



# Radio Amateur News & Views

The Official Journal of the Radio Amateurs of Northern Vermont

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## BEYOND LINE OF SIGHT WITH VHF The February RANV Meeting

As we all know, the range of VHF and UHF is limited to distances a little beyond line of sight. Hams using an HT can attest to how a hill will block their signal into the repeater. Using the weak signal modes, SSB and CW, along with higher power and gain antennas can increase this distance to 100-200 miles. For the average ham station of modest means, working beyond this distance usually requires cooperation in the way of enhancement or sporadic-E skip.

Recently a number of software techniques have been developed to enhance weak signal communication and increase the range of normal VHF communication (see article, *this issue*). Mike N1JEZ has been experimenting with several of these modes and will give a talk on their use. Specifically, Mike will speak about WSJT, JT43 and others. The presentation will be done on a computer using Powerpoint and it will have a good interactive portion where we'll actually run the WSJT software and decode several QSO's. Mike always does a first class job and the show will impress even the non-technical types.

None of this does you any good unless you show up at the meeting! Make sure you that you are there, Tuesday, February 12<sup>th</sup>, at 7PM, at the O'Brien Civic Center, 113 Patchen Road, South Burlington. We will be there, rain or shine or snow or sleet. Pizza party, foodfest and pre-game show at Zack's on Williston Road at 6. See you there!

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## MILTON HAMFEST 2002 – 20<sup>TH</sup> ANNIVERSARY

**The 20<sup>th</sup> annual Milton Hamfest will be Saturday, February 23<sup>rd</sup>, at Milton High School.**

Vermont's greatest and only ham radio show has everything the amateur operator, hobbyist and computer hacker would want: Priceless goodies, forums on the latest and greatest and services like exams and QSL checking. And, our biggest asset – 500 or so individuals looking for and talking about the same things you are!

With thousands of square feet of indoor flea market area and 100 tables available, we plan on having another great flea market. Some of the same vendors will be back - *Radio Bookstore*, *Radio Devices* and *Webster Associates*. Add to this a whole bunch of folks bringing their radio collections and emptying out their basements, and you have a lot of stuff to look at. Come on down and buy something. No need to worry about being overbid or

having your computer crash while *E-bay* bidding! And the deals found at Milton are as good or better than anything found on line! Nothing beats getting out on the floor and fondling the merchandise.

For its size, Milton still offers the best forums program anywhere. And we have added even more!

The early bird **QRP Forum** kicks things off at 8:30. You've got to get up early to get the good QRP DX! Brian N1BQ and the *Northern Vermont QRP Society* will bring back their QRP Road show on everything you ever wanted to know about QRP operation.

At 9:00, Mike N1JEZ will host the **Satellite Forum**. More updated information will be presented on the AO-40 satellite and other orbiting birds. Immediately following this forum, at 10:30, Mike joins with Henry KT1J to present the first ever **Microwave Forum**. Hams in Ver-

Milton... continued on page 7

## OUR LAST RANV MEETING

by Charlie W1CHG, Sec'y

The last RANV meeting was called to order by President Paul AA1SU On January 8<sup>th</sup> at 8:15PM. This was followed by personal introductions all around.

Brian N1BQ was in the hospital and couldn't make the meeting. We all expressed wishes for his speedy recovery. Don N1QKH volunteered to bring the goodies to the February meeting. Debbie W1DEB gave a status report on the jackets. A sample logo was passed around. Jackets should be in shortly, hopefully in time for the Milton Hamfest (*they have finally arrived! -ed*)

Mitch W1SJ, in giving a report on the Milton Hamfest, mentioned the fact that attendance is way off at these events nationwide. Many events have failed or have been dropped by their sponsors. We need to TALK THIS UP big time to all our friends and fellow hams. Advertise if you will for the good of the event, the club and the ham fellowship!

Jeff N1YWB reported that the Field Day is in a state of flux due to change of ownership.

Mitch reported that a remote receiver was set up for the 145.15 repeater and turning OFF your CTCSS tone will access this receiver and provide better results.

A unanimous vote was taken to spend \$60 for the RANV advertisement in the *Vermont Amateur Radio Directory*.

The speaker for the evening was David W1KR. He showed us some of his slides of the Spring 2000 Hosstraders in Rochester, New Hampshire. Included in the pictures were examples of "Not Quite-Trash" and "Oldies But Goodies" including Swan, Heathkit, older Yaesu and Hammerland. Other shots showed nighttime shopping, the Ground-Rod Guy, AMers, QRPers and Military guys. Also, some very good instruction was given on the

## THE PREZ SEZ

by Paul AA1SU, President

I am just winding down from working the *Vermont QSO Party* from home. It was a great event, as the sunspot count was over 240 all weekend. I even had some new countries call me with my little ole 100 watts. I hope that some of you had a chance to get on the air and hand out a few Vermont contacts. Vermont counties seemed to be really hard to get. This is an ongoing problem, but not unsolvable.

This month, of course, we have the ever-popular *Northern Vermont Winter Hamfest* and *ARRL Vermont State Convention*. This is the premier Ham Radio event of the winter for us. I know that many of you cannot attend the monthly meetings, but look forward to the Hamfest to see the faces of the other members in the club. Please talk up the event amongst your friends and family. Look for me at the gate, collecting money. I'll have my call sign on my baseball cap.

For RANV members who live out of state, we are sad that you cannot attend the event. However, we appreciate your support of the club through your membership each year. It really speaks well for our organization to attract hams from

time-honored art of "Dumpster Diving" at the end of the hamfests.

David also showed some shots of the *Antique Wireless Association Convention* and *Flea Market* in Rochester, New York, held last September.

After the slide presentation, David gave a status report on progress towards making miniature copies of the Vibroplex "upright" telegraph keys. These are 1/2 size replications, machined of brass and other metals, and very intricate! They should be beautiful when completed!

The meeting moved on to more important matters (*refreshments*) and ended around 9:05.

outside the Northern Vermont area. Our fantastic web page is what drew you in, and this great newsletter holds you for the rest of the year.

This month's meeting will feature some real cutting edge stuff in the field of Ham Radio. I urge you to definitely attend. You will learn a lot in just two hours. In fact, the next several meetings are featuring new topics that just blow me away with their everyday usefulness. For complete up to date information on upcoming meetings, check the RANV Web page. It is chock full of useful information about Ham Radio in general, and about local hams and their activities.

And, don't forget to consider applying for an appointment with the ARRL Field Organization. They are looking for amateurs to help out with various positions in Vermont. An active club like ours produces the type of candidates that they are looking for. I will be featuring two positions per month for the next several issues. See if one strikes your fancy.

### Contacting RANV

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

## BEYOND LINE OF SIGHT WITH VHF!

By Mike N1JEZ

There are a number of new software techniques which have really impacted the ability to communicate long distances on VHF frequencies. Normally, the range of VHF and UHF frequencies are limited to a little beyond the line of sight distance. Radio waves usually travel in straight lines and since the earth is round, the radio waves end up going into space. Under certain conditions, the troposphere will bend VHF signals, enhancing the range out to more than 100 miles. There are also occasional ionospheric activities, such as Sporadic-E skip and the F2 skip we are currently experiencing on 6 meters, but those activities don't occur all that much. The techniques described below can be used most or all of the time to extend VHF range from a few hundred to over thousand miles.

Interplanetary dust particles are plunging into the Earth's atmosphere almost continually. Using this phenomena, we can communicate using VHF frequencies over distances up to 1400 miles by bouncing signals off the ionized trails of these tiny meteors. This method of communication has been used for many years particularly by the military. Hams have used it, but primarily on CW. It requires good knowledge of CW concise scheduling and lots of patience to wait for a long enough burst to copy call signs and information. Recently, Joe Taylor, K1JT developed software called WSJT (*Weak Signal Communications by K1JT*). This mode uses a computer sound card to transmit and decode meteor bursts or "pings" without the need to know CW. The mode of transmission is also called by its technical name, FSK-441. FSK stands for frequency shift keying and 441 is the numerical encoding scheme. Each character is converted to a sequence of 3 audio tones sent at certain timings. The receiver end must determine if it is receiving a meteor "ping" then synchronize on the tones and finally convert to text. A full description of WSJT can be found in December 2001 QST, page 36.

Another weak signal mode is called JT43. This is an extreme weak signal mode used to reliably communicate over distances of up to 500 miles. To copy a CW signal, it needs to be at least several dB above the noise level. The human ear/brain combination can narrow the effective passband to something like 200 Hz, permitting a good operator to copy CW at something like 6-8 dB (1 S-unit) below the noise on an SSB receiver. JT43 uses coherent integration techniques to achieve tiny bandwidths in the 1-10 Hz range. Decreasing the bandwidth in this manner gains another 13 to 23 dB in sensitivity beyond CW (*about 2-4 S-units!*). JT43 is a "slow" mode, but not "ultra-slow": it achieves a respectable throughput of 28 characters per minute by encoding every transmitted character as a distinct tone sent for exactly 2 seconds. Each detectable signal element becomes a full character, rather than a "dit" or "dah" in a Morse code sequence. JT43 also provides for incoherent integration to increase sensitivity even further. For every doubling of integration time, theoretical sensitivity is increased by another 1.5 dB. In other words, if you are able to copy a signal 20 dB below the noise in one minute, theory says you should be able to reach -21.5 dB in two successive one-minute transmissions of the same message, and -23 dB in four minutes.

If you can usually work another 2 meter station at 350 miles on CW, you should be able to work a similar one at 500 miles with JT43. There is no need to wait for tropospheric enhancements, aurora, or whatever. Beyond that distance, of course, WSJT with the FSK-441 mode will get you out to 1100-plus miles by using meteor scatter. With a combination of the two modes, you should be able to work half the continent with a modest station — that's around 500 grid squares, if you are not on the coast!

## CONTESTING CORNER

by Paul AA1SU

We are still chugging along through contest season. To get things started off, this weekend, February 15-17<sup>th</sup>, the *ARRL CW DX Contest* will be on the air. It is 48 hours long, starting at 7PM on Friday. The exchange is RST and state. The DX will send RST and their operating power in watts. You can't work any stateside contacts, and the DX can only work us. Vermont should be fairly popular, as usual. There are many rules and details that you can find on page 113 of December QST.

The following weekend is the *Northern Vermont Winter Hamfest* in Milton. If this isn't enough for you, then try the *CQ Worldwide 160 Meter SSB Contest* on Friday and Saturday night.

Moving on to early March, there is the *ARRL SSB DX Contest*. The rules and the exchange are exactly the same as the CW contest. On 40 meters, you will have to work split, which is time consuming. However, if you want some DXCC on this band, and you are not comfortable with the code or RTTY, this is the only way.

Now, moving onto published contest results, featuring local amateurs. In *CQ Magazine*, Jim N1BCL logged 383 QSOs and 271 prefixes in the March 2001 *CQ WW WPX SSB Contest*. Nice going! Jim also tells me that he just returned from Hungary, where he managed to log several more contacts from Europe.

In QST, Mike N1JEZ pounded out an outstanding Rover score in the *ARRL UHF Contest* held last August. Mike worked 222, 432, 902, 1296, 2304 MHz, and 10 GHz all from the car. How does he do it? You can ask him and congratulate him at the next *RANV Meeting*. He will be telling us more about these "nose bleed" frequencies.

That about does it for this abbreviated month. Next time: WPX!

## HF ACTIVITIES

A number of stations got on for various contests this past few weeks and took advantage of excellent conditions. This past weekend was the *Vermont QSO Party*. It was also the *New Hampshire QSO Party*, the *Delaware QSO Party*, the *Minnesota QSO Party*, the *10-10 International Contest*, *North American Sprint* and the *Freeze Your Butt Off Contest*. I love it! All weekend long everyone asked, "what contest are you in?" to which I answered, "any one you'd like!"

**Mitch**, operating **WB1GQR**, set yet another new *Vermont QSO Party* record with 2218 QSOs, 74 countries, 155 multipliers and 344K points. The conditions were absolutely amazing, particularly to Europe and Asia! **Paul AA1SU** knocked around on Sunday of the QSO Party running up 531 contacts.

**Ron KK1L** ran up a fine score 259 QSO's and 43 mults in the *NA Sprint*. **Mitch** gave him a run for a while (182 QSOs), but bowed out for an hour for dinner, after a long day contesting.

**N1BQ** and crew repeated their *FYBO* contest, a QRP event which gives multipliers for how cold it is. They had 87 contacts 32 mults, 5 degrees F, a dozen bagels and "killer chilli" for a score of 133K. I'm not sure if the chilli was included in the scoring.

A week earlier, **Mitch**, as **W1SJ** "fooled around" to the tune of 18K points high power and **Grant K1KD** picked up 12K points low power in the CQWW 160 meter CW contest. Grant also reported 77k in the NAQP Contest held the week before that.

Scores of **RANV** members can be found in the Contesting section of the **RANV** Web site.

Conditions are spectacular! Ten meters is open wide every day and Six meters is often open to somewhere every day, too! Use them now, because conditions will go downhill from here!

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## REPEATER NEWS

by *Mitch W1SJ*

The 145.15 repeater has not been receiving as well as it should as of late. The theory is that we are getting hit by a nasty problem called *reradiation*. When the transmitter comes on, noise is being generated by a "diode mixer" formed by corrosion somewhere. It could be in the cable, connectors, mounting hardware or antenna itself. The problem appears to track with relative humidity. All summer things were fine. In winter, it's dryer, and the problem returns.

Sometime this spring the problem will be addressed. In the meantime, I have installed a remote receiver centrally located in our area. To choose the mountain receiver, turn the 100 Hz CTCSS tone on. To use the local receiver, turn the tone off. Virtually everyone in the Champlain Valley will get improved results without the tone. I found it handy to have two memories programmed to 145.15, one with and one without tone. Check the **RANV** Web Site for daily updates on the repeater system.

## ARRL FIELD ORGANIZATION

### Official Relay Station & Official Bulletin Station

by *Paul AA1SU*

In a continuing effort to make local hams more aware of positions available within the ARRL Field Organization, this month we delve into two more opportunities available to you as radio amateurs. Again, the minimum requirement is that you be a Full Member of the ARRL. **Bob DeVarney WE1U**, our Section Manager, can appoint you after you fill out an application available from a link at [www.arrl.org/FandS/field/org](http://www.arrl.org/FandS/field/org).

Have you heard about traffic handling? The Official Relay Station (ORS) is a traffic handling appointment that is open to all classes of license. Regardless of your favorite mode or frequency, this job can be both fulfilling and rewarding. This is not for inexperienced operators. Transmissions must be of the highest quality, both technically and operationally. You will be setting an example in traffic handling as a skilled operator, ready to function in case of emergency. All ORS's are expected to follow standard ARRL operating practices for messages, such as form, ending signals, and prowords, as well as regular participation in traffic activities. In addition to some other responsibilities, the ORS reports monthly to the Section Traffic Manager (STM) **Karl Zuege KB1DSB** with a breakdown of traffic handled during the past month. Currently ORS appointments are **Joe WA2SPL**, **Jim AA1BO** **Ralph KD1R**, **Geroge N1DHT** and **Ben N1UKK**, but there is still room for growth. If you know one of these hams, and are interested in an appointment, they would be happy to tell you more about it. In the meantime, if you don't have message experience, check with your local club for information on how you can become more familiar with traffic handling procedures. Once you get the hang of it, you may want to consider asking to be appointed an ORS.

Many of us have Internet capabilities, and we enjoy receiving ARRL Bulletins via E-mail. However, many hams are not on line. Rapid dissemination of information is the lifeblood of an active, progressive organization. The ARRL Official Bulletin Station (OBS) network provides a vital link for informing the amateur community of the latest developments in Amateur Radio. The OBS copies bulletins from the ARRL, and then forwards them, using a variety of available modes, to the amateur community. One such method is to upload the bulletin to packet bulletin boards. Another is to transmit it on a repeater net, when it is known that several hams might be on the air. This can be done by using a recorded announcement or just reading the text over the air. Retransmissions must be made weekly, and appointees should send a monthly activity report to the Bulletin Manager (BM), currently vacant. While doing this, the OBS may also include in their bulletin transmission, news of local, section, and regional interest. Current OBS appointments are **Linda W1MP** and **Bill N1PCC**. Obviously, there is room for growth.

Another job function is recruitment of new hams and League members. Appointees should take advantage of every opportunity to recruit and to foster growth of Field Organization programs.

# AN INTRODUCTION TO DX CLUSTERS

by Fred NIZUK

With the introduction of the DXBVT DX cluster last month, many people have logged in and been putting it to good use. For this month's article, I will walk you through connecting to the cluster, and get you going with some of the more basic things you can do to help in your ham activities. Later articles will discuss more advanced (*but not any more difficult*) features, so you can get the most from this resource.

The first thing you need to do is to get connected. I will discuss access by the Internet, as that will be how most of you will connect to the cluster. If you're really committed to connect by packet radio, there is tons of material on the Internet to get you started.

Most everyone today has a computer running some version of Windows. The easiest way to connect is to run your favorite browser and in the address bar, enter this address: telnet://n1zuk.dyndns.org:8000. The RANV Web Site also has a direct link.

You will get a short greeting, then a login prompt. Just enter your callsign, then hit enter. Don't worry if you see every letter you type come up twice. If this happens, we'll fix it shortly. Once logged in, you'll see a bunch of information on the last spots posted to the cluster, a WWV report, a list of connected users and the MOTD (*Message of the Day - system availability information*). If you haven't logged in before (*or haven't entered your information yet*), you'll also be asked to set your name, QTH, location, and home node information. There's no time like the present, so let's not procrastinate! Entering this information will allow several of the functions of the cluster to operate correctly. It will also introduce you to the SET command, which is used to set information about you, and how you want the cluster to handle connections with you. You

only have to set this once. Afterwards, the system will remember your information when you log in again.

First, did you have your keystrokes come up double? If so, let's fix that now. Typing UNSET/ECHO will prevent it from happening again. UNSET is the opposite of the SET command. If at some point, you log in from work, and you don't see your keystrokes, you may need to type (blindly) SET/ECHO.

Now, let's set your personal information. Type SET/NAME Bob (if that's your name, of course) will tell the system your name. SET/QTH Jericho, VT will set your QTH to be Jericho. You should SET/HOMENODE N1ZUK, so mail that's addressed to you will be sent to the cluster for you to read. You can set your location by using either SET/LOCATION or SET/QRA. If you know your 6-digit grid square (mine's FN34km), doing a SET/QRA

wave. But what if you were all set to operate on 20 Meters? You could list just the last spots on 20 Meters by typing the following: SH/DX ON 20M. Now, only the last ten 20 Meter spots would be listed, and you wouldn't have to wade through the spots you weren't interested in. You could narrow it down further, and type SH/DX ON 20M/CW, and only get spots from the CW portion of 20 Meters. You can also list spots from or to a certain prefix (*SH/DXCC VP8 shows spots from the Falkland Islands*); by searching the comment field for particular information (*SH/DXIOTA shows IOTA details*); of a particular callsign (*SH/DX PZ5RA, for PZ5RA in Suriname*); and more.

There are a number of ways you can query the spot database, which next month I'll cover in greater detail. If you're impatient, you can find out more by using the online help that's built into the DX cluster. To access help on any command, just type HELP and the command. For example, HELP SHOW/DX (*or H SH/DX*) will give you information on how to use

the command, and how you can filter your request. If you're unsure of even what the command is named, you can use the "?" command (*shortened from APROPOS*) to find out what the command is. The command ?DX will list all the commands that have DX in either its name or description.

If you haven't yet visited the cluster, I hope you'll do so. It's free for all hams to use, and it's terrible to throw a party, and not have anyone show up. Come and explore. There's little you can do to mess it up (*or I can't fix!*). The best way to learn is to play with it. Next month, I'll explain filtering in greater detail, and explain how to get only the spots you're interested in seeing. Also on deck is the mail and talk functions. Until then, 73 and good DX.

*"The best way to learn is to play with it."*

is the easier way to go. Otherwise, you can use SET/LOCATION X X N Y Y W, where X is your latitude in decimal degrees, and Y is your longitude.

Now that your information is entered, we'll go to the command you'll be using the most, the SHOW command. It's used to access most of the information on the cluster, but this month we'll just be covering a couple of the things it'll do. One of the most important functions it has is to show us the spots that have been posted to the cluster. This is done by typing SHOW/DX (*or SH/DX*). This will display the last 10 spots that have been posted. Useful as it is, it becomes much more powerful once you add some filtering to it.

By doing a SH/DX, you get spots ranging from 160 Meters to micro-

# CW CLASS RESULTS

by Mitch WISJ

The first ever CW Weekend Class was held in Vermont on January 25-26<sup>th</sup>. Here are the statistics: 8 signed up; 5 showed up for class; 3 were still in class when it ended; 2 passed the code test. Debbie W1DEB and Dave KB1FVA now have HF privileges and they are working towards General. The jury is still out for 2 students who plan to take a test this Friday.

I find these numbers very discouraging. My goal in Weekend Classes is 100% pass rate. With a pass rate of less than 50%, I don't view this as a success. CW classes have been done before and every time, I leave with a sense of discouragement.

I struggled mightily with CW in my early years so I know what the pain feels like. I also know that when I put my mind to getting the job done, I passed the exams – up to 20 words per minute. I would have passed 35 words per minute, if I saw a need to. I've been teaching CW for 20 years and see the same things repeatedly. There is no reason that everyone cannot pass the CW exam. The clear and concise reason why people struggle is that they are not focused on the task at hand. It often starts with a poor attitude, such as, “*why do we have to learn this useless stuff*”, “*I don't have the time*”, and “*I have a disability which prevents me from learning this.*” Here are the quick and dirty answers – First answer: you have to learn CW because the FCC and ITU say you do to qualify for an HF license. End of story – not open for debate. Second answer: if you don't have the time, either make some, or then don't bother learning it. If you do it half way, you will frustrate yourself. You must be committed to putting in quality practice time **for as long as it takes**. There will be setbacks and there will be days you will feel that you are wasting your time. Put your feelings aside and focus on the goal. Third answer: while the FCC and other agencies might be bamboozled by some of the “disability” claims about learning CW, in my sole opinion, I don't buy it. If you can converse in normal English (*or any language*) without assistance, you can learn to recognize 5 word per minute CW. For those persons with serious handicaps, such as loss of sight, hearing, motor skills, etc., examiners will gladly modify the exam accordingly. All people have various learning curves, strengths, and weaknesses. That means that some will pick up the code quickly, and some will take longer and need to use different methods of practice. However, I still maintain that it is possible for anyone who is normally conversant to learn slow speed CW.

These are my observations and feelings about teaching Morse code over many years. Many will either agree or disagree or send mail bombs or whatever, but it is still what I observe and believe. Hopefully, you can use this information to your advantage to help you pass the CW exam.

This whole discussion will be rendered moot one day. Code will be eliminated as a requirement for all amateur radio classes of license, eventually. It may occur on the day the *Circumferential Highway* is completed and we will be too old to do anything with it anyway. I wouldn't wait, since the bands are hot right now!

I have left the instructions for CW Self Study on the Web Site. It contains all the details on downloading Morse Academy and using it step by step. Enjoy!

# HAM CLASSES

by Mitch WISJ

The next Weekend Amateur Radio Class will be on March 16-17<sup>th</sup> in Essex Junction. The class is actually 3 classes rolled into one. Of the greatest interest to our readers who have Technician licenses is the **General Upgrade Class**. This is held on Sunday. Upon pre-enrollment (*required*), you receive a course book, work book and CW software. Specific readings and exercises get you ready for the one-day class. Exams are given at the end of class (6pm). If you have the 5 word per minute code credit, you are in excellent shape, as you only need to pass the 35-question General exam. Otherwise, practicing for the 5 word per minute CW test can either be done with the software before class, or after class, at a later date. It is recommended for most students to work on the CW practice after class.

For potential new hams, the Weekend Class has two options. For students just wanting to get a taste of amateur radio without jumping in totally, the **Technician Class** on Saturday is just the right ticket! Exams are given at the end of this class also. For students who plan to operate on the HF bands, the full weekend **General Class** might be the best option. They would then attend the Technician class on Saturday, take the Technician exam on Saturday night, come back on Sunday for the General and take the General exam on Sunday night. Then, they spend a few weeks learning the code and they have the valuable General license and a ticket to worldwide communications. Pre-enrollment is required for all courses and a package of the appropriate study material is sent out prior to class.

Growth in Amateur Radio has been dismal. Trying to fill class has been an on-going struggle. In Vermont, we get few new amateurs and they hardly offset the many hams who don't renew or move away. We grew by 18 hams since last year. That's less than 1%! And Vermont is one of the better growth states. Many states continue to show a net loss of hams. The bottom line is that if we continue to lose licensees other services will try to grab our frequencies. The buzzards have already started circling!

It is OUR JOB to recruit new amateurs. The ARRL will not ride up on a white horse and save the day. They don't even own one. By sharing our excitement and love of amateur radio, others will be excited about it. Get your friends interested and have them consider taking the class, or getting study material.

For information on the weekend class, contact Mitch at w1sj@arrrl.net or at 879-6589.

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most actually make contacts on 2, 3, 5 and 10 GHz. You'd be surprised how many have equipment on 10 GHz. Mike and Henry will give you the low down on this fascinating part of the spectrum and how to get set up for very little money.

At 9:30, John Grow, VE2EQL will give a talk on **The Complete HF-UHF Portable Emergency Station** which will discuss a complete portable station, with self contained battery system and charging. The radios include an FT-817 HF transceiver with an FT-1500 2-meter radio. Details will be given on construction, battery selection, protection, and operating.

Our special guest this year is **Rick Lindquist N1RL**, Senior News Editor of the ARRL. He will give a wide ranging talk on **ARRL Product Reviews and other HQ Secrets**. Rick edits the *ARRL Letter*, the *ARRL Audio News* and other ham radio news stories for QST and the ARRL Web Site. Rick also has done excellent product reviews over the years, and has recently reviewed the Yaesu FT1000 Mark V. He is also an avid contester, operating from rare places like Vermont (!) and Yukon. This should be a really tremendous show and we're not sure how it will end up!

The **ARRL Forum** will be held at 11:00. New England Division Director Tom Frenaye K1KI will be joined by Vice-Director Mike Raisbek K1TWF and Vermont Section Manager Bob DeVarney WE1U. The forum will consist of news about amateur radio and the ARRL, followed by a discussion and questions.

Another new forum this year is **Vintage Radios**, hosted by Mike W1RC and Rene W1GWD. They will speak about how to collect older "vintage" radios, restore them and put them on the air. Bring your latest flea market acquisitions for a great discussion!

The **Contest Forum and Yankee Clipper Contest Club Meeting** will start at 11:30 and will be hosted by YCCC area coordinator Ron KK1L. The feature presentation will be *VB2V CQWW 2001 - Field Day on Steroids*, a multimedia show about a group who went up to the northern reaches of Quebec in October! There will also be a number of topics of interest to contesters and DXers. If you ever had an interest in finding out more about how DXing and contesting really operate, be sure to stop by.

**Volunteer Exam Sessions** will be offered twice during the hamfest, at 9 AM and 1 PM sharp. Candidates are reminded to bring a copy of license, CSCE, pen, pencil and \$10 (*cash only*) exam fee. Commercial exams will also be offered in the afternoon session. Contact **Mitch W1SJ**.

Milton will have QSL card Field Checkers available to check your DXCC or VUCC cards without having to mail them to the ARRL. Consult the ARRL Web or contact W1SJ for details.

Finally, and most important, we need help! Volunteers are needed to staff the entrance doorways, to staff the club information table and to help set up on Friday night. You don't get paid, you don't get free admission and you don't get a free lunch. But, volunteering is fun!

<b>NORTHERN VERMONT</b>		
<b>WINTER HAMFEST</b>		
<b>ARRL VERMONT STATE CONVENTION</b>		
<b>MILTON, VERMONT</b>		
<b>SATURDAY, FEBRUARY 23, 2002</b>		
<b>NOW IN ITS 20<sup>TH</sup> GREAT YEAR!</b>		
<b>NEW ENGLAND'S BEST AND BIGGEST WINTER HAM RADIO SHOW!</b>		
<b>FLEA MARKET</b>	<b>FORUMS</b>	<b>ACTIVITIES</b>
<b>100+ Tables of Goodies!</b> <b>New and Used Radio Sales</b> <b>Book Sales at Radio Bookstore</b> <b>Vermont Amateur Radio Directory</b> <b>Connectors, radios, computers</b> <b>Tables FREE while they last</b>	<b>8:30 QRP Forum</b> <b>9:00 Satellite Forum</b> <b>9:30 Emergency Station</b> <b>10:00 Microwave Forum</b> <b>10:30 Product Reviews</b> <b>11:00 ARRL</b> <b>11:00 Vintage Radio</b> <b>11:30 Contest Form</b>	<b>VE Sessions 9am &amp; 1pm</b> <b>Commercial Exams 1pm</b> <b>RANV Information Table</b> <b>ARRL QSL Card Checking</b> <b>Coffee, Donuts &amp; Sandwiches</b> <b>Hundreds of Eyeball QSO's</b>
<b>ADMISSION ONLY \$3 UNDER 18 FREE</b>		
<b>TALK-IN:</b> WB1GQR 145.15- Rptr W1NVT 146.67 Beacon	<b>DIRECTIONS:</b> MILTON HIGH SCHOOL, ROUTE 7 I-89 Exit 17, Route 7 NORTH 4 Miles I-89 Exit 18, Route 7 SOUTH 5 Miles	<b>FOR MORE INFO:</b> Mitch: (802) 879-6589 w1sj@arrl.net <a href="http://www.ranv.org">http://www.ranv.org</a>

**NEXT MEETING:  
“Beyond Line of Sight with VHF”  
Tuesday, February 12<sup>th</sup>, 7pm  
O’Brien Civic Center**

**MILTON HAMFEST  
VERMONT STATE CONVENTION  
Saturday, February 23<sup>rd</sup>, 8am - 1pm  
Milton High School**

**RANV**

P.O. Box 9392

South Burlington, Vt 05407

**<http://www.RANV.org>**