



# SIGNAL



de N1NC

August 2014 Volume 23 Number 8

## This Month's Meeting

As usual, there will be no club meeting in July or August. We're not inactive though. Don't forget the Monday evening.

QST QST QST

Gene, WW4EN, has agreed to host this year's picnic.

The 2014 NVARC Picnic will be held on Sunday, 17 August, from 2-5pm.

QTH is 144 Tyler Road, Townsend MA 01469. Gene describes his QTH as "deep in the woods". Please refer to <http://novacek.enco.com/qth.html> so there are no surprises on the 17th. It's a long driveway off of Tyler Road. That said, don't hesitate to come--visiting any ideal ham location is worth the trip. Enjoying the company of other NVARC members ain't too bad, either.

Those of you who attend will be amply rewarded: recall the presentation Gene made a while back describing his purpose-built shack and extensive grounding system.

As for all previous NVARC picnics, attendees bring their own food--meat for yourself and maybe something like salad/chips/dessert to share. Gene has no grill so if someone has something transportable, please bring it (and anything needed for operations) along -- otherwise there will be a bunch of raw meat. (ed note--Stan KD1LE will bring grills.

Gene will provide soft drinks, beer, condiments, and paper goods and is looking forward to seeing you.

Don't hesitate to bring along the XYL, spouse, or SO.

## Last Month's Meeting

There was no July meeting.



Transportation Coordinator Rick Shaw reports the N1NC club aircraft is being outfitted with new HF gear for aeronautical mobile.

## President's Corner

de Skip, K1NKR

Wow, August already. It seemed like the summer took its time getting started. Then all the July activities ate it up quickly. Now many of us are wondering whether we can get a whole "summer" into August before the school and workaday world re-invade in September.

Speaking of lost time, did you make any WRTC contacts in July? Dave Sumner, K1ZZ, reported at the WRTC closing ceremony that the Silver award winners had 4508 QSOs; Gold had 4572; and even the lowest scorers had over 3100 QSOs. I think the lowest QSO count equals my lifetime total of QSOs in VHF contests! These guys are capital-C contesters. I'm not. Nevertheless, it was a great give-back experience to have been part of the logistics support for WRTC. I--and everybody else--finished the week's activities with "exhausted exuberance."

Every year is a centennial of something. It's just math. But this year was special locally: the Cape Cod Canal (the largest sea-level canal in the world), fried clams (Woodmans of Essex MA), Brigham's Ice Cream, Fruitlands (in Harvard, now a museum). The year 1914 itself was the initiation of World War One, the first success of Radio Amateur volunteerism and later the first great challenge to our hobby. And of course 2014 is the centennial of the founding of the ARRL. The convention in Hartford was certainly a "big Boxboro." Obviously, there were a lot of visitors from outside 1-land and this meant that there were a lot of eyeball QSOs and—more importantly—eyeball QSLs. And it was a great time to reacquaint with long-time friends in the Amateur community. In my case there were three of us, from separate high schools who all belonged to the same club in Providence back in the sixties. We had scattered to the four winds. Yet, fifty years later it was as if we had never left town. This is the magic of our hobby.

What do microwave contests, the trustworthiness of Internet information, club badges, the ARRL convention, DX QSL postage stamps, the status of the local repeater, ideas for construction projects, and building airplanes in your basement have in common? Saturday morning breakfasts at Tiny's Restaurant in Ayer, that's what. From eight to nine each Saturday morning an informal segment of the club (and some non-members as well) convene, eat, and socialize. It continues year round, so y'all come.

Well, August will be behind us soon and the NVARC program year will begin again. See you in September.

### This Month's Program

As usual, there are no club meetings in July or August. We're not inactive though. Don't forget the Monday evening net, and look elsewhere in this issue for information on the annual NVARC picnic.

### Picnic

It's often said that ten percent of an organization do ninety percent of the work. Well, thanks to one of those non-ten percenters we have an NVARC picnic coming up. Do you remember Gene, WW4EN? Maybe not; his work travel keeps him from most meetings. But you probably do remember his talk about setting up a purpose-built shack—building and grounding system and all. Impressive to say the least. Gene stepped up and agreed to host the picnic this year. Come on along. Get to know one of those non-ten percenters among us. They're what makes the club great.

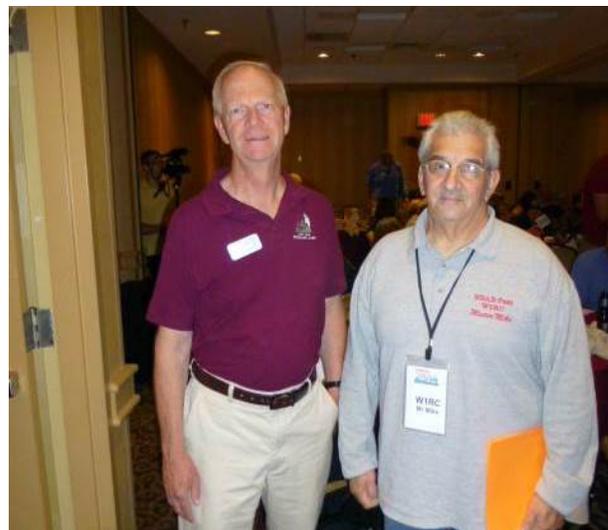


Photo courtesy of K1NKR

Skip K1NKR and Mike W1RC, the "benevolent dictator for life" of NEAR-Fest, discuss Nearfest's matching of NVARC's matching donation to the ARRL Spectrum Defense Fund.

## Ride to End Alzheimer's

July was a very busy month for the local Amateur Radio community. In addition to the World Radiosport Team Championship this is the sixth consecutive year we have provided communications support for the Alzheimer's Association Ride to End Alzheimers. Nineteen Amateur Radio Operators including nine NVARC members provided radio support for this event on Saturday July 12. The operators did communication for event logistics, and the health and safety of the bicycle riders who participated in the event.



Photo courtesy of KD1SM

Photos: Stan KD1LE and Bob AB1CV at Net Control on Museum Field in Devens.

Many of the operators have participated in the event every year since we were asked to include this event in our annual calendar. The 2014 volunteers were NVARC members Bob AB1CV, Gary K1YTS, Ken KB1UVP, Stan KD1LE, Ralph KD1SM, John KK1X, Dan KW2T and his son Tom KB1ZNI, Jim N8VIM, and Larry W1ESR. They were joined by MARA members Tom AB1GF, Tom K1JHC, Tim W0TJP, and Mark K1MGY, Jeff KB1EQH, Carsten KB1KTP, Jeff KB1EQH, Tim KB1ZVR, and Joseph N1QDZ.

The Ride to End Alzheimer's consists of four groups of bicyclists riding distances of 30, 62, or 100 miles plus a 2-mile "family ride". All riders start and finish at Museum Field in Devens. The 100 mile course goes south through Harvard, Littleton, Bolton, Lancaster, Clinton, West Boylston, around the south end of Wachusett Reservoir, then north through Sterling, Lancaster, Shirley, Groton, Townsend, Pepperell, Hollis NH, then back to Devens through Groton, Pepperell, and Ayer. The 62 and 30 mile courses follow portions of the 100 mile course.



Photo courtesy of W1ESR

The business area of Pit 6

The Amateur Radio support team provided fixed communication at the 6 aid stations (pit stops) along the courses and ride-along operators for the Support and Gear drivers who report rider status and provide assistance to riders who encounter problems along the course.

Thanks to Central Massachusetts Amateur Radio Association, Paul Andrews WB1EWS, Dave Peabody N1MNX, and Bernie Peabody N1IMO for the use of their repeaters for this event.

Further information about the ride itself can be found on <http://www.alzmass.org/ride/>  
 Details of the Amateur Radio operation are posted on <http://n1nc.org/Events/2014/Alz/>



Photo courtesy of W1ESR

The pit crew at Pit 6 where Larry W1ESR provided communications support.

-Ralph KD1SM

### NVARC Field Day 2014

Field Day for NVARC almost didn't happen this year due to all the preparations for WRTC2014. A special thanks go out to Stan KD1LE and Bob W1XP who with about two weeks to go rallied the troops to put together what I call "Field Day Lite". Thanks to the "Tower Consortium" for the crank up tower and antennas. I provided a complete station. And thanks to Ralph, KD1SM for providing the generator. This year just shows that you can put together a successful Field Day with limited preparation.

We operated in the 1A category and made 251 contacts on CW and 249 on SSB. Bob made five QRP QSOs to net the 500 bonus points for us in the natural power category. While I operated the first and last hour of the event Stan and Bob ensured that we were active as much as possible. Clearly we could have used more operators but the most important part is that we all had fun!

The only other time in recent years that we participated in the 1A category was 2013 where we had a much greater number of participants.

Year	Score	Category	QSOs	Participants
2014	1351	1A	500	12
2013	4700	1A/V	1237	35
2012	5242	3A/V/G	1307	65
2011	6022	2A/V/G	1530	55
2010	5802	3A/V/G	1311	57
2009	4842	2F/V/G	1115	25

Les Peters, N1SV

## ARRL Centennial Convention

DE Stan KD1LE

The ARRL Centennial Convention took place July 17-19 in Hartford CT. It was like Boxboro on steroids.

Thursday there were seven all day training sessions on Public Service, Contesting, DXing, Amateur Satellites, Legal, Leadership, and RFI. These were in depth sessions on the subjects. Registration was required prior to the Convention and they were all filled/closed the week before.

The Convention officially opened Friday morning with a ribbon cutting. Friday and Saturday there were six or more simultaneous one hour sessions starting each hour from 9 AM to 3 PM. They covered almost every aspect of Amateur Radio.

Friday night there was the Centennial Banquet with presentations by Kay Craigie N3KN ARRL President and Dave Sumner K1ZZ ARRL Chief Executive Officer. The keynote speaker was Craig Fugate KK4INZ FEMA Administrator.

Saturday afternoon after the last sessions ended was the closing ceremony. The ARRL was presented with various plaques and trophies commemorating the 100 year milestone from other Amateur Radio organizations from around the world.

At the banquet K1KI made a statement that the Boxboro Convention may be held next year. It wasn't clear if that means they would shift to the odd years or if they were going to try to make it an annual event.

Members seen at the Convention:

Bob W1XP, Karen KA1JVU, Les N1SV, Ralph KD1SM, Jeanine N1QIT, Rod WA1TAC, Stan KD1LE, Bruce K1BG, Skip K1NKR.

## WRTC 2014 Beam Team – N1SV

In July hundreds of volunteers helped to ensure that the 2014 World Radiosport Team Championship was a success. Never before has this event been held on the East Coast of North America so this was a once in a lifetime opportunity for many of us to participate. Below are the members of my Beam Team from left to right (Rod WA1TAC, Peter, N1ZRG, Ed

W1ZZ, Les, N1SV, Larry W1ESR, Dave K1WHS, Fletch N1MEO, Jeff WA1HCH, and Mal K1MC).



Photo courtesy W1ESR

My team set up four of the 64 sites. We set up the tower and antennas at four sites at Fort Devens; Adams Circle, Davao Circle, North Solerno, and South Solerno. Everyone on our team worked very well together and were very motivated to make sure everything was done correctly. Because of the amount of material that had to be transported I rented a 16-foot box truck. Loading the truck at the warehouse on Wednesday July 9<sup>th</sup> was chaotic and I just hoped I hadn't forgotten anything when I left.



Photo courtesy of W1ESR

Les N1SV and Larry W1ESR loading the truck at the Hudson storage facility for their Devens sites.

On Thursday morning we set up the first three sites with each one taking about three hours to assemble and test. We returned Friday morning to set up the last one which was completed just an hour and a half before the competitors arrived! In the end no significant parts were missing and all four sites were installed and tested with no problems but more importantly without any injuries.



Photo courtesy of W1ESR

When the IARU HF Championship concluded at 8AM on Sunday morning we were there to disassemble the four sites and turn the material over the new owners of each site kit (to help defray the cost of the event the organizers pre-sold each sites material for ~\$1,200).

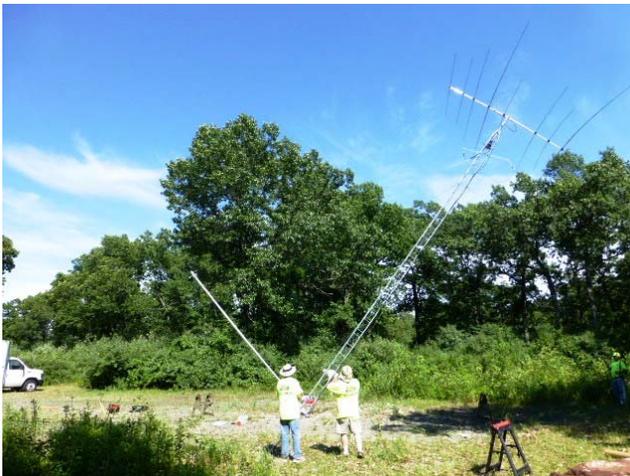


Photo courtesy of W1ESR

This event was a lot of work but also a lot of fun. My sincere thanks go out to the members of my team for their hard work and dedication over the past three years! While no one placed in the top ten from any of our four sites here are the results of how they did.

- #18 N1Z (PY1NX/LZ3YY) - North Solerno (6J)
- #29 K1C (KE3X / K0DQ) - South Solerno (6B)
- #41 W1N (5B4WN/5B4AFM) - Adams Circle (6Q)
- #45 N1D (NR5M/W2GD) - Davao Circle (6G)

Les Peters, N1SV

## WRTC 2014 Beam Team – K1BG



Photo courtesy of K1NKR

Above the K1BG Beam Team at Heald West with the competitors. Back row L- R Rob Rand PCC, Skip K1NKR, John KK1X, Paula Terrazi PCC, Bruce K1BG, Sandor NB1N, Mark K1MGY, Ralph KD1SM. Front L- R Bob W1XP, ES5RY, VE3EJ, K9VV, Stan KD1LE

At the crack of dawn on Thursday, July 8<sup>th</sup>, the Heald Street Beam Team began setting up three stations for the WRTC2014 competition that took place on Saturday, July 10<sup>th</sup> and finished early the morning of Sunday July 11<sup>th</sup>. The team was predominately made up by NVARC members. Preparation for setup actually began on Wednesday July 7<sup>th</sup> when Stan KD1LE, Bob W1XP, Roland NR1G, and I rented a truck and loaded it at the WRTC storage facility in Hudson NH.



Photo courtesy of K1NKR  
Our leader K1BG Beam Team Captain

The Heald Street Beam Team had be preparing and training for this event for two years, so we were well prepared for the task at hand. The weather was good, and we took advantage of it! It took us a little less than 9 hours to set up the three sites, including two in the Heald Street Orchard (one very close to NVARC’s field day site and the other very close to the N1MNX repeater site), and a third in the Nis-sitissit Meadows Conservation Area (all in Pep-perell). Our task consisted of assembling and erect-ing a 40 Rohn 25 tower, including tribander, dipoles for 80 and 40 meters, rotator, generator, cabling, etc., at all three sites. We began setting up just after 6 AM and were finished just before 3 PM.

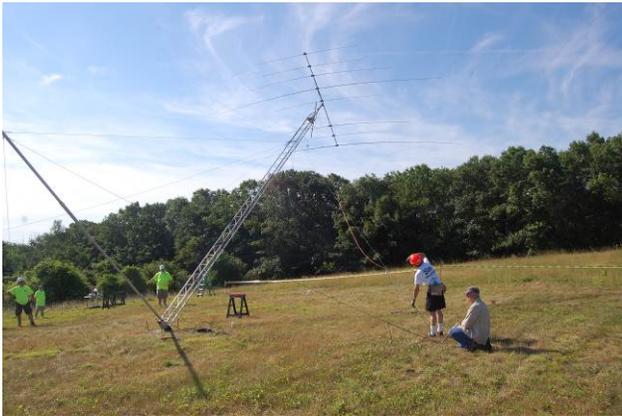


Photo courtesy of K1NKR

WRTC is an event that takes place every four years where the best amateur radio contest operators in the world compete against each other using similar stations with identical antennas at geographically close locations. The sponsor’s goal is to make sure that competitors have no advantage based on an-tennas or site geography. The teams (competitors and judges) at the three sites we set up consisted of K9VV and VE3EJ at Heald west, operating N1M (ES5RY judging), VE7CC and VE7SV operating K1Z at Heald East (G3SXW judging), and 3V/KF5EYY and YT1AD operating K1U at Nissitissit Meadows (K5GN judging). A certificate was prepared by Mark, K1MGY, and given to each participant and judge on behalf of the beam team to commemorate the event.



Photo courtesy of KD1SM

WRTC competitors at Heald West with the Site Turnover Certificates created by Mark K1MGY

Sunday morning the reverse process took place, with three stations coming down. Takedown was finished by 1 PM or so, with the last pieces being returned to the storage facility by around 3 PM.



Photo Courtesy K1NKR

And when it was done N2JFS Packed out the entire Heald St West site in and on his BMW sedan.

The teams finished 6<sup>th</sup>, 33<sup>rd</sup>, and 59<sup>th</sup> respectively in the competition. The competitors and judges were all very grateful for the hospitality and support we gave them, and we all made a number of new friends through our participation.

I want to thank everyone who participated in WRTC2014. Club members and volunteers included Stan KD1LE, Bob W1XP, John KK1X, Michael KA1NXH, Mark K1MGY, Bill K1NS, Ralph KD1SM, Skip K1NKR, Matt NM1C, Jessica KB1YJI, Sandor NB1N, Dennis K1LGQ, Pete K1PLH, and Roland NR1G. Separate thanks go to Skip K1NKR who was the overall site captain for the three sites, and Sandor NB1N, Dennis K1LGQ with Jean K1AVM, Matt NM1C and Jessica KB1YJI, who were site managers during the event (meaning they stayed at the sites more or less continuously from Thursday through Sunday). I'd also like to especially thank Paula Terrasi and Rob Rand of the Pepperell Conservation Commission for providing continuous help and support during the entire two year process.



Photo courtesy of W1ESR

The "primitive" camping facilities at Nissitissit Meadows site in Pepperell where Dennis K1LGQ and Jean K1AVM were the resident site persons.

## August Board Meeting Notes

Due to Field Day and WRTC activity there was no formal July NVARC Board meeting. The August Board meeting will be held at the cookout so information from that will be too late to print.

## July Treasurers Report

Income for July was \$30 in membership renewals and \$3 from ARRL membership renewals. No expenses were recorded this month. The ARRL

Spectrum Defense Fund match will be paid in August.

Current balances:

General fund	\$2,897.73
Community fund	\$4,836.41

As of 7 August we have 41 members who are current with their dues and 22 renewals outstanding. Please check your renewal status on the roster circulated at the monthly meeting or ask Ralph.

If you are joining ARRL or renewing your membership please consider letting Ralph send in the paperwork for you. The Club will buy the stamp and will get a commission from ARRL. ARRL membership checks should be made payable to NVARC; Ralph deducts the Club commission before forwarding your paperwork to Newington. As an Special Service Club, the ARRL expects a majority of Club members to also be ARRL members.

Ralph KD1SM

## Tech Talk

Since my introduction to lightning when it let the magic smoke out of my FT-990 I have been on a continuous quest to improve my protection. I increased the ground system by doubling the tower base grounds, grounded the guy cables, added coax shield grounding at the tower bases and added a grounded entrance panel. Inside I added a surge protected power strip for the radio and computers. When not in use I switch the mechanical coax switch that selects between the remote switches to the grounded position and disconnect the radio if a storm is at all likely or if I will be away.

All of that being done there is still that open S0-239 port on the mechanical switch, what evil could there be there? Also, all my remote antenna switches are still connected to the outside world. The remote antenna switch ports all have high value resistors permanently from the center conductor to ground to drain static charge. But those are for draining low currents. There are commercial devices by ICE, PolyPhaser, and others for coaxial feed line protection. They are based on some combination of Gas Discharge Tubes (GDT) and other circuitry. They may have the center conductor DC blocked by a capacitor and some inductance to resist a surge current.



Bournes Gas Discharge Tubes and MOV's

I decided one easy step I could take was adding the GDT's to the switch ports. So I ordered some based on an article I read recently in QST. One thing you have to decide is the voltage you want the GDT to trip at. This depends at least on the power you run and the SWR of the antennas. The article "Antenna Feed Line Control Box" on page 40 of August 2014 QST discusses some of the issues and calculations.

Afterward I was thinking, why GDT's? The surge protection outlet strip uses Metal Oxide Varistors (MOV). When you look quickly at the spec's they at first seem like they do the same thing. The MOV's have a wider (lower) range of what is called **clamping** voltage. But they both have models that go up into the thousands of volts and can sink thousands of amps (at least for u-seconds). They also cost about the same at a dollar or two each. I did a little research and without getting too technical this is why they are used where they are. The MOV is a semiconductor device and it has much higher capacitance than a GDT. This is a disadvantage in the feed line RF environment where it could create noise. MOV's are also "clamping devices". That is in a high voltage situation they attempt to sink enough current to maintain the clamping voltage they are designed for. So in the outlet strip the MOV would try to sink the surge maintaining the voltage somewhere near normal and may not knock out the breaker. That way small surges or spikes can be dealt with while maintaining circuit operation.

The GDT on the other hand is a crowbar device. So by design it is an open circuit with low capacitance until the **sparkover** voltage is reached. Then the gas ionizes and it is a short circuit. In the feed line case it would shunt the surge from center conductor to ground. The GDT maintains the short circuit condition until the voltage drops below the **arc voltage** which for the devices I looked at was 10 volts @ one amp.

There are some common issues with both devices. The specs for both devices when talking about the maximum peak current is for one operation. So it may have saved you from that lightning strike but it

gave up its life doing it. For some range of hundreds of amps the spec may be for five or ten operations and for lower currents in the tens of amps they may last several thousand operations. Another aspect to this is no "normal" failure mode. It may go up in smoke saving your equipment which you may notice. Or it may quietly go away leaving you unprotected. The companies selling the higher level devices don't seem to mention this.



With "standard" GDT's and MOV's the suggested way to maintain the protection is a regular program of replacement. In the literature the suggested replacement period is one to three years. There are now several types of GDT's that are designed to "fail shorted which takes the guess work out of "end of life". Above is a model with mechanical shorting based on the temperature the device reaches. This would guarantee a known state at end of life in high current cases. Unfortunately the models that I found available were for lower voltages than what might be seen in the transmission line application.

Stan KD1LE

### Meeting Coffee "Bar"

Many thanks to Ed Snapp, N1YFK, for his rejuvenating the coffee "bar" at the last two meetings. There's been an incremental increase in socializing, and that's what we meet for.

Don't forget to leave a donation if you partake.

### Strays

You may have read of the interference that grow lights are causing. The August 1916 issue of QST had an article about arc light interference. Some things never change! Of course, chasing down arc light interference didn't result in a chance meeting with your local marijuana grower. Maybe things do change.

### Your Article

Your article could have been here which would have eliminated this blank space.

## NVARC Club Net

The NVARC Club Net meet's every Monday evening at 8 PM on the 442.900 Pepperell repeater.

Stop in and bring your input and questions.

The net is in need of a regular Net Control Station (NCS).

Recently participants talked about the upcoming Field Day, WRTC, the search for a June meeting location, SDR dongle projects and trouble shooting. Also local interference location and signal identification.

Recent attendees were

Jim N8VIM, Stan KD1LE, Skip K1NKR, Larry W1ESR, Les N1SV, Bruce K1BG, George KB1HFT, Dave N1MNX

## Upcoming Contests

Jul  
12-13 IARU HF World Championship & WRTC2014  
Aug  
2-3 UHF Contest  
16-17 10 GHZ & Up Round 1  
17 Rookie Roundup RTTY  
Sep  
13-15 Sep VHF  
20-21 10 GHz & Up Round 2

## Flea Markets/Hamfests

Jul  
17 ARRL National Convention (Hartford CT)  
20 MIT Flea (Cambridge)  
Aug  
9 Three Rivers Hamfest (Milo ME)  
17 MIT Flea (Cambridge)  
Sep  
12 CT State Convention (Nutmeg Hamfest)  
21 MIT Flea (Cambridge)



## Nashoba Valley Amateur Radio Club

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<http://www.n1nc.org/>

President: Skip Youngberg K1NKR

Vice President: Jim Hein N8VIM

Secretary: John Griswold KK1X

Treasurer: Ralph Swick KD1SM

Board Members:

Rod Hersh WA1TAC 2012-2015

Bob Reif: W1XP 2013-2016

Wolfgang Seidlich KA1VOU 2014-2017

Editor: Stan Pozerski KD1LE

Emergency Coordinator: Larry Swezey W1ESR

Photographer: Ralph Swick KD1SM

PIO: Roland Guilmet NR1G

Librarian: Peter Nordberg N1ZRG

Property Master: John Griswold KK1X

N1NC Trustee: Bruce Blain K1BG

Annual membership dues are \$15; \$20 for a family  
Meetings are held on the 3rd Thursday of the month

7:30 p.m. - Pepperell Community Ctr.

Talk-in 146.490 simplex

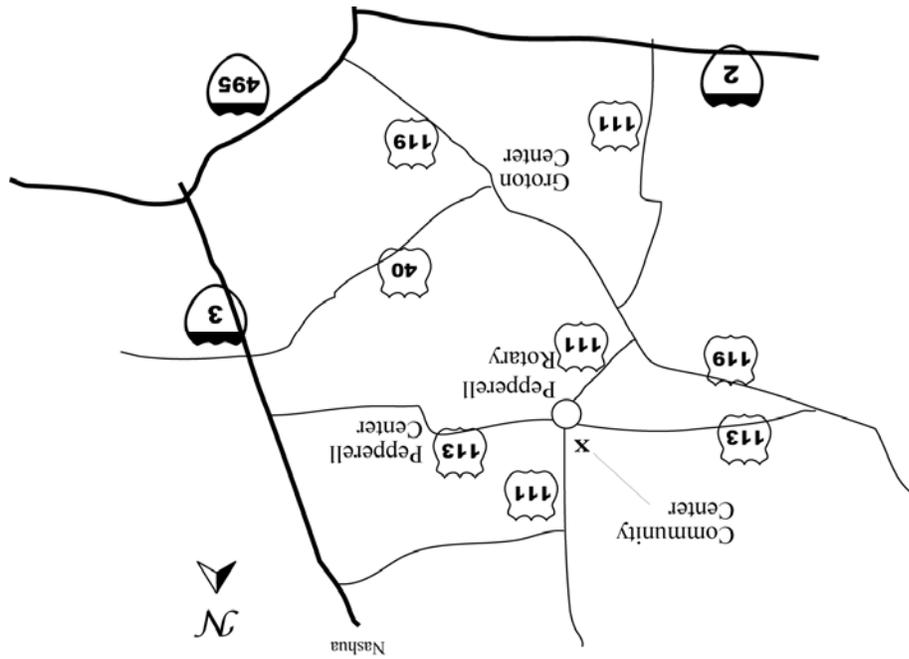
442.900 + 100Hz Repeater battery power

147.345 + 100 Hz Repeater

53.890 – 100Hz Repeater battery power

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