NVARC
Nashoba Valley
Amateur Radio Club

# SIGNAL

SPECIAL SERVICE CLUB
ARRL

October 1998 Volume 7 Number 10

## This Months Meeting

This month's speaker will be Den Connors and the topic will be STS-93 Shuttle mission which is an AXAF and SAREX mission. So you don't know what an AXAF or SAREX mission is? Well I'll never tell. You will have to come to find out.

## Last Month's Meeting

Last month the speaker was Lew Collins W1GXT and he discussed the FCC's RF Exposure rules that we all sign up for now when you sign that Form 610. By the way, the 610 part may change and more information about that is under the ARRL column. We also had the "mystery" picture contest that you can read about below.

## Repeater Activity

The repeater building has been undergoing interior improvements. Last year we started insulating and paneling the building to moderate the extremes of temperature and make it neater. Last Fall that project fell by the wayside in favor of building equalizer plates for all the guy points, adding turnbuckles, and moving the guys. This Spring an additional set of guys was added to the top of the tower and the antenna was replaced. In the last few weeks the interior work has resumed because we realized it would be difficult to complete once the six meter equipment was installed. Thanks to the following people for their time and materials to improve the building; Bob W1XP, Ralph KD1SM, Ben KB1FJ, Stan KD1LE, Wolf KA1VOU.

Dave N1MNX has obtained the necessary equipment for a six meter machine that he has been working on for some time now. That equipment has been assembled and set up by Bob W1XP and is temporarily on the air for testing from a remote site. In addition to Dave and Bob, Ralph KD1SM and Stan KD1LE have been working on the repeater

The repeater frequency is 53.89 with a –1.0 megahertz offset and the tone will be 100 Hz. The antenna was at a height of 15 feet and has been usable as far as Concord, Ma. The antenna has now been raised (but is still not at the repeater site). I'm sure the people working on it would appreciate signal reports.

Besides the work that has gone into these projects considerable equipment and material were required. If you wish to contribute to the support of the repeater please contact Dave N1MNX.

Thanks to everyone who has helped out on these projects.

## Public Service

We ran a public information booth at the Groton Septemberfest and had quite a few visitors. As always the kids and code oscillators were a big attraction. We did have some sign up for a potential class and hope to find a few more. The following people participated Earl WR1Y, Ralph KD1SM, Rod WA1TAC, Jon N1JGA (with the little dogs), Stan KD1LE, Bob W1XP, Herm KE1EC.

NVARC provide communications support for the 5th Annual Rotary International.Cross Country Jamboree at Devens on October 3rd. The participants were from area high school cross county teams and the events were organized as Freshmen, Junior Varsity, and Varsity. Some of the races had nearly one hundred runners. The courses were on a section of Devens that is closed to traffic. After the event the crew 'did' lunch at a local establishment. Thanks to the following members who supported the event Don N1HVA, Bob W1XP, Lynda N1PBL, Ralph KD1SM, Wolf KA1VOU, Stan KD1LE.

The weekend after the last meeting we held our road cleanup for September. Thanks to the cleanup crew of Craig N1ABY, Ralph KD!SM, Don N1HVA, Stan KD1LE, Ben KB1FJ, Earl WR1Y, Pat N1VAW.

The weekend of this issue we are providing communications for the Pepperell Fall Classic Soccer Tournament. Ian NZ1B is coordinating that event.

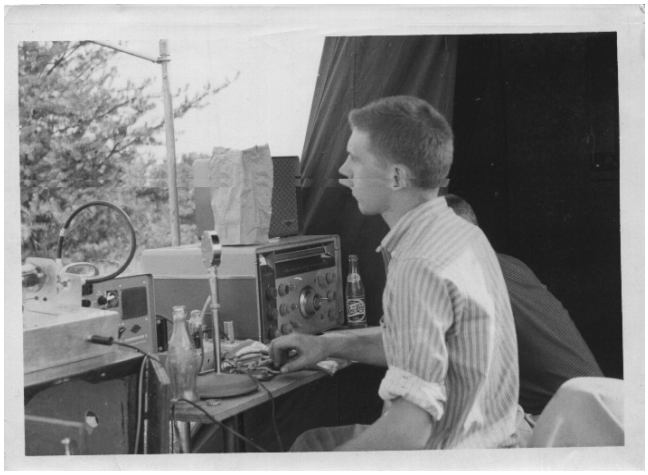
## NVARC FoxBox

The FoxBox continues to be put in the field for each weekend. Generally it has been off the air one day when moving between sites. On several occasions people have run out of time when looking for it. That may be more common as the day light fails earlier. If only a few people have found it, and there are people actively looking for it, we have decided to extend its stay at a given location. So it has spent the last few weekends at the same (very nice) spot. As always the frequency is 145.63 and it transmits between the hours of 8 AM and 9 PM. If you find it please sign the log and take a fox badge.

The intrepid hunters that successfully found the lair used for the weekends of September 19-October 3rd were Ralph KD1SM (although there is some question about the validity of this claim), Karen KA1JVU, Bob W1XP (I'm sure Karen and Bob really found it), Bob K1QT, Scott N1OMM ( I know Scott found it since he unlocked it and brought it home),and Charlie N1PQV (He was with Scott). Stan

## Field Day Memories

The field day picture from 1956 and the young lad was none other than Bob Reif W1XP.



The winner of the drawing with the correct name was Rod WA1TAC. The prize was an ARRL Operating Manual donated by Bob.

The receiver on the right was a National NC-530.

The 2 meter transceiver on the left was a Gonset Communicator II.

## From The Editor

As always, I would like to see articles written by the members for the newsletter. It doesn't have to be a technical article and it doesn't have to be long. It could be about operating in some contest or from some location. It could be the experience you had on your first fox hunt. It could be about some simple handy gadget you built. Or it could be about stamp collecting. If everyone wrote one article a year we would have two original articles in every issue of the NVARC Signal. It's not so difficult, give it a try. We all want to know what you have been up to. Remember the best person to write about the things you like to do or the things you have enjoyed doing is you. I'm going to write about what I like to do.---ed

## ARRL News and Newsletter

FCC RENEWS AMATEUR ENFORCEMENT EMPHASIS

Things may be changing for the better on the Amateur Radio enforcement front. The FCC announced this week that all Amateur Radio-related enforcement investigation, evaluation, and processing has been transferred to the Compliance and Information Bureau. The change, effective September 1 but not announced until more than three weeks later, was made "by internal arrangement" between the CIB and the FCC's Wireless Telecommunications Bureau.

The Wireless Bureau handles amateur licensing and, for the past several years, has coordinated enforcement with the CIB. The FCC said the main objective of the change was to "facilitate the Commission's pursuit of compliance," especially in the area of resolving interference complaints, a hot-button issue within the amateur community. "Amateur enforcement should have gotten more direct attention over the last few years," conceded Riley Hollingsworth, K4ZDH, the CIB's legal advisor for enforcement. "A lot of people think the FCC doesn't care." Hollingsworth will be the FCC's point man in handling the complaints. He says FCC Chairman William Kennard "wants greater respect with respect to enforcement" at the FCC. Putting enforcement in the

CIB's hands should mean "a much faster, more effective response," he said.

ARRL General Counsel Chris Imlay, W3KD, says he's "cautiously optimistic" that the change will improve the dismal amateur enforcement situation. "Now, CIB doesn't have to just gather evidence and forward it to another bureau," Imlay said. "It can act on it when it is ready. That's a good situation compared to where we were." The FCC's public notice said the CIB staff now handles Amateur Radio enforcement matters "from initiation to resolution." That includes complaints, amateur testing issues, warnings, monetary penalties, revocation hearings, and "in extreme cases" equipment seizure and prosecution through the Department of Justice.

The Wireless Bureau continues to handle Amateur Radio licensing, including new applications and renewals, as well as all Amateur Radio policy and rulemaking matters. The change is expected to have no impact on the Amateur Auxiliary. Hollingsworth said the change could, in fact, mean that the FCC will work more closely and more effectively with amateur volunteers in dealing with enforcement issues. Under the new arrangement, all amateur enforcement questions and complaints should be directed to the Compliance and Information Bureau, Compliance Division, Attention: Amateur Complaints, 1919 M St, Mail Stop 1500E1, Washington, DC 20554. The FCC also has instituted an "Amateur Enforcement Line" at 202-418-1184. The automated system prompts callers to leave a name, a number, and a brief message. The CIB will return the call within the next business day.

SPECTRUM PROTECTION BILL TREADING WATER AS CONGRESS TRIES TO ADJOURN

It appears certain that action in Congress on HR 3572--better known as the Amateur Radio Spectrum Protection Act of 1998--will be postponed at least until next year, when a new Congress will be in place. Even so, the ARRL and League members have continued to press for consideration of the measure during the current session. The bill—sponsored by Rep Michael Bilirakis of Florida—has garnered 74 cosponsors. The projected early October adjournment date for the 105th Congress has become a moving target as the House attempted to juggle its efforts to complete the major appropriations bills, wade through the charges and countercharges in the ongoing investigation of the President, and find time for some politicking before the November elections.

New additions to the list of cosponsors for HR 3572 include Representatives Neil Abercrombie of Hawaii, Carolyn Kilpatrick of Michigan, Carolyn McCarthy of New York, Sam Farr of California, Owen Pickett of Virginia, Charles Stenhold and Gene Green of Texas, and Rod Blagojevich of Illinois. For a full review of the bill along with a sample letter to Congress, see "DC Currents," QST, June 1998 or H.R. 3572: How You Can Help.—Steve Mansfield, N1MZA

FCC'S NESS: ENSURE ADEQUATE SPECTRUM FOR AMATEURS

FCC Commissioner Susan Ness recently gave amateurs some cause for optimism. In remarks prepared for delivery September 23 at the Personal Communications Industry Association of America's PCS '98 in Orlando, Florida, Ness promoted the notion that some spectrum should be kept off the auction block. The value to the public of certain spectrum uses "does not always translate into pure economic terms," Ness declared.

"For example, we need to ensure that adequate spectrum is available for public safety purposes, for unlicensed—that is, Part 15--uses, for the Amateur Service, and for experimental and scientific purposes," Ness said. "None of these needs would be met if auctions displaced judgment in the spectrum allocation process."

Addressing the topic "Blueprint for Spectrum Management," Ness said auctions work well but are not a substitute for the allocation process. The FCC, she said, must not back away from its fundamental duty to allocate "in accordance with the public interest." The complete text of Commissioner Ness's remarks are available on the FCC Web site at http://www.fcc.gov/Speeches/Ness/spsn815.html.

GAMMA RAY BURST BRIEFLY AFFECTS PROPAGATION

Insomniac hams in the Western US might have witnessed the effects of a startling cosmic event in the wee hours of August 27. And those hams' logbooks may hold information scientists want. For five minutes, starting at 1022 UTC on August 27, HF propagation changed dramatically for the Western US and Pacific area. "It was as if night was briefly turned into day in the ionosphere," said Stanford professor Umran Inan, leader of a research group that observed the event. That means that your 40 or 80-meter DX QSO may have suddenly faded away, and, for a short time, you could have worked DX on 20 or 15 meters, or maybe even higher frequencies, in the middle of the night. On HF, Inan said the MUF should have risen to daytime levels for about five minutes.

Inan said he'd very much like to hear if any hams noticed the effect. The cause was a tremendous burst of gamma-rays and X-rays coming from a newly-discovered star type some 15,000 light-years away. The burst of radiation from the distant star was powerful enough to boost the level of ionization in Earth's upper atmosphere from nighttime to daytime levels, according to the Stanford research group.

This was the first time that such a change in Earth's environment has been attributed to an event so far away. The star that emitted the burst is a magnetar, a superdense neutron star with the most powerful magnetic field ever found in the universe, a magnetic field strong enough to rip atoms apart.

The gamma and X-ray burst "lit up" Earth's ionosphere. Along with the burst a cloud of subatomic particles spewed from the star's surface at nearly the speed of light. Those particles spiraled around the magnetic field lines and emitted microwaves. At the National Science Foundation's Very Large Array (VLA) radio telescope in New Mexico, astronomer Dale Frail, working with Caltech researchers Shri Kulkarni and Josh Bloom, detected the microwaves emitted by this cloud of particles at frequencies ranging from 1.4 to 8.4 GHz, and made a "movie" of the cloud as its radio emission brightened, then faded away.

The radiation burst affected the ionosphere over the Western US, but the Eastern part of the country was in shadow, so hams in the East would not have experienced the strange propagation effects. For more information, see the National Radio Astronomy Observatory's Web site at http://www.nrao.edu/pr/magnetar.html.--Dave Finley, N1IRZ

SOLAR UPDATE

Propagation prophet Tad Cook, K7VVV, Seattle, Washington, reports: Solar activity was down a bit last week, with the average solar flux off by six points and average sunspot numbers lower by almost 27 points.

Now that September is over it's time to look at some long term trends. The last quarter of 1997 had an average solar flux of 94.3. The next quarter—January through March of 1998--the average flux rose to 98.8. The second quarter of this year the average flux was 107.8, and this last quarter the average flux was 129.2. The average flux for September was 137.7, and for May through August it was 106.7, 108.5, 114.1 and 136. The average flux over this past week was 125.6, and for the same period one year ago it was only 88.2. We can see that the general trend in solar activity is up, although there was only a negligible increase from August to September.

Last week the really active geomagnetic day was on Friday, when the planetary A index was 121 and the planetary K index went as high as 9, which signals a major geomagnetic storm. Over the next few days, Friday through Sunday, the solar flux is forecast to be 115, 113 and 112, and the planetary A index for the same period is predicted at 20, 20 and 15. Unsettled to active conditions are predicted around October 15 and for October 18-23 as well. The solar flux is expected to rise after the weekend, to above 130, then drop down to 120 around October 12-14, then peak around 145 around October 20. Now that we are in the fall season, look for good HF propagation when the K and A index is low.

The October 1998 issue of the magazine Astronomy has a couple of items of interest to solar observers. Page 28 has a stunning picture from the NASA Transition Region and Coronal Explorer spacecraft showing loops of plasma from an active solar region on April 25. The same issue on page 60 has an article about forecasting solar storms titled "Blowin' in the Solar Wind."

Sunspot numbers for September 24 through 30 were 156, 118, 115, 87, 127, 86, and 59, with a mean of 106.9. The 10.7- cm flux was 135.4, 122.1, 126.9, 135, 122.5, 115.9, and 121.5, with a mean of 125.6, and estimated planetary A indices were 28, 121, 14, 12, 6, 10, and 8, with a mean of 28.4.

FCC ADOPTS UNIVERSAL LICENSING SYSTEM

Amateurs can say good-bye to the FCC Form 610 series in a few months. The FCC has adopted its long-proposed Universal Licensing System, which replaces Form 610 with a new, electronic Form 605, the Quick-Form Application for Authorization in the Ship, Aircraft, Amateur, Restricted and Commercial Operator, and General Mobile Radio Services. Applicants may continue to use the old forms for six months after the new rules go into effect, however. The FCC also adopted proposals to permit automatic reciprocal licensing of foreign hams wishing to operate in the US, pursuant to recent international reciprocal operating agreements.

The FCC said the ULS will "fundamentally change" the way the Commission receives and processes wireless applications and makes licensee information available to the public. The rules adopted September

17 will—in the FCC's words—"consolidate, revise, and streamline" license application procedures for radio services under the Wireless Telecommunications Bureau. The FCC last November began initial collection of licensee data to populate the ULS. Using the ULS, applicants and licensees will be able to file, modify, and renew electronically. Access to the ULS is via http://www.fcc.gov/wtb/uls/.

When the FCC first aired its ULS plan, some licensees expressed concerns because ULS registration would require applicants to provide a Taxpayer Identification Number, typically a Social Security Number. In its public notice, the FCC assured that "all TIN information will be kept confidential."

The FCC's action consolidates 40 existing forms into four ULS application forms, including the new Form 605. Electronic filing in the ULS will not yet be mandatory for individual amateurs. Hams will have the option of filing electronically or on paper. However, electronic filing via the ULS will be required for Volunteer

Examiner Coordinators in the Amateur Service. Mandatory electronic filing requirements go into effect July 1, 1999 or six months after the use of ULS in a particular service—whichever is later. An official Report and Order detailing the FCC's actions is expected to be released soon. The FCC's Public Notice is available on the FCC Web site at http://www.fcc.gov/Bureaus/Wireless /News_Releases/1998/nrwl8040.html.

JAMBOREE ON THE AIR '98 IS OCTOBER 17-18

In the Bronx, New York, Cubmaster Lloyd Ferrell, KB2LWR (left) helps his Cub Scout Pack 808 crew—which was not above a little horseplay—prepare to put up a VHF antenna for the 1997 JOTA. At KB2LWR, Cubmaster Ferrell shows an enthusiastic Scout group how to operate the two-meter radio during the 1997 JOTA.

On the third weekend of October, more than 400,000 Scouts around the world are expected to get together on the air during the 41st international Jamboree On The Air (JOTA). The annual event gives ham radio veterans a chance to plant the seed of ham radio in the minds of Scouts gathered at stations set up in fields, parks, mountaintops, or even at the veteran op's own shack, to participate. Remember your first ham radio contact? Experienced hams can give that feeling to future ham radio operators during JOTA by showing Scouts the fun they could have if they embark on a "hobby of a lifetime." JOTA runs from Saturday, October 17, at 0001 local time to Sunday, October 18, at 2359 local time. This means activity continues from Friday to Monday, because of the time differences. During JOTA, participating Scouts not only get a chance to talk to other Scouts in their community or state, but they might even be able to chat with Scouts in different countries!

The radio station of the World Scout Bureau, HB9S, will be on the air from Geneva, Switzerland. HB9S will operate almost continuously, but will take breaks during the night in Europe. Groups can contact the station via packet at HB9S@HB9IAP or via e-mail to Station Manager Yves Margot, jota@world.scout.org. Operators at HB9S say they will do the best they can to make contact with Scout stations worldwide and speak to scouts in as many languages as possible. JOTA can be a club activity or an individual project. Individual hams who want to get involved should make arrangements with Scout leaders a few weeks in advance (to get contact information, call the local Scout office and make yourself available to your local Cub Scout Pack, Girl or Boy Scout Troop or Explorers). The ARRL Educational Activities Department offers a JOTA information package on the ARRLWeb at http://www.arrl.org/ead/jota.html.

JOTA can sometimes be an outdoors activity like Field Day. The occasion gives veteran hams a chance to set up antennas and demonstrate different modes of radio communication, including packet, RTTY, SSTV, and HF digital modes, as well as voice. JOTA activity on HF will center around 3740 or 3940, 7290, 14290, 18140, 21360, 24960, and 28990 kHz on SSB or 3590, 7030, 14070, 18080, 21140, 24910, and 28190 kHz on CW. For more JOTA information, see http://www.scout.org/jota/.—Jean Wolfgang, WB3IOS; Frank Krizan, KR1ZAN

NEW ARRL SITE PROVIDES YOUTH WITH A PLACE TO MEET

A new page on ARRLWeb aims to take advantage of youth interests in computers and the Internet to offer younger hams a place to get together online to arrange on-the-air schedules. Amateur Radio youth groups can just visit the Youth Skeds Database at http://www.arrl.org/ead/youthskeds/ and make skeds with other schools or young people's groups. The ARRL Educational Activities Department credits Phil Downes, N1IFP, for coming up with the idea.

Regardless of age, grade level, school or group affiliation, youngsters worldwide can register at this site. This adds them to the list of groups wishing to get acquainted with others via Amateur Radio.

"The purpose of this particular ARRLWeb page is to answer a growing need, thanks to the wide Amateur Radio interest on the Internet," said ARRL Educational Activities Correspondent Dan Miller, K3UFG.

"This is a meeting place for youth groups wishing to interact, and contact each other via Amateur Radio. This can be schools at any level, or scouts, or CAP, or any youth auxiliary club." At the Youth Skeds home page, entering a state (without entering a city) makes it possible to scan a statewide list of groups who have registered. Or you can pinpoint an area by entering a city and state.

"This is a brand new service of the ARRL and is available to all Amateur Radio youth groups, whether they are affiliated with the ARRL or not," Miller said. "Of course, becoming affiliated would provide additional benefits, but the decision is theirs." Miller says he'll be happy to provide additional information. Call him at 860-594-0340; e-mail dmiller@arrl.org.

LEAGUE ASKS FCC TO HOLD THE LINE ON CONDUCTED EMISSIONS

The ARRL has asked the FCC to hold the line on current conducted emission limits below 30 MHz from unlicensed consumer electronic, industrial, scientific, and medical devices operating under Parts 15 and 18 of the Commission's rules. Interfering devices include such common household appliances as computers, TV sets, and microwave ovens. Conducted emissions result from RF voltages imposed on the a.c. power line, which can, in turn, act as an antenna. In general, the current conducted emission limit is 250 uV.

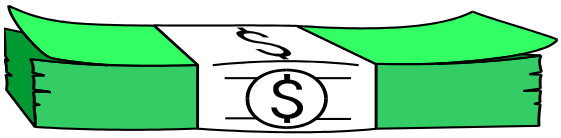
In comments filed in response to a Notice of Inquiry on conducted emission limits below 30 MHz in ET Docket 98-80, the League said the proliferation of Part 15 and 18 devices over the past decade as resulted in what it called "a marked increase in RF noise from conducted emissions generally." The ARRL said it "wholeheartedly agrees" with a tentative FCC conclusion that some limitations continue to be necessary to control interference to licensed radio services in the HF range.

The League said that current Part 15 and 18 limitations are "not sufficient" to prevent interference to hams from conducted emissions. The League said it would be "most inappropriate" to consider relaxing the limits "unless and until the consumer electronics industry is provably able to properly respond to the interference problems."

The League concluded that because most interference from Part 15 and 18 devices to licensed HF services results from conducted emissions, "it is especially important that the Commission retain what minimal protection exists from the present regulations."

The League has already called on the FCC to not relax line-conducted emission limitations at 2.4 GHz and has recommended a 300-meter distance limitation from residential areas if the FCC adopts the relaxed conducted and radiated emission limits it proposed in a separate proceeding (WT Docket 98-42). That proceeding focused on updating regulations for Part 18 RF lighting devices.

## $The October Treasurer's Report $



Expenses :
primarily insurance premium $266.44

Current fund balances:
General Fund: $388.21
Community Fund: $440.92

If your ARRL membership renewal is coming due soon, do yourself and your club a favor and let me send in your payment. You save 32 cents and the club gets to keep part of the money. Make your membership check out to NVARC in the full amount of your ARRL renewal and I will take care of the rest. If you haven't yet joined the ARRL, then there's no better time -- the League needs your input on the licensing restructuring proposal and it helps amplify our voice in Washington DC to count you as a League member. If you join the League through the Club then NVARC gets an even larger slice of the dues pie.

## ARRL Web Page

If you haven't looked lately the ARRL Web Page has undergone a lot of changes. They have instituted a "members only" area where complete product reviews, index to QEX, daily news items, and other things will be available only to the members. The first time you need to log in with your membership number and set up a user name and password.

## NVARC QSL BUREAU

At the last meeting Bob Reif W1XP volunteered to manage the outgoing NVARC QSL Bureau. Just bring your cards and labels to the meeting.

## CW Practice Nets

The NVARC slow speed net meets Tuesday and Thursday at 7:30 p.m. on 28.123 MHz. Except the third Thursday of the month. That being the club meeting night.

## Calendar of Events

Flea Markets:
October:
18 MIT Flea
24 NE Antique RC Flea Nashua
November
7 Londonderry, NH. IRS Flea.
15 Mayflower ARC Plymouth
21 Waltham ARA Auction Newtonville

Special Event Stations.
October:
16-18 Collins Collectors Assn Convention W0CXX/5
17-18 WWII Submarine USS Ling
17-18 USS Hornet Air and Space Museum
17-18 Boy Scout Jamboree On The Air
17 USS North Carolina BB55 AC4RC
17 Nowhere, IL "operating from nowhere" W0FUN
November:
7-8 Remembering the Edmund Fitzgerald
18-19 Mickey and Minnies 70th and Disneys 75th.
28-29 Plimouth Plantation WA1NPO

If anyone is interested in any of these events I have the times and frequencies and they are usually listed in QST. Stan

## Did You Know?

Q Why there is no channel one on your TV?

A In the 1940's the FCC assigned the frequencies of channel one to the mobile services.

Q In a cost savings move American Airlines eliminated one olive from each salad. How much did they save that year?

A $40,000.

Q What city has the most Rolls Royces per capita?

A Hong Kong


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

Pres.: Erik Piip KA1RV
V Pres.: Den Connors KD2S
Secretary: Ian Norrish NZ1B
Treasurer: Ralph Swick, KD1SM
Editor: Stan Pozerski KD1LE
PIO: Jon Kinney N1JGA
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
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 leave items on PEPMBX, at Packet address: KD1LE@N1FT.NH or pozerski@net1plus.com