NVARC
Nashoba Valley
Amateur Radio Club

SIGNAL

SPECIAL SERVICE CLUB
ARRL

de N1NC

March 2002 Volume 11 Number 3

This Month's Meeting

This month's program will be EHF datalink systems by David Russell.

The club received the shipment of Anderson Powerpole connectors. Ralph will have them for sale at the meeting. Purchases will be limited to one bag per member until everyone gets a chance to buy some. It is hoped that the low price will encourage members to convert most of their equipment to this standard power connector.

We also received the ARRL Emergency Communications books that were ordered. There are three levels to the course. They start with introductory level information in the level 1 book and go on to organizational information in the level 3 book. The books will be available for loan from the club librarian.

We are going to run an emergency communications course so we would be interested in what format people would work best for members.

Earl WR1Y will have a laminator for people who need their license or other items protected.

Bring your outgoing QSL's to the meeting and have the club send them out. See Bob W1XP.

We gather at Tiny's for breakfast Saturday mornings at 8:00 AM. We sit in the back dining area.

Bring your short Shows-and-Tell to the meetings. They are always welcome. Its always interesting to see the variety of things people are working on.

Welcome to New Member

Gary Busler K1YTS has joined the Club. Gary is interested in technical activities and Public Service. He assisted in several Public Service events in 2001, including the Pepperell Fall Classic Soccer Tournament

ARES, RACES, SKYWARN Communications Drill

Massachusetts ARES, RACES, and SKYWARN will conduct a state-wide Simulated Emergency Test (SET) March 23rd. This will be a communications exercise and will be based on a hurricane scenario. Communities that chose to formally participate have received sealed envelope instructions in advance. Some of the message traffic or local situation is predetermined by the contents of the envelopes that will be opened hourly during the exercise. Message traffic is designed to support the scenario. All stations are encouraged to find and check into their local net.

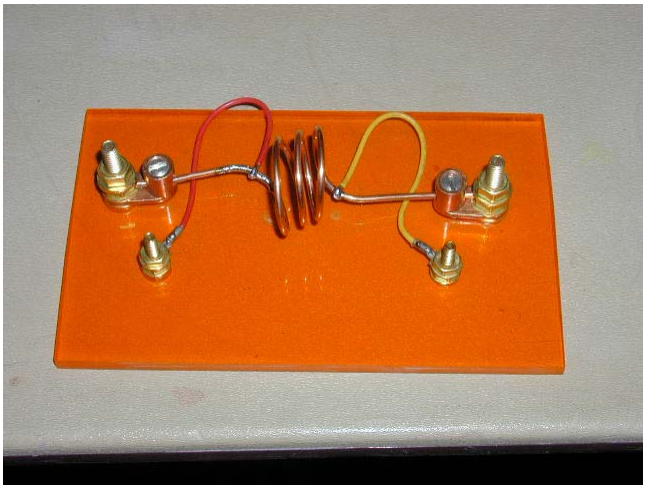
Last Month's Meeting

In the ARRL book raffle. John KB1HDO won the ARRL Antenna Book and Phil Hopkins (who promises to get his call soon) won the ARRL RFI Book.

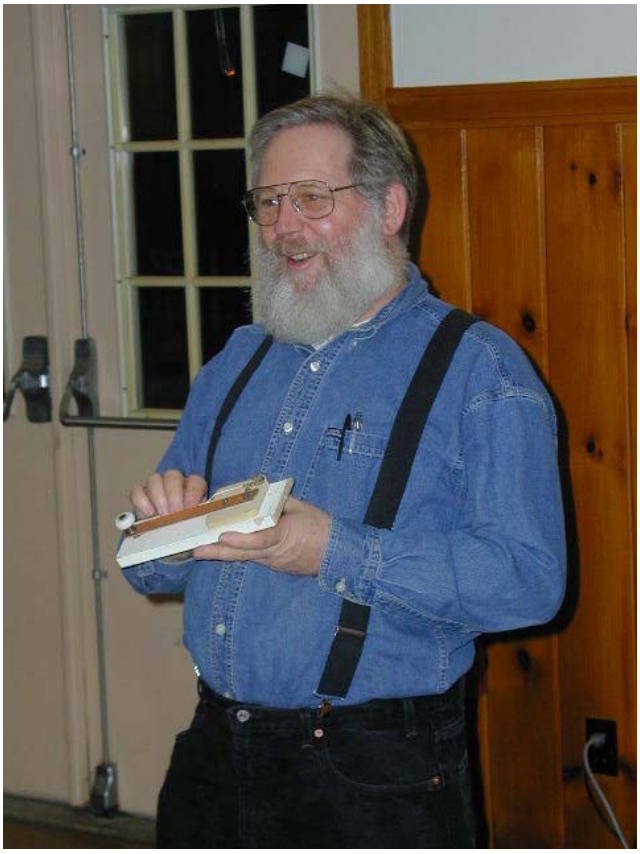
Erik KA1RV reported the board had approved the purchase of six sets of the ARRL Emergency Communication Manuals. They should be arriving soon. The club is encouraging members to complete the course material and take the certification test. The idea being to get as many people as possible up to the same level when it comes to emergency communications. The books will be lent out to members. Den KD2S has been working to arrange some classes or study group based on peoples preferences. We also plan to be able to administer the certification tests locally.

The board also approved a quantity purchase of Anderson Powerpole connectors. They are the standard power connectors as promoted by the ARRL and ARES/RACES. They will be available to members in packages of 10. The club will pass on the savings of the quantity purchase, pick shipping cost, and sell them to members for less than quantity price to encourage everyone to replace the non-standard connectors on their equipment. This is one problem we can eliminate before an emergency (or even Field Day) happens and are faced with mismatched rigs and power cables.

Stan KD1LE did show and tell on the current shunt he designed. The problem was to measure battery charge and load currents in the 12 volt DC circuits at the repeater site.



The shunt is simply an appropriately sized length of wire that can be calibrated to a known milivolt per ampere output. These shunts were built with one milivolt per ampere output so they introduce very little voltage drop in the circuit.

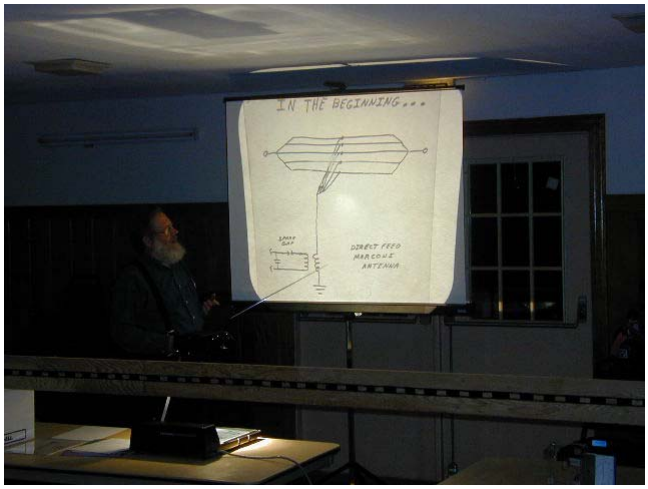


Bob W1XP did another show and tell on a key he designed from everyday things for a neighbor who

needed to make code practice devices for a Cub Scout den.

The main presentation was demonstration of SWR by Bob W1XP.

Above is the Bobs 'standing wave line' on which he could show the standing waves by both a lamp or meter indication. Above he is moving a lamp along the line.



Above Bob is showing an old antenna design. The presentation covered the history of SWR measurements and the instruments that were used.

April Elections

Elections are coming up in April. If you would like to try a position as a club officer or board member let one of the current officers know of your interest.

FoxFinder Industries

On a sunny day FoxFinder Industries 'employees' hard at work cutting wire for FoxFinder kits.

A Tour of the KC1XX Contest Station by Les Peters N1SV

If you have participated in either the CQ Worldwide or ARRL International DX contests then the callsign KC1XX should be a familiar one, it belongs to Matt Strelow of Mason, N.H. Matt has assembled one of North America's premier multi-operator / multi-transmitter contest stations. This past December I was fortunate enough to be able to spend an afternoon with him and tour his station.

Born in Germany, Matt moved to the states in the late 80s and founded XX Towers. With its small crew of highly experienced tower workers, they install and maintain towers and antennas for both amateurs and commercial customers. XX Towers services customers nationwide as well as overseas. I can tell you from experience Matt and his crews are very good but it comes at a cost, their hourly rate is $130 plus expenses and he's always booked.

The view to the south

As I arrive at Matt's house on Hurricane Hill Road the views are impressive. I get out of my vehicle and can see nine towers behind his house. From the front of his house there is a great view to the horizon from northeast to southwest. It certainly was no accident why he selected this location.

Situated on 11-acres are nine towers that range in height from 85 to 310 feet. There are a total of 41 antennas in the air not counting the four 177m 2-wire beverage antennas. All RF cables and control lines that enter the house do so through a large interface panel. As we approach the first tower there's enough spare antennas and tower sections next to it to assemble a spectacular contest station by itself.

Over the years Matt has decided to move away from rotors due to repeated failures and has decided to concentrate more on installing additional antennas in order to cover all major directions and takeoff angles. With 16 different 10m yagis and phasing combinations, he covers all major directions and takeoff angles to accommodate a variety of propagation conditions.

Stacks of 10 & 15m 4-element yagis

The array of eleven 15m yagis is just as impressive as the eight 20m yagis. The largest of the 20m antennas is a 6-element monster on a 60-foot boom manufactured by M2. On 40m Matt uses only two antennas; a full size 4-element rotary beam and a Cushcraft 40-2CD. This is a contest station on steroids.

The centerpiece of Matt's antenna farm is his 80m arrays. Way out in back of his house is a 310-foot Rohn 55G tower. The tower supports a stack of two-phased delta loops. The tops of the upper pair are at 300 feet with the lower pair at 150 feet. The antennas booms are constructed of four Rohn 25G tower sections with a combination of wire and tubing for elements. This one of a kind array is truly impressive and having heard it on the air, I can tell you it really performs well. I have heard KC1XX work Japanese stations at our sunrise on 75m phone getting 59 reports while I could barely hear the other station. As we look up at the upper loops I can see the wind noticeably flexing the tubing at the bottom of one delta loop but Matt remarks me that's its normal.

The 80m tower and upper phased delta loops

As we walk back to his house Matt points out his 177-foot beverage antennas and 160m full size elevated vertical. By this point I'm on antenna overload. With so many towers and so much aluminum in the

air I wonder how he keeps everything working. He tells me that he has a core team that spends many weekends each spring and summer repairing and improving antennas for the coming season. With so many antennas on each band I ask him if there is a band that he thinks he needs to improve on. He quickly responds yes, 160m. This summer he's planning on adding two more full size 160m verticals to the existing ones and phasing the trio.

The operating positions are located in a large addition over his two-car garage. There is certainly no roughing it for the KC1XX crew; there are a total of three beds (two in the loft above) and a full bathroom. Along the front and one side of the main room are separate operating positions for each band (on some bands there is a second position for a spotter). Each operating position has an IC-781 and an AL-1200 (except for 160m where he uses an Alpha 77), a networked pc, and various antenna switchboxes. Mounted on the wall at the corners of the room within view of each operating position are three 15-inch monitors displaying Geoclock maps of different continents showing day/night in real time.

The 10, 15, and 20m operating positions

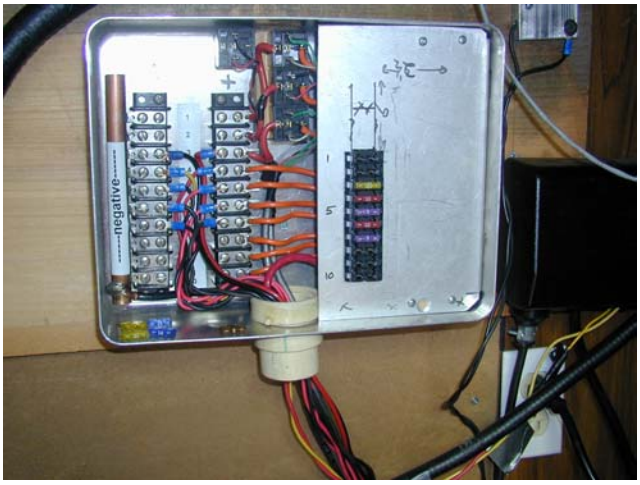
Matt's approach to contesting is anything but amateur, It is no wonder why his team is so successful in winning so many contests in the multi / multi category. He has an entire wall full of 1st place plaques from CQ WW, ARRL DX, and WPX contests.

Adopt-A-Highway

April will be our first road cleanup of 2002 hope to see a few new faces…Stan

Repeater Improvements

Below is the new power distribution panel that fuses all the repeater equipment. It also allows for some equipment to be automatically turned off at loss of AC power to conserve the batteries.



Above Bob W1XP is checking the repeater batteries. Battery maintenance is a significant effort but is critical to the repeaters being available during extended power outages.

Below (on the next page) on the right from the top down is the packet node equipment, the 440 repeater, and the 220 repeater with its duplexers. A lot

of work has gone into cleaning up the wiring and bringing all the RF cabling through a patch panel where antenna connections can be easily changed. This facilitates troubleshooting by allowing equipment to be easily patched to spare antennas that are on the tower.

RACES

Be prepared to Help your family, friends, community and country, with your expertise!

The town of Pepperell is in need of RACES operators. You can use your radio skills to help, even from your home.

Pepperell Emergency Management agency would like to get you involved in Emergency Communications as a volunteer. Any time or equipment level accepted.

For further information on helping your community and country, please contact:

David Peabody
Pepperell E.M. Communications Officer
E mail n1mnx@qsl.net
Phone 978-433-2577

Or snail mail

P.O. Box 1309
Pepperell, Ma. 01463-3309

All appointments must submitted by June 1st so contact me soon if you are interested.

If you know anyone that does not have a ham license that would like to be a worker in the "Communications Unit" such as persons familiar with gas engines, generators, gas- driven water pumps, lighting, automobile drivers, CB radio, FRS radio, computers or networking they may also apply.

If your not from Pepperell and would like to help your own community, you are welcome to call me and I will help you to contact the appropriate person for your town.

Dave Peabody N1MNX

March Board of Directors Meeting

Board Members present: Russ WR1Y, Bob W1XP, Ian NZ1B, Erik KA1RV, Den KD2S, Ralph KD1SM. Newsletter editor Stan KD1LE was also present.

The Minutes of the last Board meeting and last General meeting were presented to the Board. Ralph presented the Treasurers Report, included later in this newsletter.

Discussion on the upcoming Emergency Communications Course and Exam Series. Next Saturday, 3/16, will kick off the first in a series of Exams to qualify Instructors to teach classes for the ARRL Emergency Communications series.

Moved by Bob, Seconded Erik, that the Club pay for doughnuts for the Saturday meeting. -Carried

Den, KD2S, agreed to accept the position of Emergency Communications Coordinator (EC3) for the series of training/exams

Bob, W1XP, advised that he had submitted an Ad to QST (20 words) for the FoxFinder Kits promotion (approved at the February Board meeting)

Ralph, KD1SM, submitted a proposal, circulated in advance via E-mail, that the club consider appointing a Librarian, to take care of the clubs growing assets of Books, Videotapes and training aids.

Discussion on the Librarian position affirmed that the President should canvass for a suitable candidate

and that the Board would ratify the Presidents appointment.

It was agreed that Ralph's proposal for the Librarian would be appended to the Board meeting minutes. It was further agreed that each Board Member bring any club assets, that should be available to members to borrow, to the next General meeting for the Librarian to inventory.

The upcoming (April) Club Elections were discussed with the agreement that the President would contact Craig re his current board position, prior to asking for candidates.

Discussion on the difficulty off obtaining speakers for Club meetings, resulted in the agreement that each Board member would either do a presentation personally or find one external speaker for the VP.

Members expressed concern that we not be perceived as "The Gang of Five". There being no further business, the meeting closed at 8:50 PM.

Ian Norrish
NZ1B Secretary, NVARC

Emergency Communications Course

We received the six sets of ARRL Emergency Communications course books. They will be available for loan from the club librarian.

A test session for the ARRL Emergency Communications courses EC-01, EC-02, and EC-03 was to be run on March 16th at the Pepperell Community Center. The tests were coordinated by Steve Telsey N1BDA and sponsored by NVARC.

From The ARRL Letter

ARRL EXECUTIVE COMMITTEE MULLS OMNIBUS FCC FILING, CC&R LEGISLATION

As a result of ARRL Executive Committee action, the ARRL moved another step closer to asking the FCC to act favorably on its Novice band "refarming" recommendations. The EC also further mulled strategy regarding a possible congressional solution to the issue of deed covenants, conditions and restrictions--CC&Rs--as they affect the ability of amateurs to erect outdoor antennas. Meeting March 2 in Arlington, Virginia, the EC waded through a full agenda of regulatory and legislative items. President Jim Haynie, W5JBP, chaired the session.

Within the next few weeks, the ARRL is expected to file a Petition for Rule Making that, among other things, will ask the FCC to revise its Amateur Service rules in accordance with the modified Novice band refarming scheme the ARRL Board of Directors okayed in January (see "ARRL Board Adopts Modified Novice Band Refarming Plan," <http://www.arrl.org/news/stories/2002/01/21/101/>). That plan--based on recommendations of the ARRL Novice Spectrum Study Committee--would eliminate the Novice/Technician Plus CW subbands as such and reuse that spectrum in part to expand phone allocations on 80 and 40 meters. The plan would permit Novice and Tech Plus (or Technician with Element 1 credit) to operate CW on General-class 80, 40, 15 and 10-meter CW allocations at up to 200 W output.

The ARRL's pending "omnibus" petition also would seek other minor changes to the Part 97 Amateur Service rules. ARRL General Counsel Chris Imlay, W3KD, is putting the finishing touches on the draft Petition and will circulate it to the ARRL Board of Directors prior to filing.

The EC took no formal position on several other recent Part 97 rule making petitions. While initial comment deadlines have passed, the Committee noted that another comment opportunity will open "if and when the FCC incorporates one or more of the petitions into a Notice of Proposed Rule Making."

On the legislative front, meetings with several members of Congress during the week leading up to the EC meeting were said to have "offered encouragement" regarding the possible introduction of legislation to extend PRB-1 preemption to include CC&Rs. Existing draft legislation was reworked to reflect the tenor of the Capitol Hill discussions, and the EC reviewed and concurred with the revised draft. Details have not yet been released, however.

In an effort to reduce or eliminate the necessity of filing paper vanity call sign applications, the EC authorized ARRL Headquarters staff to develop a vanity call sign filing service for members and to charge a fee to recoup expenses. In addition, the EC asked Imlay and ARRL Executive Vice President David Sumner, K1ZZ, to draft a letter to the FCC advocating "a prohibition on multiple applications for the same call sign by a single applicant."

Minutes of the March 2 EC meeting are available on the ARRL Web site

"LOGBOOK OF THE WORLD" WILL COMPLEMENT QSL TRADITION

ARRL's "Logbook of the World" (LOTW) electronic contact-verification program will spark "a culture change" when it's introduced later this year, predicts Project Manager Wayne Mills, N7NG. Once LOTW is operational, participants will be able to qualify for awards such as DXCC or WAS without having to first secure verification in the form of hard-copy QSL cards. But Mills—who heads ARRL's Membership Services Department--is quick to add that LOTW will complement the conventional exchange of QSL cards, not replace it.

"We will not do away with accepting QSL cards in the traditional manner," Mills says. "We're not replacing the whole paper QSL scheme with Logbook of the World." Neither will Logbook of the World provide a means to get QSLs--electronic or otherwise. Mills said amateurs will still be able to solicit QSLs--even electronic cards--although e-QSLs still may not be used to apply for ARRL awards. Mills this week issued a separate ARRL e-QSL policy statement to clarify what is and what is not acceptable <http://www.arrl.org/news/stories/2002/03/07/100/>.

Logbook of the World "is really a system to offer credits for awards—and not just our awards," Mills explained. He hopes to enlist the participation of other organizations that grant operating awards, such as CQ and RSGB. Central to the LOTW concept is a huge repository of constantly updated log data provided by individual DXers, contesters and DXpeditions and maintained by ARRL. Once it's up and running, Logbook of the World will be able to provide quick contact credit. Mills adds that the system will be open to all--ARRL members and nonmembers.

Registering and uploading electronic log data to LOTW will be free. The only time users will incur charges is when they wish to apply contact credits toward a particular award, such as DXCC, WAS or VUCC.

Software development for The Logbook of the World continues. "We're well into the software implementation phase for the logbook server," said ARRL Web/Software Development Department Manager Jon Bloom, KE3Z, who expects to begin full system testing this spring.

"The security part is the linchpin of the system," Bloom said. Both he and Mills emphasize that every effort will be made to ensure the integrity of LOTW log data. Registrants will have to positively identify themselves via off-line, hard-copy means before being issued a secure--and free—digital signature and granted password access.

In simple terms, when a participant logs on, the Logbook system would determine if its database contains any contact "matches" with log data submitted. If so, a user could apply any credits generated to particular awards at a per-credit fee. Mills said the cost would be in line with current ARRL award fees.

In situations where an operator disputes a failure to match, Mills said, the operators involved would have to resolve the situation off-line.

Bloom and Mills believe that Logbook of the World will improve the integrity of the confirmation process. "It will remove some of the human factors that lead to errors," Bloom said. And, Mills added, Logbook will minimize opportunities to purposely "game the system" or to outright cheat—something that's not always possible to detect even with paper QSL submittals.

Mills said he hopes to announce an inauguration date for Logbook of the World within a few months.

CONFERENCE TOLD OF HAM RADIO'S VALUE TO HURRICANE FORECASTERS

Attendees at the seventh annual Amateur Radio Hurricane Conference earlier this month in Miami gained some insights into how forecasters make use of reports gathered via ham radio to produce hurricane and tropical storm advisories. National Hurricane Center staffer Stacy Stewart described how so-called "ground truth" reports from hams in an affected region can augment data gathered via instruments, radar and satellites and permit forecasters to generate more accurate models of storms in progress.

Nearly a full house of some 40 attendees turned out for the conference February 2 at the National Hurricane Center. The annual event was organized by volunteers and operators of W4EHW--the Hurricane Center's Amateur Radio station, now in its 22nd year. During an Atlantic or Gulf storm, real-time weather data from amateurs is funneled to forecasters via the Hurricane Watch Net <http://www.hwn.org> and W4EHW to benefit forecasters in tracking the storm and predicting its likely path.

Stewart told the gathering that, among other things, ground truth reports can give forecasters a more meaningful picture of wind velocities at different elevations. The eyewitness ham radio reports also can help forecasters to pin down a storm's location and give them a clearer idea of what actions the public is taking or might have to take, he said.

In addition to W4EHW operators and team members, those attending included representatives of the ARRL, the Hurricane Watch Net, Florida Emergency Management, and radio amateurs from the US Virgin Islands, Jamaica, Turks and Caicos, and Bermuda. Hurricane Center Amateur Radio Coordinator John McHugh, KU4GY, opened the conference and gave update on the Caribbean Amateur Radio Meteorological Emergency Network (CARMEN) project <http://www.fiu.edu/orgs/w4ehw/>.
Assistant Amateur Radio Coordinator Julio Ripoll, WD4JR, recounted the 2001 hurricane season and W4EHW's supporting operations. He presented some of the reports and photographs sent in from affected areas, including Belize during Hurricane Iris, and Cuba and the Bahamas during Hurricane Michelle.

Assistant Hurricane Watch Net Manager Mike Pilgrim, K5MP, described the Net's ongoing mission and activities.

ARRL's Steve Ewald, WV1X, discussed the support that the League provides for emergency preparedness and training and gave a plug to the popular ARRLAmateur Radio Emergency Communications Course series <http://www.arrl.org/cce/syllabus.html>. He said the ARECC courses offer a standardized approach to emergency communications training. Ewald said the ARRL's Field Organization continues to play a vital role in disasters and emergencies, and he thanked all participants for "carrying on the mission of Amateur Radio public service."

Individuals honored with W4EHW/National Hurricane Center awards of appreciation in recognition of support rendered during the 2001 hurricane season were: FCC Special Counsel Riley Hollingsworth, K4ZDH; Wayne Wilkinson, KC4CYK/C6A; Mike Matalon, 6Y5MM; Alison Barton, KF6HYJ/mm; Brian Hamilton; Alexis Digon, CL4RP; and Lionel Remigio, KC4CLD.

The conference closed with a tour of the operations room at the National Hurricane Center and W4EHW. "We hope for peace on Earth and a quiet 2002 hurricane season," McHugh said. For more information, visit the W4EHW Web site <http://www.fiu.edu/orgs/w4ehw/>.

February Treasurer Report$

Income for February was $45 from membership renewals, plus $15 from a new membership, $2 from club patch purchases, $39 from the book raffle, and $25 from Powerpole connector kit sales.

Expenses were $100.78 net for the FoxFinder project, after purchasing more stock of PC Boards and filling orders, $15.95 for the QSL bureau and $13.60 for newsletter postage, $11.34 for Yearbook binders, and $190 for ARRL Emergency Communications Course books, and $156.15 for PowerPole connector kits leaving a net expense for February of $371.82.
Fund balances as of March 14 are:

General Fund:	$4618.02
Community Fund:	$1717.55

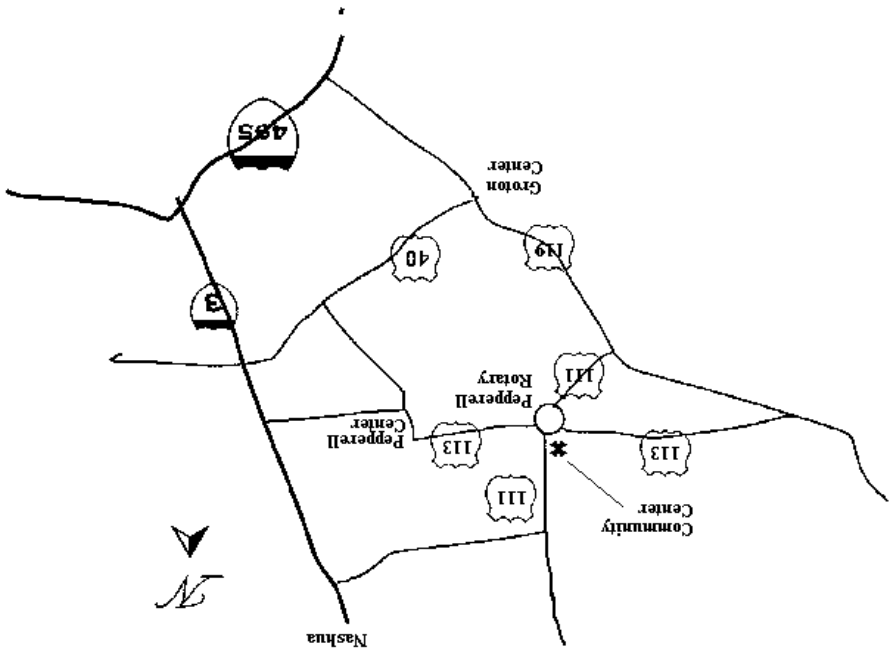
73, -Ralph KD1SM

Nashoba Valley Amateur Radio Club
PO Box # 900
Pepperell Mass 01463-0900

mailto:nvarc_n1nc@arrl.net
http://purl.org/hamradio/club/nvarc/

Pres.: Erik Piip KA1RV
V Pres.: Earl Russell WR1Y
Secretary: Ian Norrish NZ1B
Treasurer: Ralph Swick KD1SM
Editor: Stan Pozerski KD1LE
Photographer: Ralph Swick KD1SM
PIO: open
Board Members:
Bob Reif 1999-2002
Den Connors 2000-2003
Craig Kalley 2001-2004
N1NC Trustee: Bruce Blain K1BG
Meetings are held on the 3rd Thursday of the month - 7:30 p.m. - Pepperell Community Ctr. Talk-in 146.490 simplex
442.90 + 100Hz Repeater
53.890 – 100Hz Repeater
This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor. Articles and graphics in most IBM-

PC formats are OK. You can send items to pozerski@net1plus.com



NVARC

Nashoba Valley Amateur Radio Club

PO Box 900

Pepperell, MA 01463-0900