10-89

Zero Beat

Hampden County Radio Association, Inc.

Our 42nd ARRL affiliated year
Special Service Club

Serving Greater Springfield, MA

Remarks from the President

The Board of Directors, which plans and runs the club (among other activities) is busy setting up the meeting schedule for this club year. The first meeting (September) which was a review of June's Field Day seemed to provide a lot of interest. The next meeting to be held October 6th, will be a discussion by Bob McCormick, KA1KPH of his recent trip to Bulgaria. He has lots of pictures and plans to comment on their Ham Radio activities and on other aspects of his trip. I think you will find this interesting.

With this issue of Zero Beat, your board is sending out a questionnaire. We want to get input from you as to how you want the club run. Here's your chance to advise us of your thoughts. Please take a moment to think about the questions. There will be extra copies of the of the form at the October meeting and at that time we will ask you to fill it out. If you can't come to the meeting, please fill it out and send it to the club's address.

At the present time I'm listening to the Hurricane Net on 14.325 Mhz. Hugo is in the Carribean wrecking havoc. I'm absolutely astounded at the number of stations that interfere with this emergency net. Particularly unnecessary is the tuning up on the air on frequency. A dummy load should be used. Tonight I saw Art Zaveralla, W1KK being interviewed by channel 22. He was monitoring the Hurricane Net.

We're looking for your ideas as to what to have for meeting topics. Please let any member of the Board have your thoughts.

73 de K1BXE, Yorke

10m 1200 baud packet

Packet "nodes" (Net/ROM and TheNet) have traditionally been available on VHF and UHF frequencies only. Recently, 1200 baud packet has appeared on 10 meters (FSK, not FM!). There are a number of nodes available on 28.195 Mhz. These nodes are linked with other nodes on 2 meters, 220, and 440 so that you don't even need HF capability to take advantage of the band openings!

Here in Western Mass, we have a 10 meter node at the "BERK" cluster. BERK5 is available full-time on 28.195 Mhz, or by connecting to any BERK node (BERK1: 145.07, BERK2: 221.11, BERK3: 145.09, BERK4: 144.99). The most common "DX" node available from BERK5 is AZSE (South East Arizona), where you can enter the Arizona Packet network. Once you're there, you can access their CONF node

(continued on back page)

Next meeting will be Friday, October 6th, 8:00PM at the Feeding Hills Congregational Church

Next board meeting will be Thursday, October 12th, 7:30PM at Jeanette KA1MEW's house

Next VE exam will be Wednesday, October 4th, 7:00PM at the Agawam High School

Club Officers

President—Yorke Phillips, **K1BXE**
Vice President—Stan Hilinski, **KA1ZE**
Treasurer—Greg Stoddard, **N1AEH**
Secretary/Clerk—Jeanette Platanitis, **KA1MEW**

Board of Directors

Jim Sebolt, **N1DUY**
Larry Lemoine, **N1EPE**
Steve Nelson, **WA1EYF**
Cliff Junkins, **W1UWX**
Ed Goldberg, **WA1PLS**
Fred Stefanik, **N1DPM**
Frank Potts, **NC1I**
Bob Lafleur, **NQ1C**

v3.13 09-05-89 KA2DEW

Greetings Packeteer. This publication is brought to you for the purpose of furthering packet radio networking. In the past 12 months a small group of packet radio enthusiasts in New York, Massachusetts and New Hampshire have managed to construct a packet network using hidden transmitter free backbones that stretches from southern New Hampshire to Syracuse New York. Average turn around times for operation from end to end is about 80 seconds. Throughput has been consistant enough to run some real fine demonstrations even at prime time. Loading has increased over the past year however and we have not been able to keep ahead (for long) of the mounting volumes of traffic. This is considered a challenge, not a problem.

We're not done yet! It looks like this winter will be the season of the 4800+ baud backbones. Also we're still looking to expand the system. We're looking for hams interrested in owning and operating their own nodes. Most of our nodes are privately owned.

Hopefully this document will help you in determining the effectiveness of what we have proposed and implemented and will get you on a course towards developing your own network hardware.

If you are interested in adding to the system: I recommend that you contact Herb, Tadd, Dana, Kevin or the sysop of the node that is closest to you (use the INFO command to check) or that you go to a meeting of one of the packet organizations and talk to the other people who are involved.

If you are interested in using the system: I consider hacking the network a good thing. Learn all that you can. This is half of the fun! Take the network as far as you can. The theory on this is that the more packeteers we have that can use and understand the network, the more progress we will see in the future and the more fun we will all have. At all times, take the other packeteer by the hand and help him in understanding how to use the network. Please note: If you find that a path in the network is not responding quickly it is probably overloaded. Note this and try avoiding that path during prime time. Your cooporation and support (and input) is appreciated.

Short term objectives:

a>Create redundant links from Boston to Buffalo
b>Create HTS free links in place of existing shared access channels for backbones.
c>Promote emergency power in existing nodes.
d>Experiment with and install higher speed backbone links.
e>Play radio!

Long term objectives:

a>Participate in hidden transmitter free backbone from New Brunswick to Indiana and from Ontario to Maryland.

Hidden Transmitter Syndrome:

This is the bane of most earlier packet networks. A system with 3 sites:Site A and Site C are far enough apart that they don't hear each other at all. Site A and site C are near cities. Each has a BBS or 2. Site A has traffic to go to site C and site C has traffic to go to site A or B. Site A will transmit when it doesn't hear anything. Site C will do the same. Site B hears both A and C. If C is transmitting and A decides to transmit, both messages are lost. If A is waiting for a reply from B and site C is talking, then site A has to wait. If C is talking for too long, site A will retry, thus trashing the message C is sending to B. The upshot of this is that if the A to B link was on a different frequency than the B to C link, the observed performance increase is greater than 5 times, regardless of the baud rate! A hidden transmitter is a station that can be heard by one or more stations on a frequency but can not hear ALL of the stations on the frequency. It is the policy of NYSPRA and NEPRA to stay away from hidden transmitters on any new paths that we are developing.

Networking Contacts:

--Tadd Torborg, KA2DEW - Eastern MA/Southern NH operations
603-424-3700x232 between 3pm and 7pm or @ WB1DSW or KA2DEW on 145.07 off the SNH node.

--Herb Belin, WA1TPP - Western MA/CT operations
Contact at WA1TPP off HERB wireline link at BERK node or at Herb's BBS, WA1TPP-2 (personal BBS) off HERB node or @ K1MEA.

--Dana Jonas, WA2WNI -- NYS RACES packet coordinator, Albany NY
Contact @ WA2PUU or off DANA wireline link at KNDRHK node or write to Dana Jonas, RD2 Box 92, Valatie NY 12184

--Kevin Wright, WA2VAM -- Assistant NYS RACES packet coordinator, Cortland NY. Contact @ WB2ACU or write to Keven Wright, POB 11, East Freetown, NY 13055

Node Operation:

Nordlink/TheNET software by DF2AU
NET/ROM by Software 2000

To use a network node, you connect to it. As soon as you get a *** CONNECT message back you can type a command which the network node will interpret. The commands available on a user port are Ident, Nodes, Routes, User, Connect, CQ, Parm and Sysop. Only the first character of each command (except CQ) need by typed. Some of the commands require additional information which is typed on the same line as the command.

Nodes: This command is used to ask the node about the other nodes on the network. Information that may be gotten includes all of the nodes that this node knows about, the user nodes that this node knows about or the next node in the path that this node will use to connect to another node. Usage- Type N <return>. The network node will return with a list of all of the user nodes that it knows about. Type N * <return>. The network node (NET/ROM or TheNET v1.0)will return with a list of all of the nodes, user or hidden, that it knows about. A hidden node is one whose name begins with a # sign and is used as a backbone port with no user services. Type N nodename <return>. The network will return with a table of callsigns for the neighboring nodes which are the paths that the node might take to get to the nodename specified. Each line of the returned table has a > if the path is in use, the callsign of the path, the quality of the path and a 1 if the path is a serial port to another TNC in the same rack or a 0 if the path is over the air. Note that the quality returned is calculated based on sysop entered values and not on the actual radio signal quality or failure rate. *note: TheNET v1.1 doesn't pass hidden nodes or list them in the nodes list.

Routes: This command, entered as R <return> will return a table of adjacent nodes (neighbors). All of the neighbors will be listed. On each line of the table is a > if the path is in use, the callsign of the neighbor node, the quality of the path, and the number of nodes the neighbor node is telling this network node about. At the end of each line, a I would indicate that this neighbor has been "locked in" by the sysop. Otherwise the nodes listed were detected by this node via automatic routing broadcasts which occur about once per hour.

User: This command, entered as U <return>, will return a list of the users of the node. This does not include stations who are connected through the node. A user connecting from SNH to SRTOGA will not show on CENTMA (not even on the backbone nodes), only on SNH and SRTOGA.

Parm: This command shows the current numerical values set up as parameters for the node. A NordLink or NET/ROM operations manual will be required to make any sense out of this.

Info: This command will return with up to 160 characters of text which contains information programmed by the sysop. This should include the node's location, its uses, what BBSs are available and where to go for more information. If you are playing around looking through the network you should use this command at each node.

Connect: This command is used to connect to another node in the network or to a user available from the node you are connected to. Usage is C callsign <return> just like the command for a TNC1 or TNC2. You can, with this command, connect to another node using the nodename, i.e. C MTM <return>. For style and good amateur practice we recommend that you use the node's callsign for your initial connect to your local user node. Note that this command will not work on hidden nodes in the interstate network system.

Sysop: This command followed by the password allows the sysop to make changes to the routes table or parameters.

Node notes:

The callsign that a node uses for a user who is exitting a node is the entry callsign subtracted from 15. Thus if the user is KA2DEW-0 and he connects to a node, when he connects from any node in the network he will be seen as KA2DEW-15. KA2DEW-2 becomes KA2DEW-13 etc...

Crowd nodes:

Some of the nodes in the network sport a capability called CROWD. This feature allows an operator to join a "crowd" with several other hams to have a multi-way conversation. Each ham sees every other ham's messages preceded by the callsign. To use a crowd node you must connect to a node which has one, then do a C CROWD *carriage return* and once you get a connect back you should type an extra *carriage return*. You will then get a message back telling you to type "/H for help". Once you type /H and a *carriage return* you will get a full page of text describing the functions of a CROWD node. From now on, anything you type will be printed at each other ham's location.

You may have to schedule contacts with other hams or monitor the CROWD node for an hour or so to scare up a conversation. I use it when I get into a conversation with more than one ham at a time from home and then ask everybody to migrate to the CROWD node. Currently there are CROWD nodes at UTICA, ALB144, BERK4, MTM, SNH and CENTNH.

Network Node Hardware: TheNET or NET/ROM

Each network site consists of 2 or more TNC2 clones tied together by the serial port on each TNC. If there are more than 2 TNCs a diode matrix box is used to patch the 4 lines from each TNC to each of the other TNCs. Connected to each TNC at the radio/audio port is a radio. Each radio is on a different frequency. The radios shouldn't interfere with each other. Each site has a backbone connect port to tie it into the network. Each site has a user port to allow users, both human and computer server (i.e. DOSgate, Unix, BBS etc...) to talk into the network or get connected to from the network. It is the considered opinion of the network designer that a site with no user port is probably bad. This would only invite abuse of the backbone by users.
Many sites have 4 or more TNCs. Each link in the backbone is on a different frequency to avoid hidden transmitter syndrome and therefore each link at each site needs a separate TNC/node.

TheNode by G8BPQ

Each network node consists of a PC compatible computer with DRSI, TNC2 or TNC1 type tncs. This software behaves like TheNET or NET/ROM except that it maintains the same mneumonic and callsign on all of its ports. The node behaves as if it were a single TNC with several radios. To connect to a user you must specify which radio you're going to use. This is fairly self documenting however. Type C <return> to get information explaining this. There is also an info command (type I <return>).
This node is shareware and is in the form of a software package for a PC compatible. It also has the additional feature of being an excellent front end for a BBS. A user, apon connecting to the node, may type 'BBS <return>' and be connected to the BBS. Or, if the sysop chooses, the BBS may also take on a node mneumonic and be broadcast. This way a user may connect direct to the BBS without first connecting to the network user port which serves the BBS. This way a BBS could be installed that doesn't have a 2 meter user port at all and its users could still access it via the network from the 2 meter frequency of choice. This would allow that traffic from a BBS, directed to 2 meter user, would only appear on 2 meters once, from the user's local node to the user. This is as apposed to twice in the case of a BBS talking to a 2 meter digi and then the digi talking to the BBS's user. Experience shows us that throughput is limited by the # of hops on two meters that a signal has to travel.

We Support Keyboard to Keyboard QSOing!!!

[NK1M wants to play chess over packet. Connect to him from the SNH:K1TR-1 node]

Support:

We would like to take the time (and space!) to give our thanks and appreciation to the clubs and individuals who have helped our cause! Thankyou!
MTARA, NOBARC, Saratoga Co RACES, PenBay ARC, GURU, CVRC, Dutchess Co RACES, NEPRA, FLRGOBL, OARS, etc etc...!

A Tribute
by Jeff Duquette, K1BE

Percy Noble, W1BVR, is now a silent key. I felt Percy represented the "Old Man" of amateur radio. I never met Hiram Percy Maxim, W1AW. But I knew him because of my friendship with Percy Noble., W1BVR.

Percy represented the best of amateur radio. He was a gentleman to all. I remember the extreme courtesy he showed to me when I first checked into the Western Mass cw net. I was totally lost! Percy gave me the confidence to keep trying until I could at least hold my own. (Never could send with an automatic key, though.)

Percy as the Section Communications Manager made me an Official Bulletin Station. I'd get on the Mt. Tom net and read off the latest news. I even passed the word on cw nets. That was my introduction into providing service in amateur radio.

Percy is gone, but not forgotten. For if amateur radio is to survive we must have new Percy's to welcome and teach newcomers. Percy Noble, W1BVR was the embodiment of the best amateur radio has to offer.

W1BVR Licensed amateur 1921-1989 68 years!
Served as: SCM: 2 years
N.E. Division Director 18 years
ARRL Vice-President 6 years
SCM about 15 years

Attached is an article W1BVR wrote at my request when I was the Zero Beat editor. I have many more, so speak up if you want to see them re-printed.

Show You Attend!

At all of the club meetings, we'll have a chalkboard set up near the door where you can write your callsign and name. It is necessary for the club to take "attendance" at the meetings to verify club participation in contests such as the January VHF contests. Please help us by writing your call and name. You can also use the board to find out who else is at the meeting that you may want to meet.

From February Zero Beat '79
Recollections of the 1931 Event
By Percy Noble W1BVR

The following is as I remember my activity with the U.S. Air Force at Bowles Airport in 1931. I believe it was our total air force at the time and they had no radio equipment.

How I got invited to be part of it I don't remember, but I did ask my superintendent of schools, (I was then teaching principal at the school in Blandford.) if I could be released for two days to take part in air force activities. Being a reserve officer in the army, he agreed, and no docking of my pay! He was the reserve officer, not me.

The city of Springfield had set up a small building for our radio shack. W1ASY, (now W1RB) loaned his transmitter. I don't remember who loaned his receiver. The ARRL station, (W1MK I think.) would keep in touch with us for relay if necessary.

Harry Fisk, W1DR of Westfield and I made up one team. We copied coded material (5 letter groups) for an hour at a time, alternating turns. At the end of each run we took our coded material to the sergeant in the main building. I believe the station we copied was NAA. Unfortunately, I can't recall who made up other teams. (Too busy that day myself!) My wife tells me I've always been self-centered, and I guess she's right.

One afternoon an officer came into our shack, saying he knew we had a receiver, but did we have a transmitter? He asked us to relay a message for him to Long Island. We agreed to try and relayed his message. he told us a plane had just come in and smashed its' propeller. He gave us the number of it and requested that a replacement be sent up.

We sent the message to W1MK to relay, Some time after that, and I don't think it was too long, the officer again came in and told us the new propeller had arrived. HAM RADIO SCORES AGAIN!

At the conclusion of the exercises, some of the crew got an airplane ride to New York, I declined because I didn't trust airplanes then, and I still don't! You and I both know it's impossible to take a heavy plane, load it with a great many people, and get it off the ground. (Or am I just keeping up to date?)

(10m packet continued from front)

(similar to our CROWD), or the NJ7P mailbox located off the BISBEE node. A sample connect session might look similar to this:

```
cmd: C BERK1
*** CONNECTED TO BERK1
C BERK5
BERK1:WA1TPP-12> Connected to BERK5:WA1TPP-5
C AZSE
BERK5:WA1TPP-5> Connected to AZSE:N7OO-10
C BISBEE
AZSE:N7OO-10} Connected to BISBEE
C NJ7P
BISBEE} Connected to NJ7P
*** Welcome to the NJ7P Mailbox...
```

If you are finding the local frequencies for packet too crowded, you can also use BERK5 as an entry point into the network, when the band is closed. Connect to BERK5 on 28.195 (remember, SSB or FSK, not FM! - but still 1200 baud) and from BERK5, you should have access to the North East packet network.

Have fun, and happy packeting!

Thanks to all who helped with the Hurricane Hugo traffic! Amateur Radio comes through in times of need!

VE Exams

Exams are sponsored by the HCRA on the first Wednesday of each month at 7:00PM *sharp* at the Agawam High School. VE's are also needed. If you are interested in taking an exam or helping give exams, please contact Jeanette KA1MEW at 786-1463.

The next exam will be October 4th.

HCRA Meetings

First Friday of each month at
Feeding Hills Congregational Church
Center of Feeding Hills
Intersection of routes 57 & 187
Doors open at 7:30 PM
Meeting starts promptly at 8:00 PM

Local Nets

HCRA 10 Meter Net	Thursday 9:00 PM 28.650
Nutmeg VHF Traffic Net	Daily 9:30 PM 146.28/88
80 Meter Ragchew Net	Tuesday 8:00 PM 3.709 Mhz
WMPN	Daily 6:00 PM 3.937
WMSN	Tuesday & Thursday 7:30 PM 3.713
WMN	Daily 7:00 PM 3.562
WMTN	Monday-Friday 1:00 PM 146.31/91
CPN	Monday-Saturday 6:00 PM 3.965 Sunday 10:00 AM 3.965
Mt. Tom Information Net	Wednesday 7:30 PM 146.34/94
Mt. Tom Swap Net	Follows Mt. Tom Information Net
Mt. Tom Emergency Net	Sunday 8:45 AM 146.34/94
Agawam Civil Defense Net	Monday 8:00 PM 449.175 & 146.70
RASON	Daily 9:00 PM 146.13/73
WESCON	Daily 8:30 PM 147.78/18
CN	Daily 7:00 & 10:00 PM 3.640
CSN	Monday-Friday 7:30 PM 3.720
CSTN	KY1T PBBS, 145.01 Mhz

Hampden County Radio Association, Inc.
P O Box 482
West Springfield MA 01090-0482
Editor: Bob Lafleur, NQ1C

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Hampden County Radio Association
Member Survey

The club is attempting to learn more about its members and their interests in order to serve the needs of the club better. Please help us by answering the following questions as best you can, and leaving this survey with us at the club meeting. Thank you.

General Information

How old are you? _____

What class license do you have? None Novice Technician General Advanced Extra

Which of the following club officers do you know?

___ Yorke, K1BXE
___ Stan, KA1ZE
___ Greg, N1AEH
___ Jeanette, KA1MEW
___ Jim, N1DUY
___ Ed, WA1PLS
___ Cliff, W1UWX
___ Bob, NQ1C
___ Steve, WA1EYF
___ Larry, N1EPE
___ Fred, N1DPM
___ Frank, NC1I

(optional) Your call? _____ Name? _____

November Auction

Do you make it a point to attend the auction in November? Yes Usually No

Have you ever bought anything at a club auction? Yes No

Have you ever sold (or tried to sell) anything at a club auction? Yes No

Would you like the club to continue to have a club aution? Yes No Not Sure

December Christmas Social

Do you make it a point to attend the December Christmas social? Yes Usually No

Would you prefer a planned meeting topic instead of the social hour? Yes No

June Banquet

Do you make it a point to attend the June Banquet? Yes Usually No

Which of the following most appeals to you for a June meeting?

Planned Speaker Banquet At Church Meeting at Resturaunt Weekend Barbecue

Zero Beat

Do you read Zero Beat every month? Yes No

Do you find the information in Zero Beat interesting or useful? Yes Sometimes No

What topics would you like covered in Zero Beat? _____

Do you get your Zero Beat on time? Always Most of the Time Almost Never

Meetings

How many meetings during a club year do you attent? None A Few Most All

Why do you come to the meetings? _____

What was your favorite meeting last year? _____

What was the worst meeting last year? _____

Should we have more time for "Mix & Mingle" at the meetings? Yes No Don't Like Mix & Mingle

Would you like to see more demonstrations at the meetings?

Would Like More Just Right Don't Like Demonstrations

Would you like to see more videotapes at the meetings?

Would Like More Just Right Don't Like Videotapes

What topic(s) would you like to see covered at a meeting? _____

Would you be willing to help with a meeting presentation? Yes No

Club Packet Bulletin Board

Do you use the club bulletin board? Yes Occasionally Never Don't Have Packet

If the club bulletin board was available via landline modem (on a Springfield number) would you use it?

Yes No Don't Have Computer Don't Have Modem

If you use the club bulletin board, does it provide adequate service? Yes No

If no, why not? _____

Your Interests

Circle all activites you are active in. Underline activities you plan to investigate in the next year.

HF DXing	HF Ragchewing	HF Traffic Nets
HF SSTV	HF RTTY/AMTOR/Packet	HF Contesting
VHF Ragchewing	VHF Traffic Nets	VHF RTTY/Packet
VHF/UHF/SHF Contests	ATV (Fast-Scan TV)	Satellites
EME (Moonbounce)	Homebrewing	Computer Programming

Other _____

Other

Please feel to write any additional comments you may have. We're open to your ideas! Thank you for your time.

Hampden County Radio Association, Inc.

P O Box 482
West Springfield, MA
01090 – 0482

Application for Membership

Call Sign: _____

Name: _____

Address: _____

City: _____ State: ____ Zip: _____

Phone: ( ) – _____ Listed: Yes____ No____

License:

Studying____ Novice____ Technician____ General____ Advanced____ Extra____

ARRL: Life Member_____ Member_____

VE: Advanced_____ Extra_____ Expiration: ___/___/___

Regular HCRA Membership is $9.00. Additional family members residing at the same mailing address are FREE – no additional charge (please fill out reverse side for each family member. If you are under 18 years of age, dues are only $5.00. Please consider including a donation to help support the club's future projects. All donations are tax deductible to the extent of the law.

Membership Dues $_____
Donation $_____
Total Enclosed $_____

Mail this form and a check made payable to HCRA, Inc. to:
HCRA, PO Box 482, West Springfield, MA 01090 – 0482
or bring to any club meeting.

Please list additional family members here.
Family members must reside at the same mailing address.

Call Sign: _____

Name: _____

License:

Studying___ Novice___ Technician___ General___ Advanced___ Extra___

ARRL: Life Member_____ Member_____

VE: Advanced_____ Extra_____ Expiration: __/__/____

Call Sign: _____

Name: _____

License:

Studying___ Novice___ Technician___ General___ Advanced___ Extra___

ARRL: Life Member_____ Member_____

VE: Advanced_____ Extra_____ Expiration: __/__/____

Call Sign: _____

Name: _____

License:

Studying___ Novice___ Technician___ General___ Advanced___ Extra___

ARRL: Life Member_____ Member_____

VE: Advanced_____ Extra_____ Expiration: __/__/____