NVARC
Nashoba Valley
Amateur Radio Club

SIGNAL

SPECIAL SERVICE CLUB

de N1NC

January 2007 Volume 16 Number 1

This Month's Meeting

The program for the January meeting is Members Short Subjects.

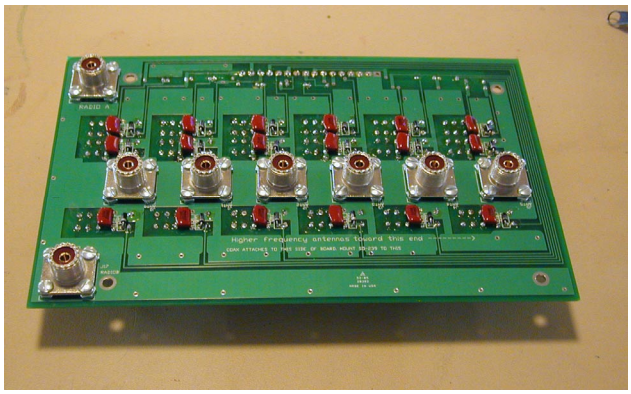
We will be updating member information in the club yearbook. Please check your information with Ralph.

Last Month's Meeting

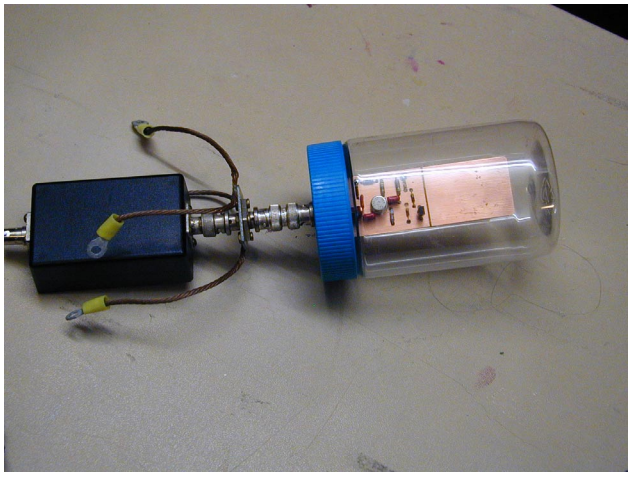
Last months presentation was Homebrew Night. There were many presentations.

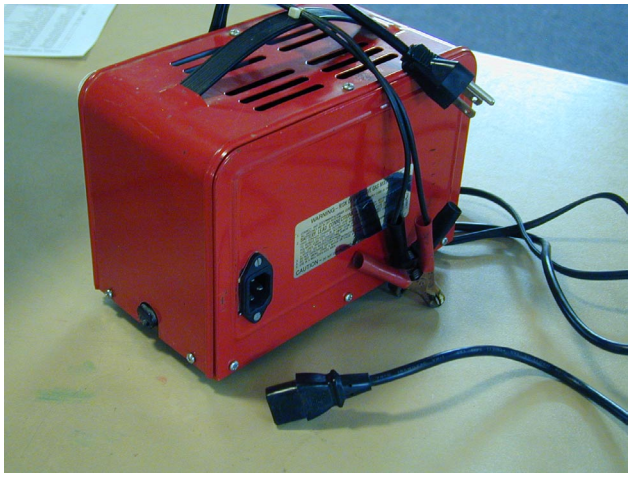
Leo K1LK showed the two meter and 440 MHz satellite antenna built.

Bruce K1BG showed a two to six port antenna switch. The top picture shows the relay side of the board and below is the connector side.

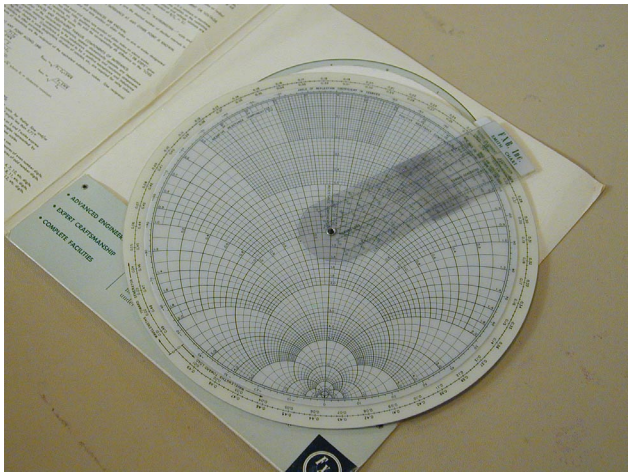


Bob W1XP show the antenna matching circuit (above) in a bucket for matching a 50 foot PVC vertical antenna he built to 40, 80, and 160 meters. Bob also showed an active antenna (below) he built for receiving in the 600 meter band.





Stan showed a battery charger he updated with a power cord connector which includes a line filter that accepts the standard IEC power cords. Many were left over from the Bandpass filter project.



Dale AB1GA showed a Smith Chart plastic “slide rule” he dug up.

Below John KK1X reads a letter from John GM3TCW our honorary member from Scotland. Although John’s family has moved out of the country he returns to the area when he can to visit. John usually joins us at breakfast and attends our regular meeting if the schedule permits.

Rod WA1TAC showed several items. In the picture above he is holding a scrap box antenna switch he built.

In the book raffle Bruce won the ARRL Digital HF Handbook. Leo K1LK won a 2007 ARRL Handbook.

Attendees at the December meeting: Bob AB1CV, Dale AB1GA, Gary K1YTS, Larry KB1ESR, Ben KB1FJ, Hank KB1JLA, Rob KD1CY, Stan KD1LE, Ralph KD1SM, John KK1X, Don N1HVA, Dave N1MNX, Les N1SV, Peter N1ZRG, Joel W1JMM, Peter W1LLB, Bob W1XP, Rod WA1TAC, Earl WR1Y.

Board Meeting

This months board meeting topics.

Future meeting presentations

Discussed the possibility of running general or extra class classes since code is no longer a requirement.

Discussed the North Middlesex Emergency Planning Committee meeting that took place January 10th.

Should start thinking about Field Day June 23rd-24th.

Treasurers report.

Treasurers Report

Income for December was $45 from member dues, $2 from ARRL membership renewals, $47 from the December meeting book raffle, and $12 from patches. Expenses were $15.60 for newsletter postage and $46 for the annual Post Office box renewal leaving a net income of $44.40 for the month.

Current balances:

General fund	$3,942.42
Community fund	$2,136.83

As of 11 January we have 56 members who are current with their dues and 8 renewals outstanding. Please check the member roster that is circulated at the monthly meeting if you do not remember your renewal date. Your membership date also appears on your newsletter mailing label.

If your ARRL membership renewal is coming up, leave your renewal with me at a Club meeting and the Club will pay the postage. As a Special Service Club, the ARRL lets us retain a small portion of the dues that we forward to them.

If you are not yet an ARRL member, please consider joining our National Association for Amateur Radio. Ask at any Club meeting if you want to know the benefits of membership. Of course, the Club gets a somewhat larger commission on new memberships that are submitted through us.

Ralph KD1SM

CW Changes R&O FAQ

http://www.arrl.org/announce/regulatory/wt05-235/

Q. The Report and Order in WT Docket 05-235 that eliminates the Morse Code testing requirement for all license classes was adopted by the FCC on December 15, 2006. When will it become effective?

A. Typically, the effective date of a FCC order comes 30 days after its publication in the Federal Register. If that's the case, the new exam requirement and the revised 80-meter segment for automatically controlled digital stations would likely go into effect sometime in February 2007. When the rule changes adopted in the R&O are published in the Federal Register, the effective date will be included in the Federal Register summary. In any event, the new rules will not go into effect anytime before they show up in the Federal Register.

As soon as the R&O is published in the Federal Register the ARRL will verify the effective date and publicize it on the ARRLWeb and in QST.

Q. I am a "no-code" Technician. What does WT Docket 05-235 mean to me?

A. Once the changes are in effect, all Technician licensees – whether or not they have passed a Morse code examination -- will have "Tech Plus" operating privileges. This means you will have all of your current VHF/UHF and above frequencies and also will have access to the Novice/Technician Plus frequencies on HF. These include:

3525-3600 kHz CW only

7025-7125 kHz CW only

21,025-21,200 kHz CW only

28,000-28,300 kHz CW, RTTY and Data

28,300-28,500 kHz CW, SSB

The power limit is 200 W PEP output for Technician operators.

Technicians can upgrade to General by passing the Element 3 written exam and to Amateur Extra by also passing the Element 4 written exam. No Morse code test will be required.

Q. What about other bands and modes?

A. There are no additional new privileges available to Technician/Tech Plus licensees as a result of WT 05-235. The R&O does not change the operating privileges of Novice, General, Advanced and Amateur Extra class licensees either.

Q. I have a Certificate for Successful Completion of Examination (CSCE) for Element 3 (General written test) and have been waiting for the FCC to drop the Morse code requirement. What will I need to do? Will I automatically receive my General license?

A. It will not happen automatically. You also will need to wait until the new rules are in effect. CSCEs remain valid for 365 days. There's been no change in that rule. If you have a non-expired CSCE for Element 3 credit, you would need to go to take the CSCE to a VE test session, pay the test session fee, if any, and have the examination team prepare and submit the paperwork for your license upgrade.

If the CSCE for Element 3 credit has expired or expires before you attend a test session to process your upgrade, you will have to retake the examination element in order to receive the credit toward your upgrade. The test session fee will apply.

Remember: A CSCE is only valid for 365 days. An expired CSCE for the General license theory will not be usable for an upgrade. If your CSCE expires before the new rules go into effect you will have to retake the Element 3 General class theory exam in order to upgrade.

Q. I hold a Novice license. Am I grandfathered to Technician now?

A. No. There is no grandfather provision. In order to upgrade to Technician, you will need to pass the Element 2 written examination. The FCC did not change operating privileges for Novice, General, Advanced and Amateur Extra class licensees.

Q. I am a current Advanced licensee. Am I affected by this change?

A. No, this ruling does not impact your license. While no new Advanced class licenses are being issued, current Advanced class licensees will have the same privileges they already enjoy. The R&O does not change operating privileges for Novice, General, Advanced and Amateur Extra class licensees.

Q. I got my Technician license prior to March 21, 1987. What happens to my license?

A. You actually could have already taken that license and proof that you had the Technician license before

that date to a volunteer examiner (VE) test session, paid the test session fee and already enjoying General privileges. This latest R&O doesn't change anything in this regard.

This is based on the fact that before that date, the only difference between the Technician and General class licenses was the Morse code speed; the theory exams were identical. Starting March 21, 1987, the Technician and General class license exams no longer were the same, so the "grandfather" rule doesn't apply for Technician licenses issued after March 21, 1987.

Proof that you held the license prior to March 21, 1987, could be a copy of your old Technician license or the page from the amateur Call Book showing your license class as Technician).

Q. Do I still need to pass a Morse code test in order to use CW on the air?

A. No. Any Amateur Radio licensee who wishes may use Morse code on the amateur frequencies they are authorized to use -- except the five USB-only channels at 5 MHz.

Q. The FCC issued an Order on Reconsideration involving automatically controlled digital operations previously allowed on 3620-3635 kHz.
What is that Order's effect?

A. The FCC Order on Reconsideration states that when it becomes effective, the automatically controlled digital operation formerly allowed on 3620-3635 kHz will now be allowed on 3585-3600 kHz. The change affects Part 97.221 (b). While it is correcting a problem in the R&O for WT Docket 04-140, this change does not take effect immediately but on the date announced in the Federal Register when the R&O is published -- no sooner. Until that time, you may not have unattended automatically controlled digital stations on either the old or the new 80 meter subband.

NMAEPC Meeting

Bob W1XP and Stan KD1LE attended the January meeting of the North Middlesex Area Emergency Planning Committee (NMAEPC). The committee is composed of representatives for emergency management of more than ten area towns. A proposal had been put before the committee to fund equipment that could be used to replace our three repeaters in case of a disaster that caused us to loose the equipment at the repeater site. It could also be used to put a repeater on the air at some other site using the portable tower and our standard frequency assignments. After considerable discussion the proposal was set aside for further study and checking of competitive prices.

NVARC Club Net

The club net meets on the 442.900 repeater. Recent participants include Dave N1MNX, Bob W1XP, Bob AB1CV, Joel W1JMM, Larry KB1ESR, Skip K1NKR, Gary K1YTS, Ralph KD1SM, Stan KD1LE, Les N1SV, Richard KB1MBR, Ken K1JKR, Den KD2S and Peter KB1LZH.

Recent discussions were meeting programs, local emergency management activities, and construction of the QSL sorting boxes.

The net is a good place to bring information for the club and questions or discussions. The net meets at 8:00 PM Monday evenings on the 442.900 N1MNX repeater.

Contest, DXpeditions and Special Events

The information for a DXpedition can be quite detailed and may include bands, dates, number of stations, and times of day they plan to work certain continents so I can not list it all here. But if a country or prefix is of interest you can get more information at www.425dxn.org.

Contests

2007
January
1 Straight Key Night
6-7 ARRL RTTY Round-Up
14 North American QSO Party CW
20-21
UK DX RTTY
ARRL January VHF Sweepstakes
CQWW 160 CW last full weekend
North American QSO Party SSB

February
2 Vermont QSO Party
3-4 Delaware QSO Party
CQWW RTTY WPX 2nd full weekend
17-18 ARRL International DX Contest CW
23-24 Russian PSK WW Contest
24-25
CQWW 160 SSB
North American QSO Party RTTY

March
3-4 ARRL International DX Contest Phone

May
CQWW WPX CW last full weekend

June
9-11 ARRL June VHF QSO Party
23-24 ARRL Field Day

July
CQWW VHF 3rd full weekend

September
CQWW RTTY DX 4th full weekend

DXpeditions

Call	Location	Until
TF/IW5DCE	Iceland	December
YI9KT	Iraq	January 07
OX3PG	Greenland	June 07
TU2/F5LDY	Ivory Coast	31 August 07
T68G	Afghanistan	March 2007
9V1CW	Singapore	2008

See www.425dxn.org for more listings

Advertisements

ARRL Letter

CALIFORNIA HAM HAS ROLE IN SEA RESCUE

A California radio amateur played a part in an international effort to rescue a US sailor attempting to single-handedly circumnavigate the globe. Miguel "Mike" Morales, KC6CYK, of Riverside, told ARRL he was able to contact fellow radio amateurs in Chile to obtain and relay reassuring information to the family of Ken Barnes, whose 44-foot ketch Pivateer was foundering off South America. A Chilean trawler, Polar Pesca 1, rescued Barnes from his disabled vessel on January 5. Upon learning of Barnes's predicament on January 2, Morales said he contacted the sailor's fiance, Cathy Chambers.

"She mentioned that the satellite telephone was dying on him over there, so their communication was 30 to 60 seconds at a time," Morales recounted. "I was lucky enough, I got in touch with some of the Charlie Echo [CE-prefix] stations until I got to someone in Punta Arenas, and then Polar Pesca, the vessel that did the rescue." Morales speaks fluent Spanish and has visited Chile and knew "the way things operate down there." As a result, he says, he was able to obtain credible reports via his 10-meter contacts as to what was happening.

Morales said he was able to gather information via his Chilean ham radio contacts from the Polar Pesca 1. He relayed information about Barnes's location and when he was going to be rescued. Morales said he felt it was important for the family to know Barnes's situation and how the rescue plans were playing out.

Barnes, who's 47, left Long Beach, California, late last October, hoping to be the first person to sail around the world from the West Coast. A severe storm dismasted, badly damaged the vessel and soaked his supplies.

The Chilean Navy dispatched one of the CP3 Orion aircraft Chile uses to patrol its 200-mile-offshore territorial claim. The plane spotted the foundering vessel, photographed it and even attempted to drop a life raft that missed its mark. The Chilean Navy coordinated the operation and recruited the Polar Pesca 1 to undertake the actual rescue, although Morales says the US Coast Guard agreed to cover the expense. At that point he was able to pass along news to the family that the trawler was en route to Barnes's location.

"The main thing is, Ken Barnes is back, is alive," Morales said. "What I did was on behalf of the US

ham radio community, I believe. That's what you're there for."

Barnes is scheduled to return home to California this week, and Morales will be among those on hand to welcome him.

AMSAT-NA SIGNS AGREEMENTS TO BUILD "EAGLE" AT MARYLAND FACILITY

AMSAT-NA will co-locate its Satellite Integration Lab with the Hawk Institute for Space Sciences (HISS) in Pocomoke City on Maryland's Eastern Shore and construct its Eagle satellite <http://www.amsat.org/amsat-new/eagle/> there. A division of the Maryland Hawk Corporation, HISS is a non-profit educational organization affiliated with the University of Maryland Eastern Shore (UMES).

"I consider these happenings to be a serious beginning of the activities towards a real spacecraft," commented AMSAT Vice President for Engineering Bob McGwier, N4HY. The new site will replace AMSAT's former lab facility in Orlando, Florida, damaged beyond repair during Hurricane Charley in August 2004.

With the unanimous approval of its board of directors, AMSAT-NA has executed memoranda of understanding with the University of Maryland Eastern Shore and with Maryland Hawk Corporation to formalize the relationship. Per the agreements, AMSAT-NA will gain essentially no-cost access to the HISS facility in return for sharing its equipment and ideas with HISS as well as limited access to the NASA Wallops Flight Facility, which includes environmental testing, machine shop, rocket manufacturing and launch facilities.

In addition, AMSAT-NA will work with UMES to identify opportunities to work together on satellite and related technology projects as well as to work with students and faculty to enhance hands-on studies and research.

HISS is currently constructing the interior walls for the new 8000-square-foot facility. It's being designed around AMSAT's dual clean room, used for AO-40 and now in storage at Florida Space Institute.

AMSAT's lead mechanical engineer, Bob Davis, KF4KSS, an employee of HISS, was AMSAT's mechanical design expert in the Orlando lab during the AO-40 (Phase 3D) campaign. AMSAT expects to move its "clean room" plus parts and equipment currently in storage in the Orlando area to the new lab in the next few months.

The next-generation high-Earth orbit satellite, Eagle will provide many services and reliable communication on bands not previously available. It will take maximum advantage of software-defined transponder (SDX) technology to offer a broader range of easily accessible Amateur Radio payloads. The AMSAT Board of Directors okayed the Eagle upgrade plans during the 2006 AMSAT-NA Space Symposium and Annual Meeting last October in San Francisco.

Under the new plan, Eagle's communications payloads will include a mode U/V linear transponder for SSB, CW and other modes. A second SSB/CW transponder will uplink on L band (1.2 GHz) and downlink on S1 band (2.4 GHz). Both would be usable over 75 percent of the satellite's orbit by an AO-13 or AO-40-capable ground station, AMSAT says. Jim Sanford, WB4GCS, is the Eagle project manager.

AMATEUR COMMUNITY TRANSITIONS SMOOTHLY TO NEW ALLOCATIONS

With some confusion but little commotion, the amateur community took occupancy of more commodious HF phone subbands as the so-called "omnibus" Report and Order (R&O) in WT Docket 04-140 <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-149A1.pdf> kicked in December 15 at one minute past midnight Eastern Time. Among other things, the wide-ranging R&O inflated the overall phone allocations on 75 and 40 meters and provided Generals with a little additional phone spectrum on 15 meters. On 75 meters, where the phone band expansion came at the expense of spectrum that had been allocated to CW, RTTY and data modes, some operators camped out above the new 3.600 MHz Extra class phone band edge to count down the switch.

"Anyone on that wants last CW es [and] first SSB?" pleaded one operator as the minutes ticked away. He'd been working a string of stations on CW, and when the appointed time arrived, he simply switched to SSB and carried on in that mode. There was no massive onslaught of phone stations, however, and several CW contacts continued largely unhindered, interspersed among a slowly growing number of SSB signals.

By week's end, the FCC had not acted on the League's Petition for Partial Reconsideration <http://www.arrl.org/announce/regulatory/wt04-140/ARRL-04-140-ReconPetition. pdf> in the proceeding, filed December 11, so the changes went into effect as scheduled. The ARRL had called on the Commission to postpone the allocation change

for 3600 to 3635 kHz while considering a request to maintain the status quo in that small segment. In its petition, the League emphasized that it was not seeking reconsideration of the entire 75-meter phone band expansion.

"Rather, we ask only that the Commission restore the privileges unintentionally withdrawn from those who operate and who utilize automatically controlled narrowband digital stations between 3620 and 3635 kHz," the League said. The ARRL pointed out that while the R&O left unchanged rules permitting automatically controlled narrowband digital in that segment, it eliminated RTTY and data as permitted emissions above 3600 kHz.

The League wants the Commission to make a "simple and equitable fix" by moving the dividing line between the narrowband and wideband segments of 80/75 meters to 3635 kHz. This would keep 3600 to 3635 kHz available to General and higher licensees for RTTY, data and CW and open to Novice and Tech Plus licensees for CW. It also would maintain access to the automatically controlled digital subband, 3620-3635 kHz.

"This is neither a minor matter nor an academic exercise in future band planning," the ARRL concluded. "It is an urgent problem which, unless corrected, affects a substantial number of existing Amateur Radio fixed facilities and an even more substantial number of mobile facilities."

Meanwhile, unconfirmed reports indicated that some stations -- perhaps out of confusion regarding the effective time or a lack of concern -- fired up on the new phone segments well in advance of the effective time. Judging from those heard in the eastern US, everyone was enjoying -- and even wisecracking about -- the additional elbow room.

"It's just like up the band," quipped one operator attempting a QSO in the newly expanded 40-meter phone band. Retorted another operator: "It's no good down here. It's too crowded!"

The Amateur Radio frequency allocation chart <http://www.arrl.org/FandES/field/regulations/bands.html> and the ARRL Band Plans <http://www.arrl.org/FandES/field/regulations/bandplan.html> on the ARRL Web site have been updated to reflect the band changes. Revised FCC Part 97 Amateur Service rules reflecting all changes detailed in the FCC Report and Order in WT Docket 04-140, also are available <http://www.arrl.org/FandES/field/regulations/news/part97/>.

AMATEUR RADIO SATELLITES AWAITING LAUNCH, DEPLOYMENT

The GeneSat-1 satellite <http://www.crestnrp.org/genesat1/>, which carries an Amateur Radio payload, now is set to launch Saturday, December 16, at 1200 UTC from Wallops Island, Virginia. The launch window extends to 1530 UTC. Problems with testing of TacSat-2, the primary Minotaur launch vehicle payload, forced NASA to postpone the launch from December 11. A collaboration of NASA Ames Research Center, industry and local universities, the GeneSat-1 CubeSat will transmit AX.25 1200 bps FM/AFSK telemetry on 437.075 MHz.

Additional information on GeneSat-1 and other CubeSats is on the Amateur Radio Information and Support for CubeSats Web site maintained by Ralph Wallio, W0RPK <http://showcase.netins.net/web/wallio/CubeSat.htm>. Rocket launches from the Wallops Flight Facility are available live via the Web <http://www.wff.nasa.gov/webcast/>, starting approximately 30 minutes before launch.

The space shuttle Discovery carried four other ham radio payloads to the International Space Station for deployment later this month. Discovery launched December 9 and now docked with the ISS. The spacecraft <http://www.ew.usna.edu/~bruninga/ande-raft-ops.html> will be released into space from the ISS on December 20.

The ANDE (Atmospheric Neutral Density Experiment), RAFT (Radar Fence Transponder) and MARScom satellites all contain systems involving student projects. Midshipmen at the US Naval Academy's Satellite Laboratory designed and built RAFT and MARScom plus the ANDE communication package under the tutelage of Bob Bruninga, WB4APR. The fourth satellite, FCal (Fence Calibration satellite), was built at the Naval Research Laboratory (NRL) It contains an Amateur Radio CubeSat for communications and telemetry.

The Amateur Radio payload within the ANDE satellite will contain two independent AX.25 packet command and telemetry systems. The primary system will operate like PCsat and PCSAT2, providing telemetry and supporting 1200 bps packet communication (ie, digipeater operation) on 145.825 MHz. The secondary will operate on unpublished frequencies.

Bruninga says midshipmen had to rebuild the ANDE communication package from scratch after the fin-

ished modules "burned to a crisp" the day before it was due for delivery when a heat-chamber thermostat failed. "This project has taken multiple years to complete and the current team has taken the work of past students and moved forward with it," he explained.

RAFT-1 will have a PSK31 uplink passband of 28.117 to 28.120 MHz as well as a UHF telecommand uplink. The 145.825 MHz uplink/downlink frequency will support 1200 bps packet.

RAFT also will provide a 217 MHz transmitter/receiver for the NSSS radar fence experiments. Radio amateurs will be able to listen to the signal as the satellite crosses the National Space Surveillance Satellite Network (NSSS) radar-tracking system.

MARScom will operate on Navy-Marine Corps Military Affiliate Radio System (MARS) frequencies. It will feature UHF AM and 148.975 MHz FM uplinks and a 27.965 MHz SSB downlink.

FCal's downlink frequency will be 437.385 MHz (AX.25 AFSK 1200 bps packet). It will identify as KD4HBO.

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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
147.345 + 100 Hz 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.

Nashoba Valley Amateur Radio Club

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