



# Radio Amateur News & Views

The Official Journal of the Radio Amateurs of Northern Vermont

SEPTEMBER 2002

Vol. 12 No. 9

## PORTABLE OPERATING Our September 10<sup>th</sup> RANV Meeting

This month we'll be doing a presentation of portable operating in the field. For this show, we have assembled a panel of experts: Ed N1PEA, Brian N1BQ, Bob WE1U, Ralph KD1R, and Dave W1DEC. They will assemble several stations, including an assortment of portable rigs, tuners, and antennas that they use for portable operation. We will start the presentations promptly at 7PM outside to take advantage of the remaining light. Club business and socializing will take place inside when the sun moves off and the light fails.

The presentations will cover radios, power supplies, tuners, and antennas, as well as methods of packing, carrying, and/or transporting equipment. There will be a broad range of equipment for demonstration and show and tell. Each of the presenters has worked DX around the world with these combinations of equipment.

The September Meeting will be Tuesday, September 10<sup>th</sup> starting at 7PM at the O'Brien Civic Center, 113 Patchen Road, South Burlington. Pre-meeting feeding will be at Zach's on Williston Road starting at around 6. See you there!

## COMING UP!

The Fall season is upon us and there are numerous amateur radio activities to take part in.

First up, is the RANV meeting, September 10<sup>th</sup> on Portable Operation. You've heard about all the neat portable radios out there, now come see how some hams use this equipment.

On September 14-15<sup>th</sup> is the VHF QSO Party. Grab a 6 and 2 meter radio and a UHF radio, go to a hill and make some contacts. All of those aforementioned portable radios have VHF capabilities on SSB, so rig up an antenna and you will be surprised how many people can be heard all weekend long.

After 2 quiet weekends, there is Hosstraders on Friday-Saturday, October 4-5<sup>th</sup>. Plan to go down to Hopkinton to meet the gang and to peruse the goodies.

Tuesday October 8<sup>th</sup> is our RANV meeting on Microwave Operations. We will be fortunate to have Mike N1JEZ and Henry KT1J talk about how to actually build and set up small microwave stations which can make contact with each other.

The Weekend Class is October 12-13<sup>th</sup>. Send all interested people to the Saturday class to get their Technician license, or come to the Sunday class to pick up your General!

It will be a busy 6 weeks!

## RANV OFFICERS

It is time to start thinking about who will be directing the club next year. Elections for RANV officers take place in the November newsletter and the new officers start serving at the November meeting.

In July, two officers had to step down for various reasons and have been replaced with appointees who have agreed to help out in the short term. So, it is likely that we will be have to chose 2 or 3 new officers. Please think about whether you or someone you know can help out RANV by being an officer. The jobs are quite easy and fun.

RANV has had a good run of excellent officers, which is reflected in the health of the club. Please help continue this tradition. Contact Mitch by October 31<sup>st</sup> to put your name on the ballot.

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## OUR LAST RANV MEETING

by Mitch W1SJ

The last RANV "meeting" was actually our annual summer picnic held on August 3<sup>rd</sup> at Knight's Point State Park. It was a hot, sunny day and there were about 30 people in attendance.

The picnic started around 11 AM with confusion and a search for our picnic area. The park ranger gave our spot to another group – which eventually turned out to be us! Later, when my bow and arrow was questioned by the ranger, I wanted to say it was for use on employees who tried to give away our spot. But, I was polite and explained amateur radio and what we were doing.

The picnic had plenty of good food, including barbecue chicken, hamburgers, and hot dogs. We had a couple of stations on the air. I had a DX-70T tied to a 20-meter dipole in the trees and also an Icom FM radio which was used to call up IRLP and make contacts all over the country on FM! Jeff N1YWB also had an Icom IC-746 running. A couple of contacts were made, but the battery brought to the picnic showed its age and couldn't crank out the watts. Moe N1ZBH had a battery with him which supplied power for a little while.

Eric N1SRC was there and was able to unload some more stuff in his attempt to clean house. This was likely Eric's last RANV appearance as he will be relocating to Idaho.

The crew this year seemed more interested in socializing than operating or fox hunting, all probably due to the hot weather. We don't have any numbers available on the number pounds of meet and potato salad consumed.

The last of the hearty picnic-goers left around 6 PM after a great day of fun in the sun.

## THE PREZ SEZ

by Brian N1BQ, President

August was a busy month! The monthly meeting was the annual summer picnic at Knight's Point. There was fine attendance and a good time was had by all. I had a family wedding to go to. Considering it was 102 degrees in the shade in Massachusetts where I was, all things considered, I would much rather have been at the picnic!

The following weekend was the *Multiple Sclerosis – 150 Mile Bike Ride*. Paul, AA1SU, my esteemed predecessor and current AARL Section Manager, put together a team of hams from the region that once again showed off ham radio in a fine light. I was away until Saturday night and only was able to work Sunday as a roving support wagon. It was hot with little shade over most of the route. I was very pleased to hear unsolicited comments wherever I went from the participants and the officials about how pleased they were with the quality of our efforts and grateful for our help. This was a collaborative effort involving hams from various organizations in this region. That having been said, RANV represented the largest group among the volunteers. Way to go!

The Fall meeting schedule is officially booked. We will start the September meeting with five operators who do portable HF work setting up and showing off their portable rigs. There will be four to five different rigs and about seven different kinds of antennae for attendees to try out and operate. October's meeting will feature a Microwave primer, by N1JEZ and KT1J with more hands-on operating for attendees. November will be a kaleidoscope with four short presentations on Geocaching, ARES, the ARRL, and RACES. Finishing the year will be the annual Christmas party at W1SJ's QTH.

## BOXBORO AND THE FOX BOXES

by Mitch W1SJ

I attended Boxboro in August and was disappointed to see few Vermont hams there. I always enjoy this show, as there are a lot of activities rolled into a day and a half. The forums are always first rate. I attended one on the theory and tuning of duplexers – something repeater owners live and die by.

I spent much of the day at Boxboro in the Fox Hunt. Two radio clubs own Fox Boxes – self contained boxes which transmit on 145.65 MHz every so often. These are hidden in the woods around the complex and run all day. Hunters then attempt to find them on their own schedule. I found the first one buried (*literally*) in the woods by the entrance to the complex and the other was under a bush way in the back. I used my yagi, paper clips and sheer guts to find them. Unfortunately the boxes leave several minutes between transmissions – and sometimes double with each other!

Perhaps we ought to try the Fox Box style of hunt in the future.

### Contacting RANV

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

# KB1EZC AND CREW FIND FOX

by Mitch WISJ

Our August Fox Hunts have always had a smaller turnout than usual. It has been disappointing to find a great hiding spot, only to have a few hunters participate and even fewer actually find the fox. Given this scenario, I decided to put technology to work so that I wouldn't have to sit in the car all night, staring at trees.

I utilized my portable UHF repeater with 2-meter crossband link. This setup is used at many public service events and at Milton and Dayton. It allows me to have a solid 25-watt signal to a good mobile antenna, while only using an HT. The HT is set on low power (100 mw) and I can move around the area while maintaining a good signal. I put this equipment in an old car of mine and parked it at a dentist's office on the corner of Route 15 and West Street in Essex Junction. This allowed me to drop off the car and walk home.

My plan backfired immediately. In my haste to hide the antennas, I shoved the mag mount for the UHF repeater inside the car. A mag mount without a ground plane is a very bad thing because the SWR goes sky high. With a repeater, if the SWR is high, the duplexer will not do its job properly. The poor antenna performance and desense of the UHF receiver by the UHF transmitter blocked me from accessing the radio, even from my house, ¼ mile away! I went back and put the UHF antenna on the fender, where it belonged. I also turned the UHF transmitter off, since I didn't need to hear anything coming back. Finally, all worked as advertised. I was able to be in the house and "be" the fox, without having to sit in the car! This was very useful, as I was busy packing stuff to take to the Flea Market the next day.

A question should arise at this point, as to how we identify the winner. This was easily solved by putting a piece of paper in the windshield of the car and listing callsigns of expected hunters, followed by a code number. A few extra code numbers were included for callsigns I left out. It was simple – find the fox, find the paper, find your call and tell me your secret code number. If the number matched, you're a winner!

Jay K1UC was the first vehicle to roll and he was in the Essex Junction vicinity quite early. By 6:30, more troops showed up – KB1EZC with KB1EZD and KB1EZE, W1RL with N1ALX and K2MME.

So I went merrily along, rambling on about DF equipment and attenuators, when, at 7:47, Leela, KB1EZD screamed out, "We found the Fox – Code number 05401!" I checked my list, and it was a match. Two minutes later, Jeff W1RL, who claimed he was not using any fox hunting equipment, called in with another good number. It looked like it was going to be a fairly quick hunt.

However, Howie and Jay ended up surveying every road in the region, without finding the fox. I felt bad for them, so with 10 minutes to go before the ending time, I gave this clue, "Finding this fox is like pulling teeth." Howie, a retired dentist, exclaimed, "I'm at the dentist, but I still can't find it!"

I walked over to retrieve the Fox, and found Howie waving a 4-element yagi frantically. He looked like someone who was trying to track the RF collars on a herd of Caribou. At this point, he was only 50 feet from the car, but I followed along. Jay soon joined us and both were looking in trees and under brush for something – anything! Finally, Jay said, "it's in the car", just as he noticed the car with TWO antennas on it. They found the paper with code numbers and we ended the hunt at 8:36.

I tell everyone involved in Fox Hunting that proficiency takes lots and lots of practice. A good hunter can look at a signal strength meter, and knowing the terrain, make a good guess of the distance to the target – without fancy equipment. Finally, hunters have to be careful about what they assume. You never know when the hidden transmitter will be placed in an innocent car, or even stuffed up the tailpipe of a car, as in one hunt I found myself in!

# MS-150 BIKE TOUR

by Paul AA1SU

The MS-150 Bike Tour, also known as the *Green Mountain Get-away*, was held on August 10-11<sup>th</sup>. By all accounts, it appears to have been another great success. This was our second year providing ham radio communications for this charity event, and the MS folks are once again pleased with our outstanding performance. Both **RANV** and **STARC** provided Hams for the weekend.

A couple hundred bike riders left Sand Bar State Park in Milton early Saturday morning, and did not stop until they arrived at Johnson State College to hunker down for the night. They had a variety of courses to travel to accommodate their bike riding skill level. On Sunday morning, they awoke to a hearty breakfast and headed back to the Sandbar. We had our share of flat tires along the way, and we also had one ankle injury that had to be stitched up at the local hospital. Hams not only provided help at the rest stops, they provided transportation.

My thanks go out to **STARC** members: Moe N1ZBH, Steve N1UKT, Earl K1YLB, and Brad KD1BL and **RANV** members Jeff N1YWB, Bob KB1FRW, Fred N1ZUK, Sara W1SLR, Charley W1CHG, Don N1QKH, Mitch W1SJ, Paul AA1SU, Jay K1UC, and Brian N1BQ. Many thanks for the use of the St. Albans repeater. It held up swell during the long hot days, even if my radio did not. I had a microphone wire break during the day, and Bob KB1FRW was able to solder it at a rest stop with his handy dandy inverter and a soldering gun.

As with all of these types of events, we took notes for next year, and we are already looking forward to it in 2003. Who know? We may even have APRS in use. Thanks again, and take care.

# GEOCACHING

## As much fun as a Fox Hunt!

by Mitch W1SJ

I've recently discovered a craze which will likely appeal to all of our Fox Hunters out there. *Geocaching* is the hiding and finding of caches of stuff, usually small trinkets and novelty items. A web site, [www.geocaching.com](http://www.geocaching.com) contains a database of caches hid by various players. There is a description of each cache, some hints on how to find them and the exact geographical coordinates of the locations. You plug the coordinates into the GPS and away you go!

I first heard about Geocaching from Bob WE1U from his Web site and from overhearing conversations on the radio. I also know that Ed N1PEA, Foster W1CGT, Tony N1DXR and a few other hams in this area are also involved. A few weeks ago, I read about how some of the folks at the W5YI Newsletter are also involved. I became curious, so I jumped over to the Geocaching Web site to see what was near my QTH. I typed in the zip codes and found several caches right nearby! So, Saturday afternoon, I grabbed my trusty Garmin 45XL and headed down the road to Diversity Hill. That is the official name of the hill which almost completely blocks 145.15 MHz as you ride down Prim Road in Colchester. From the map and description, I knew that the cache was up the trail behind Broadacres. The GPS confirmed it was a short walk – less than ¼ mile. Wow, this was way too easy!

After the trail turned into the woods, it stopped being so easy. Woods block microwave signals. A GPS is a microwave receiver. When you go under trees, satellite signals start to get weak and GPS accuracy starts to get suspect. And then, I found out another sticky point – most caches are not right ON the trail, but off into the woods. So, here I am, with the GPS saying that I was only 0.02 miles from the target (100 feet), while trying to climb a steep hill choked with brush and trying to keep the hand holding the GPS out so it can acquire a good signal. Unfortunately, the GPS arrow was going crazy, pointing one way and then the other way. Then I vaguely remembered something in the description about poison ivy nearby (*is it 3 leaves or 4, or 5??*) and noticed I was wearing shorts. This wasn't good. And then, I felt that rush of adrenaline I get during Fox Hunts when I can smell the Fox close by. I reconfigured the GPS to map mode and triangulated from there. There, in the middle of nowhere, was a Tupperware box stuck in a rock outcropping. I found it! Yow, what a feeling! I couldn't wait for the next hunt! Proper Geocaching etiquette calls for taking a goodie from the cache and leaving one, which I quickly did. I was so entwined in the woods, that I needed the GPS to find my way back to the trail!

While this isn't exactly Fox Hunting, Geocaching shares many traits. First, is that false readings abound when you get close. Second, you quickly learn that the quickest way between two points is not necessarily a straight line – particularly when that line goes across a mud bog or down a cliff, like I found during a hunt right near my house in Essex. Thinking and common sense is definitely required. Oh, and did I mention, that for maximum enjoyment, you also need to be looking at and admiring the scenery in some really nice settings. So, the skill to develop is to glance at the GPS occasionally, look around for a box which seems out of place in the woods and look around at the fauna and wildlife – particularly if you happen to come upon a hungry coyote! And the beauty of this is that there are caches hidden all over the world. Last week I was in Boston and found a cache tucked away in a little park in the North End. As I just finished writing this, I just found a cache in Forest Park in Queens, New York and even hid one in Brooklyn!

Just like in Fox Hunting, the more you practice, the better you get. And there are other activities involved in Geocaching, such as searching for benchmarks. These are permanently mounted markers set up by surveyors and can be used for practice, although there are no goodies. See you in woods!

# NEED NEW HAMS

by Mitch W1SJ

The **Fall Weekend Class** will be October 12-13<sup>th</sup> in Essex. There will be classes for Technician on Saturday and General on Sunday. That's the small headline.

The big headline is that we need new hams. **Amateur radio is slowly dying.** The ARRL won't say this, but someone needs to. Just look at the numbers. For the last two years the number of licensed amateur operators in the U.S. has dropped. There is no sign of any growth in the future. If we keep dropping every year, then many years from now, there will be no hams. It's a simple equation. While there are some new hams each year, more are not renewing. Vermont, as well as Northern New England and the Pacific Northwest are the fortunate few states which still show growth. Before we all break into a celebration, consider that the net growth in Vermont has been around 20 each year. That is less than 1%. It is nothing to write home about, but it is better than a loss.

I am appealing to everyone who reads this newsletter, whether a club member, or a casual reader on the Web. Go out and recruit new hams. It's easy to do. Simply do what you enjoy doing – playing radio. Others will see your enjoyment and be interested. Then tell them how to take a class, learn online, or get books to learn the hobby and get their license. Of course, this means you will have to be active in amateur radio too. So you don't want to recruit – what's the alternative? Oblivion – if we keep losing hams.

For those interested in the one or two day class in our area, contact Mitch at [w1sj@arrl.net](mailto:w1sj@arrl.net) or go to the Web site [www.ranv.org/weekend.html](http://www.ranv.org/weekend.html). Start rounding up the new recruits!

## CONTEST CORNER

by Paul AA1SU

This month we have a few contests to keep us busy as we head full bore into contest season. Starting this weekend, there is the *ARRL September VHF QSO Party*. It starts at 2 PM Saturday, September 14<sup>th</sup> and ends at 11 PM on Sunday. For those of you on FM, try 146.55 and 146.58 MHz on 2 Meters, 446.0 MHz on 70 cm and 52.525 MHz on Six Meters. For the casual operator driving around, turn the squelch off on your radio, and listen for weak signals.

For those of you looking for some fast HF activity, try the *North American Sprint, SSB* on Saturday, September 14<sup>th</sup>, from 8 PM until Midnight. This Sprint features the QSY rule. Once you have made a QSO on one frequency, you cannot make another contact on that same frequency, until you have made a contact at least 1 KHz or 5 KHz away: 1 KHz if you replied or 5 KHz if you called. See [www.contesting.com/articles/198](http://www.contesting.com/articles/198) for a beginner's guide.

There are a few specialty contests over the next two weekends where you can hand out contacts by tuning the HF bands. However, on October 5<sup>th</sup>, starting at noon is the *California QSO Party*. This is the biggest stateside QSO Party of the year. All California counties should be active, and you may be able to work them all in a single weekend. It ends at 10 PM on Sunday. You should have no trouble finding stations calling CQ, but if you run your station at just the right spot, they will come to you. As a side note, on Sunday morning is the *RSGB 21/28 MHz SSB Contest*. Because of our position on the East coast, you may find yourself working two contests at once. It is on Sunday from 3 AM to 3 PM. I found that since California is open on 10 and 15 Meters on Sunday morning, that it is easy to work both sides of the Earth from New England on Sunday morning.

Looking at the QST results for the 2001 *ARRL 10-Meter Contest*, I see that **RANV** members made a strong showing. In Mixed/High Power, Grant K1KD put in a nice effort for the weekend. In Phone/Low Power, Carl KC1WH racked up a lot of points. In Phone/High Power, Mitch W1SJ took top honors by making the top ten nationwide! In the Multi-operator category, station W1PU racked up 1.9 million points with the help of Matt KB1EXM, Fred N1ZUK, Fran KM1Z, Paul AA1SU, Grant K1KD, and Ted K1HD. Congratulations to all of us.

As some of you may have heard, ARRL sponsored contest results will only be available on the League's Web site starting in January. We here at **RANV** are sad to hear this news, as we all find it a lot of fun to see our efforts in fine print for our friends to see. The Field Day results will continue to be posted in print, but that's it. I hear that we have made our discontent known to the New England Division Director.

Next month: "THE CONTEST"

## COVERT AO-7 COMMAND OPERATOR REVEALED

by ARRL News Service

The mystery command operator of the recently resurrected AO-7 satellite is none other than satellite veteran and AMSAT Principal Satellite Investigator Mike Seguin, N1JEZ, of Burlington, Vermont. After being inactive for more than 20 years, AO-7 was discovered back on the air in June and at least semi-operational. Seguin subsequently stepped in to handle Earth station duties but initially kept a low profile.

Seguin said he stayed undercover for a while because he did not want to have to deal with "the inevitable flood of E-mail" while concentrating on a critical phase of trying to command AO-7. "There were a number of technical hurdles to overcome," he said, "not the least of which is dealing with 30-year-old stuff." AO-7 was launched November 15, 1974. It went silent in 1981.

Although Pat Gowen, G3IOR, first announced the reappearance of AO-7 on June 21, Seguin now believes the aged spacecraft may already have been back in operation for a year or so. Seguin said he's now convinced that the CW he has heard—and continues hearing—during UO-14 passes is from AO-7 in Mode B, transmitting on approximately 145.973, very close to UO-14's 145.975 uplink.

Seguin says his job is to investigate which AO-7 commands still work after more than two decades and which do not. He successfully commanded AO-7 for the first time on July 11, changing the CW beacon speed. So far, the satellite has been sent and has accepted at least seven different commands. "At this point, there are things that don't seem to work," he said. "I guess we have to expect that after 21 years."

Built by a multinational team under the direction of AMSAT-NA, AO-7 carries Mode A (145.850-950 MHz uplink; 29.400-500 MHz downlink) and Mode B (432.180-120 MHz uplink; 145.920-980 MHz downlink) linear transponders plus beacons on 29.502 and 145.973 MHz.

For those attempting to use AO-7, Mode A (2 meters up/10 meters down) is not a problem, but Mode B (70 cm up/2 meters down) is. Because of changes in the international Radio Regulations that went into effect in the 1970s as AO-7 was under construction, the 432.1 MHz uplink frequency is no longer authorized for space communications. There's some question as to whether a 1974 FCC waiver might still cover operation on the original Mode B uplink frequency.

AMSAT advises potential users that when uplinking to a satellite, they are operating in the Amateur-Satellite Service. Sections 97.207(c)(2) and 97.209(b)(2) of the FCC's rules authorize space station and earth station operation only in the 435-438 MHz segment. AMSAT has additional information on AO-7 on its Web site <http://www.amsat.org/amsat/sats/n7hpr/ao7.html>.

**SEPTEMBER MEETING:  
“Portable Operating”  
Tuesday, September 10<sup>th</sup>, 7 PM  
O’Brien Civic Center**

**RANV**

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