



Radio Amateur News & Views

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MICROWAVE OPERATIONS The October 8th RANV Meeting

What is microwave? We generally define it as frequencies above 1000 MHz. Amateurs have many bands they can use in this region, including 903, 1296, 2304, 3356 MHz and 5.7, 10, 24, 47 and 75 GHz. Some experimenters, like Brian WA1ZMS, formerly of Vermont, play on even higher frequencies.

Contacts can be made on these frequencies with relatively simply equipment. The biggest requirement is having a clear path.

This month we are honored to have Mike N1JEZ and Henry KT1J present on Microwave Operations. Over the years, Mike has been very active in satellite operations and VHF/UHF weak signal communications. He is one of the most competitive Rover operators in the VHF contests. Recently, he has built up his Rover station to include the microwave bands. I had a chance to use this station in the June contest and it plays well – and Mike has improved it since. Mike will be assisted by Henry KT1J, who often helps Mike with microwave communications.

Why use microwave? If you have the line of sight path, microwave allows very wide bandwidth – perfect for data and video transmissions. There is a lot less traffic on microwave than on 2 meters!

The focus for this meeting will be hands-on communications. There will be demonstrations of simple microwave equipment and discussion on how to set up a station. We will emerge from this meeting as dangerous microwave operators!

Activities get underway Tuesday night for dinner at Zach's at 6 PM. The meeting starts at 7 PM at the O'Brien Civic Center, 113 Patchen Road, South Burlington.

FOX HUNT OCTOBER 11TH

Tune into 145.15 MHz for the final Fox Hunt of the season. The hunt will start 6 PM on Friday, October 11th. John KB1EYC and Leela KB1EZD and Leo KB1EZE will be the Foxes for the evening. The rules are simple: be the first to find the Fox by listening on 144.55 MHz. The Fox will hide in a public accessible spot, will produce at least an S-1 signal at I-89 Exit 14 and will transmit at least 10 seconds out of every minute. The winner of the hunt will get full bragging rights and will become the Fox for the first hunt of 2003!

HOSSTRADERS

Just as you receive this newsletter it will be time to head down to Hosstraders. The location is the *Hopkinton State Fairgrounds* in New Hampshire. Take I-89 into New Hampshire and head for the *Exit 7 – Davisville* exit. After getting off, go left under the highway for 0.2 miles and then go right (*Warner Rd.*). The fest will be about a mile down on the left side. The trip is about 2 hours from Burlington.

The fest opens at 9 AM on Friday, October 4th and winds down 1 PM on Saturday. Exams will be given on Saturday at 9 AM. Admission is \$10 before Friday at 3, \$5 afterwards. Sellers pay \$10 additional.

The Hopkinton Fair Grounds is a real nice place. There are plenty of areas shaded in pine trees, as well as open areas. There is a map of the Fair available. Download it at <http://www.ranv.org.hossmap.jpg>.

For communications, use 145.15 Mhz into New Hampshire, then 145.33 MHz. At the hamfest, check in on the 146.67 MHz repeater.

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OUR LAST RANV MEETING

by Bob KB1FRW

The last RANV meeting started at 7:00 PM, September 10th, 2002, at the O'Brien Civic Center. There were approximately 23 hams that turned out. The activities started right away because the show was outside and the light was leaving by 7:30. The show consisted of 4 fully portable battery operated HF stations and 1 mobile station, HF to almost light.

The first station I came to was by Ed N1PEA. His station was a W3FF *Buddipole* Portable Dipole that tunes 7-54 MHz by adjusting taps on the coils. For more information see <http://www.buddipole.com/buddipole.html> or for homebrew, <http://www.qsl.net/w3ff>. Ed was also set up for PSK-31.

The next station was presented by Bob WE1U, with his *Elecraft K1* with the 40, 30, 20, and 15 meter modules installed, and running on 8 internal NiMh AA batteries. Bob had put up 40-meter dipole and an *Outbacker* vertical antenna.

I then sauntered over to Brian N1BQ's, setup, which was his *Yaesu FT-817* running from a portable battery with an 8-foot vertical military surplus whip stuck in the ground and a counterpoise wire that wraps up in a chalk line spool (*without the chalk*). Brian was tuning the rig with a *LDG Z11* auto tuner.

The last HF station was manned by Dave W1DEC, with his 100-watt *Icom 706MKIIG*, an *Icom AT-4* Automatic Antenna Tuner, an end fed 33-foot antenna, and two ground wires. Dave's complete station fits in a standard backpack and weighs about 46 pounds. This station is taken on sailing trips to the Caribbean.

Dave has a few tips when traveling out of the country: it is essential that you carry copies of your FCC license, and receipts evidencing your ownership of the equipment. Also, tell airport security in advance about what's in the pack before they run it through the X-ray machine so they don't panic! Should they be unfa-

miliar with ham radio equipment, ask them to summon a pilot from the flight crew. They can generally put security personnel at ease by confirming that the equipment is amateur radio equipment since it's similar to what they use in the cockpit.

An unexpected arrival was Mike N1JEZ, with his mobile VHF-and-up road show. Big yagis for microwave bands, complete with rotor, are mounted on his vehicle roof rack. The N1JEZ RoverMobile was carrying equipment capable of operating on 50 MHz through 24 GHz. He didn't bring the Laser system! You can visit Mike and the gear at hometown.aol.com/mike73/index.html.

There were a few contacts made but most of the time was spent just asking questions and seeing how the different stations could all be used for portable field operation.

At 8:00, Brian continued the club business meeting outside. Brian moved to approve up to \$600 to purchase another AB-577 "Rocket Launcher" portable antenna tower for Field Day, I seconded, it was discussed briefly then Brian moved to include freight and bring the total to \$700, Dave, W1DEC, seconded; the vote was unanimous.

ARRL section manager, Paul AA1SU, handed out appointments for his cabinet, Mitch W1SJ, Technical Coordinator (TC), Mike N1JEZ, Technical Specialist (TS), Dave W1DEC, Official Emergency Station (OES) and State Government Liaison (SGL). Paul also presented Bob KB1FRW, with an ARRL "Emergency Communications Commendation" for assisting with the Franklin County E-911 net on August 31st, when a main telephone line was severed and many towns in Franklin and Grand Isle counties lost the ability to call 911.

The meeting ended when it got so dark outside that we could not see each other!

THE PREZ SEZ

by Brian N1BQ, President

Fall is upon us! This month's meeting will feature Mike N1JEZ, ARRL Technical Specialist and AMSAT and microwave guru, and his companion on microwave crime, Henry KT1J, doing a session on practical Microwave operations. They will be showing simple microwave equipment that will not only let you talk, but send video and data. The presentation will be done in such a way to let you all get your hands dirty if you wish.

The November Meeting will have a full agenda. There will be three mini-presentations. Paul AA1SU, ARRL Vermont Section Manager, will talk about the League and its role in Vermont ham radio. Carl KC1WH, will speak on Amateur Radio Emergency Service (ARES). There will also be a presentation on Geocaching. While not strictly a ham radio activity, it is one of the fastest growing techno-related outdoor activities in the country. N1BQ, N1PEA, W1SJ, WE1U will present.

Last but certainly not least we will be holding the annual elections first thing during the November meeting. See my article on RANV officers for details on this important process.

Contacting RANV

In Person: Meeting, October 8, 7pm,
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Please send submissions for the newsletter to the editor, W1SJ.

RANV OFFICERS

by Brian NIBQ

It's been ages since we had a contested election and whomever does get "elected" is often jokingly asked questions along the lines of "Whatsa matter, you couldn't run away fast enough?" While we joke about it, choosing officers is not a joke, but a very serious process. Leadership and dedication keeps the club going and keeps fresh ideas flowing for presentations and activities.

We have had something of a shakeup in the club management in the last year. Paul, AA1SU, was asked to step up to being Vermont ARRL Section Manager. As a result, I had to step up from Vice President/Treasurer to President and in the same time frame Charlie W1CHG, came down with health problems requiring him to step down as Secretary. Debbie W1DEB, stepped into my former role but her recent teaching assignment prevents her from attending Tuesday meetings. Several people have intermittently covered Charlie's duties as Secretary.

A club like **RANV** cannot run by itself nor can it suffer long under patchwork coverage by its officers. I plan to run for election as President. We need two individuals to step up to run for the Vice President/Treasurer and Secretary positions.

None of these positions is very strenuous. VP/Treasurer, requires showing up for most meetings, checking the **RANV** mailbox once a week, writing three to six checks per month and balancing the checkbook. The secretary needs to attend all the meetings, make a record of attendance and take notes on what occurred at the meeting to be written up and submitted to the newsletter editor. All of the officers attend a Steering Wheel Meeting once a month about a week after the regular meeting. If everyone does their job, none of us need put in more than 10 hours per month on club business, most months less. So think about it. Wouldn't you like to help the club move forward?

CONTEST CORNER

by Paul AA1SU

We begin this weekend (Oct 5-6th) with a reminder that the *California QSO Party* will be on the air. It starts at 12 Noon on Saturday, and ends at 6 PM on Sunday. Single operators can only work 24 of the 36 hours. The bands will be 160 through 2 Meters and you can work SSB or CW. This is the largest state QSO Party of the year, and all 58 California counties should be activated. Most contesting software will support this contest, which is handy because it gives you a list of the counties and their abbreviations. You can visit www.cqp.org for even more information on this fun contest. The Vermont record for this contest is 86,725 points scored by our own KK1L in 2001!

Skipping a week and moving on to October 12-13th, you can try your hand at a variety of contests, including *Worked All Germany* and the *Pennsylvania QSO Party*. Now the Pennsylvania contest is nice because you get more points for 160 and 80 Meter CW QSOs. And since they are relatively close to us, this is easily accomplished under cover of darkness. SSB contacts count for one point, and there will be plenty of those too. The hours are Noon to 1 AM Saturday, and 9 AM to 6PM on Sunday. This gives you plenty of time to sleep.

Looking to October 25-27th, there is "The Contest": the *CQ Worldwide SSB Contest*. For those of you looking for rare DX and limited to phone, this is for you! It is a 48-hour contest, starting at 8 PM on Friday, and the whole world will be on. There is no credit for stateside contacts, only DX. You could easily make a dent in your quest for DXCC while working this one. You can even get in a few 40 Meter Europe contacts by working split. The exchange is Signal Report and CQ Zone, which for us is 05. You can spin the dial, and find wall-to-wall DX.

The *ARRL November Sweepstakes CW* is on November 2-3rd. It starts at 4 PM on Saturday, and ends at 10 PM on Sunday. You can operate no more than 24 of the 30 hours. The off time is when you can catch some sleep. Enter *Radio Amateurs of Northern Vermont* on your summary sheet where it asks for club participation. I'm hoping that we do better than in previous years in the club category. The required exchange is long, so you will need to practice ahead of time using your favorite contesting software. It is a consecutive serial number, precedence (Q, A, B, U, M, or S), callsign, *check (the last two digits of the year you were first licensed)*, and ARRL Section. Complete details and rules can be found on page 100 of the October QST. If you are Low Power, your Precedence is A; High Power is B. Don't worry about the other ones, just copy them. This is a good one to help with your *Worked All States* award. Many hams look for Vermont cards after this contest so be sure to check the mailbox. By the way, you can only work a station once in the contest, regardless of band.

Looking at recently published contest results, some **RANV** members pounded out a nice score in the February 2002 ARRL International DX CW Contest. At the super station of Ron KK1L, guest operators racked up over a million points in the Multi-Operator Single Transmitter category! Operators included Grant K1KD, Mitch W1SJ, Fran KM1Z, and Loyd W1CX. Nice going guys! As a matter of fact, Ron is looking for operators for the upcoming CQ Worldwide Contests in October and November

Next month: *CQ Worldwide CW* finally does not fall on the Thanksgiving weekend!

RANV MEMBER NEWS

by Mitch WISJ

Many have heard the IRLP link on the repeater and are fascinated by how well it hooks up the world to our little hand held and mobile transceivers. However, for me, the IRLP linking has taken on a more personal touch. Not a week goes by when someone in ham radio that I have lost touch with suddenly "appears" on the repeater like magic!

In September, I was loading the van for the VHF QSO Party when, all of a sudden, I heard the link come on and KB1EXM was calling me. Matthew, active with RANV during such notable events as Field Day, the MS-150 Bike tour and other activities, has relocated to the Washington, D.C. area after graduating from college. Matthew had hooked up with one of the big VHF multiop efforts in Maryland and managed to land a job as one of their roving stations. Multiops use "rovers" to drive around with equipment to give them contacts from rare grid squares. Matthew and his partner were checking in with me to see what frequencies I would be on. As fate would have it, conditions absolutely stunk and I had a hard time even hearing the big multiop station, much less the weak little rovers. But, we had a great QSO on 145.15 MHz that Friday.

My attempts to write this newsletter have been met with difficulty today. I have been getting calls left and right on the phone and radio. Not that I mind, but it always seems like I'm getting calls when I'm fighting a deadline! Today, Jim N1OVV called on the phone. Jim was very active on the 145.15 Mhz repeater several years ago from his former QTH in Barre. He was part of a late night wrecking crew which included myself and others. Back then, we drew more listeners at night than most radio stations! Jim moved to Maine several years ago and he is now back in his native Boston. He reports that activity on the repeaters is boring and dull. Compared to some of the debauchery that we had on 145.15 MHz on some nights, anything else could be considered boring!

I went back to writing the newsletter when the IRLP link came on from a node out West. Then I heard Chris WT1L calling from Sacramento! Chris was a charter member of RANV at the ripe age of 13 and was one of the youngest hams to earn his Extra Class. For five years (1992-96), we used Chris' callsign WT1L for the Field Day effort because it was short and easy to use on phone and CW. (*He still gets QSL cards from all those contacts!*) Chris was both a phone and cw operator for us in 1990, 91, 92, 95 and 96. After that he got involved in college and lost interest in radio. Now settled in a job in California, Chris is acquiring equipment and getting active again. He claims he misses his antenna and tower, which are not possibilities at the apartment complex he is at. And then, the weirdest piece of information he shared was that he is going out with my next door neighbor's daughter. Small world?

If any moral could be tied to this story, it would be to listen, listen and listen! I would have never had some of these conversations unless I was monitoring the repeater. If you only listen to the repeater while driving to/from work and then switch it off, think of all the fun you are missing!

REPEATER NEWS

by Mitch WISJ

Many of you active on 145.15 MHz have heard the new repeater being smoke tested from its Essex location for the last couple of days. This is the next to the last step in a process to correct damage caused by lightning in June and to update the repeater system. The new system is a GE Mastr II base unit while the old system was a modified GE trunk mobile unit. The radios are very similar, with many interchangeable pieces, but there are differences which should improve the operation. The base power supply is more resistant to power surges and lightning damage and the rack mounted base unit is much easier to access and work on. This comes at a price – the base unit weighs twice as much as the old system, which will cause some interesting headaches when we have to move it up the mountain. I will report on that activity (*hopefully positive*) next month.

The system was built up by Tony WA2LRE, who has built most of the repeaters in Northern New York and even a few in Vermont too. The controller was changed to a unit with more features and flexibility. The UHF radio, duplexers and antennas will be the only components carried over from the old system.

The system will be tested for a week or two while we tweak it and test for any problems. It is linked through IRLP Node 723. Remember to use a CTCSS of 110.9 to access it. When moved to the mountain, it will revert to the normal 100.0-Hertz tone. So far, the system has demonstrated amazing sensitivity from its lofty 400' elevation!

NEW TOWER

RANV is the proud owner of another AB-577 military mast, affectionately known as a "rocket launcher." These units have become extremely popular amongst hams and they have gotten much harder to acquire. This one was acquired last week after talking about it for some time. The mast has the extension option, meaning that we can put this beast up to 70 feet in the air if desired! Having another one of these masts gives us much more flexibility in our Field Day site design and setup. In the coming weeks we will run the mast through it paces to make sure it operates smoothly. We will also put the final touches on the repair to our cw yagi which caused so many headaches.

USE OUR BANDS and PROMOTE AMATEUR RADIO

editorial by Mitch WISJ

Tied with our October meeting topic on operation on the microwave bands, I have some comments on our use of some of the lesser known bands and comments on the buzzards which are constantly circling to feed off these very frequencies. I've commented in these pages about my concerns about the growth (or lack of growth) of amateur radio in the last couple of years. It comes as no surprise that activity on FM on 146, 222 and 450 MHz is a fraction of what it was 5 years ago. The good news is that HF and VHF/UHF weak signal activity has increased. I'm not totally sure why the FM activity is down. However, I read about something quite distressing in the W5YI report the other day.

About 20 years ago, the FCC, in their infinite wisdom, decided to transfer 220-222 MHz from the amateur radio service to the land mobile service. Despite thousands of comments from amateurs and other parties, comments filling an entire room at the FCC (*I was there*), the FCC decided against amateur radio after United Parcel Service mentioned something about needing spectrum at 220 MHz. UPS never operated there – I'm sure that was never the plan, anyway. But land mobile got the spectrum, and they use it quite heavily in the metropolitan areas. I often listen down there when in New York and it's quite busy!

OK – old news, so what? Right now land mobile entities are squabbling over who can control the licenses (*the so-called band manager*) in the 220-222 MHz land mobile spectrum. As you know, commercial radio licenses can be worth thousands of dollars and more. It is fairly high stakes.

Along comes *Data Comlink*, a company which provides communications for the management of power companies. To make a long story short, their solution to the problem is to not have a band manager for the 220-222 MHz spectrum, but to instead create more commercial channels in the 222-225 MHz amateur band. They say, "*In nearly all but densely populated areas, the 222-225 MHz band is largely quiet. Only handfuls of individuals in the Amateur Radio Service even use this spectrum, while hundreds of thousands of potential commercial users wait with no alternatives.*"

I am an active 222-225 MHz user on both FM and SSB. While I cannot comment on their allegations of hundreds of thousands of potential commercial users, I can certainly say how many hams use 222 MHz.

I know that there are 175 functioning repeaters in New York and New England on 222-225 MHz. I know that in every VHF contest, I'll log around 100 stations on this band. The big mulitop stations even log even more. We are a presence on the band – no doubt about that. However, the relative numbers are quite small. If you are looking for same density that is found on 146 or 440 MHz, it is not there. I can count the number of 222 MHz users in Vermont on the fingers of one hand. There is a very good reason for these smaller numbers. After we lost 2 MHz of this band, confidence was shaken and amateurs and manufacturers both took a much dimmer view of 222 MHz. It wasn't the place where either wanted to invest a lot of money. Before the band loss, there was a lot more equipment available!

This brings up an interesting question. Do we have to saturate a band (*like the way 2 meters is crowded*) to justify our existence? Perhaps. Decisions are often made by money, not by what is good for society. However, the fact remains that not only do we need to be better at utilizing our spectrum but also we need to be better at clearly documenting this use. Compared to the 700,000 hams in the U.S., the users of 222, 902, 1296 and higher bands comprise a tiny percentage. We need to increase this usage but at the same time we need educate commercial interests that loading a band up to simply to justify its usage is not in Amateur Radio's best interest or even society's best interest. Based on the number of new users each year, we ARE increasing our usage of the higher bands. We are simply not filling them up with high density traffic but using them to develop new and better communications techniques.

The bad guys will always be out there. Heck, a few years ago, one group suggested that they NEEDED the 144-148 MHz spectrum for their satellite service. Image the fun they would have asking 8000+ amateur repeaters to leave. Spectrum attacks are also taking place against 420 MHz and 2304 MHz. There are many folks looking for frequencies out there. Therefore, we must always be vigilant about protecting our service and our valuable frequencies. It is OUR job to make sure others know we are important!

Come to meeting on Microwave operations, have fun, learn what you can, and consider using more of our great resources!

Check out the article on ham radio in the October 2nd Burlington Free Press at <http://www.ranv.org/5000h.html>

**NEXT MEETING:
“Microwave Operations”
Tuesday, October 8th, 7 PM
O’Brien Civic Center**

**FOX HUNT
Friday, October 11th, 6 PM
145.15 MHz**

RANV

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