had the propagation upper hand and was able to run Europeans. It was totally insane with an average of 150 QSO's per hour for a full 2 hours! The runs continued into the afternoon as I turned the beam West and focused on stateside. At 1:40, Debbie ripped me from the radio and tossed me into the car for the trip to the airport, as I was E-mailing the logs to Bob to take over the operation.

I continued on as a spectator, watching the cluster on the laptop and passively seeing how things played out. It was impressive - I saw many spots for [WINVT](#), [K1VMT](#), [W1JXN](#), [N1GVT](#) from various counties, [N5WVR](#), [N2TOM](#), [AA1SU](#) and a few others. If you were looking for VT - we were there.

On Sunday, things slowed down - with no Black Sea Contest or other QSO Parties, many contesters were off line. The European run didn't even happen. But plenty of other hams were still worked throughout the entire day.

When I get all the logs in, I'll be able to see what the level of activity was like across the board. Look for the results on line in a few weeks.

Vermont was definitely in the house. Great work everyone!

## POP QUIZ – Answers below

Technician Question: T2C06

*Which of the following is an accepted practice to get the immediate attention of a net control station when reporting an emergency?*

- A. Repeat the words SOS three times followed by the call sign of the reporting station
- B. Press the push-to-talk button three times
- C. Begin your transmission by saying "Priority" or "Emergency" followed by your call sign
- D. Play a pre-recorded emergency alert tone followed by your call sign

General Question: G1C07

*What is the maximum symbol rate permitted for RTTY or data emission transmission on the 20-meter band?*

- A. 56 kilobaud
- B. 19.6 kilobaud
- C. 1200 baud
- D. 300 baud

Extra Question: E1F02

*What privileges are authorized in the U.S. to persons holding an amateur service license granted by the Government of Canada?*

- A. None, they must obtain a U.S. license
- B. All privileges of the Extra Class license
- C. The operating terms and conditions of the Canadian amateur service license, not to exceed U.S. Extra Class privileges
- D. Full privileges, up to and including those of the Extra Class License, on the 80, 40, 20, 15, and 10 meter bands

## LOCAL NETS

Monday	8 pm CVARC 160 meter net 1966 kHz
Tuesday	8 pm East Coast Tech Net 147.150 (+) PL123.0
Wednesday	8 pm BARC 146.610 (-) PL100
Thursday	7 pm STARC 145.230 (-) PL100
Friday	8 pm Covey Hill 146.685 (-) PL100
Sunday-Friday	5 pm Green Mountain Net 3.933 MHz

*Got a favorite net? Let us know and we'll add to the list!*

## HAM CLASS

*Mitch W1SJ*

A one-day Technician Class will be offered Saturday March 25<sup>th</sup> in Essex. The class includes the on-line ham class web site, a full day of training and VE session at the conclusion.

Contact Mitch at [w1sj@arrl.net](mailto:w1sj@arrl.net) for enrollment details or go to [www.ranv.org/weekend.html](http://www.ranv.org/weekend.html).

## EDITOR NOTES

*Dave KCIAPK*

**WE WANT TO HEAR FROM YOU!**

This is your club newsletter. Feel free to submit articles! Articles can be short, long, technical, anecdotal, etc. Share your experiences, ideas, and stories!

If you would prefer to receive an electronic version (pdf) of the club newsletter, please contact me at [davidblin@aol.com](mailto:davidblin@aol.com). I will need your name, call sign, and email address.

Answers: T2C06 - C G1C07 - D E1F02 - C Good Luck!



## NEWS & VIEWS

### INSIDE

- HAM BREAKFAST A HIT
- HAM-CON: FEB 25<sup>TH</sup>
- VPOTA ANYONE ?
- FEATURED PLATE
- RANV ROCK STARS
- ARRL CLUB GAVEL COMPETITION
- SECRETARY'S MINUTES
- FEATURED QSL CARD
- WINTER FIELD DAY / FL DXPEDITION
- VT QSO PARTY INITIAL RESULTS
- POP QUIZ
- HAM CLASS: MAR 25<sup>TH</sup>
- LOCAL NETS
- EDITOR NOTES

### NEXT MEETING TEST EQUIPMENT FOR THE HAM RADIO OPERATOR

Tuesday • February 14th • 7:00pm  
Wheeler House, 1100 Dorset Street  
South Burlington, VT

### Upcoming, Notices, & Misc

- Steering Wheel: 3rd Tues 6:30; Ninety-Nine Restaurant, Taft Corners, Williston
- VE Exams every 2nd Friday; Red Cross Building 29 Mansfield Ave, Burlington
- Dues due? Pay online at [www.ranv.org/ranvpay.html](http://www.ranv.org/ranvpay.html)