



# Radio Amateur News & Views

The Official Journal of the Radio Amateurs of Northern Vermont

June 2003

Vol. 13 No. 6

## HANDS-ON EQUIPMENT NIGHT The June 10<sup>th</sup> RANV Meeting

Last month, we gave you insight on how to be a super operator. This month, we actually break out the tools to let you experience operating with various pieces of equipment. At our "Hands-On Equipment Night", attendees will bring various radios, computers and equipment and we will all get to try them out. One of the big problems at each Field Day is unfamiliarity with equipment. We hope to give everyone an insight into the operation of several types of transceivers likely to be seen at Field Day and other operating events. We encourage everyone to bring radios, and, especially, the instructions!

Pre-meeting activities will be at Zach's on Williston Road starting at 6. The meeting will begin at 7PM sharp on **June 10<sup>th</sup>** at the O'Brien Civic Center, 113 Patchen Road South Burlington.

## FIELD DAY!

*by Mitch W1SJ*

Field Day is the greatest ham radio classroom. If you have any interest in this great avocation of ours, you won't want to miss out participating in Field Day on the weekend of **June 27-29th**. Field Day entails all of the following: antenna design and setup, station design and setup, contest operating, public service communications, emergency communications, satellite communications, power generation, propagation, computers, camping and eating. Certainly everyone is interested in at least one of these topics! Ask any Field Day veteran and they will tell you how much they learn each year.

It is a sad fact that a relatively small minority of club members actually participates in Field Day. This is true in other areas as well. With so much to be gained from the Field Day experience, this is hard to believe. Unfortunately, the Field Day weekend also coincides with many weddings, graduations and other family events. However, there are many hams who have no other commitments and simply do not get involved for a variety of reasons. This year, we hope to involve more people in Field Day than ever before.

It is important to get involved with Field Day early. As you read this, hams are already getting involved in the planning stages of the event. Several of us are doing the engineering on the antenna systems. Discussions are going on about what equipment will be used and how it will be set up. During Field Day, activities reach a fever pitch and newcomers showing up at the last moment often get overwhelmed. The weeks prior to Field Day are spent

## AMATEUR RADIO WEEK PROCLAIMED

*by Paul AA1SU*

I am pleased to announce that on Tuesday, June 10, 2003, the honorable Jim Douglas, Governor of Vermont will proclaim June 22<sup>nd</sup> through 28<sup>th</sup> as Amateur Radio Week in Vermont. The ceremony will take place at 11:30 AM on the steps of the capitol building in Montpelier.

I invite all radio club presidents, club officers, ARRL Field Organization members and all Vermont amateur radio operators to attend this great event. If you plan to attend this historic occasion, drop me an E-mail, so that I can get a head count. Hopefully, we will have media coverage of the ceremony, too.

As you may have noticed, this is the week that leads up to Field Day. This is no coincidence. Field Day is an important national exercise that prepares us to act as trained communicators in an emergency. Please plan to operate Field Day at your club, from home or mobile.

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## OUR LAST RANV MEETING

by *Howie K2MME, Sec'y*

The meeting was called to order at 7 PM sharp. The club will acknowledge the efforts of some of the people who make the repeater possible. A vote was taken to allocate \$100 for dinner gift certificates to the two key people who provide the repeater site and transportation to the site. Fred WA1LIE will provide the snacks for the June meeting. Brian mentioned that he has a 3.5kw generator available for Field Day. We still need a tent for the cw operation. A visit to Ed's (NIUR) capacitor plant in Barre was discussed. Some 15 people expressed interest, but no definite date was agreed upon. Paul is working on getting the Governor to declare ham radio week in the days leading up to the Field Day weekend.

For the featured presentation, a crowd of 20 huddled around the computer projector for Mitch's presentation of "How to be a Super Operator." He stressed that the public judges us on the way we communicate. It therefore behooves us to use proper procedures in the various modes and bands we operate.

In repeater operation, be sure that you have a good signal – both RF and audio wise. If you are not making the repeater very well, don't try to prolong a QSO. Wait until you are in a better location. Transmissions should be kept short, under 60 seconds. AVOID timing the repeater out. You should speak slowly and clearly and allow a 3 second wait to allow the repeater to reset the timer between transmissions. This also allows other stations to get into the repeater as well. Use an external speaker or headphones, where legal. FM repeater operation is different than HF communications in that procedures follow more of a commercial model. Q signals are generally to be avoided and plain English is preferred. HI HI is a no-no! ID is

## THE PREZ SEZ

by *Brian N1BQ, President*

Lots of things are coming up. Field day is almost upon us – the 28<sup>th</sup> and 29<sup>th</sup> of this month. There are still details being hammered out. If you can possibly take either the day or afternoon off for Friday the 27<sup>th</sup> we will begin setting up shortly after lunch. Contact Mitch, W1SJ for the RANV operation at Redmond Road in Williston effort or Brian N1BQ for the QRP operation in Underhill.

There is another activity that often gets little attention but is equally important to ham radio's future. "Kids Day" is held twice a year in January and June. This year it will

definitely not indicated more than once every 10 minutes. Phonetics are not generally used.

The talk moved on to public service events. Public service is the reason the amateur radio service exists according to the government. We must be prepared and get involved. Preparation includes knowing how to use your equipment. If a frequency or tone requires changing, know how to do it. Read the manual and keep it with the radio. Have an extra radio and batteries fully charged and ready at any time. Proper operating procedure is especially required, as we need to gather information and pass it along quickly and accurately. Transmissions must be kept short and the net control is the boss.

Finally, the talk covered contesting, an area where all our operating skills can be judged against others in a competitive setting. While a lot of fun, contesting improves our operating skills for use in other areas. Much information must be transferred and recorded accurately. We learn to listen under the demanding conditions of many strong signals. It forces us to have reliable equipment that will hold up over time and provide a competitive signal.

The talk ended, and a mad dash for the goodies ensued!

be on Saturday, June 21<sup>st</sup>. Kid's Day is intended to encourage young people (*licensed or not*) to enjoy Amateur Radio. It can give young people hands-on experience so they might develop an interest in pursuing a license in the future. It is intended to give hams a chance to share their station with their children. For more details, please go to the League website at [www.arrl.org/fandes/ead/kid-rules.html](http://www.arrl.org/fandes/ead/kid-rules.html). This activity is important to all hams. Youth is the lifeblood of our hobby. A growing ham population is necessary to keep the hobby feasible. If each of us was able to show off our hobby to just one kid who has never seen it and if one in ten of these kids were to become interested, ham radio growth would be in excellent shape.

This month's meeting will be a hands-on version of "How to be a Super Operator" We will have live radios and logging computers to play with. As we all have learned all too often, Field Day is a bad time to be figuring out which button does what!

One last pitch for Field Day: please let the various site persons know where you are going to be!

### Contacting RANV

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

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learning a lot about the set up and operating procedure in anticipation of the actual event. Some of the specific events in preparation for Field Day: **RANV** meeting on hands-on equipment on June 10<sup>th</sup>, operator training on June 21<sup>st</sup> and Field Day planning meeting on June 23<sup>rd</sup>.

There are many things to get involved in at Field Day. Some people lean towards operating, others stay more involved with setup and site details. One of the key activities is antenna setup on Friday afternoon and evening. The more trained setup people we have available, the faster setup will go. When you get involved in antenna setup, you'll learn all there is to know about setting up high performance antennas quickly. We will start antenna setup at 2 PM on Friday (*as allowed by the rules*). People arrive all through the afternoon and early evening, depending on their work schedules. The goal is to erect all 14 antennas on 3 towers before nightfall. With a recent purchase of another military crank up tower, this job should be a little easier.

On Saturday morning, we literally build a ham radio city in the field. Three tent structures contain the operating positions. Radios and assorted equipment get hauled out of vehicles and installed into these tents. A full food service facility with canopy, grill and tables must also be set up. Finally we fire up the generators and put the stations through their paces, making sure everything works.

The Field Day operating event starts at 2 PM. We have 24 hours to do whatever we need to do to make a big score. While the phone and cw stations are staffed by trained contest operators, the VHF and GOTA (*Get On The Air*) stations are open for everyone to enjoy. For many hours last year, these stations sat idle for lack of operators. This year, we will be setting up an operating schedule for both stations. The operating blocks are 2 hours long, starting at

## FOX HUNT JUNE 20<sup>th</sup>

The next **RANV** Fox Hunt will be **Friday, June 20<sup>th</sup>** starting at 6 PM on the 145.15 repeater. Jay K1UC will be the Fox for the evening. Jay won his first fox hunt last April and this is his first time as the fox. Consequently, we have no idea what radio tricks he has in store for us.

The fox must be hidden in a public accessible spot in Chittenden County, must provide an S-1 signal at I-89 Exit 14 and must transmit at least 10 seconds out of every minute. Otherwise, anything goes. Be sure to tune to the repeater input of 144.55 MHz and don't forget your yagi!

2:00 Saturday. Please pick 1 or more blocks to operate and let us know so we can build the schedule. The work doesn't end here! Between now and Field Day, we will have several opportunities to get familiar with equipment, logging software and contesting, in general. Please seek out one of these opportunities and learn. You will enjoy yourself far more during Field Day. Trust me!

At 2 PM on Sunday, we stop operating, collect the logs and usually pause for 30 minutes for a cool drink and to reflect on all the RF we've been throwing around. Then is time for the serious work of taking everything down and packing it away. This is a good opportunity for those who couldn't make Field Day to show up on Sunday afternoon and provide some much-needed relief. Tear down is tough, mostly because many of us are tired. A few fresh recruits do wonders for the general morale.

So, take that first step and get involved. E-mail W1SJ and let him know what times you will be at the Field Day site, what jobs you would like to be involved in and what operating times you desire. Then, all you need to do is to show up!

## PUBLIC SERVICE

by Mitch W1SJ

Amateur operators in Northern Vermont have just completed the superbowl weekend of ham radio public service events.

Saturday was the *Essex Memorial Day Parade*. The radio contingent included: AA1SU, KB1EZD, KB1EZE, KB1IVE, N1EQF, N1LXI, N1PEF, N1WCK, W1DEB, W1SJ and W4YFJ. Ham communicators helped to line up the parade participants and passed updates to the reviewing stand. Debbie W1DEB was promoted to **RANV** float driver since Mitch W1SJ was in the **RANV** Reconnaissance Car – a go-kart used to traverse up and down the parade route checking for problems and generally getting in everyone's way. Two pieces of good news – everything went off without a hitch and the rain held off.

Sunday was the 15<sup>th</sup> running of the *Vermont City Marathon* in Burlington. A total of 43 amateur operators provided communications for aid stations, medical facilities, information booths and race officials. Hams came from all over Northern and Central Vermont with a few even from New York. **RANV** members in this group included K1CRS, N1YWB, W1DEB, W1RLR and W1SJ. The work for many hams began mid-week with an organizational meeting. Earlier, a full 2-meter repeater was configured and installed in downtown Burlington for the event. This backup repeater became key as the main repeater experienced noise in the early going. Many agreed that radio activity was quieter than previous years, likely due to the cooler weather.

On Friday, before all of this excitement, Mitch W1SJ presented a radio demonstration at Essex High School as part of their "School-Wide Event" of demos and mini-classes. The W1CTE club station was reassembled for the event and used to make contacts on HF and VHF/Internet. The students were suspicious at first, but left very interested!

# INTERNET LINKING

by Mitch Stern W1SJ

Vermont Technical Coordinator

A short time ago, the general rule was that the range one could expect for a normal VHF contact was limited to 30-70 miles, the maximum range for most repeaters. Indeed, this was the limitation cited to prospective Technician operators when they asked the difference between Technician and General Class. Sure, there are the seasonal openings on 6 meters due to sporadic-E skip and there is always satellite communication, but neither is particularly reliable and both require more equipment.

A revolution has been occurring for the last few years and that is Internet Linking of amateur radio communications. The concept is simple enough: the audio is converted into digital bits in a standard computer sound card, packed up into bite sized pieces (*packets*) by the computer and blasted down the Internet, where it is received at the distant end and converted back into audio. It took years to convert this simple concept into a robust reliable working system. What you hear today is truly extraordinary. Tune to a local repeater or remote base system set up for Internet Linking and you will hear conversations with stations located all over the world – with signals and clarity sounding like they are coming from across the street!

Two systems have emerged as the leaders in the Internet linking world out of several different formats. Probably the oldest is the *Internet Linking Project*, or IRLP. This has been the brainchild of Dave Cameron VE7LTD from Vancouver, British Columbia. The other system is *Echolink*, originally written and adapted from the older *I-link* System by Jon Taylor K1RFD from Connecticut. There are a very small handful of repeaters which have both systems working. The casual user would be hard pressed to tell which system a distant station is coming in on. They work that well!

Even though they sound alike on the air, IRLP and Echolink are very different systems. IRLP runs under the Linux operating system; Echolink is a Windows program (*although there is a beta Linux version available now*). IRLP links only repeaters and remote bases; Echolink links repeaters, remote bases and users sitting at their computer. IRLP allows only one connection at a time; Echolink will handle as many connections as your ISP can stand. IRLP is rigidly controlled with specified parameters; Echolink is pretty much, “anything goes.”

Which is better? Both are great systems. There are features of Echolink I like a lot, but the lack of technical rules makes me very nervous. There are connection conditions which can cause repeater lock-up. The technical procedures of IRLP afford a greater deal of protection in this regard. There is always a concern that someone from afar can mess up your repeater. I have never heard of this happening. However, if it did, it would be a simple matter to drop the link either from the radio or computer and then disallow any further connections from the offending station.

***“A revolution has been occurring for the last few years and that is Internet Linking”***

How does it work? Great! Each week I “dial up” several friends on distant nodes and talk to them on my HT as I walk around the house or neighborhood. Or, some of my friends dial me up by calling my local repeater.

On a trip, Internet Linking is really special. This winter, I was in the Caribbean, on Sint Maarten (PJ7), which happens to have an IRLP node. Each day I dialed up Vermont and got the snowfall totals, which is always a hoot when you are sitting

on a white sandy beach. On a recent trip to the *Dayton Hamvention*, I dialed home many times right from the flea market, and even from several places during the trip out and back. One of the limitations of Internet linking is that it is not available everywhere (*not yet*) and not all repeaters allow users to dial out – sort of a phone which only receives calls. However, if you have a buddy at the other end who knows what repeaters you will be on, then he can dial you. With the current rate of growth, many of these areas will be filled in with fully open nodes.

Echolink is very useful to amateurs who are antenna challenged. Echolink allows direct connect from your computer. You install the Echolink software, hook up a microphone, click on who you want to connect to and talk! Work all over the world with no antenna. Frankly, talking into a computer doesn’t do it for me, but for some hams, this is a big thrill!

There are those who say that Internet linking is “cheating” and it is not ham radio. Some comments are in order. To “cheat” you have to be playing a game and breaking the rules. So if your game is working countries and collecting QSL cards for DXCC, Internet Linking is cheating and not permitted by the ARRL. However, if your game is to have conversations with other people, there is no rule that prohibits you from using fiber instead of ionosphere for part of the trip. As far as it not being ham radio – hey, if I’m talking into a radio to my buddy who also is talking into a radio, both on the ham bands and both using our callsigns, it certainly sound like, looks like and smells like ham radio to me!

Although there are few Internet Linking sites in New England, Vermont is generally well represented. In Northern Vermont, 145.15 hosts both IRLP and Echolink. Towards White River Junction, IRLP can be

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found on 145.13, 443.5, 443.9 and 444.9. On the west side of the state, Echolink is on 146.835 in Shaftsbury, 147.045 in Rutland and 147.55 simplex in Bridport. All allow outgoing calls except for Rutland.

Setting up a node is not too difficult, but there are several details that need to be addressed. You will need a computer running at least 100 MHz with 32 MB of RAM, and a high-speed Internet connection. Retired computers are perfect for this. You will need software, an interface board and a link radio. You don't need the link radio if the computer connection is right at the repeater. For Echolink, you download the software from [www.echolink.org](http://www.echolink.org). This website also shows available interface boards, some available for as little as \$40. When you install the software, Echolink sets up your node number for you, after your callsign is validated. For IRLP, a complete package of software and hardware is available for \$105. You fill out an application and receive a unique node number after validation. Go to [www.irlp.net](http://www.irlp.net) for details.

IRLP rules do not allow you to send the repeater tail, courtesy beep or ID over the network. If you do this, you will be locked out! While Echolink has no rules regarding this, I would **strongly** recommend that you not send your repeater tail, as this can lock someone up. Some time ago, I connected to both the Rutland and Shaftsbury nodes and each repeater's tail keyed the other's tail and the system continued to ping-pong until I cancelled the connection from the computer terminal. If I was not sitting at the computer, I would have been in trouble.

There are 3 general ways to suppress the repeater tail. The easy method is to have the node at the repeater site and hook right up to the repeater receiver. However, most Internet nodes are NOT at the repeater since there is no high speed Internet (*or even phone*) available. The second method, used at 145.15 MHz, is to have a separate UHF repeater linked to the 2-meter repeater. The UHF repeater has no tail and will only be on when someone is transmitting on 2 meters. The IRLP node will then have a UHF radio on the UHF repeater frequency. The third method is to modify the repeater to send a CTCSS tone only when someone is talking. At all other times, the CTCSS tone is not sent. The node will then have a radio on the repeater output frequency, and operate with CTCSS decode turned on.

Do yourself a favor and use a commercial radio (*i.e. Motorola or GE*) for linking. Ham equipment often gets too hot and can easily be bumped off frequency. Otherwise, the connections are quite simple: data cable from interface to computer serial port; audio from radio speaker into sound card input, audio from sound card output into radio mike jack, PTT from interface to radio and squelch level from radio to interface.

You will find, like I have, that managing the technical end of the linking business is easy. Managing the users and politics can be challenging on a busy repeater. Decisions have to be made on how you want the system to work - whether to allow connections during nets or QSO's, whether to allow connections overnight, whether to allow users to dial out, etc., etc. Some might just say this is the fun part!

I hope you take the time to learn about and embrace Internet Linking. I find it to be a relaxing sideline between HF contests and erecting antennas!

## TEN-TEN INTERNATIONAL

*by Paul AAISU*

In a continuing effort to educate everyone about some of the other aspects of ham radio, this month I will tell you about *Ten-Ten International*, or 10-10 for short. Ten-Ten is an organization of amateur radio operators dedicated to maintaining high levels of amateur radio communications on the 10-Meter amateur band (*28.0-29.7 MHz*).

Founded in 1962, the organization has grown dramatically over the years. To join this group, you need to first contact and log ten other 10-10 members on 10 Meters. You will need their call sign, 10-10 number, name, date, and QTH. You then fill out an application form with this information and send them \$15. You then receive a membership card, certificate of membership, and Ten-Ten number that you can exchange with other members around the world.

Naturally, they have all sorts of awards to further enhance the fun of joining such a group. They have WAS, WAC, WPX, as well as some higher-level awards to shoot for. To help you find other members on the band, there are five contests available throughout the year to spur activity. Two are Phone, two are CW, and one is all mode. Of course, rag chewing is the most encouraged activity to have fun with, and there are also several nets on the air at any given time.

Once you have a 10-10 number, it is yours for life. Even if you do not renew your membership in the years to come, you can still hand out your valuable number to other hams on the band. It will never be reissued. You just won't be able to apply for any of the numerous pieces of wallpaper available. You also do not have to necessarily do anything with the numbers that you collect. You can just hand out your number for the fun of it.

In the local area, you can find several Ten-Ten members in our midst. They can be found nightly on 28.425 MHz at 00:00 UTC. Feel free to check in and start collecting your numbers. They are even on the local repeater, and if you bump into one, they will be happy to tell you more about the group. There is also a web site with vast amounts of information: [www.ten-ten.org](http://www.ten-ten.org). Here you can explore all of the ins and outs of the whole organization, and find application forms, schedules, and rules. So, if you're tuning around the 10-Meter band and bump into a nice group of folks exchanging numbers, stop by and give them a call. They'll be glad to hear from you.

**NEXT MEETING:**  
**“Hands-On Equipment Night”**  
**Tuesday, June 10<sup>th</sup>, 7 PM**  
**O'Brien Civic Center**

**FIELD DAY**  
**Setup: Fri, June 27<sup>th</sup> 2-9 PM**  
**Setup: Sat, June 28<sup>th</sup> 10 AM**  
**Operating: Sat. 2 PM - Sun. 2 PM**  
**Teardown: Sun, June 29<sup>th</sup> 2 PM**

**RANV**

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