

NEDA

North East Digital
Association

Quarterly

Devoted to Packet
Networking in the
North East

Volume 4

Issue #2

November 14, 1993

Editor's Column

Hello and welcome to NEDA's 13th Quarterly, once again edited by Tadd, KA2DEW. The saga of Tadd continues with a move back to the East Coast. I told you it would happen! Those of you who have a copy might want to review the editor's column in issue 2.4 of the Quarterly. That was the issue that was finished as I was moving out to Lynnwood Washington. In that editor's column I spoke of my wanderings. Well... Now I'm in Hackensack NJ and doing fine. I live walking distance from work

(4 miles) and even walk it once in a while. I'm still returning to the west coast for visits and etc.. but it looks like I'm back on the east coast for the duration. (duration of what?). On to NEDA stuff.

Except for the fact that our newsletter isn't on track yet the club is doing rather well. We've got exceptional attendance to the board meetings and an excellent crew of officers and volunteers. Network growth and general enthusiasm is up

Continued on page 5

This is the West Paterson NJ site located at a facility owned by the Passaic County Office of Emergency Management. The site houses seven 220/UHF link radios and two vhfuser port radios. The site uses both ROSE and TheNET software with three diode matrices and a four way wireline link (see maps). Many of the backbone links are not shown on the maps because at pub time two are still under development and two were down due to problems at the other ends. Site equipment is owned, contributed, and/or maintained by (alphabetically):

*Andy KB7UV
Bill NX2P
Don N2IRZ*

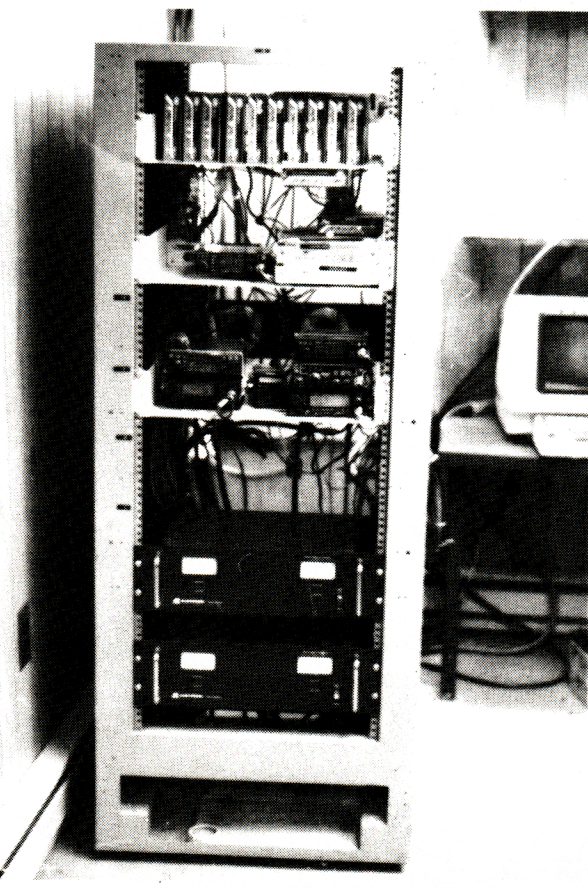
*Radio Amateur Telecommunications Society
Passaic County OEM
Mike N2DZZ
Steve N2KBD
Tadd KA2DEW
Ted KB2BLX
and probably a bunch more.
This is a real group effort.*

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Minutes of 2nd Quarter Board of Directors Meeting

June 5, 1993, Rochester NY.

Call to Order

W1JFP, presiding as chairperson, called the meeting to order at 1:25 PM. Attending the meeting were:

Burt Lang	VE2BMQ
Don Russ	N2CZL
Tadd Torborg	KA2DEW
John	N2DH
Chuck Silvia	KB2DIO
Cal Stiles	W1JFP
Richard Place	WB2JLR
Mark Oliver	NM2J
Walt Recore (Bud)	N2PFK
Bob Seger	WB2QBQ
John Burningham	WB8PUF
Scot Hollinger	KC1UA
Dana Jonas	WA2WNI
Dave Packard	K1YHR
Mitch Hill	WA1YKN

The following Board members represent at quorum for the purpose of conducting business: W1JFP, WB2QBQ, WB2JLR, VE2BMQ, with K1YHR as alternate for K1MEA.

Secretary's Report

WA2WNI noted a correction to the minutes as printed in the Quarterly 3.3/3.4. At the previous meeting, an expenditure of \$100 for the purchase of a spare toner cartridge for the laser printer had been approved, but not reflected in the minutes. W1JFP agreed that this had in fact been approved, yet omitted. A motion was made by WB2QBQ to accept the minutes as amended, seconded by WB2JLR. The motion was passed and approved.

Treasurer's Report

W1JFP distributed copies of the treasurer's report, prepared by WB1DSW. It was agreed that the treasurer's reports would be stated as of the end of the Quarter, so the numbers would make more sense, a practice commonly used. The figures reported were:

Continued on page 22

Technical Committee Meeting Summary

June 5, 1993, Rochester NY

KA2DEW opened the meeting at 8:50AM with the following people in attendance:

Burt Lang	VE2BMQ
Tadd Torborg	KA2DEW
Don Russ	N2CZL
Mark Oliver	NM2J
Richard Place	WB2JLR
Cal Stiles	W1JFP
Bob Seger	WB2QBQ
Dana Jonas	WA2WNI
John Burningham	WB8PUF
Scot Hollinger	KC1UA
Mitch Hill	WA1YKN
Dave Packard	K1YHR
Walt Recore (Bud)	N2PFK
Chuck Silvia	KB2DIO
John	N2DH

TCP/IP Committee

No report.

Continued on page 24

Minutes of 3rd Quarter Board of Directors Meeting

August 28, 1993, Chestnut Ridge, NY

Call to Order

K1MEA, presiding as chairperson, called the meeting to order at 1:15PM. Attending the meeting were:

Burt Lang	VE2BMQ
Ted Wolf	KB2BLX
Greg Healy	K1CL
Tadd Torborg	KA2DEW
Don Rotolo	N2IRZ
Cal Graniel	N1JEO
Steve Oliphant	N2KBD
Jim Wzorek	K1MEA
Howy Stark	N2NRT
Bill Slack	NX2P
John Burningham	WB8PUF
Andy Funk	KB7UV
Dana Jonas	WA2WNI

The following Board members represent Quorum:

K1MEA, VE2BMQ, WA2WNI, WB8PUF for WB2JLR, KA2DEW (for WB2QBQ)

Secretary's Report

As reported by WA2WNI, no minutes from the June meeting have been distributed, nor were any presently available, so this report will be postponed until the next meeting.

Treasurer's Report

As reported by WB2QBQ:

Opening Balance:	\$3332.15
(As of 3/31/93)	
Income:	4086.73
Expenses:	3401.27
Ending Balance:	\$4017.61
(As of 6/30/93)	

A motion was made by WA2WNI to accept the Treasurer's report as read, seconded by KA2DEW. The motion was passed and accepted.

[Note: The opening balance as of 3/31/93 does not agree with the 6/93 meeting's ending balance - de N2IRZ.]

Continued on page 24

Technical Committee Meeting Summary

August 28, 1993, Rochester NY

KA2DEW opened the meeting at 8:50am with the following people in attendance:

Burt Lang	VE2BMQ
Tadd Torborg	KA2DEW
Dana Jonas	WA2WNI
Cal Graniel	N1JEO
John Burningham	WB8PUF
Jim Wzorek	K1MEA
Greg Healey	K1CL
Steve Oliphant	N2KBD
Ted Wolf	KB2BLX
Howy Stark	N2NRT
Don Rotolo	N2IRZ
Bill Slack	NX2P
Andy Funk	KB7UV

It was directed that the minutes reflect that the Chairman is lost in Time. (Tadd began the meeting by stating it was September)

It was announced that TheNET X1-J had just been released.

Continued on page 24

1993 NEDA Officers and Appointees

All officers may be reached
via packet mail @ WB2QBQ

Board of Directors:

Cal Stiles	W1JFP	@W1JFP.nh
Burt Lang	VE2BMQ	@VE2FKB.qc
Dana Jonas	WA2WNI	@WA2PVV.ny
Rich Place	WB2JLR	@WB2PSI.ny
Jim Wzorek	K1MEA	@K1MEA.ma
Bob Seger	WB2QBQ	@WB2QBQ.ny

Appointees:

Chairman:	Cal Stiles	W1JFP
Vice Chair:	Rich Place	WB2JLR
Treasurer:	Bob Seger	WB2QBQ
Documents:	Bob Seger	WB2QBQ
Membership:	John Burningham	WB8PUF
Office:	Don Rotolo	N2IRZ
Asst to Office	Leo-Paul Chauvin	KA1QP
Archives:	Don Rotolo	N2IRZ
Maps:	Tadd Torborg	KA2DEW
Rec Secretary:	Dana Jonas	WA2WNI
NTECH/NBOD Dist:	Bob Seger	WB2QBQ
Editor:	Tadd Torborg	KA2DEW

Board Member Alternates:

W1JFP	▶ Russ McAllister	WA1TLN
VE2BMQ	▶ Don Rotolo	N2IRZ
WA2WNI	▶ Bill Slack	NX2P
WB2JLR	▶ John Burningham	WB8PUF
K1MEA	▶ Dave Packard	K1YHR
WB2QBQ	▶ Tadd Torborg	KA2DEW

Technical Committee:

chairman: Tadd Torborg KA2DEW @NX2P.nj

Network Volunteer Regional Contacts

South East Ontario	Eric Meth	VE3EI @VE3NUU
Montreal area	Burt Lang	VE2BMQ @VE2FKB.qc
Northern New York	Steve Long	KB2DAJ @WB2TUP
Rochester NY area	Mark Oliver	NM2J @WB2PSI
Central Eastern NY	Howard Cohen	WA2TVE @WA2TVE
Central Southern NY	Chris Perrine	KB2FAF @KB2HKI
Northern Tier PA		
+ Southern Tier NY	Dave Schmarder	N2DS @WF2A
Eastern New York	Dana Jonas	WA2WNI @WA2PVV
ENY Hudson Valley	Eric Svalland	N2JHJ @WA2PVV
Western Mass		
+ Northern Conn	Jim Wzorek	K1MEA @K1MEA
New Hampshire		
+ Eastern Mass	Linds Collins	NR1N @WA1WOK
New Jersey	Tadd Torborg	KA2DEW @NX2P

BBS Committee:

chairman:	Paul Straney	N2LSS
	Jim Wzorek	K1MEA
	Herb Salls	WB1DSW

NEDA Emergency Services Advisory Committee

cochair:	Dana Jonas	WA2WNI
cochair:	Cal Galvito	WA1WOK

HexiPus™ Project Committee

chairman:	Howie Cohen	WA2TVE
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ROM Burning

These hams have volunteered to burn EPROMs for networking purposes. Give them a call or send a letter. If you have any information for this list please send a packet to NEDA @ WB2QBQ with Attn: editor in the title field.

Maine - John, NS1Z @ NS1Z.ME volunteers to burn TheNET EPROMs for those that can supply nodename, call-sign, password and EPROM. John has a supply of EPROMs and will accept replacement (mail order house of your choice if you like) or EPROMs in advance. 207-364-2246

New York - Paul, N2LSS volunteers to burn EPROMs. If you want ROSE you should supply binary images and chips. If you want TheNET you can supply binary images or can get in touch with Paul and tell him what call-sign, info, password, nodename, parameters, you want and what version of software. He has TheNET Plus and X1. Paul wants EPROMs or funds (mail order catalog of your choice) in return for burned EPROMs but he has stock to get things going in a hurry. Contact Paul via N2LSS@N2LSS.NY or 607-965-8327.

New Jersey - Don, N2IRZ will supply the EPROM and burn it with information of your choice. He has X1-J, TNplus2.11, ROSE 3.4 (and will keep on top of new versions). Supply call-signs, node names, addresses, passwords as appropriate. Include floppy data if possible or Don will figure out what you need. Send a SASE to Don for an info/configuration sheet if you need to. Don asks for \$7/EPROM and he'll supply the parts, mailers etc. or if you can supply postage, mailer, EPROM and binary image, Don will send it back as a voluntary (free) service. Don Rotolo Box 219 Montvale NJ 07645.

Washington (state) - John, KA7TTY will burn EPROMs for TheNET X1-J. Send EPROMs and configuration information to John MacDuff 620 South East Bush St. Issaquah WA 98027.

Quebec - Burt, VE2BMQ will burn EPROMs for TheNET 2.08, 2.10 or X1-J. Contact Burt via Burton Lang 1153 Hwy 203 Howick PQ, J0S 1G0 or VE2BMQ @ VE2FKB.#MTL.PQ.CAN.NA

This tidbit was overheard on one of the packet backbones. I didn't recognise the call-signs involved "Ah, you mean RE-TUNE the Translinear Gravitonic Inducer to modify the polyphase bilateral quantum sequencers, thus causing prolific reconstitution nodule implosions along the non interdimensional edges of the primordial control surfaces of ur simple craft!"

Board Meeting Schedule

Preliminary meeting schedule for NEDA Board of Directors Meetings, 1994:

Early February:	Springfield MA area
Mid April:	Cape Cod
Mid Summer:	Central NY state someplace?
Fall:	NH or Vermont?

If you would like to host a meeting in your area you should drop a note to NEDA @ WB2QBQ.

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Local Packet Meeting Announcements

This column lists clubs and special interest groups that meet to discuss packet radio or aspects of packet radio. Please send this information to me as early as possible or as late as necessary. Obviously it would be better for the Quarterly if meetings were planned well in advance or regularly scheduled. The purpose of listing them in the Quarterly is not because all of your people should see it here. I hope that your meetings are well publicized via packet BBSs, DxClusters and at general ham radio club meetings.

MAPRA, VT/NH border

The Mt. Ascutney Packet Radio Association meets every other month. The meetings dates are set at the previous meeting but they are always held on Sunday and usually in Newport, New Hampshire. Contact N1CB @ WA1WOK or at his PMS N1CB-5 from the VNH node for more information.

DOERS North East NY and Northern VT

The Digital Operators Emergency Radio Service meets every Sunday morning at 09:00 local time at the QTH of WA2JPM in Morrisonville, NY. Talk-in is on 147.15+ and 224.02-.

DOERS may be contacted at the following address:
P.O. Box 600
Morrisonville, NY 12962
(518) 563-6851 Chuck KD2AJ

SYRPUG, Central NY

SYRacuse Packet User Group meets every other Sunday morning at 9PM at the Fairway Restaurant at the Camillus Mall in Camillus NY. SYRPUG is sponsored by Camillus Parks and Recreation. The club has packet classes lasting 6 weeks and are held twice a year.

Contact person is
Dave Brooks KA2VEE @ KB2DIO.ny
315-488-8866
107 Kimberly Drive West
Syracuse NY 13219

RATS North East NJ

The Radio Amateur Telecommunications Society is not a packet radio club although their meetings tend to be more about packet radio than anything else. RATS members promote packet, amateur radio, and software. Members of the club have created software including PacketTracker (channel monitoring for the Mac), ROSEswitch (TNC based networking), ROSEserver/PRMBS (mail

box) and RMAILER (BBS nonspecific distribution list handler).

RATS meets at 8PM on the second Thursday of the month at the Wendy's in Little Falls NJ on Rt 46 west bound, just west of the Rt 3 and Rt 46 junction. Most gather at around 7PM for dinner and conversation.

Contact RATS by packet.
Send to ASKRAT @ KB4CYC.nj
or by mail
Box 93, Park Ridge NJ 07656

CCPG, South East MA

The Cape Cod Packet Group meets about once a month. The meeting dates are decided a couple of weeks in advance and announced at the KC1UA BBS, KQ1K BBS, KC1KM BBS, and N1HOQ BBS. The messages are addressed to USERS @ CCLAN. Or call Scott, KC1UA 508-539-1824. Scott is acting as secretary for the group. The meetings are usually held at KQ1K's QTH in Dennis MA.

Ottawa packet group

This group meets the last Thursday of every second month at the Museum of Science and Technology in the east end of Ottawa at 7:30PM.

Contact: Barry by packet at ve3jf@ve3jf or by phone 613-820-3207.

Cornwall Packet Group, extreme eastern Ontario + St. Lawrence Seaway area of NY

This newly formed group in the Malone, Massena NY/Cornwall Ontario area has no meeting schedule yet but meets regularly on the VE3PGC repeater. Contact Eric, VE3EI @ VE3NUU for more information. Give a call on the repeater. Many of the locals monitor, or connect to some of the services shown on the Eastern Ontario map.

Other Meetings?

If you don't have a group in your area you might want to start one. If your group is successful enough to overflow your living room then you've obviously done a good thing! Even if your meetings aren't scheduled far enough in advance, or at the time of a Quarterly release I'd like to print contact info on how someone in your area can find out about your meetings.

Send your info to
NEDA @ WB2QBQ
attn. Quarterly
—NEDA Editor

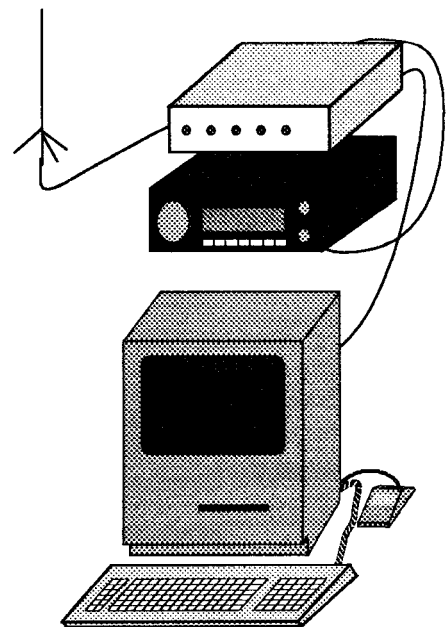
Wormholes: Helping? Or Hurting Amateur Radio?

One of the reasons that Amateur Radio exists is to be a resource for use during times of emergency. As everybody knows, Amateur Radio spectrum is valuable and looked upon with envy by commercial concerns. Anything we can do to make our governments more aware of the value of Amateur Radio as an emergency resource should be looked upon with favor. By building an interstate and international Amateur Radio packet network we are doing something of incredible value. By building a series of isolated packet networks connected via telephone (or other commercial means) we are being less valuable.

If building a wormhole reduces the value of a radio link (to the builder of the radio link) then the wormhole should be re-evaluated. We do not *need* wormholes in order to have interconnectivity. It is arguable that wormholes have already buried/mired or otherwise eliminated Amateur Radio packet backbone building efforts in some places.

Please be aware of the consequences of your actions when tying packet networks together with a wormhole.

—Tadd Torborg, KA2DEW



Constitutional Change Request

Topic:

Dues for board members

Presented:

June 5, 1993

By:

Tadd Torborg, KA2DEW

Brief:

Remaining membership time is frozen for board members.

Specifics:

In article 7, section a, the phrase "but the dues level for a Voting member is \$25 or greater" is replaced by "but the dues level for a Voting member is \$25 or greater (except for Board Members)".

In article 7, add section b to say: "Dues are suspended for Board Members for the duration of their term of office".

In article II, section a, the phrase "Any Voting member who is paid up for two years from the end of October of the current year, who has attended" is replaced with "Any Voting member who has attended".

Purpose:

Other clubs have had a problem with having their board members' memberships expire. This is an embarrassing thing NEDA's constitution was supposed to fix that by requiring that board members be paid far enough in advance that this wouldn't happen, in order to be placed on the ballot. This change does the same job but without imposing the hardship of immediately covering a \$50 membership renewal.

Editor's Note: The Constitution requires that changes to the Constitution be presented at a board meeting, then be voted on at the next board meeting following when the change note is printed in the Quarterly. This is the first Quarterly to be created since the June 5th meeting. These items will be voted on at the next board meeting (January? 1994)

Constitutional Change Request

Topic:

Delete General Meeting items

Presented:

June 5, 1993

By:

Tadd Torborg, KA2DEW

Brief:

Remove Chairman of the General Meeting from article 2

Specifics:

In article 3, subsection a, remove the words "Chairman of the General Meeting"

Purpose:

This item is a left-over from when we had a general meeting annually. As we won't be anymore, we should delete this.

—NEDA

Software Sources

Looking for the latest in ham packet software? Here are the landline numbers for 4 BBS ops and packet ops who keep lots of good stuff on tap!

SALT BBS
KQ1K@KQ1K
508-385-3427

Vectorboard BBS
716-544-1863
or 716-544-2645
300 through 9600 baud
including V.32 + V.42.
Operated by RFCARC.

AA6ED BBS
AA6ED @ AA6ED
206-271-4657

Highland BBS
N2JYG@WA0PTV.ny
300-38400 baud 716-761-6460

Editor from page 1

and it seems the nasty rumor throwing and information hoarding is fading in most of the North East. There are still major problems outside our community though.

Cal, W1JFP, who has served as Chairman of the Board for several years now, took a long driving tour with his wife Connie and mobile packet palace. (Full size Ford van with Star-craft hi-top conversion)

Cal says *Packet outside of the area is basically like 145.01 used to be out here, say around 1985. You occasionally find a non-2m backbone but they are all flat networking with lots of hidden transmitters. The routes list is often as long as our nodes lists. You'd find KA-nodes all talking on 145.01 over distances of 3 to 6 hops strung out over a large area. Depending on who was downloading what, the system would work or it wouldn't. In the few cases when I could find a live operator at a keyboard I'd get an idea of what connections were out there and things would work pretty well even over a good distance, but then I was the only user during these times.*

I had some very pleasant keyboard conversations with BBS sysops. There was one guy in South Dakota that I keyboarded with for a long time and then eventually we switched over to voice. Packet radio on the road is lots of fun and we had almost daily contacts, but don't expect incredible networks.

The funny thing is that all of the damned campgrounds are down in the lowest places, where there are streams and lakes. Why don't they put them on mountaintops so I can play packet in the evening?

I've had my own experiences. One person I talked to in Virginia told me that he'd been told by the local BBS sysop that he had to get a telephone modem to access the local packet BBS. 145.01 was for forwarding only and users should stay off it. No other frequency was available. Imagine having both a band-width shortage and a funds shortage in a service which had 30Mhz of UHF spectrum (free of charge) and shuns volunteer participants!

If you know of anybody who lives in this kind of an area, do them a favor: Buy them a membership. This would give the person an opportunity to see what they could have as well as information on how to go about building the resources..

—Tadd Torborg, KA2DEW
—NEDA Editor

Good Questions

This is a regular column run in the NEDA Quarterly where people submit questions, both simple and complex, and the NEDA Board Of Directors runs around in circles looking for an answer that is correct, clear, and to the point. Usually the simplest questions are the ones that take the most work to answer! Some of the questions are submitted with answers. This is also appreciated. The board and editorial staff reserve the right to edit your answers if submitted to this column. Editorial comments may also be submitted if you prefer not to have your opinions edited. Submit any contributions to:

*NEDA@WB2QBBQ.ny
attn.: Quarterly*

Thanks to all who have written for their support!

Question?

I'm a NEDA member and my club puts on a hamfest at least once a year. I've been to other hamfests and I've seen NEDA literature handed out. How can I get NEDA to come to my hamfest or how can I get literature that I can distribute?

Answer:

The answer to this question depends on how much support you need from other club members. Getting the literature is easy. Just contact the membership director, office manager or documentation manager (see page 3 of the latest Quarterly). Any NEDA member can get literature to take to flea markets, they just need to be responsible for publications and funds if any need to be returned to the club.

Contact your "Volunteer Regional Contact" directly and invite him or her to the hamfest.

Look in the roster and find any or all other NEDA members in your area and invite them specifically. Definitely invite any and all NEDA officers whether they are close or not. I wouldn't expect them to travel more than a few hundred miles [hee hee] but each and every NEDA officer must be an enthusiast or they probably wouldn't be volunteering for the jobs they are already doing.

Question:

I'm a node sysop of a NEDA compliant node. One of my neighbor nodes is broadcasting things to me that I can't connect to or which are definitely not compliant nodes. What should I do?

Answer:

First and most important: As soon as you can, attempt to contact the operator of the neighbor node and make sure that he understands the consequences of parameter inconsistencies and of propagating non-compliant nodes. See if it is possible to straighten it out from his/her end.

Reduce the route quality to the neighbor node so that only compliant nodes show on your nodes list.

If necessary adjust the RS-232 route qualities on the backbone TNC facing the neighbor so that you are not broadcasting any nodes that propagate to the non-compliant nodes. If it is your immediate neighbor that is being non-compliant then 82 is probably a good start. It may take optimization based on what the neighbor node's route qualities are.

Contact your local Volunteer Regional Contact and see if they have any ideas. Talk to other sysops in your region. Send a packet to the NEDA technical committee chairman (see page 3 of the latest Quarterly).

If you are totally unable to contact your neighbor node's operator, set up a gateway between your system and the neighbor. You've almost done most of that already (see items above). The simplest way to make a gateway is to take your backbone TNC that faces the neighbor and set its obsolescence-min-to-broadcast to a value higher than the obsolescence-init value. Now only the backbone TNC's node name will propagate. Now on the backbone TNC, *node lock* one of your visible nodes' call and nodename and on your visible node (the same visible node) lock in one of the neighbor's visible nodes with a path via your back-

bone TNC and with a quality of 50 such that the neighbor node will show on your node, but will go no further.

Again, be visible about all of this. The object is not to judge or to be mean, but to do the best with what you are given.

Question:

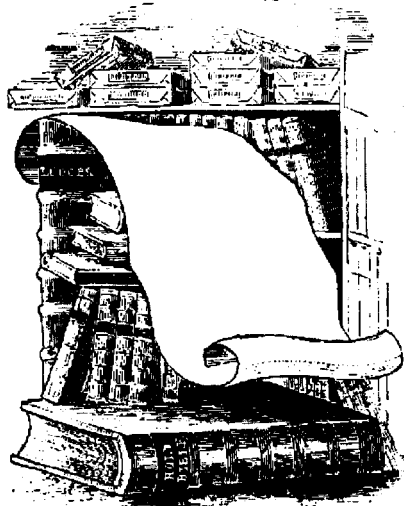
I've just installed a server in my local network and want the server only to propagate one node site away. How do I restrict the propagation of my server? [question by N2LSS]

Answer

The (so-called) *quality* factors in the TheNET nodes adjust how far a node propagates (how many TNC hops away the node's listing shows). In each TheNET TNC the *route* qualities adjust how far all nodes from a given neighbor node propagate. The *node* qualities adjust propagation for a single given node. If you do a N NODENAME on any TheNET TNC the quality value will be returned (see the NEDA Annual for more on this). What you want to do is make it so that on all of the nodes that are at your site, and that broadcast to other nodes off-site, that the quality value for your server is set to less than 203. If you look at the chart on the bottom of the *Sysop's help sheet* (last page in this Quarterly) you can imagine the propagation distance that you'll get for a particular quality value.

The way to use the chart is to picture the furthest node that you want your server to show at as the node with a quality value of 51. Now step back through the network towards your site, first to the backbone node with a quality value of 64. Now if the next node (with the quality factor of 84) is yours, then all you have to do is make the backbone node at your site see your server as an 84 quality. You can use the NODE command in sysop mode. Be aware that in order for a NODE lock to work there must not be a source of the server's node listing that is higher quality than the value that you are locking it to. If you are in a multiport stack and your server is directly connected to the stack using G8BPQ and a PC, then you'll have to NODE lock the server at every TNC in the stack, or, easier, set the route quality from every node in your stack such that the server shows up at each node at a quality of 84. R 1 N2LSS-5 + 84 should do it.

—That Answer Guy



Central and Western New York Network News

The Spring and Summer of 1993 were busy times for amateur networkers in the snow country of Central and Western New York State. We finally established a useful link between WATERT and PENVLE. The path is almost 60 miles long and runs along the eastern shore of Lake Ontario. The 6 meter signals are subject to a deep QSB that varies in frequency. The result is a link that is useful about 80% of the time. If you should be using the link and activity seems to stop, wait a few minutes for the signals to come back up and resend your last command. Steve KB2DAJ and Dave K1YHR are working with Mike KB2AUJ, Tony KF2EZ and the rest of the Oswego County RACES folks to identify a node site in northern Oswego County that could serve as a user port for that area and also serve as an intermediate node between PENVLE and WATERT. We hope this new node will bring full-time reliability to network communications in the North Country.

Mark NM2J has been working with Don Russ on a new 900 MHz link between Monroe and Brockport. Mark reports they are having problems with path loss and need to find another 6 db, or so, of signal. Mark also reports that

the link from MONROE to ROCHNY will be out of service for a short time while they work on the 900 MHz link. There is also a new 9600 BPS link between BRSTOL and Elma, NY, which is near Buffalo. The link makes an intermediate hop at a hidden node in Darysburg, NY and then continues on to DXELMA:KN2M, a DX Cluster node. Also, there is a link from WXFLD to a new node (LIVCO) in Avon, NY (Livingston County). LIVCO is also linked to ALFRED.

Although the Syracuse Packet User Group (SYRPUG) only got started last May with the help of friendly hams from the Rochester Amateur Packet Society and the Drumlin Amateur Radio Club, it sure has been making a lot of noise! SYRPUG now has 5 nodes in the Syracuse area (SYRNE, SYRNW, SYRSW, BPORT and PENVLE, plus BBSDIO). With the help of neighboring node Sysops, conditions are rapidly improving. The backbones between these nodes are not yet up to maximum efficiency, but this work has been slowed by two other major SYRPUG projects. Chuck KB2DIO and Bud N2PFK decided to tackle one of the longest standing network problems in Central New York: the

loss of the link between UTICA and the Syracuse area. They purchased at their own expense two Midland commercial low band radios and installed them at UTICA and at SYRNE. All packeteers who have to send traffic between eastern and western New York are grateful to Bud and Chuck for this important achievement. SYRPUG was also invited to provide packet communications for a National Disaster Medical System drill to take place on Oct. 16. SYRPUG and Oswego County RACES will provide thirteen packet stations which will be set up at area hospitals, the local American Red Cross, and the Syracuse Air National Guard base and other facilities to provide patient tracking data for the exercise.

The items reported above reflect only those projects that have come to our attention. We look forward to hearing about and reporting upon other projects. Please contact Dave K1YHR or John N2MKH @ BBSDIO. We would like to read about activities in other regions of the network, so pull out your word processors and get to work!

—Dave K1YHR and John N2MKH

TheNET Plus 2.11 released

NJ7P has released a new version of TheNET Plus. This appears to be a bug fix for 2.10. There are no noticeable additional 'features' over 2.10. Here is the official release blurb that was included with the 2.11 distribution.

To summarize briefly, version 2.11 has several new features over those found in version 2.08:

- 1 Automatic reconnect. If one is "BYED" out of a distant connect, the circuit will automatically be reconnected at the first 2.09, 2.10 or 2.11 node back from the "BYED" point.
- 2 Improved SYSOP parameter setting feature.
- 3 Transport layer parameters are now remote SYSOP settable.
- 4 A specialized version 2.11dx for DXCluster support.
- 5 A specialized version 2.11tm (telemetry) is available upon request.
- 6 USERS display has been revised to show level 3 thru link source and des-

ination nodes. (Helps users and NodeOps alike to keep tabs on system activity.)

7 The diddle feature of 2.10 was removed. It was unreliable and required setting TXD to an odd value.

*8 A completely revised and expanded documentation and support package. The Network.exe support package includes a nice VHF/UHF/microwave radio path analysis program as well as network design info.

Be advised the node DIGI function had to be removed from version 2.11 in order to make room for the new features. This occurred with the version 2.09 developmental nodeware as well. If one needs the digi function for their particular application, best to stay with version 2.08.

If you are unable to find a copy of 2.11 on a BBS you can send a 3.5" 720K or 1.44MB floppy and a SASE (capable of handling the floppy) to NEDA's POBox and your floppy will find its way back to you complete with software.

—EOF

Tekk Digital Link Radios Most Excellent

For a couple of years Tekk has been manufacturing digital link radios. PacComm has been selling them with their TNC and G3RUH modem in a one-piece configuration. The prices that the radios are available for varies, it seems, from \$130 to \$200 for the 9600 baud capable 1 watt units. I have heard recently that they were as low as \$90 factory direct. Here is the information for you to contact the factory direct. The price may have changed recently as they are apparently introducing a new model and also they were suffering (rumor has it) from flood-caused factory closures. Here's the information

TEKK Data Division
224 N.W. Platte Valley Dr.
Kansas City, MO 64150
phone: 800-521-8355
FAX: 816-746-1093
Service: 816-746-1098

Thanks to Linds, NR1N for this info.

—Editor

Pictures from the August 1993 NEDA Board Meeting

photos by N2IRZ



The meeting was held at the Best Western Motel in Chestnut Ridge NY (just north of the NJ border) and was hosted by Don, N2IRZ. We held the technical committee meeting in the morning (chaired by Tadd, KA2DEW) and the Board of Director's meeting in the afternoon (chaired by K1MEA). Shown here is the entire group of attendees in a photo taken by an innocent bystander just after lunch (held in a local pizzeria). The one way sign in the photo is not a deep philosophical message.



Shown here are Dana taking notes behind the keyboard of his portable, Tadd and Andy grinning at the camera, Bill and his daughter Erin in the background. On the edge of the photo Howy looks on. Steve's head is just about in the lens.



This photo was obviously taken after one of the more profound discussions. Burt and Ted exchange looks. Steve is obviously impressed and Howy is taking it all in. Dana is still taking notes.

TheNET Parameters, Why 3 Hops?

Everybody in the network should be using NEDA specified parameters in the TheNET nodes or should be sending mail to the club POBox suggesting alternatives so that we can all open communications on the subject. Tell the board what should be changed in the specification that the club is publishing. This is very important if the network is to grow to interconnect the entire region.

Rumor has it that most who don't love the NEDA parameters believe that 3 hops isn't enough. Observation of non-compliant nodes seems to bear that out. There is empirical evidence and a bit of common sense that led to the idea of limiting the propagation of nodes. It has nothing at all to do with the idea of limiting users or restricting operation. The purpose of it is to make the network work better, get used more, and be more fun.

The object of the game is to tie as many packeteers together as possible and still have our system work, in real time. It is *not* the object to have as many stations listed on our nodes lists as possible. If it makes our system more efficient, or more promotable, to have fewer nodes on the nodes lists then we should have fewer nodes. One thing that is for sure, is that it is not possible to have all of the nodes on any single nodes list. A line must be drawn someplace. The current board of NEDA seems to think that 3 dedicated point to point backbone hops is a good place to do it. Then, given that 3 hops is the chosen number, the other parameters were calculated. .

The reasons for having fewer hops of node propagation, rather than more include:

- **To restrict false routing**

By false routing I mean routing over the wrong path via automatic TheNET routing. Consider this example: We have a large network that has many redundant links, but is one link is bad, yet is still propagating nodes. How do you route around the bad link? You'd practically have to single step all the way around the network just to make sure that your connect went the route you are intending. Note that it is quite likely that the network of our future is exactly what this example suggests.

- **To keep the network small enough that an individual user can observe the exceptional performance of properly configured nodes and links**

It is very important that newcomers can figure out what is good and what isn't through personal exploration. They also must be able to map their own way though the network until they get enough interest to acquire maps. Also it is very important that every amateur can figure out the network configuration, whenever they want. Having node propagation limited to fewer link hops helps this, a lot. Imagine a newcomer looking at an enormous nodes list and finding that the first bunch of nodes he/she tries don't connect, either not quickly or not ever. Does this sound familiar? Not in any network that follows NEDA standards!

- **To improve network stability**

By having shorter node tables and shorter propagation the time-to-stability after a route failure or change is much faster. Since a node may only be broadcast 6 times (3 radio hops, 3 matrix hops) before its quality has degraded too low a change or disruption is stabilized in only 6 broadcast intervals. This is 90 minutes by the current NEDA recommendations.

- **To increase robustness of node to node connects**

By making the steps required shorter we make the circuits more robust. If a station tries to go across many hops in one connect, the chance of failure is much higher than if a station tries to go only a few hops. We can reduce frustration by making the hops shorter. This makes the network seem more robust too.

- **To limit the impact of wildcat disruption of the network, caused by incorrect node management or hostile intent**

A station that is running network software, either TheNET, G8BPQ, MSYS, NOS, etc.. may set parameters that interrupt service across **all of** a backbone, to as far away as the furthest node that the station's equipment has in its node's list. An example: If a station were to set its L4 time-out to 10 seconds, and its L4 retry counter to 20, then sent several packets to the furthest node it could reach, none of the packets would reach the destination and be acknowledged before the L4 time-out caused retries. Soon there would be 20 x Window size packets going across the backbone, just from that one stream, from that one station! There are worse things that could happen. Reducing the number of hops that two stations could do L4 traffic increases the debugability of such disruptions. It also requires more cooperation to do long distance TCP hops. I guess we'll all just have to cooperate.

- **To limit the effective area of network software bugs**

Several times in the history of TheNET there have been bugs which caused network failures. The first was a bug where control characters in a node name would crash any node in which a Node list was requested. The bad nodename would propagate (it was originated by a defective network node) throughout the limit of the node propagation range (as defined by the Quality factors) and caused massive disruption throughout the network. Tracking it down was incredibly difficult because the quality factors we had, up to 240 and 255, caused the node to echo across matrices virtually forever, and to echo across backbones dozens of times.

Another bug that has occurred is when a piece of network software didn't handle an error condition properly and locked up. The error condition occurred because one of the other software writers had implemented only a subset of the TheNET protocol. Only those stations that did L4 node to node connects together were in danger.

- **To reduce the impact of emergency operations.**

In the case of an emergency operation it might be necessary to make a temporary change to create a new path between nodes, to add temporary equipment, or to block traffic flow. 90 minute *time-to-stability* that the NEDA parameters specify is very nice for both the setup of an emergency operation and for the fast recovery once the operation is discontinued.

- **To keep nodes lists to a reasonable size i.e. < 100**

Large nodes lists baffle users, reduce manageability and tie up network resources. If we are successful in promoting an open technology that any ham can participate in and expand on, then we will necessarily have many many nodes and many many links. In other networks that have used this design philosophy there are many nodes that have many links. Our survival depends on our adopting standards that we can stick to for a long time. If we make assumptions about the scarcity of links and services in our network we are doomed to failure. By adopting parameters for 3 backbone hops maximum propaga-

The Cape Cod Packeteer

The Newsletter of the Cape Cod Packet Group

vol I, Issue VIII October, 1993

Editor Stuff

Support! Every organization needs it to survive, and the Cape Cod Packet Group is no exception. Do you like the network we have created on Cape Cod? Do you find it a lot easier to get from point A to point B than it used to be? I hope so. This is what the Cape Cod Packet Group has set as one of its main goals; to provide a fast, effective, reliable, state of the art packet network to serve Cape Cod's packeteers in everyday applications as well as emergency situations. We feel that we have accomplished a lot in the year we have existed. We have completed some ambitious projects, and have several more lined up. We want to make packet in the Cape Cod area a model system.

We could sure use your help!

If you like what we're doing here on the Cape with packet, we could certainly use your support. To those that have pledged your support by becoming a Cape Cod Packet Group member, all of us extend our heartfelt thanks! If you'd like to become a Cape Cod Packet Group member, we would be very happy to hear from you! Please refer to the end of this month's newsletter, which will provide several different ways to contact the group. Thanks for taking the time to read the Cape Cod Packeteer, and happy packeting!

—Scott/KC1UA

Packet by phone - BPQSPI v1.07

Perhaps the most exciting part of this month's newsletter concerns a new piece of software written by Larry Houbre/AA1FS. Larry's creation stems from a telephone conversation he and I had during the summer. Larry was just setting up a BBS in New Bedford, using AA4RE software. Knowing I was running AA4RE, Larry gave me a call with a few questions about it. During the course of our chat, I mentioned to him that lots of node sysops were dying to find an easy way to interface a telephone modem to a network node, to provide packet network access via landline. Larry, a computer consultant and software writer, said he'd "look into it". Not thinking too much about it after we hung up, I filed it in that folder in the back of my mind and went about my business.

Two days later I found a message from Larry to me on my BBS. It seemed the first version of BPQSPI, rev 1.02, was ready for me to beta test. Imagine my delight!

What is BPQSPI and how does it work? It's a TSR (terminate and stay resident) program that works with G8BPQ node software, and it works great! From a sysop standpoint, it is extremely simple to set up, and from a user standpoint it's a breeze as well. The sysop creates a new port in his G8BPQ configuration file, copies the BPQSPI files into his BPQ directory, places a line in his autoexec.bat file right before the node

software is loaded, and provided he's followed BPQSPI's documentation, his BPQSPI port is up and running! The user, who is required to have a callsign and password in the sysop's files, uses his or her favorite communications software, dials the number, performs a simple log in and finds him/herself connected to the host node. At that point, it's just like being on packet. The user can go anywhere and do anything within the limitations of the host node.

Version 1.07 of the software is the first version to be publicly released. It is primarily available at Larry's telephone BBS, Dreamer's BBS.

The phone # is (508)991-6058.

The filename is BSPI107.LZH.

You will also need the program LHA211.EXE to unarchive the file. Larry has put a lot of time and effort into this software, and has produced a winner. If you'd like to see BPQSPI work from a user standpoint, drop a line to KC1UA@KC1UA.#EMA.MA.USA.NA with your callsign and requested password, and I'll set you up as a user and send you the phone #. You *must* be registered to use the BPQSPI port. If you're not, you can still connect to the BPQSPI prompt, but you'll never get to the node itself. Users or sysops with questions about the software should also send a message to KC1UA. My thanks go to Larry for his superlative effort in creating this software. —EOF

2CMBX:N1HOQ Civil Defence BBS Now Running AA4RE

After a long stay from my work on the CDCN2C project, I have resumed progress on the system. I will briefly update you on the new functions and present status of the Civil Defense Cluster Network.

New software has replaced the former WORLI BBS system. The new system uses the more flexible and increasingly popular AA4RE BBS software. Instant access from the command line to the databases is now possible, replacing the cumbersome download procedures of the former system. Here are the commands:

At the command prompt =>

TEL TOWN[ENTER]

will return emergency phone numbers for that town. Substitute the town of your choice.

WB [ENTER]

When connected to the BBS, users may use the WB command to get an automatic download of the latest NWS Wx Bulletin.

WBM [ENTER]

The command WBM will download the areas most recent MARINE NWS advisory and related forecast.

The Weather commands are also available on other BBSs on the Cape.

Many new files related to RACES/ARES/Civil Defense have been added to the files directories of the 2CMBX mailbox system. Most other functions are the same as any other BBS you may use now. I believe this new system will better serve, and encourage CD/RACES/Public Service amongst our towns...

Many thanks to the exemplary efforts of Mitch, WA1YKN and Scott, KC1UA.

—Shawn N1HOQ

KC1UA system configuration:

<i>Description</i>	<i>Nodename</i>	<i>Frequency</i>	<i>Hardware</i>	<i>Software</i>
User Port	SWL:KC1UA-7	145.730	DRSI DPK-2 TNC	TheNet X1J
User Port	SNDWCH:KC1UA-5	145.010	PacComm Tiny 2	TheNet X1J
MBOS Link	#SWL2:KC1UA-2	223 MHz	To be announced	TheNet X1J
CCLAN 1200	#SWL:KC1UA-10	438 MHz	Kantronics DataEngine	G8BPQ 4.06a
CCLAN 9600	#SWL:KC1UA-10	430 MHz	Kantronics DataEngine	G8BPQ 4.06a
KC1UA BBS	BBSSWL:KC1UA	Wireline	286 AT Computer	AA4RE/G8BPQ
Phone Port(300-9600 baud)		Telephone	286 AT/Phone Modem	BPQSPI/G8BPQ

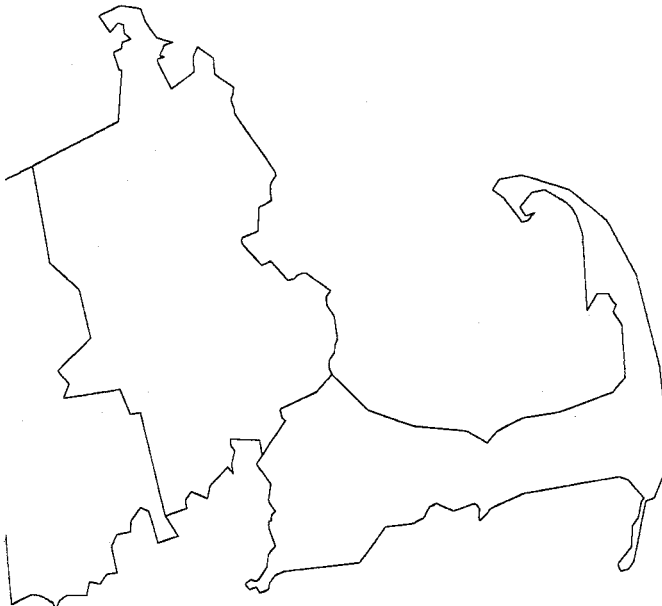
CCPG/CCLAN Update

W1NPR has returned south to sunny Florida. He can be reached at W1NPR@W1NPR.#SRQFL.FL.USA.NA...our usual gang will be headed up to the HossTraders at Rochester, NH on 10/15 and 10/16. We'll be there both days and hope to see you there...the link between KC1UA and K1UGM is still being worked on...don't forget to try out the new multi-user chat mode (talk) at the SWL:KC1UA-7 and SNDWCH:KC1UA-5 nodes, and speaking of which, would anyone be interested in using this chat feature for a round table packet net? I was thinking once a week, maybe Sunday evenings around 8PM or so. Awaiting your input...

YCCC PacketCluster Access

YCCCWF KA-Node on 147.525 MHz. Once connected, type XC KB1H. YCCCWF is also accessible through port 3 of the CAPCOD:WA1YKN-7 node (C 3 YCCCWF and then repeat above procedure.)

The FAL, SWL, and CAPCOD nodes also provide coverage for a good deal of Southeastern Massachusetts. See NEDA maps in this Quarterly.



**Cape Cod Packet Group
Officers and Board of Directors**

Officers:

President/Chairman	Frank "Mitch" Hill	WA1YKN
Vice President/Secretary	Scott Halligan	KC1UA
Treasurer	Rick Davis	KA1WSW

Board of Directors

Mitch Hill	WA1YKN
Scott Halligan	KC1UA
Bob Baker	KQ1K
Shawn Reed	N1HOQ
Frank O'Laughlin	WQ1O
Jim Leavitt	KC1KM
Rick Davis	KA1WSW
Jim Valdes	WA1GPO

**How to Correspond With
The Cape Cod Packet Group**

via packet radio

KC1UA@KC1UA.#EMA.MA.USA.NA
WA1YKN@KQ1K.MA.USA.NA

via Telephone

Scott/KC1UA: (508)539-1824
(508)539-1827, SWLBBS telephone port, up to 9600 baud.
Mitch/WA1YKN: (508)428-2458

via 'snail mail'

The Cape Cod Packet Group
23 Jeannes Way
Forestdale, Ma. 02644

Please don't hesitate to contact us in any of the above manners if there is anything we can do to assist you with packet!

Thanks for taking the time to read this month's newsletter. We'll see you next month! 73.

Respectfully submitted for the Cape Cod Packet Group by
Scott/KC1UA

—Secretary, Cape Cod Packet Group

BBS BURODS - New Features at BBSSL:KC1UA and MOUSE:KC1KM

Editor Stuff What do You Want?

We're receiving a good deal of mail from people around the area with their comments about the Cape Cod Packet Group and CCLAN. Indeed, things are going well, and we are planning for the future of the network. Lots of ambitious projects are on the forefront. But, what do you want? Are you interested in TCP-IP? Binary file transfer capability? Round table nets? Civil Defense operation? How about a local PacketCluster? A new phase of amateur radio satellites is forthcoming. Anyone interested in a satellite gateway?

What do we want?

Your support! I hate to be redundant, but for these projects to come to fruition, we need it...not only your support of the group by becoming a member, but also your support by stepping forward and giving the group a hand if you can. This issue will have a "Help Wanted" column in it. Check it out!

You know what we want. Let us know what you want. Let's all work together to make the Cape Cod area a model packet system. A true group effort can make it happen.

73, de Scott/KC1UA

NEDA Meeting in Hanover New Hampshire 10/23/93

On Saturday October 23rd, Mitch/WA1YKN and Scott/KC1UA attended the North East Digital Association technical and Board of Directors' Meeting at Hanover New Hampshire, on the campus of Dartmouth College. The meeting began at 9:30 AM, so we were up and running at about 4:00 AM. Fueled with high octane gas and coffee, off we went. It's always a pleasure to meet with the NEDA gang; they're a great bunch of guys that take packet networking very seriously. NEDA has guided node sysops and BBS sysops alike, and has been the backbone (pun intended) of the proliferation of packet networking and packet use in the northeastern US.

As this was the second meeting we attended, we now find ourselves on the ballot for the upcoming election for NEDA officers. Yep, folks, go to two NEDA meetings and look what happens! I can't tell you how many times, but the word "suckers" was thrown in our direction quite often throughout the day. We're looking forward to the possibilities.

The NEDA technical meetings always begin in the morning, around 9:30 or so. They are open to any and all. The Board of Director's meetings are open to voting members of NEDA only. The next meeting is in Springfield, Ma. on February 5th. Packeteers are encouraged to attend the technical meetings, as alot of very interesting information is passed around. Sysops and general packeteers alike would benefit from this. Also, it appears that we will be hosting the April NEDA meeting, in a place to be announced, here on Cape Cod. The date we're looking at is Saturday April 23rd. This should be lots of fun, and we're looking forward to it with great enthusiasm!

If you'd like to know more about NEDA, or would like to become a member of the organization, drop a message to either WA1YKN or KC1UA. You'll love our sales pitch!

Scott & Mitch

Two new features have been added to the functions of BBSSL:KC1UA. Let's get right to them.

MODS. I have added a somewhat large database of equipment modifications for amateur, SWL, and scanner equipment. The MODS command is easy to use. In three steps you will be able to find what you're looking for, provided it is in the database. I will be working to constantly build this database. If you can't find what you're looking for, chances are it'll show up at some point. (NS1N also offers a mods server, connect to his BBS for details). The three step MODS acquisition is as follows:

Step 1: Type MODS INFO. This will give you a short file telling what modification directories are available. Currently, directories for YAESU, ICOM, KENWOOD, ALINCO, TNC, SCANNER, and MISC are available. **Step 2: Type MODS AREA,** where AREA is one of the above. You will see a list of available files, their size, and their date of creation. **Step 3: Type MODS FILENAME,** where FILENAME is any of the files in the list.

That's all there is to it. Typing H MODS will give you a help file.

TOWN. The TOWN command, followed by the complete spelling of the Massachusetts town of your choice, will return *all* FCC licensed frequencies issued to that town. Not just Police and Fire, folks, everything! The source is the FCC Database. Currently, some of these files are *humungous!!!* I will be working to shrink these files and will provide instructions on how to retrieve them. Think before you strike!!! Make sure you have your capture buffer or capture to disk on before you start, so you don't have to do it twice. To see how big of a file you're going to be downloading, type TOWN followed by the first letter of the town you're looking for. TOWN A will give you a list of all towns that begin with A, and their filesizes, for example. The following commands are available in conjunction with TOWN:

TOWN CODES - Will return a list of FCC service codes. These are the two letter codes that you'll see under the SV column. **TOWN LETTER** - Where LETTER is the first letter of the town you're looking for. Provides a list of those towns and their filesizes. *Very important to view before you start your download.* **TOWN NAME** - Where NAME is the correct spelling of the Massachusetts town you wish to download. Two name towns such as New Bedford or Great Barrington should be entered as NEWBEDFORD and GREATBARRINGTON respectively. Towns with geographical prefixes such as North Adams or East Overshoe should be entered as NADAMS or EOERSHOE respectively.

This is not a case-sensitive command, either capitals or lower case will do... I just love to use capital letters to get your attention!

At the MOUSE:KC1KM BBS, we have added the WB and WBM commands, which will return the latest National Weather Service and Marine forecasts respectively. Again our thanks to Jim/KA1EUI for his daily uploads!

Questions regarding any of the above can be sent to KC1UA. Enjoy!
CCPG

Changes and Updates Abound for CCLAN Nodes

In September, the KC1UA packet system underwent a major refit, which has been of great benefit to the network. During the month of October, two additional CCLAN nodes have been refitted and are thusly operating with much greater efficiency.

Shortly after the changes at KC1UA went into effect, Mitch, WA1YKN decided to take a hard look at his setup. The DataEngine with G8BPQ on EPROM was running like a top, but it was feeding a KPC-4 running in KISS mode. Enter DataEngine #2, and one NEDA HexaPus. The two DataEngines now talk to one another across the diode matrix at 19,200 baud. The result is significantly increased performance for all links as well as user ports. Mitch's system configuration is as follows:

CAPCOD:WA1YKN-7 - Port 1, 145.070 MHz - Port 2, 147.525 MHz #CCOD:WA1YKN-10 - Port 1, RI link - Port 2, CCLAN 9600 baud backbone

CAPCOD port 1 is the main user port, while port 2 allows linking to the YCCCWF Ka-Node that ultimately connects to KB1H PacketCluster. CAPCOD is the second DataEngine, while #CCOD is the original, with new EPROM burned: Remember, for the connect to YCCCWF, you will now connect to CAPCOD and type C 2 YCCCWF. Access to WQ1O's WeatherNode on 145.070 remains the same (C 1 WQ1O).

On October 24, the HARWCH:KC1KM node was refitted. As it was, HARWCH was using a DataEngine running in KISS mode, which was a terrible waste of a powerful piece of gear. Granted it served the purpose quite well, but the refit enhances it greatly. The DataEngine was fitted with an EPROM running G8BPQ. It is now TheNET backended to the MOUSE:KC1KM BBS. Users connecting to MOUSE through

the CCLAN will see no difference in connecting. However, users wishing to connect directly on 145.710 will have to connect to HARWCH, and then type C MOUSE to get to the BBS. Direct connect attempts to MOUSE will get the user to the node as well, and he/she will then have to type C MOUSE again to get to the BBS. An extra step, yes, but a small price to pay for a much more efficient operation. Jim's system is now configured as follows:

HARWCH:KC1KM-7 - Port 1, 145.710 MHz - Port 2 CCLAN 9600 baud backbone. MOUSE:KC1KM - Wireline link to DataEngine. Users on 145.710 must connect to HARWCH, and then to MOUSE (C MOUSE). Users connecting via CCLAN will type C MOUSE as before.

While it is essential at the moment for some of the systems in our network to run TNC's in KISS mode, it is our goal to minimize the use of KISS mode as much as possible. KISS mode makes it possible to run nodes where it would be otherwise impossible, but its compromise, to be brief, is degraded operation due to inability to process information quickly enough. We would like to erase the use of KISS from our network entirely, but this is not practical at the moment for several reasons. The above refits will greatly improve things, but KISS is essential to the structure of the CCLAN at this point in time.

One other quick report on network enhancement: A new radio has been installed for the link between #SWL and DENNIS. The Kenwood TM-441a seems to, combined with some serious parameter tweaking, make this link a great deal more effective than it has been in the past. You should notice much better throughput when connecting to and from DENNIS out of and into the CCLAN

CCPG

CCPG/CCLAN Updates

The link between KC1UA and K1UGM is ALMOST working! During a band enhancement the other night it was running and working quite well. We're striving to get it to that condition all the time, and will keep you posted, but hopefully, we're finally getting close. A TNC hardware problem at KC1UA could delay things a bit further, and at UGM's end they're trying to clear a place on the tower so they can get the antenna up high...WQ1O's second WeatherNode should be on the air in the Wood's Hole area before too long...please, if you can, connect DIRECT, and let the network cater better to those who need it...I still wonder if anyone's interested in a packet round table net on Sunday nights. I've heard from one person thus far, and he was psyched... if you wish to send a packet message to USERS@CCLAN please feel free to do so. This message may be sent as a bulletin from any of the BBS's on CCLAN... We are still working on the link to OAKHM2:KA1OXQ-2. Due to band conditions this link has disappeared over the last few weeks. It is still in experimental mode at this time, but we hope for its return asap...Happy Thanksgiving to all of you from all of us!

CCPG

CROWD Node at WA1YEN

While we were at the NEDA meeting, we obtained the NEDA CROWD node software from Dana/WA2WNI. Our tentative plans are to add a CROWD node at the WA1YKN node stack, sometime in the near future. Why, you might ask? Jeez, don't you guys already have CHAT capability at CDCN2C? Don't the SWL and SNDWCH nodes both offer the TALK feature, that offers round table packet QSO's? Yes indeed on both counts. However, the idea of CROWD is to make it visible on the CCLAN. Users will see CROWD:WA1YKN-? (SSID to be announced) on our nodes lists, and will be able to get *directly* into it. Unlike the TALK feature on SWL and SNDWCH, which work well but are somewhat crude, CROWD is quite a bit more user friendly, and allows multiple simultaneous streams of round table QSO's. CDCN2C's CHAT offers this feature, but again, it is not a visible part of the CCLAN. We want CROWD to be available primarily as a Civil Defense tool, and secondarily for fun! Last month I made mention of a round table packet net. CROWD would make this alot of fun, and easy to connect to for all interested.

CROWD should be forthcoming in the near future. We'll let you know when it's up and running, and you'll of course be seeing it on our nodes lists. This should be a very interesting addition to the Cape Cod LAN. Stay tuned!

CCPG

Diode Matrix to NOS Wiring (as used at wb2psi)

The hexipus and other diode matrixes for connecting TheNET-style nodes have always been a source of confusion. This is an explanation of how and why it works.

The hexipus was designed to connect two Tiny-2 TNCs with straight-thru cables. The Tiny-2 was designed to connect to a PC (9-pin connector) with a straight- thru cable, just like a modem. That means the Tiny-2 is DCE: it receives data on the TXD pin, and sends data on the RXD pin - exactly the opposite of what seems right.

The hexipus is wired like a null-modem, except with diodes. That much makes sense - but you have to understand that the hexipus isn't a null-modem. It is the opposite: a null-terminal, null-computer, or null-DTE. In other words, the diode orientations are exactly the opposite of what they would be if the hexipus were a null-modem.

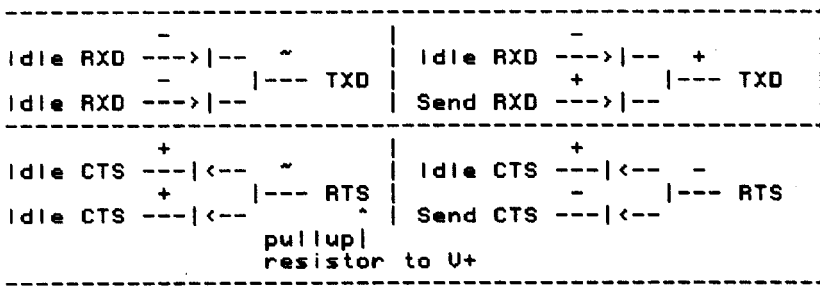
The other important thing to understand is that the data signals go thru the diodes in a different direction from the flow control signals. This is easiest to explain in terms of voltage levels and idle states. The purpose of the diodes is to allow a single line with non-idle state to override all the other lines with idle states.

Data lines: the idle state is a STOP bit = 1 = MARK = V-
the data state is a START bit = 0 = SPACE = V+
One V+ must be able to override multiple V-

Flow lines: the idle state is V+
the flow state is V-
One V- must be able to override multiple V+

Note: on most Breakout Boxes, GREEN=SPACE and RED=MARK

So, this is what the matrix must look like:



Symbols:

- + Positive Voltage
 - Negative Voltage
 - ~ No current flow
- All signals flow from left to right.
Resistor = 4.7 ohms

So, the simplified 2-port diode matrix would look like this (9 pin sense):

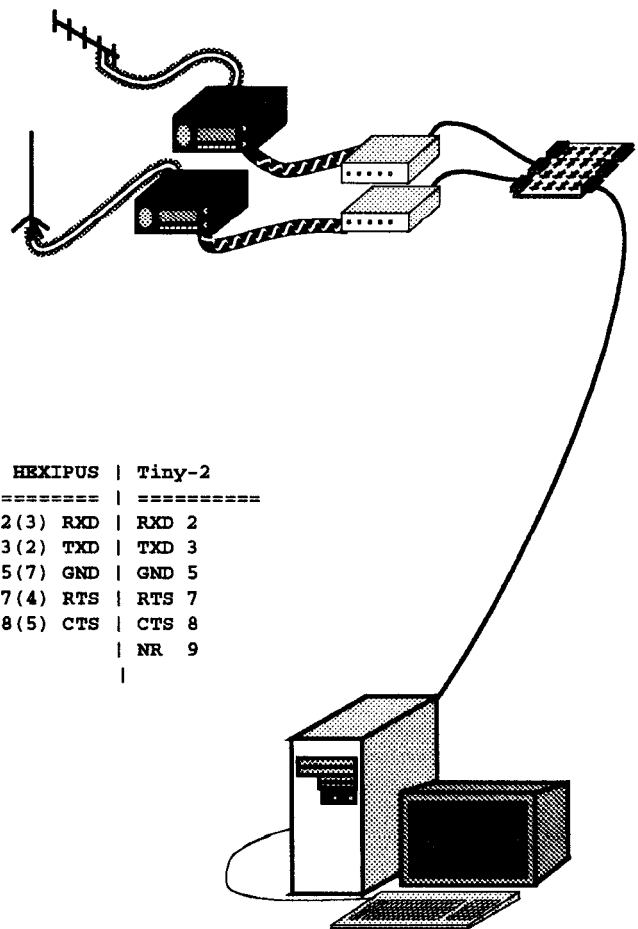
2 RXD → — TXD 3	The RXD diode arrow
3 TXD ← — RXD 2	always points to TXD
5 GND — — GND 5	The RTS diode arrow
7 RTS → — CTS 8	always points to CTS
8 CTS ← — RTS 7	

The more common cables are shown below, assuming 9-pin connectors, but showing the 25-pin connector assignments in parentheses. Tiny-2s have the pullup resistor internally, but PCs don't. The usual way around this is to solder the resistor to an unused pin such as DTR, and have the PC software assert DTR to supply the V+.

PC NOS	HEXIPUS	PC MSYS	HEXIPUS	TNC-2	HEXIPUS	Tiny-2
TXD 3(2)	-- 2(3) RXD	TXD 3(2)	-- 2(3) RXD	RXD 2(3)	-- 2(3) RXD	RXD 2
RXD 2(3)	-- 3(2) TXD	RXD 2(3)	-- 3(2) TXD	TXD 3(2)	-- 3(2) TXD	TXD 3
GND 5(7)	-- 5(7) GND	GND 5(7)	-- 5(7) GND	GND 5(7)	-- 5(7) GND	GND 5
RTS 7(4)	-- 8(5) CTS	DTR 4(20)	-- 8(5) CTS	DTR 4(20)	-- 7(4) RTS	RTS 7
CTS 8(5)	-- 7(4) RTS	CTS 8(5)	-- 7(4) RTS	CTS 8(5)	-- 8(5) CTS	CTS 8
DTR 4(20)	asserted	RTS 7(4)	asserted			NR 9

Solder resistor at PC | Solder resistor at PC | Connect pins 10 & 23 | Connected end of cable to CTS | end of cable to CTS | at TNC-2 end of cable | straight and DTR which is V+. | and RTS which is V+. | to enable NetROM mode | through.

—Jim Lill, wa2zkd



HROUTE Forwarding -- An Alternate Approach

Purpose

The purpose of this paper is to propose a different approach to BBS personal mail forwarding using the six character *grid square* locator.

Background

This method was developed to solve an ongoing problem encountered while forwarding using the R header within NY State.

History

Since the beginning of message forwarding, political boundaries have been used. Forwarding by R header became prevalent in the late 1980's the accepted format being *callsign.XX.YYY.ZZ* where *XX* is the two character state code, *YYY* is the three character country code and *ZZ* the two character continent code, giving a string length of 10 (including the periods). Parsing could be done on either *callsign*, state, country or continent, in that order. So, the typical R string would be:

KA2MSL.NY.USA.NA (Sixteen characters)

As the number of bulletin board systems grew, it was found that the state designator was too large to be useful and so an *area* field was added to the string in the format *#WWWW*. This field would contain a geographical location within the state and be used for intrastate forwarding. A typical format could be *#MHV* (Mid Hudson Valley). This describes the area of NY state north of the Westchester/Rockland counties and south of the greater Capitol District. This adds another five to six characters to the string. The string now is:

KA2MSL.#MHV.NY.USA.NA (21 Characters).

There were now five sub strings to use to determine location. This has become an accepted standard by many BBS systems in the United States. There are those sysops who felt that the two character continent field was inadequate and expanded it to 4 characters. I.E.: *NOAM* vs *NA* for North America. This could give us a 25 character string.

While useful in routing, this added information does increase the overhead in sending a message or bulletin over a long distance. Multiply this by the number of stations that handle this message and this will add kilobytes to the total send length. In fact, the R header information exceeds in size the total length of the message in many instances.

A Different Approach

For years, contesters have been using the *grid square* as an exchange for location of the station worked. A grid square is a 2° x 1° box based upon the latitude and longitude of a station. This information is not only used to determine location but is also widely used to determine distance and beam heading between two points. The format is *AAxx* (two letters two numbers). I.E.: *FN21*

Because of the size of the 2° x 1° box is quite large in the temperate zone, the box has been further divided into 5 x 2.5 sub squares in the format *aa-zz*. So, the format becomes *AAxxBB* I.E.: *My QTH* is *FN21XM*. This gives a very precise location of a station. In fact the remote sysop for my system lives only a few miles away and is in the *FN21XN* box.

My proposal is to use the *callsign* and *grid square* as the R header information in the format: *Callsign.AAxxBB* a maximum of 13 characters. This provides each BBS with an identification string which not only provides location, but also direction from the originating BBS

Since most BBS systems allow wild cards and exceptions, parsing becomes a simple matter on a local and regional basis. Forwarding by *callsign* is unaffected.

The following examples are given using the FBB format which is what I am using at my BBS and should be adapted for use with your individual system.

Sending mail to a BBS located at *FN21XM* would look like this:
H FN21XM

Lets say that on a regional basis you wish to forward mail for stations in *FN31* and *FN21* but not *FN21XY* your script might look like:

```
! H FN21XY in the FBB system the ! means  
with this exception and  
H FN31* always should appear before the  
Command to be accepted.  
H FN21* An * is a wild card
```

Assuming that we service *FN31*, *FN21*, and *FN20* lets say. The H route portion might be:

```
! FN31* Don't send this  
! FN21* Don't send this  
! FN20* Don't send this  
H *.* Send everything else
```

Using this method of H commands and exceptions the sysop may parse over as wide or as fine an area that he wishes to define.

Implementation

To avoid confusion and make the transition easier, the implementation of this plan might be in three Phases.

Phase One

Replace the *#WWWW* regional subdesignator with the 6 Character Grid square.

```
Pre Phase 1 KA2MSL.#MHV.NY.USA.NA  
Post Phase 1 KA2MSL.#FN21XM.NY.USA.NA
```

Phase Two:

Following a sufficient period of time, the State designator could be removed along with the leading #, yielding the following:

KA2MSL.FN21XM.USA.NA

Phase Three

The final phase could occur once this plan is implemented on a global basis, and the Country and Continental designators become redundant. We would arrive at the final form:

KA2MSL.FN21XM

Conclusion:

Using an existing standard we can:

- Define the Global location of an individual BBS
- Reduce the size of R Headers and forwarding overhead
- Simplify forwarding scripts by eliminating political (state) boundaries.

This method is being tested in the upper NY state area. So as not to upset those stations not participating in the study, the grid locator info was inserted before the regional sub string and preceded by a .# and followed by a period.
KA2MSL.#FN21XM.#MHV.NY.USA.NA

It was found that two 'Regional strings' caused some concern on the part of several sysops, therefore those of us in the test group have substituted the Grid Locator for the regional string, effectively implementing Phase One, on a test basis.

—Mike, KA2MSL

[Please contact Mike direct via KA2MSL@KA2MSL with feedback questions and implementation news. Feel free to send reply articles or letters to the editor for future Quarterly publication to KA2DEW @ NX2P or POBox 5001 S. Hackensack NJ 07606 (send on PC or Mac floppy please) - ed]

Bank Switching Modification for TheNET X1-J on Tiny-2 MK2 TNCs

Remove the Z80 SIO chip. If you have not made the Wink&Blink modification, do it first, soldering a jumper between pins 16 & 23, and a second jumper between pins 24 & 25 on the Z80 SIO socket on the solder side of the board (the side without the parts).

Bend pins 16 & 25 of the Z80 SIO chip outwards so when you plug the chip back in, the pins end up outside the socket.

Cut a 6" piece of insulated wire (I use the wire that is sold for wire wrapping in Radio Shack), strip 1/4" insulation off one end of the wire and wrap it around pin 16 of the Z80 SIO chip (one of the pins you bend outward), solder the wire to the pin to ensure a good contact.

Route the wire under the Z80 SIO chip so it exits the at the end of the chip between pins 1&40, plug the chip back into it's socket. Route the wire through one of the DCD State Opt. connector (J10) holes to the bottom of the board (if you have a connector in J10, you will have to use a longer piece of wire and find another route. Cut and strip the end of the wire and solder to pin 1 of the EPROM socket.

Locate R41 (10K) resistor, it is located near pin 1 of the EPROM on the component side of the board, unsolder the resistor and discard.

The Option/Normal EPROM switch on the rear of the TNC must be in the Option (out) position. After you set the switch you can pull the button's cover out, making it harder (but not impossible) to press.

—John, WB8PUF

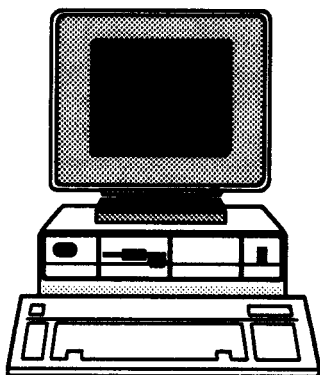


Table of Node List Lengths vs Number of Hops

This table shows the number of nodes that will be on the nodes list of a node in the middle of a network whose nodes all have the same number of visible ports and links. This is not to assume that we'll ever have a network like that. Our standards have to take into account that some nodes will be very complicated while some will not. If we look at any successful network or successful portion of a network we'll see that some nodes have four or five links while some have two or so. Most have two or three with the average being someplace in between. The average isn't what we are concerned with. We're more interested in what the worst-case situation is. Our parameter standard has to handle all circumstances without compromise. Even if you disagree with that last statement you'll want to believe that we should handle a lot more than 50% of the situations!

Links is how many links come out of each site.

Visible is how many visible nodes will be propagated from each site

Hops is how many hops the nodes will propagate.

Nodes is how many nodes will be on a nodes list.

links	visible	hops	Nodes	links	visible	hops	Nodes
2	1	1	3	4	1	1	5
2	1	2	5	4	1	2	17
2	1	3	7	4	1	3	53
2	1	4	9	4	1	4	161
2	1	5	11	4	1	5	485
				4	1	6	1457
2	2	1	6	4	2	1	10
2	2	2	10	4	2	2	34
2	2	3	14	4	2	3	106
2	2	4	18	4	2	4	322
2	2	5	22	4	2	5	970
2	2	6	26				
3	1	1	4	4	3	1	15
3	1	2	10	4	3	2	51
3	1	3	22	4	3	3	159
3	1	4	46	4	3	4	483
3	1	5	94				
3	1	6	190	5	1	1	6
				5	1	2	26
3	2	1	8	5	1	3	106
3	2	2	20	5	1	4	426
3	2	3	44				
3	2	4	92	5	2	1	12
3	2	5	188	5	2	2	52
3	2	6	380	5	2	3	212
				5	2	4	852
3	3	1	12				
3	3	2	30				
3	3	3	66				
3	3	4	138				
3	4	1	16				
3	4	2	40				
3	4	3	88				
3	4	4	184				
3	4	5	376				

If I may draw a conclusion: Since we already have nearly 100 nodes showing up at STMFRD, all coming through three hops or less of 203 quality, we can see that if we adopt any other standard we'll have a problem. The next #-of-nodes increase from 3 hops would run us from 100 to nearly 300 nodes on the nodes list! So, we either adopt a standard that is more complex, or give up standards, or we run into a problem.

—Tadd, KA2DEW

tion we are planning for a network that can grow, without needing exceptions at every turn.

Consider the table. We'd have to have a pretty simple network to not run into trouble with five hops. It is unlikely that we'll run into problems with 3 hops. With four hops we are in danger of running into trouble in 30% of the network.

The rest of the numbers:

The parameters that depend directly on the idea of having three backbone hops as a limit of node propagation are:

- Minimum Quality For Auto Update
- HDLC Channel Quality
- RS-232 Channel Quality

Time To Live Initializer - number of hops before a message between nodes will give up. This saves us from wasting network time due to routing loops.

The parameters that may be tailored for best performance after knowing the performance of the backbone links and the number of hops a station connect are:

- Transport Time-out
- Transport Busy Delay

The more hops you have the longer your time-outs will have to be.

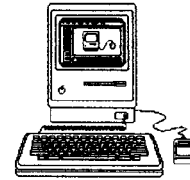
All of these parameters are explained in laborious detail in the Annual. Please read the descriptions and get in touch.

We can change things and improve explanations. Your proposals will be printed in the Quarterly if you want.

Please work with the club ..and..

Failing to plan, is planning to fail.

—NONDO, WA2WNI and KA2DEW



Program for Calculating Node List Size

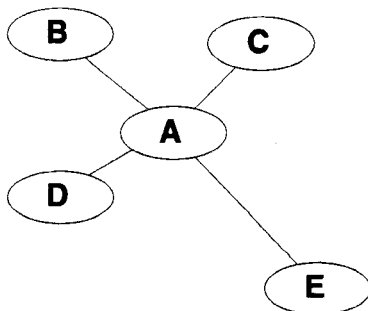
This program was written on an HP handheld calculator. It assumes a homogeneous network where all of the nodes are the same. This is for simplicity. The object of the program is to show how the node list will look during worst case conditions.

Register L = # of Links from each site

Register V = # of Visible nodenames (non pound nodes)

Register H = # of Hops that each node listing will propagate.

The program simply looks for one less than the number of hops. The last hop is a special case. Each hop generates V + PrevHop*(Links-1) The reason that we use links minus 1 is that one of the links from the node being considered comes from the node that we're broadcasting to. Example: If node A has four links and is broadcasting to node E, node E doesn't care how many nodes A has that E told it about. Thus we only count the nodes that node A heard from B, C, and D. The reason for the end-condition is that the last node wants to have a count of all of the nodes coming from all of its links.



```

LBL A  start of program

STP    ask for # of links
STO L  save # of links
STP    ask for # of Visible TNCs
STO V
STP    ask for # of Hops broadcasts will go
STO H

----- start
RCL V  get visible TNCs at first node
STO U  Save in temp register          Reg U is PrevHop
RCL H  get # of hops
1
-      one less because we handle end conditions separately
STO T  save temp register.          Reg T is loop counter

----- inner loop
LBL B
RCL U  get total # of nodes we hear about over each link
RCL L  get total # of links
1
-      Xreg now has # of links we're hearing from that we'll talk about
*      Xreg now has # of nodes we're hearing about, from links we care about
RCL V  get # of nodes at THIS site
+
STO U  save in temp register

RCL T  get loop counter register
1
-      decrement loop counter
STO T
X>0?  are we ready for finish up
GTO B  no? Then loop again

----- finish up
RCL U  get total # of nodes we hear about over each link
RCL L  get total # of links
*
RCL V  get # of nodes that I have
+
GTO A  back to start

```


X1 STAT command output

The STATS command has no parameters. It prints a number of internal TNC statistics. This command is astoundingly useful. It lets the sysop fine tune his system by knowing when radio adjustments are wrong or when a hidden station is colliding with his link. It lets the user or hacker determine how well a link actually works. By observing the stats results on different links the traffic flow on a system can be analyzed.

Basics: L1 refers to the actual electrical operation of the radios or RS-232 ports on the node TNC. L2 refers to AX.25 links between the node and users servers or other nodes whether over the radio or over the RS-232 port. L3 refers to traffic between two other nodes that passes through the node you're looking at. L4 refers to node to node connects that start or end at the node you're looking at. Here is a sample stats message→→→

```
#SRKL1:N2CGY-12) Statistics
L1 Tx % :      16   18   13   19   21   23
L1 DCD% :      14   12   9   14   17   18
L1 RxOvr:      0   0   0   0   0
L1 TxUnd:      0   0   0   0   0
L2 RxCRC:      7   0   12  0
L2 heard:     264  846  681  1070
L2 recvd:     260  343  678  799
L2 sent :     404  344  972  764
L2 RxRNR:      0   0   0   0
L2 RxREJ:      0   0   0   0
L2 TxRNR:      0   0   0   0
L2 TxREJ:      0   0   0   0
L2 fails:      0   0   0   0
L3 g'wyd:     340  468
L4 recvd:      6   0
L4 sent :      4   0
Buffers :     665  659  659  661  659  634
CPU loop:     415  413  418  398  386  388
Timers :      732  2452
```

Here is a breakdown of what the stat dump means:

First we have the L1Tx%. That's the percentage of time that the TNC has the PTT asserted. This does include Txdelays. L1DCD% similarly counts all the time that the DCD is detecting Rx signal.

```

0 to 10 minutes ago (most recent 10 minute period)
|-----|
|-----|-----| | | | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
L1 Tx % :      9   20   25   26   28   21  <-- Percent time transmitter was on the air
L1 DCD% :     24   36   46   42   38   41  <-- Percent time TNC detected data carrier
```

```

Port 0 (radio) Overruns & framing errors current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
Port 1 (RS-232) Overruns & framing errors current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
L1 RxOvr:      0   99   0   45  <-- Receive
```

```

Port 0 (radio) Underruns current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
Port 1 (RS-232) Framing errors current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
L1 TxUnd:      0   0   0   0  <-- Transmit
```

The following are error reports from Level 2. Level 2 is the software in the TNC that talks to immediate neighbor TNCs, both directly over the radio and directly via the RS-232 port (usually over a diode matrix)

```

Port 0 (radio) Current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
Port 1 (RS-232) Current hour (shown as it accumulates)
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
Port 0 (radio) Previous hour
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
Port 1 (RS-232) Previous hour
|-----|-----|-----|-----| | | |
|---|---|---|---|---|---|---|
|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|
L2 RxCRC:     309   5   594   30  <--Frame checksum errors
L2 heard:     401  367  3401  2095 <--Packets heard
L2 recvd:     372  313  1472  833  <--Packets received by node
L2 sent:      385  363  1702  913  <--Packets sent by node
L2 RxRNR:      0   0   0   0  <--Receive Not Ready packets sent
L2 RxREJ:      0   0   1   0  <--Reject packets received
L2 TxRNR:      0   0   0   0  <--Receive Not Ready packets sent
L2 TxREJ:      0   0   0   0  <--Reject packets sent
L2 fails:      1   0   0   1  <--Number of link time-outs
```

	_____		Frames Current hour (increments as you watch)
	_____		Frames Previous hour (increments as you watch)
L3 g'wyd:	116	606	←Number of level 4 frames gatewayed between nodes
L4 recvd:	140	193	←Number of transport frames received by the node
L4 sent:	164	190	←Number of transport frames sent by the node

	_____						0 to 10 minutes ago
	_____					_____	10 to 20 minutes ago
	_____				_____	_____	20 to 30 minutes ago
	_____			_____	_____	_____	30 to 40 minutes ago
	_____		_____	_____	_____	_____	40 to 50 minutes ago
	_____	_____	_____	_____	_____	_____	50 to 60 minutes ago
Buffers :	601	547	524	541	551	592	← Free Buffers
CPU loop:	298	274	276	286	297	290	← CPU loading - Number of times divided by 100 that the CPU makes it around the internal scheduler. If this drops below 100the CPU is running out of steam.

	_____		Hours since last warm start
	_____		Hours since last cold start
Timers:	38	1296	

For level 1, six pairs of numbers are printed, corresponding to the percentage of time the transmitter was on followed by the percentage of time the receiver DCD was on, for each of the last six 10 minute periods. The data is presented most recent period first. Two pairs of numbers are then displayed showing the transmitter underrun and receiver overrun. These are formatted with port 0 followed by port 1 for the current hour followed by the totals for the previous hour. In the case of the RS-232 port, underruns are not possible, and an additional error (framing) is included. The Rx overrun includes overruns and framing errors.

For level 2, the following are displayed :

Frame checksum errors Total packets heard
 Total packets received by the node (i.e. sent to it)
 Total packets sent by the node
 Total receiver not ready packets sent
 Total reject packets sent
 Total receiver not ready packets received
 Total reject packets received
 Total number of link time-outs

For each of the level 2 statistics, four numbers are shown. The first two are cumulative totals over the period of one hour, incrementing in real time. The last two are the totals for the previous hour. Each pair of numbers is the total for the radio port followed by the total for the RS-232 (cross-link) port.

For checksum errors, port 0 shows CRC errors and port 1 shows (when in 'cross-link'/matrix protocol mode only), checksum errors. As HDLC errors can be triggered by noise, acceptance of CRC errors is conditioned by the state of the DCD line. If DCD is on and an error is signalled, it will be added to the count. This reduces the false counts, but does not eliminate them. Distant stations that keep the squelch open (just) without being properly heard will result in lots of apparent errors.

For level 3, the number of level 4 frames gatewayed between nodes is displayed.

For level 4, the number of transport frames sent and received by the node are shown.

For level 3 and 4 statistics, two numbers are shown. The first is the number of frames accumulating for this hour, and the second number is the total number of frames for the previous hour.

For CPU health checking, two statistics are shown, the CPU loading and the buffer usage. Each looks like the level 1 stats with 6 numbers corresponding to the last six 10 minute periods.

The CPU loading shows the number of times, divided by 100, that the CPU makes it around its basic internal scheduler. For a node just switched on, receiving nothing, this will be about 470ish for a 4.9 MHz clock. With lots of nodes, a heard list of 20 stations and 70-80% activity on the radio channel for it to listen to, this can drop to about 350ish. If it drops to double figures, worry, as the CPU is beginning to thrash. At low double figures, the CPU is pretty much working flat out. At that point you should consider: increasing the TNC clock rate; breaking up your diode matrix/cluster into two or more diode matrices/clusters; reducing the speed of the diode matrix communications.

The BUFFERS statistic shows the minimum number of free buffers that the software had available to it during the last six 10 minute period. This indicates whether the TNC is failing to deliver data passed to it for onwards transmission, as well as how much data is backed up waiting.

The last line shows number of hours since the last warm start and hours since last cold start.

—Info by Dave G8KBB and Cal W1JFP

Amateur Networking Supply

Amateur Networking Supply has introduced three new products designed especially for packet network builders: The NETRIX matrix board, the WireModem adapter and the Power Distribution Bus.

The NETRIX is used to create a network switching node of up to six TNCs. The unique stacking configuration eliminates the need for cables, offers significant performance advantages such as higher speed and reliability, costs less than similar products, and is compatible with all TNCs that currently run TheNET or ROSE software.

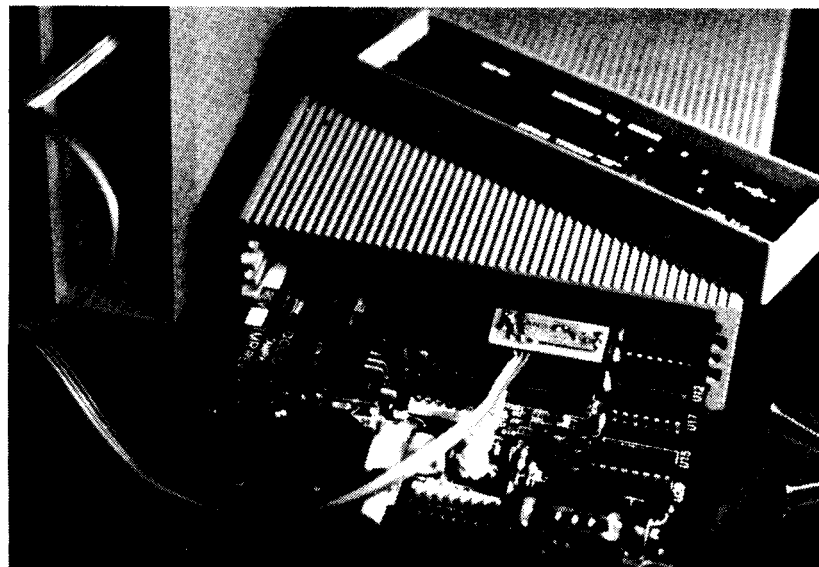
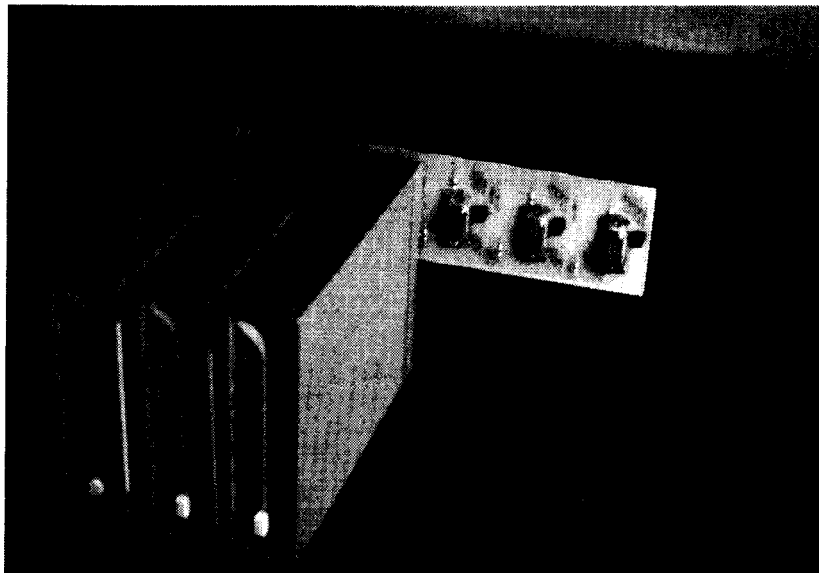
The WireModem adapter is an inexpensive yet reliable plug-in circuit that attaches to a TNC's modem disconnect header and then plugs into the passive WireLan. Up to six WireModems may be connected to the WireLan over distances generally limited to a few feet. Applications include connecting multiple TNC stacks together where each TNC stack is matrix based; creating a dedicated user port and user station configuration at a node/switch site; or creating a gateway between ROSE and TheNET network switches +nodes at the same site. The WireModem can operate at 9600 baud or more.

The Power Distribution Bus is a fused block of eight coaxial power connectors. With the power cables that ANS sells separately a very neat site can be constructed.

All three products are compatible with TheNET and ROSE networks.

The NETRIX kit is priced at \$24.95. A WireModem set, which includes six WireModem kits and a WireLan is \$12.95. The Power Distribution Bus is \$14.95 as a kit with cables costing \$2.49 each. Add \$3 shipping. ANS also sells TNC to radio cables and other needed accessories. For catalog contact Amateur Networking Supply, POBox 219 Montvale NJ 07645.

—Text Supplied by ANS



KC1UA Packet System Undergoes Major Refit

Over the past few months, the SWL:KC1UA-7 and SWLBBS:KC1UA system has undergone changes to attempt to alleviate a nasty computer crashing problem that was rendering the system inoperative for periods of time.

The SWL node was moved into its own computer, as was SWLBBS, which was tied to SWL via a G8BPQ TheNETese back end (fancy words for null modem wireline link). Well, I'm pleased to say that as of 9/24/93, the KC1UA packet system has been switched over to a TheNET node stack, using TheNET X1-J software. This system consists of several TNC's, all TNC2 clones, with TheNET X1-J software on EPROM. The TNC's are talking to one another across a diode matrix at 19,200 baud, eliminating the need for utilizing a computer completely. NEDA (Northeast Digital Association) manufactures and distributes these matrices, which they call the NEDA HexiPus™. In addition to the TheNET TNC's, the system is also utilizing a Kantronics DataEngine with G8BPQ node software burned on its EPROM. Finally, SWLBBS:KC1UA is also connected to the HexiPus, making

the system complete. Overall, this has resulted in a great improvement in the system's operation. The only computer involved in the system is the BBS computer. The node in the new configuration is easily powered during emergency situations where electricity is lost. The following section will give an overview of some of the features available in the new system, as well as its hardware configuration, frequencies of operation, and node names.

Some of the features:

- Automatic return to node after disconnect.
- Multi-user chat (round table) system at each user port node.
- Connect to BBS system by typing BBS at the prompt.
- Direct connect to BBS via alias.
- CQ calling over user port.
- Increased speed and performance.

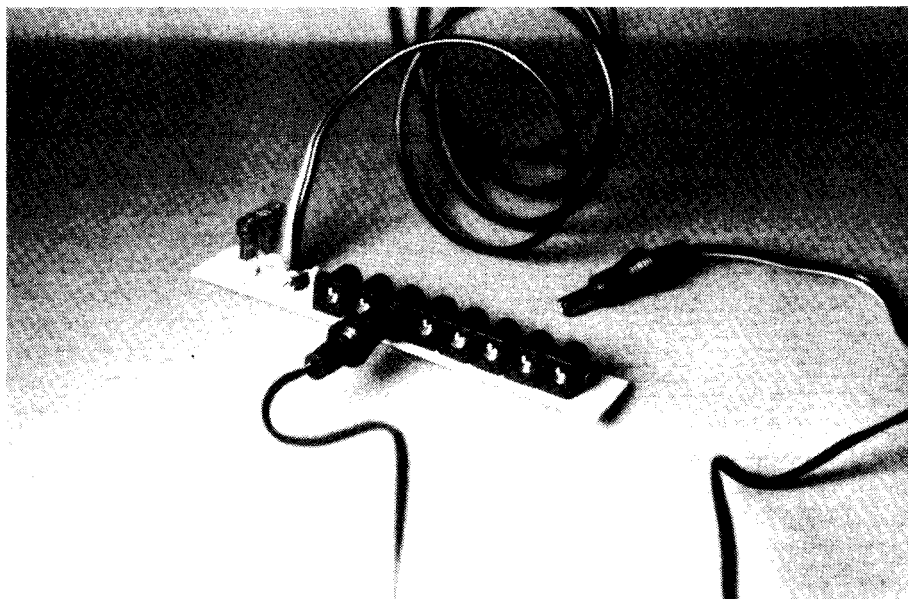
Note the return of the 145.010 MHz port with the SNDWCH nodename. Also, note the change from the old BBS alias, SWLBBS, to the new one, BBSSWL. This is being done so the system will conform with other BBS alias, i.e. BBSN,

BBSUGM, BBSRCI, etc. The MBOS link and CCLAN backbone nodes will not show on nodes lists, are not necessary for you to connect to, and thus are not listed here. SWL and SNDWCH will do all of the tricks for you.

I hope you find the new packet system at KC1UA efficient and easy to use. Most of the functions you'll use it for are no different than what you were doing with the old system. It's just much more efficient! The TheNET software is a fantastic package, and running G8BPQ burned on EPROM in the DataEngine alleviates the awkwardness of running KISS mode TNC's from a computer and allows the BPQ software to reach its full capability. BPQ on EPROM shines!

Please forward any questions or comments to KC1UA@KC1UA. I'd like to extend my thanks to Mitch/WA1YKN for his efforts in helping to make this possible, to Jim/K1MEA for providing the software, and to Cal/W1JFP for "proof-reading" our parameters before we burned them onto EPROM! Appreciate it, guys!

—Scott, KC1UA



*Pictured here is an ANS Power Distribution Board
This product is used to connect power to eight TNCs, cleaning up
the installation by organizing at least the power cables.
(Note that the NETRIX matrix has already eliminated the RS-232 cables)*

June Board Minutes from 2

Beginning Balance (As of 1/1/93)	\$4557.39
Income (Includes Dues&Hexipus)	\$1455.09
Expenses	\$3346.68
Closing Balance (As of 3/31/93)	\$2665.80

A motion was made by WA2WNI to accept the treasurer's report as presented, seconded by WB2JLR. The motion was passed and approved.

W1JFP commented that expenses exceeded income because dunning letters had not been sent out for quite some time. KA2DEW reported that paid membership was approximately 250, however the letters had been mailed the week before.

Cal then discussed the budget for the year the he had prepared and handed out to the attendees.

BBS Committee Report

No report submitted. KA2DEW reported that he had spoken with N2LSS, and he (N2LSS) would try to get organized. The board offered its full support in this effort, yet emphasized the importance of this committee.

The creation of a server list was mentioned as a priority for the BBS committee.

Technical Committee Report

KA2DEW reported that, at present, only Don N2IRZ and he are active on the technical committee. Citing a lack of interest in joining NTECH, he reported that little activity had taken place. Topics reported included the pending connectivity of Northern New Jersey to the I-90 network; Discussions with X1-H author G8KBB regarding improvements; and further mapping efforts.

Hexipus Project Report

Dana reported that there were 17 Hexipus kits left. Rich reported that he had some rejects left in case of dire need.

It was resolved that, when the present stock is depleted, the project would be closed. A page would be put in the quarterly mentioning the availability of equivalent Diode Matrix boards from commercial vendors, along with a brief description of those available.

TCP/IP technical advisor

No report. It was noted that this committee was inactive, and the question of abolition was raised. Further discussion was tabled until the next board meeting.

DxClusters technical advisor

No report

Editor's Report

WA2WNI reported that, due to personal time constraints, the position of Editor (as well as the laser printer) had been given to KA2DEW, and that he had taken the position of Assistant Editor.

W1JFP commended WA2WNI on his past efforts and, despite previous doubts that Dana could find the time to serve as Editor, that the work performed was excellent.

Emergency Services Committee

WA2WNI sadly reported upon the untimely death of Dick Numan, NYS Radio Officer for the State Emergency Management office. Dana remarked upon the tragedy of his death, since Dick had been a close personal friend and was highly involved in Emergency operations activities.

Dana and Rich stressed the importance of persons involved in state funded packet network development in getting in touch with other members of NEDA and the NEDA technical committee to make sure that the available technical documentation is both on hand and understood. This might prevent a repeat of such errors as the acquisition of dozens of TNCs that could not run networking software, or of linking radios on a ham band where this is not permitted..

NTECH/NBOD distribution

WB2QBQ reported that the BBS system at his house was operational and that the NTECH and NBOD lists were working. Bob reported problems that he'd had up until 3 or 4 weeks before, caused by hardware failures.

Old Business

Membership Confirmation via Postal Mail

The topic of confirming membership was discussed at length. W1JFP noted that this issue had never been resolved, despite numerous discussions.

A motion was made by WB2QBQ that all NEW memberships shall be confirmed by the mailing of a current Quarterly, and that all renewals be confirmed with a postcard or other simple notice, to be handled by the Membership Manager, seconded by WB2JLR. Discussion followed, where it was resolved that only older Quarterlies would be given out with Trial memberships, and this was optional depending upon availability.

Expired memberships would be treated as new memberships. The motion was passed and approved.

Trial Membership Processing

KA2DEW presented a plan where any officer (board member or appointed officer) of NEDA could serve to sponsor any NEDA member to distribute Trial memberships. It would be the Officer's responsibility for all materials and record keeping. The officer may request a number of current annuals and older quarterlies for this purpose. All return shipping is at the member's expense, and either the materials or the funds for Trial memberships are to be returned promptly after the hamfest or other activity. A motion was made by W1JFP to accept this plan, seconded by WA2WNI. The motion was passed and approved.

New Business

Next Meeting Schedule

KA2DEW reported that N2IRZ volunteered a site, as yet unnamed, in Northern NJ or Southeastern NY. The date of the meeting was fixed as August 28, 1993. WB8PUF volunteered an alternate site, as N2IRZ was not present to confirm the original site's availability. A motion was made by K1YHR that K1MEA shall serve as Chairperson of the August meeting, seconded by WB2JLR. K1MEA, not being present, did not object. The motion was passed and accepted.

The date for the Hanover NH board meeting was set for October 23rd.

Burt's Trial Memberships

A motion was made by WA2WNI to permit VE2BMQ to submit the money collected from his sale of Trial memberships, minus his cost for purchasing the materials, as full payment to the club. It was explained that Burt had paid for the annuals out of his own pocket, instead of borrowing them from the club, so it is only correct that he retain the money for this expense. With an amendment that this would be offered only onetime, the motion was seconded by WB2JLR. The motion was passed and accepted.

Board Member Alternates

W1JFP noted that the board member alternate list may be out of date. Therefore, the current list was read:

Alternate for WB2QBQ is KA2DEW
Alternate for K1MEA is K1YHR
Alternate for WB2JLR is WZ2B
Alternate for W1JFP is WA1TLN

Alternate for WA2WNI is NX2P
Alternate for VE2BMQ is N2IRZ

Cal thought that WA1TLN should probably not be his alternate and WZ2B should probably not be JLR's alternate. Cal suggested that John WB8PUF should be assigned the position of alternate.

<At this point Jim K1MEA walked into the room stating that he'd just come from the Navaho Reservation in Arizona.>

WB2JLR requested that WB8PUF be requested to become his alternate, which John agreed to. WA2WNI made the request a motion, seconded by W1JFP. The motion was passed and accepted.

Tadd asked if we should tell Jim, or wait for the minutes to come out. Many laughs. Cal filled Jim in on his upcoming chairmanship for the August meeting.

Editor Appointments

A motion was made to officially appoint KA2DEW the Editor, seconded by WB2JLR. Discussion followed, where Tadd noted that he was now Map-maker, board member alternate, Editor and chairman of the Technical committee, and that time constraints may become a problem. The motion was passed and accepted.

TCP/IP Committee

Cal said that the chairman of the TCP/IP committee didn't seem to be interested. He said that he'd volunteer for the position if it would please the board. WB2QBQ made it into a motion, seconded by WA2WNI. The motion was passed and accepted. K1MEA volunteered to be on the committee.

WB1DSW's positions

W1JFP reported that a letter had been received from WB1DSW resigning from his positions as treasurer and membership director. Herb said that he would resign as of June 30th and in his letter added that he realized that his performance had been waning for some time and that he thought it unfair for the club to bear his burdens. Herb said that he would write checks on accounts that were still outstanding and then sending a check for the balance to whomever NEDA would appoint to be the new treasurer.

Cal stated that we have two existing positions, treasurer and membership director that need to be filled. He added that Tadd had recommended that it be

broken down to more than two positions. The suggested list includes:

Office Manager, Archivist, Membership Manager, Treasurer, Documentation Manager, and Corresponding Secretary. The document "NEDA Job Descriptions" is attached to these minutes as an appendix. [*Back several pages, this issue-ed*]

Tadd noted that it was no surprise that Herb had become overworked by his duties, since they comprised a half-dozen different titles. Overall praise and wonder at Herb's achievements.

A motion was made by VE2BMQ to accept the contents of this document as a template for the expected performance of the new appointees, to be refined by the appointees themselves, seconded by WB2JLR. The motion was passed and accepted.

Tax Status and 2nd Class Mail

A long discussion took place regarding the history of non profit Tax status and 2nd class mail.

It was concluded that incorporation had been investigated, but there was difficulty in obtaining information. The subject would again be investigated, with K1MEA accepting the responsibility.

Jim reported we'd dropped the 2nd class mailing permit idea because we'd found two local mailing houses that could perform 3rd class mailing cheaper than we'd be able to do 2nd class. We've been using the commercial mailing house for over a year now.

Post Office Box

It was decided that the PO Box should remain within New Hampshire for incorporation reasons. K1MEA moved that he and KA2DEW work on relocating the PO Box, allowing a commercial remailing service to collect and forward the mail, seconded by WA2WNI. The motion was passed and accepted.

Funds for Editor

WA2WNI moved that KA2DEW be allocated \$50.00 for administrative materials, seconded by W1JFP. The motion was passed and accepted.

Trial Membership Forms

KA2DEW moved to accept the Trial membership forms as used by VE2BMQ, seconded by W1JFP. The motion was passed and accepted.

DEW Construction Project funding

KA2DEW requested a postponement of his proposal for a new technical project until the next board meeting. Granted.

Trial Membership Income

It was requested that WB2QBQ report upon the income derived from trial memberships as a separate line item.

Meeting Expenses

WA2WNI mover that the meeting expenses of \$100.74 be paid by the club, seconded by W1JFP. The motion was passed and accepted.

Russian Comp. Membership

K1MEA requested that RW3AH, a packet contact at the MOSCOW node (in Russia!), be placed on the Complimentary mailing list. The request was approved.

NEDA name in ANS advert?

KA2DEW passed along a request from N2IRZ to use the NEDA name in an advertisement for the Netrix Diode Matrix Board, in which it would be stated that the Netrix is approved by NEDA. The request was granted.

Constitution Change Requests

KA2DEW submitted two Constitutional Change Requests. Discussion was tabled, as required by the constitution, until the next board meeting. The text of these Change Requests appear as an Appendix to these minutes.

Cape Cod Packet Group

Mitch WA1YKN spoke briefly about the Cape Cod Packet Group. This information was well received.

Adjournment

W1JFP made a motion to adjourn, seconded by WA2WNI. The motion was passed and the meeting adjourned at 4:35pm.

—N2IRZ

—Recording Secretary



June Tech Mtg from page 2

Hexipus

The Hexipus project was discussed in detail. There are only 17 boards left. It was decided that NEDA would continue to sell the Hexipus until the present stock was depleted, after which the network builders needing matrix boards would be referred to the commercial vendors now offering equivalent products.

It was mentioned that some members have experienced problems with MFJ TNCs on a matrix. This is because the MFJ does not do "true" RS-232, unlike other vendors.

Wink-N-Blink Modification

It was decided that the Wink-N-Blink Mod be strongly recommended for all Node stacks, as the diagnostic features thus possible are very useful, especially on a new matrix.

Original 3-Way Wireline

It was reported that all 3 prototypes of the Hex inverter chip-based wireline have failed at some point. It was recommended that the WireModem Adapter from Amateur Networking Supply be used instead of the inverter-based circuit.

Collisions on Matrix

A discussion based upon experience and bench observations concluded that collisions are an insignificant problem, and that no actions should be taken at this time. The effects of matrix Loading, however, are significant, and need to be investigated further.

PacketTracker

A brief discussion of the merits of the KB2ICI program for the Macintosh ensued.

Parm Changes for Different Performance Rates

It was decided that this topic needs some in-network experimentation, using a very good 9600 baud link at the interface of some typical 1200 baud links. Performance is to be the critical factor, with resource sharing also being considered. Performance is rated by data throughput.

Software on Ports Recommendations

After a detailed discussion, it was recommended that, on point-to-point links, TN 2.10 be used on one end and X1-H on the other. This allows through Links on one end and Link Diagnostics on the other. For User ports, X1-H or TN 2.10

may be used, except if emergency digipeats must be accepted, which excludes TN 2.10.

X1-H Problems

It was mentioned that X1-H had been known to crash, so that its use should be avoided at remote sites. <Note: X1-J is better>

It was noted that X1-H parm names are different from those in the documentation. It is awkward stepping through the patches to change things, because the patch program forces you to go levels deep and then back out each time. The files you must work with must have a specified name, which cannot be changed once the program is opened. W1JFP mentioned that he has two sets of generic parm files, one set for backbones and the other for user ports. He copies the appropriate file to a new name, then only has to change the callsign.

It was generally agreed that the patch is awkward to use.

W1JFP suggested the creation of some simple batch files to automate the process.

User Port INFO Text

The INFO text of every user port should state whether the node has Reconnect or not. Beg that every node op have at least one TNC that doesn't automatically reconnect, if a neighbor does have one.

TCP/IP Address Coordination

It was rerouted that WA2ZKD has an addressing scheme that works well in western NY. It was recommended that the help of K1MEA be enlisted to implement this in X-1 routers where needed. The Editor was asked to publish a list of IP coordinators, to make them more reachable. W1JFP noted that a plan for New Hampshire routing was not well received by the IP coordinator there.

Miscellaneous

A discussion was held on network implementation in the Syracuse area, where radio link problems were observed in level 4. The symptom was an incessant trading of RR frames by two nodes, where the packets seem to fall out of sync. This problem has been observed since TN 2.08. <Note: It was later traced to G8BPQ interfaces. See 8/28 NTECH minutes - de N2IRZ>

The NTECH session closed at 11:45AM.
—Transcribed by N2IRZ

August Tech Mtg from page 2

Hexipus

There are only 8 boards left <Note: these are now sold out>.

Quality of a Link

WB8PUF discussed the need for an effective way of characterizing the quality (throughput) of a link. This is not to be confused with the QUALITY parameter, which might be better renamed 'routing desirability'. The better throughput links are penalized, there is no incentive to upgrade to higher capacity links, because the 3-hop limit doesn't allow the link's performance to become apparent.

The desire for some kind of test feature, to allow the user or sysop to objectively evaluate both the capacity and throughput of a link, was explained. This rating should be automatically updated, so that better links gain recognition and network trouble can be spotted quickly. N2IRZ related some of the functions of FlexNET, which is used in Germany on the RMNC hardware. This software has both short and long pings, continuously evaluating network and link performance, placing the measurements in a table for all to see and use. Routing decisions are made by the software based upon these figures.

G8BPQ Problem

VE2BMQ related his findings regarding the "out or sync/ endless RR" link looping problem discussed at the last meeting. It seems that G8BPQ software running through a KISS TNC is responsible for this problem. It was theorized that the lack of any error checking between the TNC and computer was the cause. NX2P mentioned that the KISS in all but recent PacComm TNCs has some bugs that may be responsible.

It was recommended that the use of G8BPQ software with a KISS TNC be avoided, as well as the use of G8BPQ software to perform matrix functions.

Matrix Monitor

KA2DEW and N2NRT showed a prototype PC Board for their Matrix Monitor/TNC3 project.

FlexNET

N2IRZ offered copies of the FlexNET documentation to those attending (in English!), as well as a brief explanation of the system's operation.

23cm radios

N2IRZ reported that he was monitoring the progress of a third 23cm radio project by DF9IC Henning. this item is only sold in Germany, as a kit. It was noted that import costs eliminate any cost-effectiveness, but Don would continue to monitor the project.

ROSE Update

N2IRZ reported that Tom W2VY had agreed to make some significant changes to the ROSE switch user interface. These changes will be included in the next version of ROSE, which will feature a 512k EPROM. Some of the features expected include a command-line interpreter, single-step connects/disconnects, and improved access to applications. NTECH has been requested to provide input to the features desired.

Matrix Joiner/BPQ Isolator

VE2BMQ showed two projects he had recently built: a matrix joiner and a BPQ isolator. The joiner combines two diode matrix boards to create a giant multi-port matrix. this could only be used at very low traffic sites. The BPQ isolator monitors RS-232 activity and opens a relay if there is none. this prevents a BPQ crash from locking up a matrix.

Power Distribution Board

N2IRZ showed a prototype Power Distribution Board, which uses 8 TNC-style power jacks. The fused board simplifies powering up a node site by using simple power cords with a TNC-type plug at each end. The board has reverse-polarity protection, a 'power on' and 'fuse blown' indicator, and mounts with velcro or screws.

New BASIC program

NX2P reported that he has written a program in Quick BASIC that supports interrupt 14, so you can use G8BPQ as a network interface for other software.

Major PacComm Firmware Bug

NX2P also reported a major bug in the latest PacComm firmware - the TNC does not send an acknowledgment to I-Frames. PacComm is working on it. he also cautioned that some of the defaults were kind of ridiculous, like a FRACK of 8.

RMAILER software

KB7UV discussed the latest version of KB4CYC's RMAILER list server software.

August BOD from page 2

BBS Committee Report

As reported by K1MEA for N2LSS, Traffic in the region has increased from approximately 200 bulletins/day to 700 bulletins/day. This increase, combined with the extensive traffic to/from PVV has strangled traffic in the lower Hudson region. A serialized routing plan for NY state (for bulletins only) is needed. N2LSS, as BBS committee chair, had been asked to develop a solution, however no action has been seen yet.

KB7UV described a spoke and hub system of regional bulletin distribution, partially implemented in the NYC metro area. Well-connected BBSs for a region accept incoming bulletins only from other hub BBSs, then pass these bulletins to their local spoke BBSs. This has reduced transport time and network loading through inter-regional cooperation. Comments were made on the impact of this mechanism on general purpose networking.

Continued on next column

Tech Mtg from previous column

MAX-231 Problem

NX2P reported the problem occurring when the +5v supply to a MAX231 RS-232 interface remains active when the +12v supply is gone: the chip self-destructs. this can occur if the +12v bus goes down briefly, because the +5v regulator can maintain power output for a few seconds. So, don't reset your TNCs by quickly flicking your Astron off & on, or you may be surprised.

220 Radios

VE2BMQ exhibited some obsolete phone company radios that were being converted for the 220 band. Burt promised to document the conversion procedure.

Uncle Buck's Smile

Tadd reported upon the CQ article mentioning the "New England Digital Association" (sic) and "Tad Torborg" (sic) in a favorable light. He also reported a telephone conversation with K4ABT, with Buck shedding his shining light upon TheNET X-1.

Meeting closed

The meeting was concluded at 11:17am.

—Transcribed by N2IRZ

August BOD from prev column

Technical Committee Report

The technical committee is still being organized, and there are items for the board to vote upon - refer to the NTECH minutes.

A motion was made by WA2WNI to appoint KB7UV as the manager of NBRC distribution list. There was no second. It was noted that this is WB2QBB's job, so Andy may offer his assistance to Bob for this task.

KA2DEW advised all members wanting to become a part of NTECH, the NEDA Technical Committee, to send a message so stating to KA2DEW@wb2qbb.ny.usa

Hexipus Project Report

WA2WNI reported that the project is winding down. He received the last 9 PC Boards from Howie. As previously decided, NEDA will support those commercial vendors offering equivalent products. [Note: The Hexipus is now sold out. If you have one, hold onto it, as it is now a collector's item. - de N2IRZ]

WB8PUF mentioned that, at the last meeting, it was proposed to send an assembled Hexipus to the ARRL Museum. A motion was made by WA2WNI to provide WB8PUF with two Hexipus boards and one parts set to be donated to the ARRL museum, seconded by KA2DEW. The motion was passed and accepted.

TCP/IP Committee

No report, since W1JFP is not present.

K1MEA noted that the fundamental problem with TCP/IP in a TheNET network is that users can set their own parms, thus having the ability to degrade the network. It was decided that a gateway system would not help. KB7UV mentioned the TNOS project of KO4KS, as described in the upcoming ARRL Digital Communications Conference proceedings.

KA2DEW suggested that point-to-point links into the network be insisted upon, unless a limit of 3 kB per hour is accepted or the parameters are set "friendly". N2IRZ suggested that an article be written, explaining what constituted "friendly" parameters and why, to educate users instead of acting as policemen, noting that many users may be unaware of their effect upon the network.

It was resolved to await the input of the TCP/IP chairman before any decisions were made.

Continued on next column

Continued on next page

DX Cluster Committee

No report. Discussed was the idea of inviting some of the key DX Cluster players to a board meeting to explain what happens when they use the network during repairs to their network, and how some small changes would improve network performance for both their users and existing users.

There was no old business discussed, due to the lack of minutes.

New Business

Matrix Monitor Project

KA2DEW and N2NRT described their Matrix Monitor project, exhibiting a prototype PC Board. Some discussion followed concerning what would happen to the final design, with Tadd advocating making it public domain. Discussion centered around recovery of development costs, which would not be possible with Tadd's plan. A motion to fund the next round of prototypes for \$200 was withdrawn. KA2DEW was asked to request funding again, when operating prototypes could be demonstrated.

A motion was made by K1MEA to officially sanction the Matrix Monitor as a NEDA project, with no funding at this time, seconded by WA2WNI. The motion was passed and accepted, with KA2DEW voting against.

Office Manager

A motion was made by KA2DEW to provide an annual budget of \$200 to the appointed Office Manager for supplies, seconded by WB8PUF. The motion was passed and accepted.

Budget

It was resolved to ask W1JFP to create a new budget for fiscal year 1994 to be examined and discussed at the next board meeting.

to right: Greg Healy, Ted Wolf, John ningham, Burt Lang, Steve Oliphant, Howy k, Andy Funk, Dana Jonas, Cal Graniel, Bill k (with daughter), Jim Wzorek, Don Rotolo, d Torborg

219-220 Digital Band

Discussion of NEDA's involvement with the coordination of links in this proposed band, as well as packet coordination in general followed. It was recommended that NEDA (as well as other Packet groups) should prepare a paper on network topology philosophy (i.e., how to do links) for the ARRL, to ensure that the League is aware of the correct methods, and why these methods are correct. If this topic is ignored by NEDA, it could become a fiasco, as little confidence in the knowledge of networking on the part of the ARRL was expressed. NEDA was judged to be qualified, because it guided the topology of the largest contiguous Packet network in North America, dubbed by KB7UV as "The NEDA-sphere". N2IRZ noted that the German system, where all links are point-to-point and coordinated, should also be cited as an example.

A motion was made by WA2WNI for NEDA to make an effort to create a document for the purpose of recommended networking coordination practices, and send it to the ARRL, seconded by KA2DEW. The motion was passed and accepted.

KA2DEW volunteered to combine existing articles in a logical fashion and forward the result to NTECH for action. This will be presented at the next meeting. All correspondence regarding this topic shall be carried by US Mail and not on the air.

Printing & Duplication

WB8PUF indicated that Al, the printer, would not mind being replaced. Al feels overloaded with our work, possibly by the ordering of 1,000 annuals of some 280+ pages each. John then described in detail another company that can produce similar documents with a Perfect binding method. The cost is comparable, but there is a 5-6 week lead time, and a 1000 item minimum. Due to the duplication process used, all documents must be in multiples of 16 pages in length. A figure of \$1.22 per copy for a 64 page document was reported.

It was agreed that a combination TheNET/ROSE sysop's guide would be printed as a test, which will be voted upon at the next meeting.

Membership Form Comment

KB7UV noted that the current membership form only asks for only the state in the home BBS' H-route, yet many HF forwarding paths require the country and continent designator as well, and many local BBS' need the sub-state designator (e.g., #ENY, #NWVT, #SALT). WB8PUF noted that only state was included in the database.

BBS Addressing Comments

KB7UV also reported KA2MSL's plan to use 6 character grid square locator as an additional identifier, but after the continent. KA2DEW noted that geographically-based routing information was worthless if users of that information were on different networks.

KB7UV recommended that all #whatever sub-designators also exist as flood routes, so that whenever a new BBS comes on-line and established forwarding from another BBS, they can send a message to SYSOP @ #whatever to inform them of who they are, where they are, and where they get their mail from. This would eliminate problems like KA2MSL's, where he gets a message for someone at a #ENY BBS of which he is unaware. #ENY goes both east and west for him, so if he sends it the wrong direction, it ends up dead somewhere.

Next Board Meeting

K1MEA announced that the next Board meeting would be on October 23, 1993 in Hanover NH, hosted by W1JFP.

Note on Host and Meeting Room

Don N2IRZ was thanked for providing the meeting room and refreshments at no cost to the club.

Meeting Adjournment

K1MEA moved to adjourn, seconded by KA2DEW. Adjourned at 4:25pm.

—Transcribed by N2IRZ



NEDA Job Descriptions

This is a document that was presented at the June NEDA board meeting. At the time this was a list of suggestions put together by N2IRZ, KA2DEW and WA2WNI and was not intended to be promoted as correct or finished. The document was amended, hacked, spindled, and mutilated at the June board meeting and at later board meetings. See the minutes.

Membership Manager

- Receives membership forms from the mail distribution officer, updates the database and mails received checks to the Treasurer. Save the hard copy of the membership form in a file.
- Each period (TBD) the membership manager mails a copy of the Roster or the database to the Office Manager.
- Reports number of members and provides a current roster at each board meeting.

Treasurer

- Receives checks from the mail distribution officer (occasionally from others). Deposits checks. Make a note of check's source and purpose for follow-up.
- Reports to board of directors every quarter.
- Handles all financial accounts, seeking professional advice if required.
- Writes checks for expenditures, only if approved by the board. This includes reimbursement to members, payment of bills from vendors, prepayment of orders arranged by Purchasing agent.
- Advises board on trends.
- Receives orders for NEDA products, removes and deposits payment, and forwards orders (after the check clears) to a project manager.

Office Manager/Purchasing Agent/Archivist/Distributor (OMPAAD)

- Makes sure that staff members have all of the materials that they need (postage, stationery, etc.).
- Receive mail and distribute to the appropriate staff for action as required, including follow-up for timeliness and propriety.

- All officers should send copies of all correspondence in NEDA's name to the archivist.
- The archivist should keep an original paper copy of each NEDA document in a permanent file.
- Seeks best price/terms for all major NEDA purchases as directed by Board, executes orders via treasurer.

Documentation Manager (DM)

- Receives bulk quantities of printed material from the printer and mails them out as requested by the other officers, in smaller quantities.
- Informs printer how many of any document (sent by Editor) should be produced.
- If the documentation manager runs out of a particular item it is his/her responsibility to order more, regardless of the editor's commitments.
- Provides an original of each document to the Archivist.

Corresponding Secretary

- Generates all outgoing correspondence. Letters may be to members, other hams, clubs, agencies etc..
- Reports via the Officer Manager to the rest of the officers on relevant correspondence.
- Handles routine question and answer items as relayed by the OMPAAD

Post Office Interface

- Empty the PO Box and mail it to the OMPAAD.

Editor

- Edits Quarterly and Annual, composes other documents as required.
- Sends final master to printer for all official documents (including Quarterly and Annual), advises DM to call printer with quantity.

Printer

- Prints things.
- Sends bulk quantities to the mailing house and DM, as advised by the DM.

Generic Project Manager

- Manages inventory and shipping for a club hardware or software project.
- Communications via packet between officers should only include definition of procedures and not normal business. Anything that is normal should be handled via US Mail, either through the officer manager or direct.

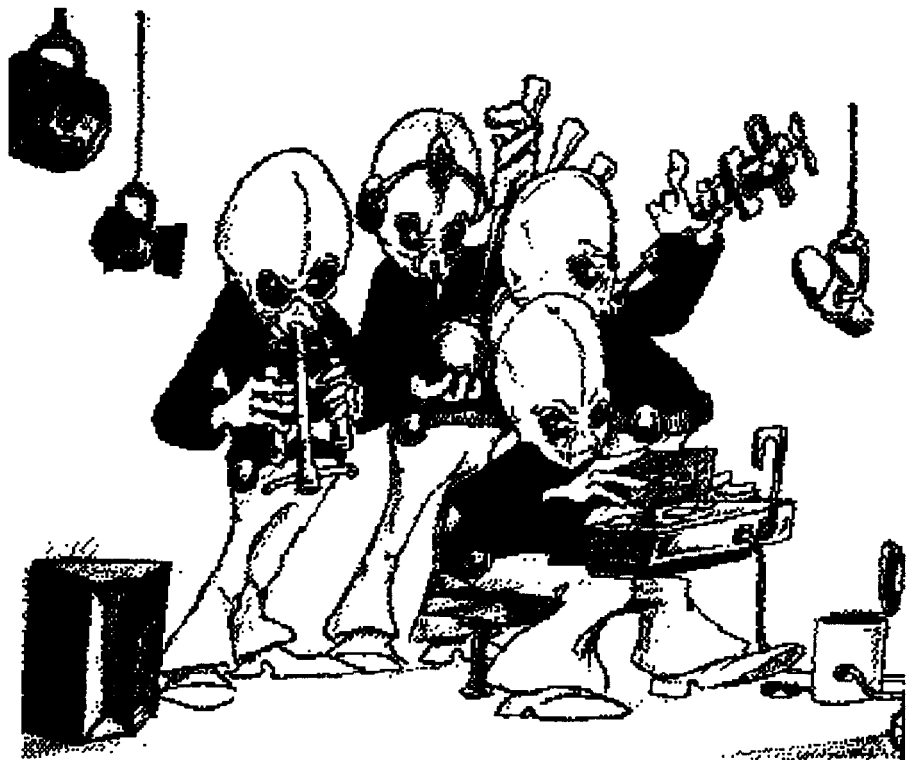
Forms


Documentation order form

for bulk mail items. Sent from an officer to the documentation manager ordering materials to be sent out.

Combination inventory form

Used by the officer manager to interrogate officers for supply requirements.



This is an artist's conception of the August board meeting. 

Membership Roster as of 10/28/93

showing members with expiration dates of 06/93 and later

callsign	first name	last name	city	state	home BBS	exp	MC	County
Clubs and Corporations								
W1BD	Central	VT ARC	Montpelier	VT	N1BRT	199404	Q	
BPA	Brunswick	Packet Assn	Pownal	ME	KA1RTW	199312	Q	
VE2CEV	ARC	Sud Ouest Inc	Mercier	PQ	VE2CEV.PQ	199307	Q	
KB2FAF	Skyline	Amateur Radio Club	Ortland	NY	KB2HKI.NY	199403	Q	
W2KGY	Cadet Amateur	Radio Club	West Point	NY		199409	Q	
W1NRG	Meriden	ARC	Meriden	CT	W1NRG	199408	Q	
VE2PWI	West	Island Park ARC	Dorval	PQ	VE2FKB.PQ	199306	Q	
Non-licensed								
	Phillip	Anderson	Perry	NY		199309	Q	
	Linda	Reedy	Tampa	FL		199405	Q	
Hams, sorted by first letter after call area								
KU2A	Nick	Fero	Frankfort	NY	WA2TVE	199505	Q	Herkimer
NU1A	Frank	Finger	New London	NH		199405	Q	
WA2AAR	Bob	Adamkewicz	Hillside	NJ	WA2AAR	199403	Q	
AA2AC	Vernon	Siegel	Clarence	NY	AA2AC.#WNY.NY.USA.NA	199405	V	Erie
KF2AD	Kent	Price	Canastota	NY		199407	V	
N2AFP	Frank	Cannan	Liverpool	NY	WA2TVE.NY.USA.NA	199405	V	Onondaga
N2AFZ	Bud	Johnson	Canandaigua	NY	WB2WXQ	199407	Q	Ontario
AA1AH	Karen	Garrison	Durham	NH	WB1DSW.NH.USA.NA	199408	V	Strafford
KA1AH	Dave	Belisle	Claremont	NH	WA1WOK	199306	Q	
WA2AHL	Eugene	Coyne	West Sand Lake	NY	WA2UMX.NY	199407	Q	Rensselaer
N2AIA	Robert	Gutshall	Charlton	NY	WA2UMX	199401	Q	
VE1AIC	Ron	MacKay	Cornwall	PE	VE1AIC.PE	199408	Q	Queens
KD2AJ	Charles	Orem	Morrisonville	NY	KD2AJ.#NENY.NY.USA.NA	199412	Q	Clinton
WD2AKK	Ed	Cope	Plattsburgh	NY		199409	V	Clinton
KA2AON	V. Brien	Mathews	Hannibal	NY	WA2FQA.NY	199409	Q	Oswego
N1APE	Harold	Hansen	Littleton	MA	KA1SRD	199410	Q	
N2API	Edward	Brady	Albany	NY	WA2UMX.NY	199407	Q	Albany
K2APL	Stan	Buckwalter	Briarwood	NY	K2APL	199308	Q	Queens
VE3APY	Carl	Wall	Toronto	ON	VE3OY.ON	199409	Q	
VE2AQI	Jim	Leslie	DDO	PQ	VE2FKB.PQ	199308	Q	
WA2AWG	Joel	Flappaport	Holmes	NY	WA2AWG.#FN31DK.NY.USA.NA	199405	Q	
KD1B	George	Makris	Yarmouthport	MA	KQ1K	199404	Q	
K2BEH	James	Wenskus	Rochester	NY	WB2WXQ	199408	Q	Monroe
WB2BEJ	Anthony	Pazzola	Albany	NY	WA2UMX.NY	199409	Q	Albany
N2BFH	Per	Moberg	Greenwich	NY	WA2UMX.NY.USA.NA	199410	Q	
K2BJG	Robert	Anderson	Oakland	NJ	WA2SNA.NJ	199409	Q	
VO1BK	Wilson	Penney	Cornr Brook	NF		199312	Q	
KB2BLX	Ted	Wolf	W Milford	NJ	WB2GTX.#NNJ.USA.NA	199503	V	Passaic
VE2BMQ	Burton	Lang	Howick	PQ	VE2FKB.#MTL.PQ.CAN.NA	199412	V	
KB1BN	Rick	Zach	Marlboro	MA	WB2QBQ	199404	Q	
N2BNE	J.D.	Van Griethuysen	Rochester	NY	WB2WXQ	199306	Q	Monroe
KA2BQE	Brian	Riley	Underhill Ctr	VT	KA2BQE.#NWVT.VT.USA.NA	199405	V	Chittenden
K2BRF	Fran	Ziobro	Utica	NY	WA2TVE	199310	Q	
KA2BSG	James	Rice	Rushville	NY		199408	Q	Yates
VE2BTZ	Robert	Robillard	St Constant	PQ	VE2CPT.PQ	199404	Q	
KA1BUC	Richard	Hansen	Hill	NH		199407	V	Merrimack
N2BUL	Paul	Altpeter	Farmington	NY		199504	Q	Ontario
KA2BVG	John	Trzaskos	Clifton Park	NY	WB2QBQ	199406	Q	
K1BXG	Joe	Devlin	Bellows Falls	VT	WA1WOK.NH.USA.NA	199404	V	
NBBZC	Dave	Chatham	Maple Hgts	OH	WA8BXN	199405	Q	
NC2C	Owen	Clute	Cooperstown	NY	N2NQH	199507	Q	Otsego
NQ1C	Bob	Lafleur	Springfield	MA	W1NY.#WMA.MA.USA.NA	199412	V	Hampden
N1CB	Carl	Breuning	Newport	NH	WA1WOK.NH	199409	Q	Sullivan
KB2CCC	Josh	Kupperman	Saratoga Spr	NY		199407	V	Saratoga
N1CDR	Mickey	Yale	Westfield	MA	K1MEA	199404	Q	
VE3CDX	Barry	Garratt	Ontario	ON	VE3CDX.ON.CAN.NA	199505	V	Brant
VE3CDY	Don	Brunet	Kingston	ON	VE3CDY.ON.CAN.NA	199409	Q	
WA2CEB	Dennis	Griffin	Orchard Park	NY	W2OY.NY.USA.NA	199309	V	Erie
KB2CEV	Stephen	Tedesco	Merrifield	VA	N3BBF.MD.USA.NA	199408	V	Fairfax
K1CGI	Vic	Ouelette	Lexington	MA	K1UGM	199306	Q	Suffolk
WB2CJIK	John	Papson	Melville	NY	N2BQF.#NLI.NY	199407	Q	Suffolk
N2CJ	Charles	Stampf	Lagrangville	NY	WA2YSM.#ENY.NY.USA.NA	199406	V	Dutchess
VE3CLN	Bruce	Colman	Gloucester	ON	VE3JF.ON	199312	Q	
VO1CNC	Jim	Hawco	Grand Falls	NF	VO1CNC.NF	199507	Q	
KD3CR	Daven	Kreifeldt	Williamsport	PA	W3AVK	199408	Q	Lycoming
K1CSB	Ray	Feeley	Southampton	MA	K1MEA	199404	Q	
AA1CW	Dave	VanZant	Fremont	NH	WB1DSW	199407	Q	Rockingham
K1CXS	Leon	Henderson	Wht Riv Jct	VT		199307	Q	Windsor
N2CZL	Donald	Russ	Rochester	NY	WB2PSI.#WNY.NY.USA.NA	199405	V	Monroe
W1DA	George	Hitz	Sudbury	MA	WB1DSW	199704	Q	
KB2DAJ	Steve	Long	Chaumont	NY	VE3CDY.#EON.ON.CAN	199407	V	Jefferson
W2DBU	Richard	Black	Brockport	NY	WB2WXQ	199404	Q	
N1DCO	Donald	Clark	W Newbury	VT	W1ET.NH.USA.NA	199406	V	
N3DDY	William	Timmins	Warren	PA	KA3SFC	199401	Q	Warren
KA2DEW	Tadd	Torborg	S Hackensack	NJ	WB2QBQ.#ENY.NY.USA.NA	199510	V	Bergen
KB2DIO	Charles	Silvia	Bridgeport	NY	KB2DIO.NY.USA.NA	199407	V	
VE2DJE	Richard	Aubin	Laval	PQ	VE2CRL.PQ	199406	Q	
KA1DLK	Michael	Powolka	Shaftsbury	VT	WA2UMX	199312	Q	
N2DMP	Ronald	Walter	Liverpool	NY	KB2DIO.#CNY.NY.USA.NA	199407	V	Onondaga

Statistics

498 listed members

Members in each state/province/country:

Korea	1
Canada	
New Foundland	2
Nova Scotia	1
Ontario	16
Prince Edward Island	1
Quebec	16
United States	
Alabama	2
Arizona	2
California	1
Colorado	1
Connecticut	9
Florida	4
Illinois	1
Kentucky	2
Massachusetts	63
Maine	14
Michigan	4
New Hampshire	61
New Jersey	17
New York	207
Ohio	8
Oregon	1
Pennsylvania	24
North Carolina	1
Texas	1
Utah	2
Virginia	1
Vermont	27
Washington	5
Wisconsin	1
Wyoming	1

callsign	first name	last name	city	state	home BBS	exp	MC	County	Members
K4DMU	Joseph	Leitsch	Louisville	KY	W4CN.KY.U.S.A.NA	199412	Q	Jefferson	
K2DN	Fred	Skinner	Cortland	NY	KB2HKI.NY	199407	Q		
AA2DP	Daniel	Shanks	Oneonta	NY	W2RGI.NY.U.S.A.NA	199408	Q	Otsego	
WA1DPP	Robert	Howarth	Derby	VT	WA1DPP.#NEVT.VT	199312	Q	Orleans	Albany County, NY
N1DQQ	Dennis	Donah	Hudson	NH	WB1DSW	199407	Q	Hillsboro	KA2RHM @WA2UMX
VE2DRB	Bob	Gobrick	Champlain	NY	VE2FKB.ON	199405	Q		N2API @WA2UMX
N2DS	David	Schmarder	Beaver Dams	NY	WB2PSI	199404	Q	Chemung	N2IUL @WA2UMX
WB1DSW	Herb	Salls	E. Kingston	NH	WB1DSW.NH.U.S.A.NA	199406	V	Rockingham	N2LEX @WA2UMX
KD3DU	Clarence	Thompson	Warren	PA	KA3SFC.PA	199506	Q	Warren	WA2IWW @WA2UMX
W2DUC	Fred	Cupp	Fairport	NY	WB2WXQ	199406	Q	Monroe	WA2YBM @WA2UMX
N4DW	Dave	Wilson	E. Burke	VT	K1UAQ	199312	Q	Caledonia	WB2BEJ @WA2UMX
WB2DWD	Robert	Seastream	Long Valley	NJ	WA2SNA	199405	Q	Morris	WB2FWK @WA2UMX
WB2DXK	John	Rardin	Howes Cave	NY	WA2PVV.NY	199409	Q		WB2QBQ @WB2QBQ
KA3DXX	George	Stickler	San Antonio	TX	KA3DXX.#SAT.TX	199507	Q	Atascosa	Allegheny County, PA
WB2DYJ	Christopher	Reich	Rochester	NY	WB2VPH.NY	199407	Q	Monroe	KC3ET @KA3NVP
NX2E	Jerry	Palermo	Rochester	NY	WB2WXQ	199407	Q		Atascosa County, TX
KF2EB	Jon	Hall	Medford	NJ	WB2MNF	199407	Q		KA3DXX @KA3DXX
VE3EBT	David	Tilley	Lancaster	ON		199401	Q	Wentworth	Barnstable County, MA
W1EDH	Edward	Harper	Glastonbury	CT	W1EDH.CT.U.S.A.NA	199404	V		W1KRW @KQ1K
WA1EDR	Lorraine	Witkowski	Windsor Locks	CT	W1NY.CT.U.S.A.NA	199410	Q		W1TTY @KQ1K
N1EFK	Warren	Ritchie	Newbury	NH	WA1WOK	199412	Q	Merrimack	WA1YKN @KQ1K
VE3EI	Eric	Meth	Monkland	ON	VE3NUU.ON.CAN.NA	199401	V		Bergen County, NJ
K8EIV	Don	Nelsch	Cuyahoga Falls	OH	WB8BI.#NWOH.OH.U.S.A.NA	199409	Q		K2LSX @WA2SNA
N3ELI	Don	Pistner	Bradford	PA	N3ELI	199308	Q	McKean	KA2DEW @NX2P
N7ENT	Peter	Kallio	Port Orchard	WA	N7ENT.WA	199409	Q	Kitsap	N2IRZ @WB2GTX
WB1ERE	Walter	Piotroski	Afton	NY	KK4L.#WNY.NY.U.S.A.NA	199504	V		Berkshire County, MA
WB3ESS	John	Bednar	Northampton	PA	N3DPU.PA.U.S.A.NA	199510	Q		AA1GG @K1MEA
KC3ET	Charles	Gessner	West Milfin	PA	KA3NVP.#EPA.PA.U.S.A.NA	199412	Q	Allegheny	N1FGY @WA2UMX
N3ET	Randy	Lilly	Allentown	PA	N3ET	199307	V	Lehigh	Bradford County, PA
N2EUW	Albert	Clark	Phoenix	NY	NONE	199401	Q	Oswego	WA3QAG @K3RLI
W2EXY	Richard	Marshall	Ransomville	NY	N2CVQ.NY.U.S.A.NA	199506	Q	Niagra	Brant County, ON
N1E2D	Fred F	Donaldson	Templeton	MA	N1E2D.MA.U.S.A.NA	199404	V		VE3CDX @VE3CDX
KY2F	Fred	Swiatkowski	Oswego	NY		199403	Q	Oswego	Broome County, NY
NB1F	John W	Brown	Hanover	NH	W1ET	199410	Q	Grafton	NX9O @WF2A
WA1FBI	Doug	Bassett	Greenfield	MA	K1MEA	199410	Q	Franklin	Bucks County, PA
N1FCC	Dave	Taylor	Belchertown	MA	W1NY.#WMA.MA.U.S.A.NA	199403	V	Hampshire	N3LKA @WA3NWL
VE2FCH	Denys	Fournier	Lasalle	PQ	VE2FCH.PQ	199404	Q		Caledonia County, VT
KA2FEO	Bob	Ellison	King Ferry	NY	WB2WXQ	199507	Q	Cayuga	N4DW @K1UAQ
N1FGY	Ed	Grosso	New Ashford	MA	WA2UMX	199403	Q	Berkshire	Carroll County, NH
N1FIL	Richard	St Jean	Manchester	NH	WA1WOK.NH.U.S.A.NA	199312	V	Hillsborough	N1JHX @K1UAQ
VE3FJB	Len	Morris	Orilla	ON	VE3FJB.ON	199404	Q		Cayuga County, NY
W2FMM	James	Ward	Nichols	NY	WF2A.NY	199406	Q	Tioga	KA2FEO @WB2WXQ
VE2FN	James	Morehouse	Montreal	PQ	VE2FKB.PQ	199312	Q		WA2NGX
WA2FQA	Jerrold	Friedman	Spencer	NY	WA2FQA.#WNY.NY	199312	Q	Tompkins	Chautauque County, NY
N1FSF	Harold	Woering	Easthampton	MA	W1NY	199409	Q	Hampshire	N2JYG @WA0PTV
N7FSP	Scott	Cronk	Seattle	WA	N7ENT	199503	Q	King	KC2ZS @KA3SFC
N1FSR	Joseph	Grey	Claremont	NH	WA1WOK	199310	Q		Chemung County, NY
WB2FWK	Peter	Harvey	Albany	NY	WA2UMX	199306	Q	Albany	N2DS @WB2PSI
WA1FXK	Donald	Patterson	Carthage	NH	WB2TUP.#NNY.U.S.A.NA	199405	V	Jefferson	N2GDE @WB2A
W1FYR	Alan	Merrill	Gilsun	NY	W1FYR.NH.U.S.A.NA	199408	V	Cheshire	N2GDDV @KC2EQ
WB2FYZ	Vince	Staffo	Ilion	NY	NONE	199404	Q		NV2J @WF2A
KC1FZ	George	Davis	Hingham	MA	NS1N.MA	199312	Q	Plymouth	W2IKF @KC2EQ
N3GAF	James	Sutkoff	Morrisonville	NY	KD2AJ	199402	Q	Clinton	WA2OVT @K3RLI
N1GBE	Ralph	Celone	Thomaston	CT	N1DCS	199307	Q	Litchfield	KA2MYD @KA2MYD
N2GDE	Bob	Hansen	Elmira	NY		199503	V	Chemung	N2SPI
N2GDV	Art	Niebuhr	Lockwood	NY	KC2EQ.#ELMIRA.NY	199405	Q	Chemung	Cheshire County, NH
N1GEP	Reade	Williams	New London	NH	WA1WOK	199410	Q	Merrimack	W1FYR @W1FYR
VE2GFF	Andre	Girard	Sorel	PQ	VE2CSC.PQ	199404	Q		Chittenden County, VT
AA1GG	William	Sexton	Richmond	MA	K1MEA.#WMA.MA.U.S.A.NA	199406	V	Berkshire	KA2BQE @KA2BQE
N1GJB	Birleim	Pomroy	Portsmouth	NH	WB1DSW	199411	Q	Rockingham	N2SYJ @KD2AJ
WB8GLQ	Michael	Nugent	Peterborough	NH	WB1DSW.NH.U.S.A.NA	199404	V		Clinton County, NY
N1GMC	Dr Edmond	Cooley	Lyme	NH	W1ET.NH.U.S.A.NA	199410	Q	Grafton	KB2LML @KD2AJ
KD4GOE	Geoff	Peacock	Theodore	AL	W4IAX	199504	Q		KD2AJ @KD2AJ
KA1GOZ	Donald	Dillaby	Nashua	NH	KA1GOZ	199403	Q	Hillsborough	N3GAF @KD2AJ
N1GPY	Frank	Alwine	Milton	VT	KD2AJ.NY.U.S.A.NA	199410	V		WA2LRE @KD2AJ
K1GQH	Roger	Guillemette	Manchester	NH	WA1WOK	199404	Q	Hillsboro	WD2AKK
W1GQR	David	Finn	Gray	ME	W1GQR	199404	Q		Cochise County, AZ
WA4GSO	George	Matthews	Wadesboro	NC		199410	Q		N7OO @NJ7P
N1GUJ	Peter	Ferguson	Granby	MA	K1MEA	199409	Q	Hampshire	Columbia County, NY
W1GXH	Alan	Chaffee	Westford	MA	WB1DSW	199404	Q		N2ROH @WA2PVV
WB1GXM	Conrad	Ekstrom	Claremont	NH	WA1YTW	199410	Q	Sullivan	WA2WNI @WA2PVV
AA2GY	Thomas	Farstad	Elmira	NY	KC2EQ	199404	Q		Columbus County, OR
N3GZW	Corey	Dean	Wellsboro	PA	K3RLI.#EPA.PA.U.S.A.NA	199310	V		KB7IVK
KE2HB	Richard	Bartlett	Cooperstown	NY	N2NQH	199308	Q	Otsego	Cortland County, NY
N1HFF	Lloyd	Swanburg	Atkinson	NH	WB1DSW	199404	Q	Rockingham	K2IWR @KB2HKI
WB4HFN	Ron	Baker	Derry	NH	WB1DSW	199308	Q	Rockingham	WB2JWD @WA2FQA
KC1HH	Robert	Merrill	Goffstown	NH	WA1WOK	199606	Q	Hillsborough	Dade County, FL
WA1HJR	Leonard	Leach	Hudson	NH	KA1GOZ	199311	Q	Hillsborough	N4UTO @N4UTO
N1HLY	William	Chase	Saco	ME	K1UAQ.#NNH.NH.U.S.A.NA	199306	V	York	Delaware County, NY
VE3HMF	Herb	Morrison	Ottawa	ON	VE3JF.ON	199507	Q		K2TNN @W2RGI
N1HNP	Richard	Lang	Lebanon	NH	W1ET	199404	Q		WA2RUN @W2RGI
K2HNW	Ted	Goble	Schenectady	NY	WA2UMX.NY	199403	Q	Schenectady	Dutchess County, NY
KB5HPN	John	Gorman	Binghamton	NY	WF2A	199410	Q		N2CJ @WA2YSM
KB2HPU	Peter	Brayman	Unadilla	NY	W2RGI.#CNY.NY.U.S.A.NA	199407	Q	Otsego	N2JBA @WA2PVV
N1HSM	Stan	Graziano	Arkinson	NH	WB1DSW	199410	Q	Rockingham	WA2YSM @WA2YSM
KB2HVL	James	Buch	Penfield	NY	WB2WXQ.NY.U.S.A.NA	199501	Q	Monroe	
WA2HWG	George	Hanrahan	Utica	NY		199401	Q		

callsign	first name	last name	city	state	home BBS	exp	MC	County	
K2HWP	Tom	Conley	Liverpool	NY	WA2TVE	199401	Q	Onondaga	Erie County, NY
KC1HY	Stanley	Dickinson	Springfield	VT	WA1WOK	199408	Q	Windsor	AA2AC @AA2AC
KB2HYT	Kenneth	Girard	Rochester	NY	WB2VPH	199310	Q	Monroe	K2SLZ @N2CVQ
KC1I	Larry	George	Sanford	ME	WA1WOK	199405	Q	York	KB2YJ @KE2VW
NN2I	A. P.	Reid	Keeseville	NY		199307	Q	Essex	N2NJH @W2OY
W3IAG	Robert	Heavener		PA	NM3G	199404	Q	Erie	W2ICZ @W2SEX
VE3ICF	Wayne	Henwood	Smiths Falls	ON	VE3ICF.ON.CAN.NA	199409	V		WA2CEB @W2OY
W2ICZ	Sydney	Chiswell	Buffalo	NY	W2SEX.#WNY.NY.USA.NA	199405	V	Erie	Erie County, PA
K1IDF	Donald	Scott	Sunderland	MA	K1MEA.MA	199409	Q		KC3LV
W2IH	Ike	Hathaway	Syracuse	NY	WA2TVE.#WNY.NY.USA.NA	199403	V	Onondaga	W3IAG @NM3G
KA1HA	Robert	Provost	Sarasota	FL	W4MWP.#SRQFL.FL.USA.NA	199411	Q		Essex County, MA
N2IJM	Phil	Phillips	Geneva	NY	WB2WXQ	199403	Q	Ontario	W1UU @W1UU
W2IKF	Paul	Klinko	Elmira	NY	KC2EQ	199401	Q	Chemung	Essex County, NY
WA2IKL	Richard	Factor	Kinnelon	NJ		199404	Q		NN2I
N1IMC	Thomas	Bery	Littleton	NH	K1UAQ	199401	Q	Grafton	WA2IQJ @KD2AJ
W2IMK	Jim	Centanni	Fairport	NY	WB2WXQ	199308	Q	Monroe	Fairfax County, VA
AA2IO	Ruthie	Hoffman	W Henrietta	NY	WB2WXQ.NY	199407	Q		KB2CEV @N3BBF
KB2IP	Paul	Trepanier	Fairport	NY	WB2PSI.NY	199405	Q	Monroe	Franklin County, MA
N1IPT	John	Ferguson	Buzzards Bay	MA	KQ1K.MA.USA.NA	199405	V		WA1FBI @K1MEA
N1IQG	Bruce	Gowans	Bow	NH	WA1WOK	199307	Q		WA2RXL @WA2RXL
WA2IQJ	Les	Schmarder	Elizbethtown	NY	KD2AJ.#NENY.NY.USA.NA	199410	Q	Essex	WB2RYB @WB2RYB
N2IRZ	Don	Rotolo	Rivervale	NJ	WB2GTX.NJ.USA.NA	199407	V	Bergen	Grafton County, NH
N2ISQ	Ted	Leonard	Maple Spgs	NY	WA0PTV	199306	Q		K1UAQ @K1UAQ
WA1ITZ	Justin	Barton	Randolph	VT	N1BRT	199307	Q		N1GMC @W1ET
N2IUL	Einar	Syvetsen	Albany	NY	WA2UMX	199407	Q	Albany	N1IMC @K1UAQ
N1IUP	Harold	Read	Berlin	MA		199408	V	Worcester	N1JRC @WA1WOK
KC2IV	Bob	Phillips	Middle Grove	NY	WA2UMX	199405	Q	Saratoga	NB1F @W1ET
KB7IVK	Damien	Cox	Vernonia	OR		199405	Q	Columbus	W1JY @WA1FHB
K2IWR	Ivan	Kingsley	Cortland	NY	KB2HKI	199412	Q	Cortland	WA1TLN @W1JFP
WA2IWW	Gerold	Murray	Albany	NY	WA2UMX.NY	199407	Q	Albany	Green County, NY
WB3IWW	Gerald	Engman	Warren	PA	KA3OEM	199312	Q	Warren	N2SWW @WA2PVV
N2IXL	Darrell	Leavitt	Plattsburg	NY	KD2AJ.#NENY.NY.NA	199405	V		Hamden County, MA
N2IYS	Richard	Spingarn	Trumansburg	NY	WB2WXQ	199403	Q	Schuyler	KA1TDL @K1MEA
K2IZA	Jack	Aber	Canisteo	NY	WB2WXQ.NY	199403	Q	Steuben	WA1WRM @K1MEA
N2IZT	Walter	Kannapel	Rochester	NY	WB2PSI.#WNY.NY.USA.NA	199401	V	Monroe	NQ1C @W1NY
N2IZV	Russell	Harris	Newark	NY	WB2WXQ	199604	Q		Hampshire County, MA
NM2J	Mark	Oliver	W Henrietta	NY	WB2WXQ.#WNY.NY.USA.NA	199406	V	Monroe	DK1TM @K1MEA
NV2J	Anthony	Volino	Elmira	NY	WF2A.#WNY.NY	199407	Q	Chemung	N1FCF @W1NY
NW1J	Michael	Rioux	Boxford	MA	K1EA.MA	199312	Q		N1FSF @W1NY
KB3JA	Kenneth	Jones	Hanover	PA	WA3KXG.#CPA.PA.USA.NA	199404	V	York	N1GUJ @K1MEA
V2JAW	Ron	Raposo	Holland Ptnt	NY	WA2TVE.#WNY.NY	199408	Q	Oneia	W1ZWZ @K1MEA
V2JBA	Edward	Rubin	Amenia	NY	WA2PVV.NY	199409	Q	Dutchess	Herkimer County, NY
V3JBG	John	Filiatrout	Russell	PA	KA3SFC	199401	Q		K2UBE @WA2TVE
CF2JC	Duane	Gaul	Spencerport	NY		199407	Q		KU2A @WA2TVE
V1JDK	Steve	Maloney	Bedford	NH	KB1PJ.NH.USA.NA	199405	Q	Hillsboro	WY2N @WA2TVE
V1JEB	Daniel	Senie	Clinton	MA	WA1PHY	199404	Q		Hillsborough County, NH
V2JEN	Allen	Olmsted	Avoca	NY	WB2PSI.NY	199407	Q		K1GQH @WA1WOK
V1JEO	Joel	Curneal	Meriden	CT	W1NRG.CT.USA.NA	199404	V		KBLT @WA1PHY
E3JF	Barry	McLarnon	Ottawa Ont	ON	VE3JF.ON	199407	Q	Ontario	KA1QP @WA1WOK
N1JFP	Calvin	Stiles	Hanover	NH	W1JFP.NH.USA.NA	199401	V		N1DQQ @WB1DSW
V2JHJ	Eric	Svalland	Kingston	NY	WA2KQY	199404	Q	Ulster	N1JDK @KB1PJ
V1JHX	Fred	Hibbard	Littleton	NH	K1UAQ	199410	V	Carroll	K1VC @WA1WOK
V2JVV	Kenneth	King	Cobleskill	NY	WB2QBQ.NY.USA.NA	199410	V		KA1GOZ @KA1GOZ
WB2JLR	Richard	Place	Canandigua	NY	WB2WXQ.#WNY.NY.USA.NA	199402	V	Ontario	KC1HH @WA1WOK
V1JMC	David	SWanson	Dennisport	MA	KQ1K	199405	Q		N1FIL @WA1WOK
V3JNS	Dan	Sekera	Kingston	PA	K3RLI	199404	Q		N1NEG @WA1WOK
V1JRA	Carl	Snyder	Cavendish	VT	WA1WOK	199504	Q	Windsor	NM1N @KA1GOZ
V1JRC	Brian	Burke	Etna	NH	WA1WOK	199411	Q	Grafton	W1PEX @KA1GOZ
C2JSC	Charles	Ingher	Putnam Valley	NY	WA2AWG.#FN31DK.NY.USA.NA	199407	Q	Putnam	WA1HJR @KA1GOZ
E2JVV	Reginald	Therault	Terrebonne	PQ	VE2CSC.PQ	199406	Q		Jackson County, WV
WB2JWD	Mike	Brown	Richford	NY	WA2FQA.NY	199409	Q	Cortland	WB8VK
A2JXI	Roger	Ousterhout	Ogdensburg	NY	KA2JXI.#NNY.NY.USA.NA	199312	V	St. Lawrence	Jefferson County, KY
V1JY	O.W.H.	Johnson	Bristol	NH	WA1FHB	199403	Q	Grafton	K4DMU @W4CN
I2JYG	Franklin	Werren	Sherman	NY	WA0PTV.#WNY.NY.USA.NA	199407	V	Chaut	Jefferson County, NY
IM1K	Russel	Hank	Enfield	CT	W1NY	199407	Q		KB2DAJ @VE3CDY
VN2K	Paul	Agoglia	Oneonta	NY	W2RGI	199401	Q	Otsego	WA1FXK @WB2TUP
A2KA	Donald	Woods	Rochester	NY	WB2PSI	199404	Q		WT2Z @KA2JXI
I1KAL	Christopher	King	Grafton	NH		199407	Q		Kennebec County, ME
I2KBD	Steven	Oliphant	Ringwood	NJ	N2DZZ.NJ.USA.NA	199407	V	Passaic	K1NIT @KA1RTW
WA2KDF	Gerard	Michaud	PA Furance	PA	W3YA.PA.USA.NA	199410	Q		King County, WA
I1KDX	Jeffrey	Patterson	Lawrence	MA	KA1PEP	199310	Q		N7FSP @N7ENT
I1KGL	Stephen	Prodouz	Eliot	ME	WB1DSW.ME.USA.NA	199403	Q	York	Kitsap County, WA
HKHT	Richard	Hook	Augusta	ME		199410	V		N7ENT @N7ENT
HKNK	Dave	Cunningham	Worthington	MA	K1MEA	199308	Q		Lackawanna County, PA
HKNS	Barry	Evans	No Falmouth	MA	KQ1K	199404	Q		WA3LWR @KB3QW
I1KNW	Elbert	Powell	Sandwich	MA	KQ1K	199410	Q	Barnstable	WA3YML @KB3QW
I8KOK	Ed	Stokes	Randolph Ctr	VT	W1JFP	199405	Q		Lake County, OH
2KPR	Terry	Kennedy	Milford	NY	W2RGI.#CNY.NY.USA.NA	199403	V	Otsego	WB8LYJ @N2JYG
1KQB	Rick	Cook	E Corinth	VT	WA1WOK.NH.USA.NA	199404	V	Orange	Lehigh County, PA
2KTM	James	Faux	Brockport	NY		199403	Q	Monroe	N3ET @N3ET
I8KVK	Ted	Jacobson	Ripley	WV		199410	Q	Jackson	Litchfield County, CT
7KXI	Jim	Raehl	Orem	UT	N7KXI.UT.USA.NA	199410	Q	Utah	N1GBE @N1DCS
2KXS	Judith	Stonehill	Honeoye Fls	NY		199408	V	Monroe	Longueuil County, ON
Z2L	Ken	Coyne	Pine Island	NY	WA2YSM.#ENY.NY	199409	Q	Orange	VE3RM @VE2FKB
1LBJ	Robert	Poor	Berwick	ME	WA1WOK	199403	Q	York	Los Angeles County, CA
8LCK	Lee	Reynolds	Lempster	NH		199403	Q	Sullivan	K6PYP @N6YN
2LDR	Martin	Miller	Philmont	NY	WA2PVV.NY.USA.NA	199407	V		

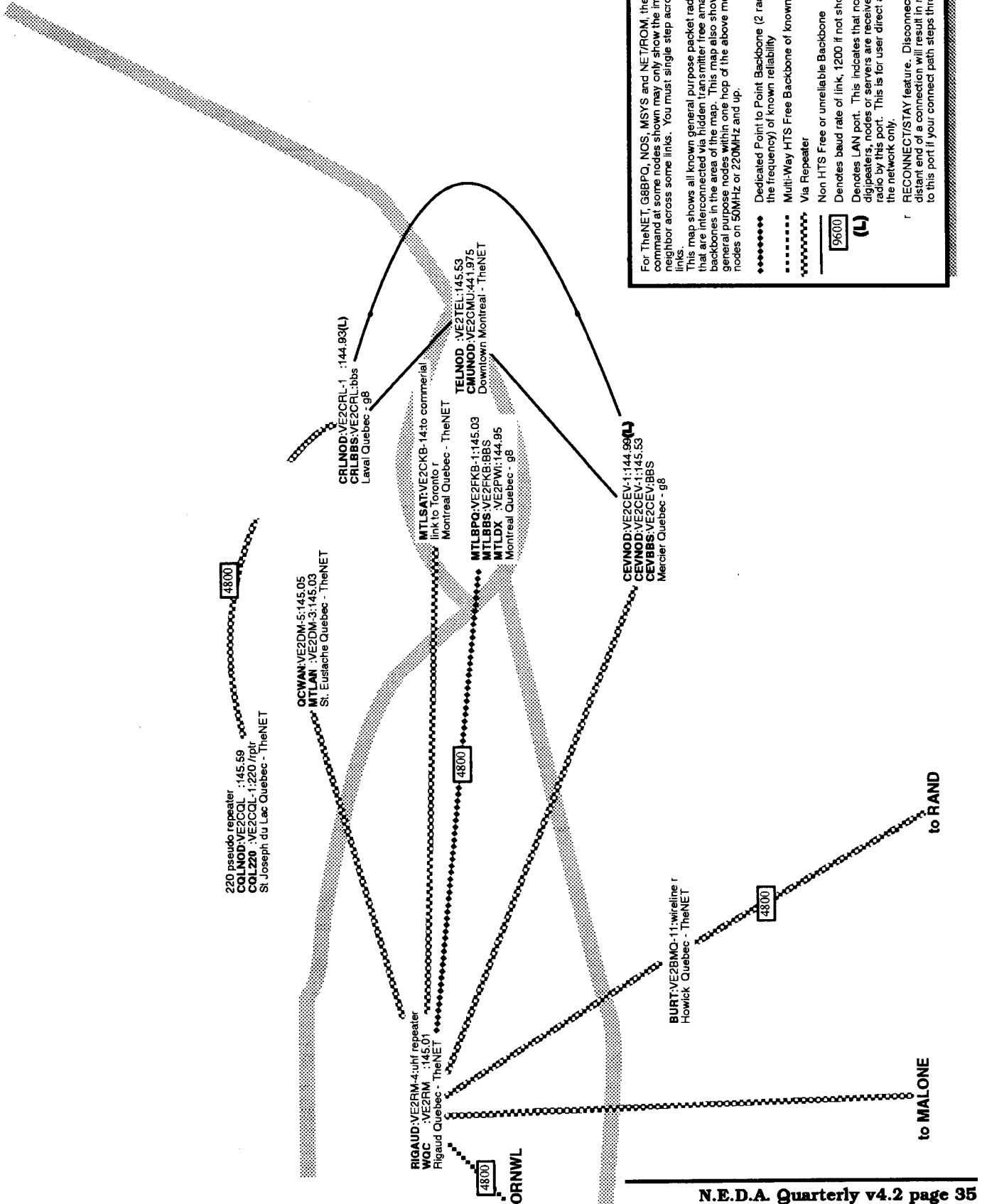
callsign	first name	last name	city	state	home BBS	exp	MC	County	
KB6LE	George	Lanning	Olympia	WA	WB7QEU	199405	Q		Lycoming County, PA KD3CR @W3AVK
K1LEC	Roland	Aldrich	Greeley	CO		199312	Q		Marrimack County, NH KA10U @WA1WOK
N2LEX	John	Wright	Albany	NY	WA2UMX.NY	199407	Q	Albany	
W2LGF	Reuben	Merchant	Lake George	NY	WA2UMX	199504	Q	Warren	McKean County, PA N3ELI @N3ELI
N2LIB	George	Reynolds	Penfield	NY	WB2WXQ	199411	Q	Monroe	
N2LKA	Patrick	Onesty	Pine Bush	NY	N2LKA.#ENY.NY.USA.NA	199404	V	Orange	
N3LKA	Brian	McCleary	Bristol	PA	WA3NWL.#EPA.PA	199407	Q	Bucks	Merrimack County, NH KA1BUC N1EFK @WA1WOK N1GEP @WA1WOK WA1WOK @WA1WOK
N1LKF	Douglas	Wood	Auburn	NH	WB1DSW.NH.USA.NA	199405	V	Rockingham	
WA2LKI	Tom	MacDonald	Venice	FL	WA2LKI.#VENFL.FL.USA.NA	199410	Q		
N1LMD	Ronald	Walker	Quincy	MA	N1LMD	199310	Q		
KB2LML	Alvah	Haggett	Champlain	NY	KD2AJ	199412	Q	Clinton	Middlesex County, MA WT1T @WA1PHY
N1LND	Frederick	Pratt	N Falmouth	MA		199409	Q		
N1LNF	John	Reid	Teaticket	MA	KC1UA.MA	199409	Q		
KA1LNU	Joel	Dumont	So Deerfield	MA	K1MEA	199404	S		Mobile County, AL WA4OSR @WA4OSR
N1LQB	William	Judd	South Hadley	MA	K1MEA.MA	199405	Q		
KA1LQE	John	Terry	So Burlington	VT	KD2AJ	199308	Q		
WA2LRE	C Anthony	Calongne	Plattsburgh	NY	KD2AJ	199312	Q	Clinton	Monroe County, NY K2BEH @WB2WXQ K2ZWI @WB2PSI KA2OMQ @WB2PSI KB2HVL @WB2WXQ KB2HYT @WB2VPH KB2IP @WB2PSI N2BNE @WB2WXQ N2CZL @WB2PSI N2IZT @WB2PSI N2KTM N2KXS @WB2WXQ N2LIB @WB2WXQ N2LTI @WB2WXQ N2LWY @WB2PSI NG2P @WB2VPH NM2J @WB2WXQ W2DUC @WB2WXQ W2IMK @WB2WXQ WA2RZG @WB2WXQ WB2DYJ @WB2VPH WB2TRC @WB2PSI WY2Z
N2LSS	Paul	Straney	Garrattsville	NY	W2RGI.#CNY.NY.USA.NA	199309	V		
K2LSX	John	Gubernard	Bergenfield	NJ	WA2SNA.#NNJ.NJ	199406	Q	Bergen	
K8LT	Gary	Grebus	Brookline	NH	WA1PHY.MA	199312	Q	Hillsboro	
N2LTI	Hervey	Gauvin	Penfield	NY	WB2WXQ	199404	Q	Monroe	
KC3LV	E.J.	Seppala	Erie	PA		199405	Q	Erie	
N1LVL	Ira	Wilner	Putney	VT	WA1WOK.NH	199406	Q	Windham	
WB8LVP	Fred	Sole	Poland	OH	WB8LVP	199308	Q		
WA3LWR	Robert	Chimel	Clarks Summit	PA	KB3QW	199403	Q	Lackawanna	
N2LWY	Dale	Fravel	Rochester	NY	WB2PSI	199404	Q	Monroe	
N1LXG	Jim	Feldhausen	Bristol	VT	KD2AJ	199404	Q		
WB8LYJ	Joseph	Townsend	Painesville	OH	N2JYG	199310	Q	Lake	
N1LZD	Louis	Calabrese	Springfield	MA	WA1TPP	199404	Q		
N2LZH	George	Stevens	Bridgeport	NY	WA2TVE.NY.USA.NA	199407	V		
KY1M	Dexter	Howe	Bradford	NH	WA1WOK.NH.USA.NA	199405	V		
N2MAH	Reg	Gehret	Bath	NY	WB2VPH	199406	Q	Steuben	
KB2MAO	Raymond	Lukach	Jamestown	NY		199410	Q		
N1MAU	Greville	Balzarini	Gloucester	MA	KA1EDY	199310	Q		
K1MEA	James	Wzorek	Easthampton	MA	K1MEA.#WMA.MA.USA.NA	199312	V		
N3MFG	Richard	Kinnin	Middlebury Ctr	PA		199407	Q		
WA2MFY	Peter	Detwiler	Gladstone	NJ		199406	Q		Montgomery County, PA WA3RIZ @WB3JOE
N2MGI	Matt	Parker	Huntington	NY	N4GAA.CT.USA.NA	199405	V	Suffolk	
N2MH	Mark	Herson	W Orange	NJ	N2MH	199405	Q		Morris County, NJ KM2P @K2RW WB2DWD @WB2DWD
W1MIV	Charlie	Tamm	Wakefield	NH	WB1DSW	199310	Q		
KC1MJ	John	Blowney	York Harbor	ME	WB1DSW	199409	S	York	
N2MKC	Thomas	Psyck	Syracuse	NY	KB2DIO	199404	Q		Niagara County, NY WA2NMN @VE3CDX K2ZR @W2SEX W2EXY @N2CVQ
N2MKH	John	Driscoll	Syracuse	NY		199407	Q	Onondaga	
N2MKJ	Keith	VanDenburg	Liverpool	NY	KB2DIO.NY	199407	Q	Onodaga	
N2MKK	Phil	Thomas	Oneida	NY	WA2TVE.NY	199407	Q	Oneida	
KA1MLN	Joseph	Jolda	Webster	MA	K1MUJ	199312	Q	Worcester	Oakland County, MI KE8UM
WA2MNM	William	Fedder	Sanbron	NY	VE3CDX	199412	Q	Niagara	
N1MOY	Bob	Tohosky	Weymouth	MA		199409	Q		Onandaga County, NY N2PFL @WB2WXQ
K2MPE	Al	Cook	Sodus Pt	NY	WB2WXQ.NY	199407	Q		
KA2MSL	Michael	Stemp	Newburgh	NY	KA2MSL.#FN21XM.NY.USA.NA	199408	Q	Orange	
N1MSV	Gareth	Crispell	Craigville	MA		199409	Q		
VE3MX	Ron	Kramer	Port Colborn	ON	VE3SNP.ON.CAN.NA	199405	V		Oneida County, NY N2JAW @WA2TVE N2MKK @WA2TVE WA2TVE @WA2TVE WJ2O @WA2TVE
KA2MYD	Thomas	Mathewson	Norwich	NY	KA2MYD.#CNY.NY.USA.NA	199401	V	Chenango	
KB2MZQ	Tom	Hirasuna	Ithaca	NY	WA2FQA	199404	Q	Thompkins	
KR3N	Donald	Anderson	Warren	PA	KA3SFC.PA	199407	Q	Warren	Onondaga County, NY N2AFP @WA2TVE N2MKJ @KB2DIO K2HWP @WA2TVE KA2VEE @KB2DIO N2DMP @KB2DIO N2MKH W2IH @WA2TVE WB2PEM @KB2DIO
NM1N	Edward	Los	Nashua	NH	KA1GOZ	199403	Q	Hillsborough	
NR1N	Lindsay	Collins	Washington	NH	WA1WOK	199410	V		
WY2N	James	Brewer	W. Winfield	NY	WA2TVE	199405	Q	Herkimer	
N2NAP	Kevin	Davis	Shortsville	NY	WB2PSI	199407	Q	Ontario	
W4NBC	Earl	Smith	York	ME	WB1DSW	199405	S	York	
N0NDO	John	Painter	Federal Way	WA	N0NDO.#SEA.WA.USA.NA	<na>	L		Ontario County, NY N2AFZ @WB2WXQ N2BUL N2JUM @WB2WXQ N2NAP @WB2PSI WB2JLR @WB2WXQ
N1NEG	Ken	Winograd	Manchester	NH	WA1WOK.NH	199408	Q	Hillsborough	
N2NFU	Carl	Squires	Apalachin	NY	WF2A.#WNY.NY.USA.NA	199307	V	Tioga	
VE2NGQ	Nat	Goldberg	D.D.O.	PQ	VE2FKB.PQ	199407	Q		
WA2NGX	Joe	Kahler	Aurora	NY		199407	Q	Cayuga	
K1NIT	Bill	Crowley	Farmingdale	ME	KA1RTW.ME.USA.NA	199407	V	Kennebec	
N2NJH	Karl	Weir	Cheektowaga	NY	W2OY	199410	V	Worcester	
W1NMQ	Joseph	Boudreau	Fiskdale	MA	W1BIM.MA.USA.NA	199404	V		
N2NON	Donald	Kunkel	Binghamton	NY	WF2A.NY	199409	Q		
N1NPV	Rollin	Sutton	S Burlington	VT	KD2AJ.NY	199407	Q		
N2NQH	Michael	Basile	Cooperstown	NY	N2NQH	199401	Q	Otsego	Ontario County, ON VE3JF @VE3JF
N2NRT	Howy	Stark	Branchville	NJ	NX2P.NJ.USA.NA	199407	V		
WA7NTF/HL9TG	Gary	Kohtala	APC	Korea	HL9TG	199406	Q		Orange County, NY KA2MSL @KA2MSL KB2TM @KA2MSL K2ZL @WA2YSM N2LKA @N2LKA
WB9NTO	Steve	Fisher	Durand	WI		199401	Q		Orange County, VT N1KQB @WA1WOK
KD7NX	Jack	Christensen	Salt Lk City	UT	KD7NX.#SLC.UT	199408	Q		
N2NYF	Virginia	Reed	Potsdam	NY	K2CC	199312	Q	St Lawrence	
NX9O	Brian	McCarthy	Vestal	NY	WF2A.#WNY.NY.USA.NA	199405	V	Broome	
WJ2O	Dave	Farnsworth	McConlesvill	NY	WA2TVE.#WNY.NY.USA.NA	199408	V	Oneida	
KB2OBB	Peter	Nalbone	Lakewood	NY	WA0PTV.NY.USA.NA	199409	V		Orleans County, VT K4STR @WA1DPP WA1DPP @WA1DPP
N2OEH	David	Vergamini	Liverpool	NY	WA2TVE	199404	Q		
WA1OJB	Brunswick	Area Packet Assn	Pownal	ME	KA1RTW	199401	Q		Oswego County, NY K1YHR @K1MEA KA2AON @WA2FQA KY2F N2EUW
N1OJU	Ralph	Swick	Lunenburg	MA	K1UGM.MA	199407	Q	Worcester	
N1OLB	Anthony	Mercauto	Somerville	MA		199410	Q		
KA1OLE	Jeff	Wood	Woodstock	VT	WA1WOK.NH.USA.NA	199410	Q		
KA2OMQ	Thomas	Calvete	Rochester	NY	WB2PSI.#WNY.NY.USA.NA	199412	Q	Monroe	
N2QNV	William	Oszust	W Babylon	NY	WB2IBO	199309	Q		
N7OO	Jack	Taylor	Sierra Vista	AZ	NJ7P	199312	Q	Cochise	

callsign	first name	last name	city	state	home BBS	exp	MC	County	
W10Q	Hartley	Gardiner	Phoenix	AZ	N7MRP	199311	Q		Otsego County, NY
N2ORX	Leonard	Goldberg	DeWitt	NY		199407	V	Palm Beach	AA2DP @W2RGI
WA4OSR	Felton	Mitchell	Mobile	AL	WA4OSR.AL.U.S.A.NA	199405	V	Mobile	KB2HPU @W2RGI
KA10U	Chan	Eddy	Penacook	NH	WA1WOK.NH.U.S.A.NA	199310	V	Marrimack	KE2HB @N2NQH
N10UV	James	Paquette	Londonderry	NH	WB1DSW.NH.U.S.A.NA	199410	Q		N2KPR @W2RGI
N10VR	Kevin	Plant	Winooski	NH	KD2AJ.NY	199407	Q		N2NQH @N2NQH
WA2OVT	Robert	Gardner	Big Flats	NY	K3RLI	199401	Q	Chemung	NC2C @N2NQH
VE3CX	A.F.	Smardon	Carrying Pt	ON	VE3CDY.ON	199404	Q		WN2K @W2RGI
KC2P	Ronald	Brodowski	Elma	NY		199504	Q		Palm Beach County, NY
KM2P	Alan	Gonsenhausner	Boonton	NJ	K2RW	199404	Q	Morris	N2ORX @
KV9P	C David	Reinhart	Alpha	MI	KV9P.#LPMI.MI.U.S.A.NA	199410	Q		Passaic County, NJ
NG2P	Bob	Hunter	Rochester	NY	WB2VPH.#WNY.NY.U.S.A.NA	199408	V	Monroe	KB2BLX @WB2GTX
NX2P	Bill	Slack	Sparta	NJ	NX2P	199308	Q	Sussex	N2KBD @N2DZZ
N1PEI	Barry	Carris	Shelburne	VT	W1KOO.#NWVT.VT	199409	Q		Plymouth County, MA
WB2PEM	Fred	Herbs	Baldwinsville	NY	KB2DIO.NY.U.S.A.NA	199407	V	Onondaga	KC1FZ @NS1N
W1PEX	Dan	MacDonald	Nashua	NH	KA1GOZ	199608	Q	Hillsborough	Putnam County, NY
K2PEY	Joseph	Huie	Quincy	IL		199401	Q		K2JSC @WA2AWG
N2PFL	Ernest	Nitka	Fayetteville	NY	WB2WXQ.#WNY.NY	199408	Q	Onandaga	WB8PUF @WA2AWG
KF8PH	Bob	Bennet	Shaker Hgts	OH	KF8PH	199405	Q		Queens County, NY
WA2PKB	William	Zaleski	Duanesburg	NY	WB2QBB	199405	Q		K2APL @K2APL
KE2PM	Joe	Flynn	Wyoming	NY	KE2VW	199407	Q		KB7UV @KB7UV
N2PMQ	John	Luebs	Camillus	NY	KB2DIO.NY	199407	Q		Queens County, PEI
VE2PNK	Daniel	Audet	SJ Chrystome	PQ	VE2SJC.PQ	199306	V		VE1AIC @VE1AIC
N2POR	Karl	Hemker Jr.	Schenectady	NY	WA2UMX.NY.U.S.A.NA	199407	V	Schenectady	Rensselaer County, NY
N1PQG	Michael	Mentuck	Marblehead	MA	K1VGM.MA.U.S.A.NA	199410	Q		WA2AHL @WA2UMX
K3PSO	Edward	Smith	Mansfield	PA	KC2EQ	199407	Q		Rockingham County, NH
WA1PTC	Michael	Staines	Rochester	NH	WA1PTC.NH.U.S.A.NA	199408	V	Strafford	WB1DSW @WB1DSW
W2PTZ	Carlton	Lee Jr.	Little Falls	NJ	N2DZZ.NJ	199407	Q		AA1CW @WB1DSW
WB8PUF	John	Burningham	Mahopac	NY	WA2AWG.#FN31DK.NY.U.S.A.NA	199404	V	Putnam	K1RSC @WB1DSW
WA2PVV	William	Roth	Valatie	NY	WA2PVV.NY.U.S.A.NA	199410	Q		K1YPP @WB1DSW
W2PX	William	Coffey	Ballston Lk	NY	WA2UMX.#ENY.NY.U.S.A.NA	199412	Q	Saratoga	N1GJB @WB1DSW
K6PYP	Scott	Swanson	Pac Palisade	CA	N6YN.#SOCA.CA.U.S.A	199410	Q	Los Angles	N1HFF @WB1DSW
NK1Q	Jim	Cedrone	S. Boston	MA	K1UGM	199308	V	Suffolk	N1HSM @WB1DSW
WA3QAG	Sanford	Reedy	Canton	PA	K3RLI.#NEPA.PA	199403	Q	Bradford	N1LKF @WB1DSW
WB2QBB	Robert	Seeger	Altamont	NY	WB2QBB.#ENY.NY.U.S.A.NA	199404	V	Albany	WB4HFN @WB1DSW
W1QJW	John	Leech	N Chelmsford	MA	WA1PHY.#EMA.MA.U.S.A.NA	199404	V		Rutland County, VT
N20KA	Candice	Peltys	Corinth	NY	WA2UMX	199307	Q		W3ZCE @WB2RUM
KA1QP	Paul	Chauvin	Manchester	NH	WA1WOK	199307	Q	Hillsboro	Saratoga County, NY
N8QWK	Jim	Grimes	Akron	OH	N8QWK	199405	Q		KB2CCC
KA2QYE	Frank	Frisone	Schenectady	NY		199408	Q	Schenectady	KC2IV @WA2UMX
K2ZR	Stephen	Maier	Medina	NY	WB2WXQ	199504	Q		W2PFX @WA2UMX
VE1RB	Jim	Harris	Yarmouth	NS	VE1RB.#YAR.NS.CAN.NA	199410	Q		WA2UMH @WA2UMX
W1RFP	Blanchard	Pratt	Norwich	VT	WA1WOK	199407	Q	Windsor	Schenectady County, NY
KA2RHM	Bruce	Roberts	Ravena	NY	WA2UMX	199412	Q	Albany	K2HNW @WA2UMX
WA3RIZ	Jeff	Chapman	King of Prussia	PA	WB3JOE.#EPA.PA	199408	Q	Montgomery	KA2QYE @WA2UMX
N2RKD	Edward	Eldredge	Cobleskill	NY		199405	Q	Schoharie	N2POR @WA2UMX
WB2RLI	Duane	Cheney	Broome	NY	W2FA	199407	Q		WB2WHD @WA2UMX
VE2RM	VE2RM	Inc	PtClairDorvi	PQ	VE2BMQ.PQ	199312	Q		Schoharie County, NY
VE3RM	Don	Dashney	Lorignal	ON	VE2FKB.ON	199307	Q	Longueil	N2RKD
KA1ROH	Paul	Cabbe	S Burlington	VT	WA2SPL.VT.U.S.A.NA	199407	Q		Schuyler County, NY
V2ROH	Louis	Welch	Chatham	NY	WA2PVV	199407	Q	Columbia	N21YS @WB2WXQ
KA2RRK	Jerry	Devine	Browns Mills	NJ	WT3V	199404	Q		St Lawrence County, NY
K1RSC	John	Johnston	Rye	NH	WB1DSW.NH	199408	S	Rockingham	N2NYF @K2CC
WB8RTH	John	Anderson	Escanaba	MI	WB8RTH.MI.U.S.A.NA	199409	V		KA2JXI @KA2JXI
KA1RTW	Michael	Grace	Pownal	ME	KA1RTW.ME.U.S.A.NA	199410	Q		Steuben County, NY
WA2RUN	Robert	Estes	Delhi	NY	W2RGI	199412	Q	Delaware	A12W
VE3RWN	Randy	Neals	Bethany	ON	VE3KRG.ON	199405	Q		K2IZA @WB2WXQ
KE2RX	Harry	Hubbard	Fine	NY		199405	Q		KV2W @WB2PSI
WA2RXL	Henry	Schwalenstocker	Saranac Lk	NY	WA2RXL	199404	Q	Franklin	N2MAH @WB2VPH
WB2RYB	Brian	Langton	Malone	NY	WB2RYB	199312	Q	Franklin	Strafford County, NH
WA2RZG	Jack	White	Scottsville	NY	WB2WXQ	199408	Q	Monroe	AA1AH @WB1DSW
V2SBL	Sean	McCann	Paienville	NY	WA2PVV	199404	Q		K1WNZ @WB1DSW
Q2SBQ	Dexter	Berwald	Owego	NY		199405	Q	Tioga	W1UBG @WB1DSW
V4SD	Sperry	Davis	Virginia Bch	VA	WD4MIZ	199404	Q		WA1PTC @WA1PTC
K4SJ	Philip	Anderson	Perry	NY	WB2WXQ	199407	Q	Wyoming	WK1Y
Q2SJB	David	Slade	Ithaca	NY	WB2PSI	199311	Q	Tompkins	Suffolk County, MA
V2SKH	Ronald	Ambrosio	Courtland Manor	NY	WA2AWG.#FN31DK.NY.U.S.A.NA	199407	Q	Westchester	K1CGI @K1UGM
Q2SLZ	Roger	Bean	E. Aurora	NY	N2CVQ	199407	Q	Erie	NK1Q @K1UGM
KA1SMC	Marlon	Wood	Windsor	VT	WA1WOK	199402	Q	Windsor	Suffolk County, NY
WA2SOK	Irv	Walter	Palmyra	NY	WA2WXQ	199312	Q	Wayne	N2MGI @N4GAA
V2SPI	Richard	Crow	Smithville Flats	NY		199410	V	Chenango	WB2CIK @N2BQF
V2SQO	Thomas	Woznaack	Latham	NY	WA2UMX	199404	Q		Sullivan County, NH
E2STN	Richard	Desaulniers	Laval	ON	VE2CRL.ON	199407	Q		G8LCK
K4STR	William	Willis	Albany	VT	WA1DPP	199407	Q	Orleans	N1CB @WA1WOK
V2SWW	Thomas	Davis	Hannacrox	NY	WA2PVV	199412	Q	Green	WB1GXM @WA1YTW
V2SYJ	Joe	Lachacz	Burlington	VT	KD2AJ.#NENY.NY.U.S.A.NA	199401	Q	Chittenden	Sussex County, NJ
AE1T	Peter	Drexel	Plymouth	NH	AE1T.NH.U.S.A.NA	199405	V		NX2P @NX2P
NT1T	Scott	Robinson	Tyngsboro	MA	WA1PHY	199510	Q	Middlesex	Thompkins County, NY
KA1TDL	Schley	Warren	Chicopee	MA	K1MEA	199404	Q	Hamden	KB2MZQ @WA2FQA
CB1TH	Michael	Ribeiro	Granby	MA	K1MEA	199404	Q		Tioga County, NY
WA1TLN	Russell	McAllister	Lebanon	NH	W1JFP.NH.U.S.A.NA	199403	V	Grafton	K2SBQ
K1TM	Juergen	Malner	Westfield	MA	K1MEA	199307	Q	Hampshire	N2NFU @WF2A
Q2BTM	Dennis	Baumgarte	Port Jervis	NY	KA2MSL.#FN21XM.NY.U.S.A.NA	199308	V	Orange	W2FMM @WF2A
Q2TNN	Jerry	Balik	Stamford	NY	W2RGI	199307	Q	Delaware	WB2ZUF @WF2A
WA1TPP	Herb	Belin	Granville	MA	WA1TPP.MA.U.S.A.NA	199604	V		
K1TR	Ed	Parsons	Windham	NH	WB1DSW.NH.U.S.A.NA	199503	V		
WB2TRC	James	Saniewski	Rochester	NY	WB2PSI.#WNY.NY.U.S.A.NA	199505	V	Monroe	

callsign	first name	last name	city	state	home BBS	exp	MC	County	
VE2TSM	Mario	Torino	Lachine	PQ		199407	Q		Tompkins County, NY
N2TTA	Thomas	Remmert	Slingerlands	NY	KB2CS	199404	Q		K2SJB @WB2PSI
KA7TTY	John	MacDuff	Issaquah	WA	N7DUO	199404	Q		WA2FQA @WA2FQA
W1TTY	H. Skid	Schermerhorn	E. Sandwich	MA	KQ1K	199404	Q	Barnstable	Trumbull County, OH
WA2TVE	Howie	Cohen	Utica	NY	WA2TVE.NY.USA.NA	199401	V	Oneida	KB7YW @WB8LVP
KA1TWX	Bruce	Graves	Keene	NH	WA1YTW	199404	Q		Ulster County, NY
KA1TYP	Richard	Adams	Enfield	NY		199407	Q		N2JHJ @WA2KQY
KC1UA	Scott	Halligan	Forestdale	MA	KC1UA.#EMA.MA.USA.NA	199410	V		Utah County, UT
K1UAQ	William	Sencabaugh	Littleton	NH	K1UAQ.NH.USA.NA	199410	V	Grafton	N7KXI @N7KXI
K2UBE	Joseph	Michaud	Mohawk	NY	WA2TVE.NY	199405	Q	Herkimer	Warren County, NY
W1UBG	Robert	King	Dover	NH	WB1DSW	199404	Q	Strafford	W2LGF @WA2UMX
N2UBH	John	Kushneis	Clay	NY	KB2DIO	199505	Q		Warren County, PA
KA1UDX	Rick	Bogdan	Hull	MA	WA1PHY	199504	Q	None	KD3DU @KA3SFC
K1UGM	Jim	Morris	Wakefield	MA	K1UGM.MA.USA.NA	199409	V		KR3N @KA3SFC
KE8UM	Murray	Scott	Clawson	MI		199407	Q	Oakland	N3DDY @KA3SFC
WA2UMH	Jim	McKnight	Schuylerville	NY	WA2UMX.#ENY.NY.USA	199408	Q	Saratoga	WB3IWI @KA3OEM
WA4UMR	John	Morton	Louisville	KY	WA4UMR	199405	Q		Wayne County, MI
K1UOL	Robert	Stevenson	Bethel	CT	K1UOL.CT.USA.NA	199405	V		WB8ZPN @WB8ZPN
N4UTO	Michael	Mazquiaran	Miami	FL	N4UTO.#RCCFL.FL.USA.NA	199410	V	Dade	Wayne County, NY
W1UU	Peter	Butler	N Andover	MA	W1UU.#EMA.MA.USA.NA	199405	V	Essex	WA2SOK @WA2WXQ
KB7UV	Andrew	Funk	Astoria	NY	KB7UV.#NLI.NY.USA.NA	199505	V	Queens	Wentworth County, ON
W1UWB	Julian	Sobin	Boston	MA		199407	Q		VE3EBT
NR2V	Dean	LaClair	Tupper Lk	NY	KD2AJ	199504	Q		Westchester County, NY
K1VC	Victor	Carozza	Deerfield	NH	WA1WOK	199308	Q	Hillsborough	N2SKH @WA2AWG
K8VCP	Michael	Kosta	Fremont	OH	KA8TEF.OH	199404	Q		Windham County, VT
K1VDZ	Joe	Lanoue	Cheshire	CT	KA1XN	199401	Q		N1LVL @WA1WOK
VE2VE	James	Hay	Pointe Clair	PQ	VE2FKB.PQ	199306	Q		Windsor County, VT
KA2VEE	David	Brooks	Syracuse	NY	KB2DIO.NY	199407	Q	Onondaga	K1CXS
W1VGZ	Thomas	Dimilla Jr	Saugus	MA	K1UGM	199404	Q		KA1SMC @WA1WOK
K1VNE	Tom	Abare	Saxtons Riv	VT		199512	Q		KC1HY @WA1WOK
W4VOS	Hank	Resch	Pittsford	NY		199307	Q		N1JRA @WA1WOK
W1VOV	Arnold	Snow	Farmington	CT		199405	V		W1RFP @WA1WOK
KA3VRW	Philip	Hemenway	Wellsboro	PA	KC2EQ.#WNY.NY.USA.NA	199310	V		Worcester County, MA
WB2VUN	R. George	Newton	Skaneateles	NY	WA2TVE	199405	Q		KA1MLN @K1MUJ
KE2VW	Gregory	Yound	Holland	NY	KE2VW	199405	Q		N1IUP
WB2VXS	David	Kinerson	Averil Park	NY	WA2PVV.NY.USA.NA	199309	V		N1OJU @K1UGM
A12W	Ed	Dombert	Hornell	NY		199408	Q	Steuben	W1NMQ @W1BIM
KV2W	James	White	Hammondsport	NY	WB2PSI	199401	Q	Steuben	Wyoming County, NY
NO2W	Bo	Lysell	N Cohocton	NY	WB2WXQ.NY	199409	Q		K4SJ @WB2WXQ
VE2WEM	Robert	Schwartz	Cot St Luc	PQ	VE2FKB.PQ.CAN.NA	199406	Q		KA2ZMC @KA2ZCM
WB2WHD	Daniel	Whelan	Delanson	NY	WA2UMX.#ENY.NY.USA.NA	199407	V	Schenectady	Yates County, NY
WA2WNI	Dana	Jonas	Valatie	NY	WA2PVV.NY.USA.NA	199312	V	Columbia	KA2BSG
K1WNZ	David	Stuart	Dover	NH	WB1DSW.NH.USA.NA	199401	V	Strafford	York County, ME
WB7WOG	Neal	Neff	Stoneham	MA	K1UGM	199407	Q		KC1I @WA1WOK
WA1WOK	Cal	Calvitto	Concord	NH	WA1WOK.NH.USA.NA	199410	V	Merrimack	KC1MJ @WB1DSW
WA1WRM	Joe	Deyette	Northampton	MA	K1MEA	199405	Q	Hamden	N1HLY @K1UAQ
KA1WSW	Richard	Davis	Cotuit	MA		199407	V		N1KGL @WB1DSW
W1WUO	Thomas	Merrick	Atkinson	NH	WB1DSW	199310	Q		N1LBJ @WA1WOK
VE3XO	Steve	Tobe	Toronto	ON	VE3CDX.ON.CAN.NA	199408	Q		W4NBC @WB1DSW
KM1Y	Harold	Pugh	Abington	MA	NS1N	199405	Q		York County, PA
WK1Y	Joseph	Boyle	E. Rochester	NH		199409	Q	Strafford	KB3JA @WA3KXG
WA2YBM	Jack	Donnelly	Albany	NY	WA2UMX.#ENY.NY	199407	Q	Albany	
K1YHR	David	Packard	Pennellville	NY	K1MEA.#WMA.MA.NA	199311	V	Oswego	
KA1YIL	Homer	Duquette	Indian Orchard	MA	W1NY.MA	199405	Q		
KB2YJ	Gary	Zanghi	Angola	NY	KE2VW.#WNY.NY	199508	Q	Erie	
WA1YKN	Frank	Hill	Osterville	MA	KQ1K.MA.USA.NA	199404	V	Barnstable	
KB1YL	James	Robertson	Rumford	ME	NS1Z.ME.USA.NA	199404	V		
WA3YML	Michael	McCambridge	Goulsboro	PA	KB3QW	199407	Q	Lackawanna	
K1YPP	Dennis	Blanchard	Hampstead	NH	WB1DSW	199310	Q	Rockingham	
WA2YSM	Elmer	Sharp	Poughkeepsie	NY	WA2YSM.#ENY.NY	199407	Q	Dutchess	
KB7YW	Fred	Peachman	Brookfield	OH	WB8LVP	199408	Q	Trumbull	
NS1Z	John	Wilcox	Rumford	ME	NS1Z.ME.USA.NA	199404	V		
WT2Z	Colson	Carr	Abkandra Bay	NY	KA2JXI	199404	Q	Jefferson	
WY2Z	Wallace	Roworth	W Webster	NY		199512	Q	Monroe	
W3ZCE	Therese	Bates	Rutland	VT	WB2RUM	199412	V	Rutland	
KA2ZMC	Paul	Sumski	Arcade	NY	KA2ZCM.#WNY.NY	199507	Q	Wyoming	
WB8ZPN	Robert	Numerick	Taylor	MI	WB8ZPN.MI.USA.NA	199404	V	Wayne	
K2ZR	Dick	Stein	N Tonawanda	NY	W2SEX.NY	199405	Q	Niagra	
KC2ZS	Ansel	Martin	Lakewood	NY	KA3SFC.PA.USA.NA	199406	Q	Chautauqua	
WB2ZUF	Glenn	McCoy	Nichols	NY	WF2A.NY.USA.NA	199405	V	Tioga	
K2ZW			Rochester	NY	WB2PSI	199410	Q	Monroe	
W1ZWZ	John	Ramsey	Easthampton	MA	K1MEA	199403	Q	Hampshire	

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Montreal map #2
10/23/93 v1.12



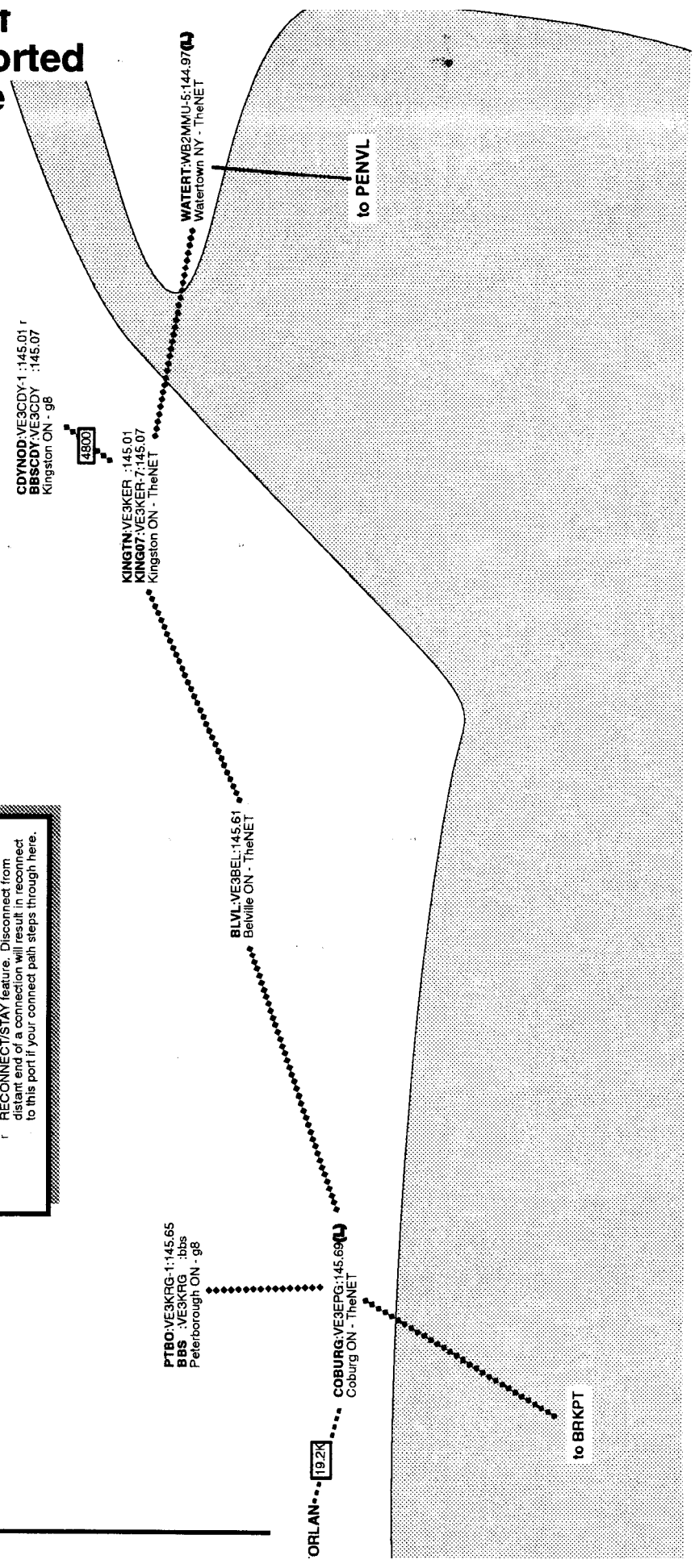
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

SouthEast Ontario map # 4
10/30/93 v2.00

For TheNET, GBBPC, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

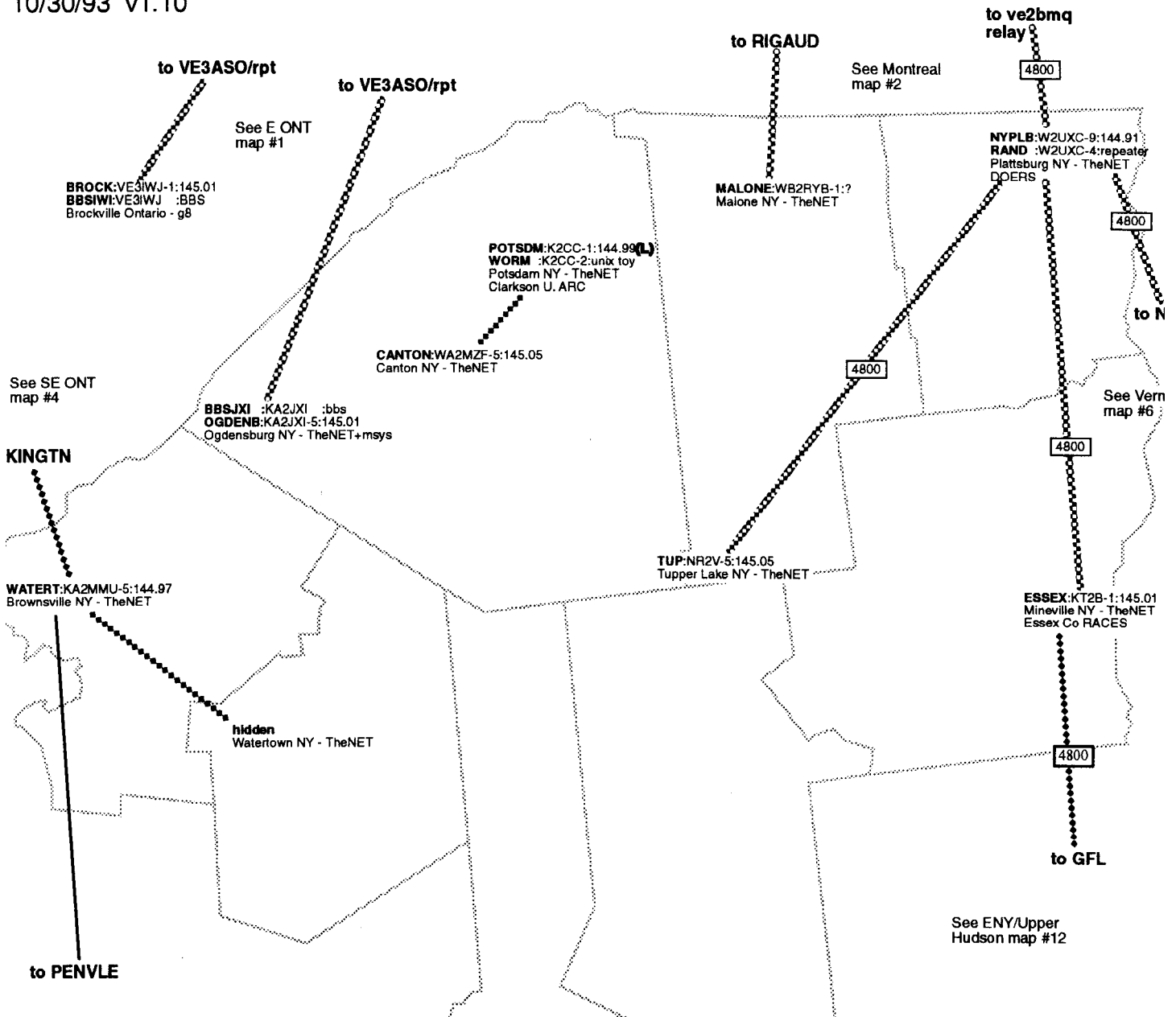
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

◆◆◆◆◆◆◆◆◆◆ Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
 ◆◆◆◆◆◆◆◆◆◆ Multi-Way HTS Free Backbone of known reliability
 ◆◆◆◆◆◆◆◆◆◆ Via Repeater
 ◆◆◆◆◆◆◆◆◆◆ Non HTS Free or unreliable Backbone
 9600 Denotes baud rate of link, 1200 if not shown
 (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
 r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Northern New York map #5
10/30/93 v1.10



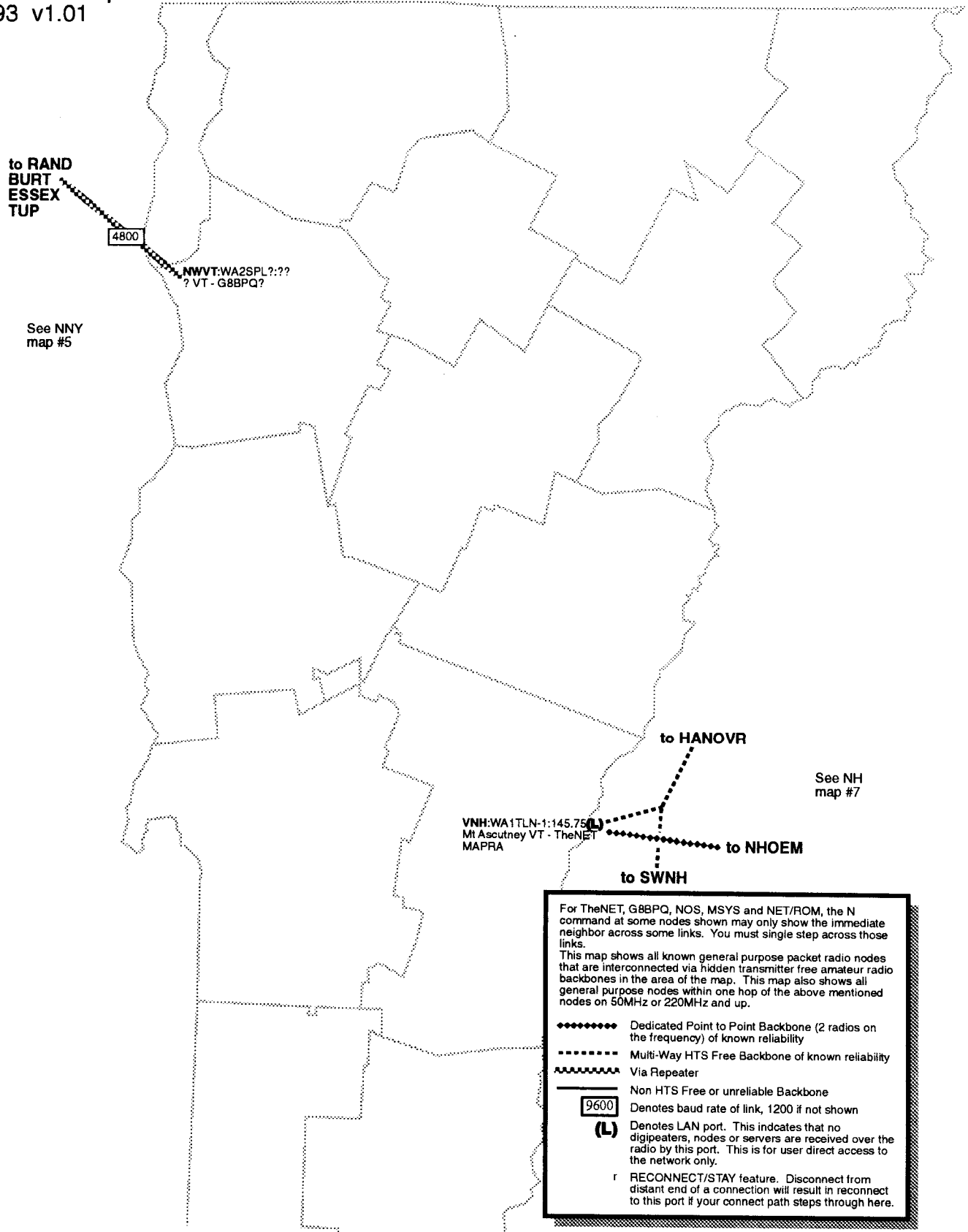
For TheNET, G8BPC, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

- ◆◆◆◆◆◆◆◆ Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- Multi-Way HTS Free Backbone of known reliability Via Repeater
- ~~~~~ Non HTS Free or unreliable Backbone
- 9600 Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

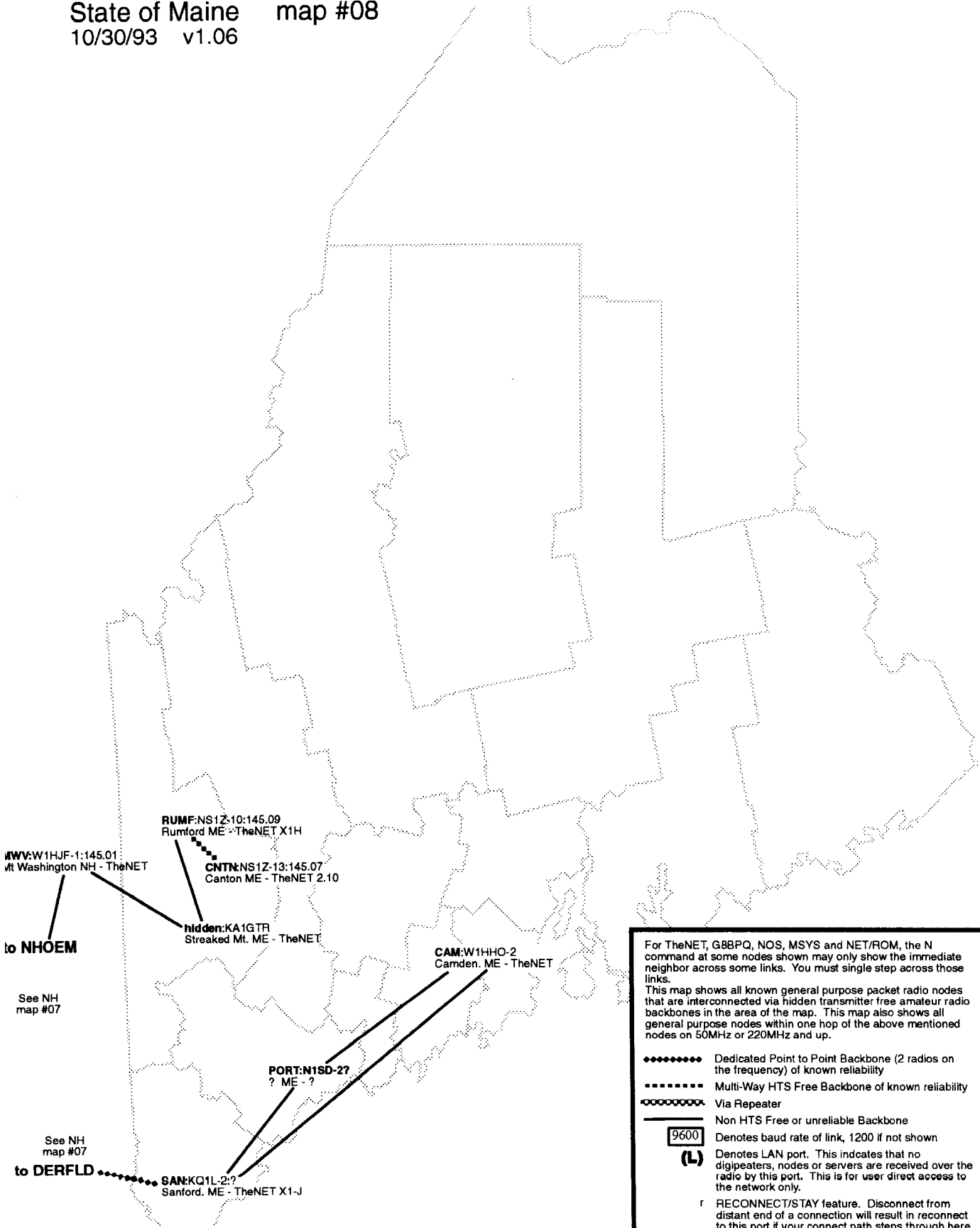
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Vermont map #6
11/01/93 v1.01



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

State of Maine map #08
10/30/93 v1.06



W1HJF-1:145.01
Wt Washington NH - TheNET

to NHOEM

See NH
map #07

RUMF:NS1Z-10:145.09
Rumford ME - TheNET X1H

CNTN:NS1Z-13:145.07
Canton ME - TheNET 2.10

hidden:KA1GTR
Streaked Mt. ME - TheNET

CAM:W1HHO-2
Camden. ME - TheNET

PORT:N1SD-2?
? ME - ?

See NH
map #07

to DERFLD

SAN:KQ1L-2?
Sanford. ME - TheNET X1-J

For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

- Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- Multi-Way HTS Free Backbone of known reliability
- Via Repeater
- _____ Non HTS Free or unreliable Backbone
- 9600 Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

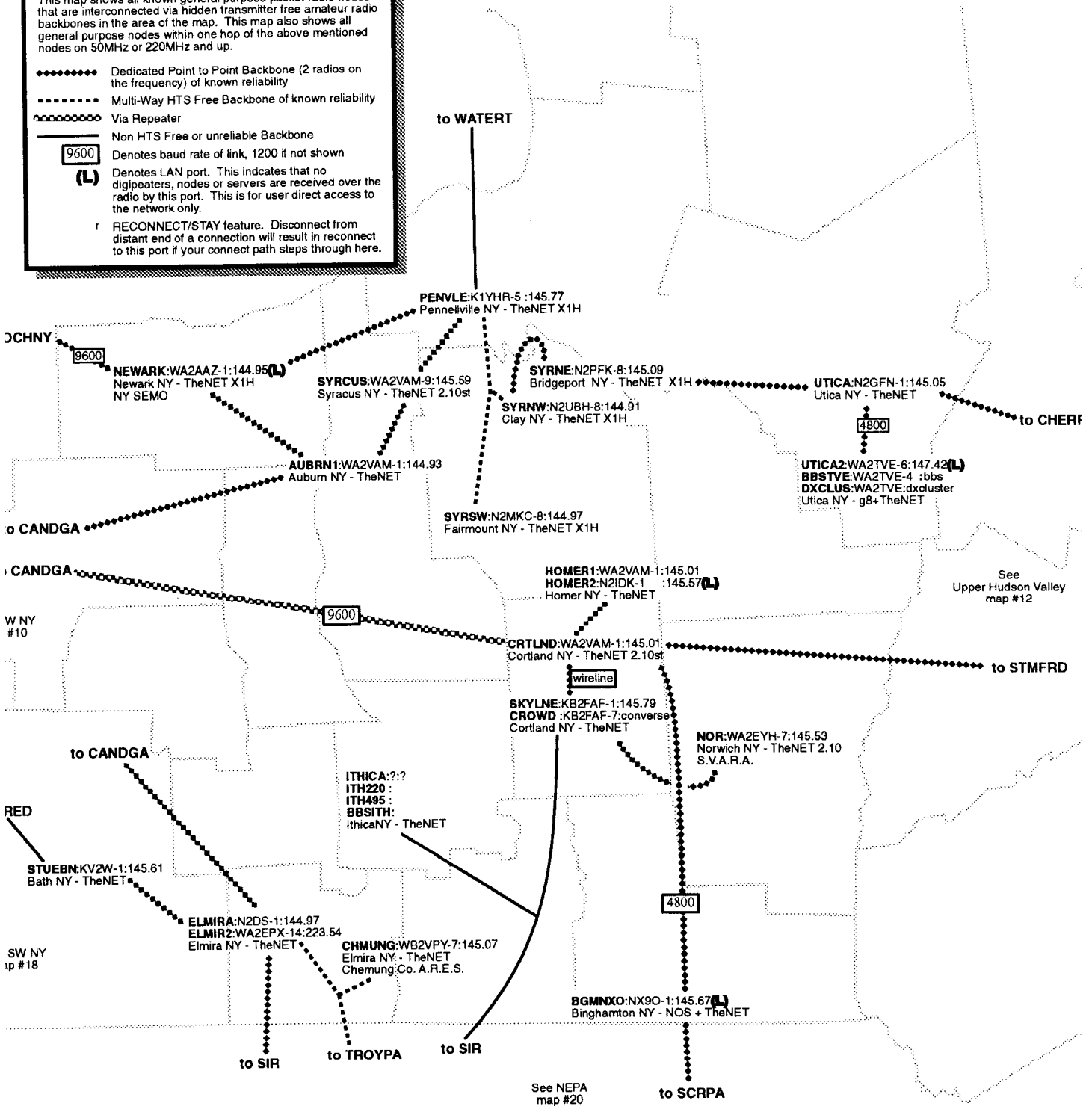
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Central New York map #11
11/05/93 v1.63

For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

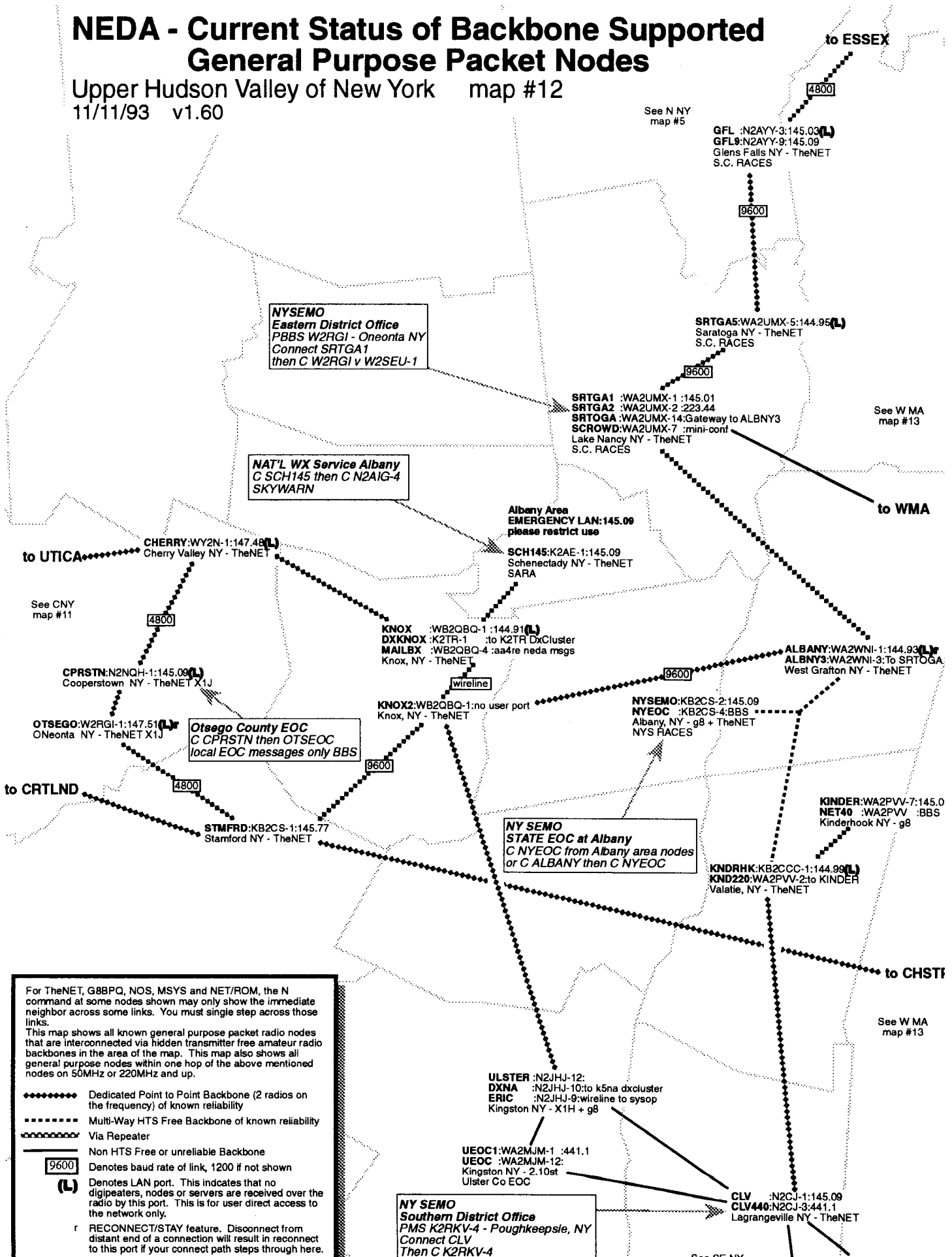
- Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- Multi-Way HTS Free Backbone of known reliability
- Via Repeater
- Non HTS Free or unreliable Backbone
- 9600 Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

See northern NY map #5



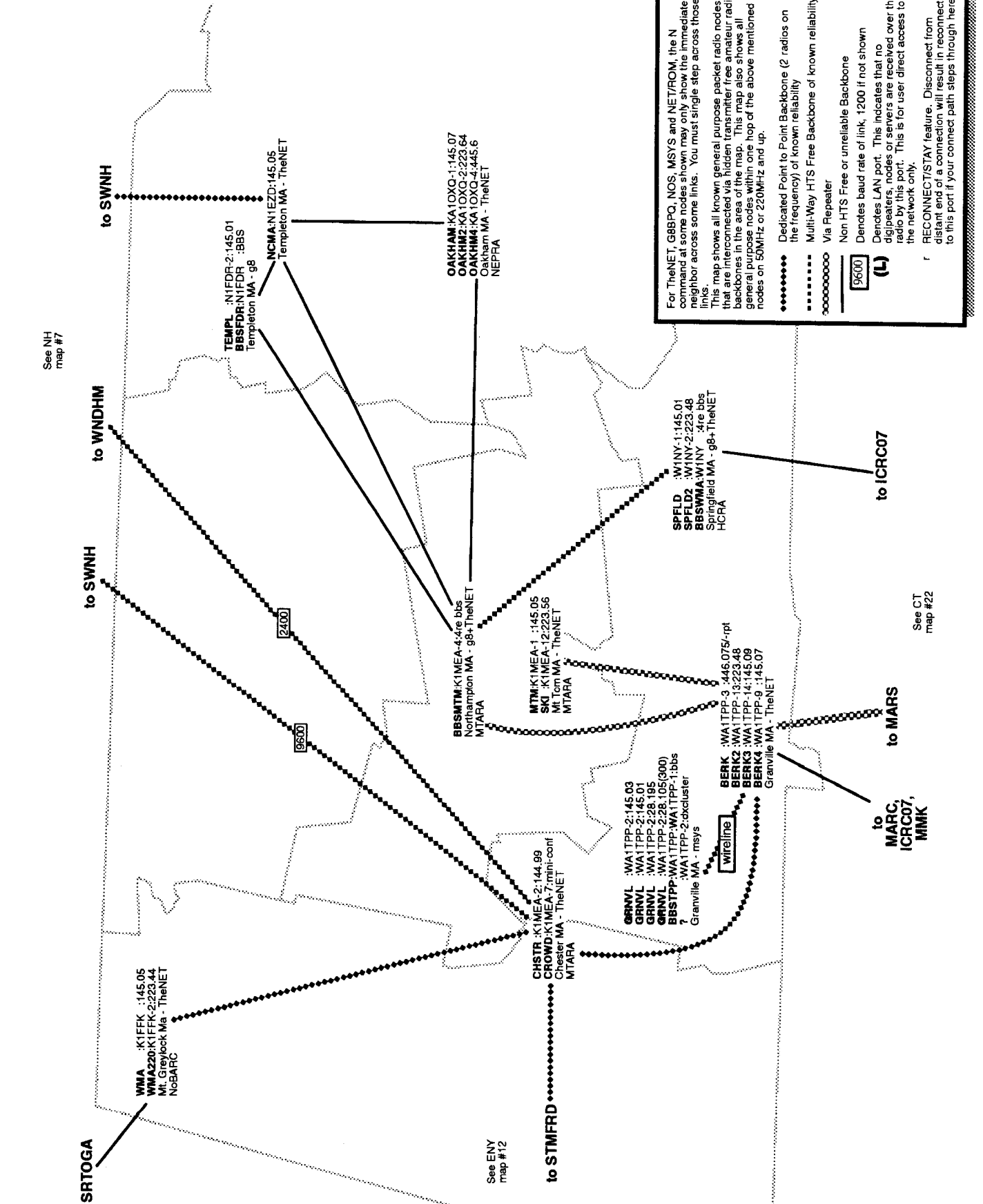
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Upper Hudson Valley of New York map #12
11/11/93 v1.60



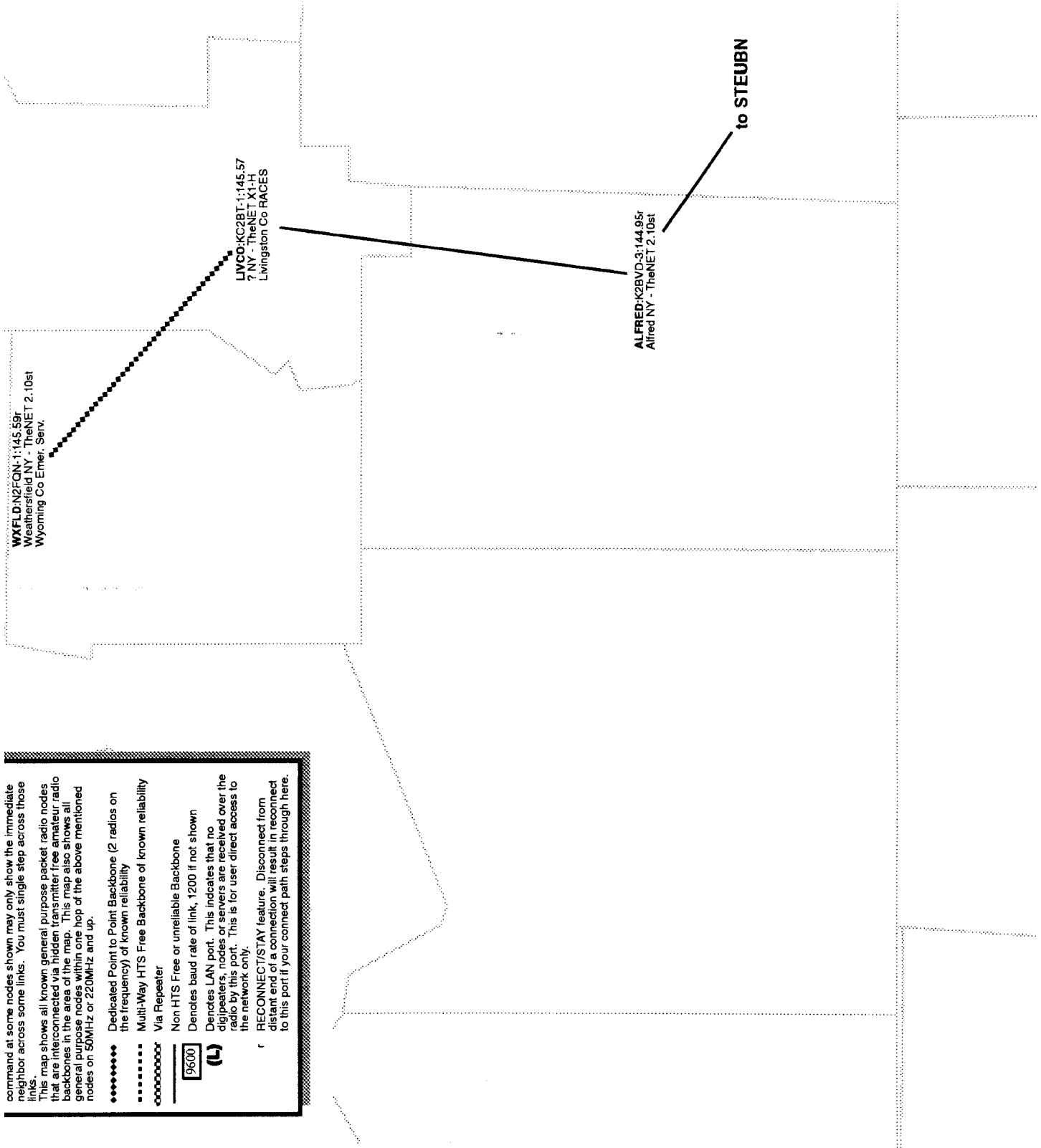
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Western MA map #13
11/11/93 v1.51



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

southwest New York map #18
10/12/93 v1.02



command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

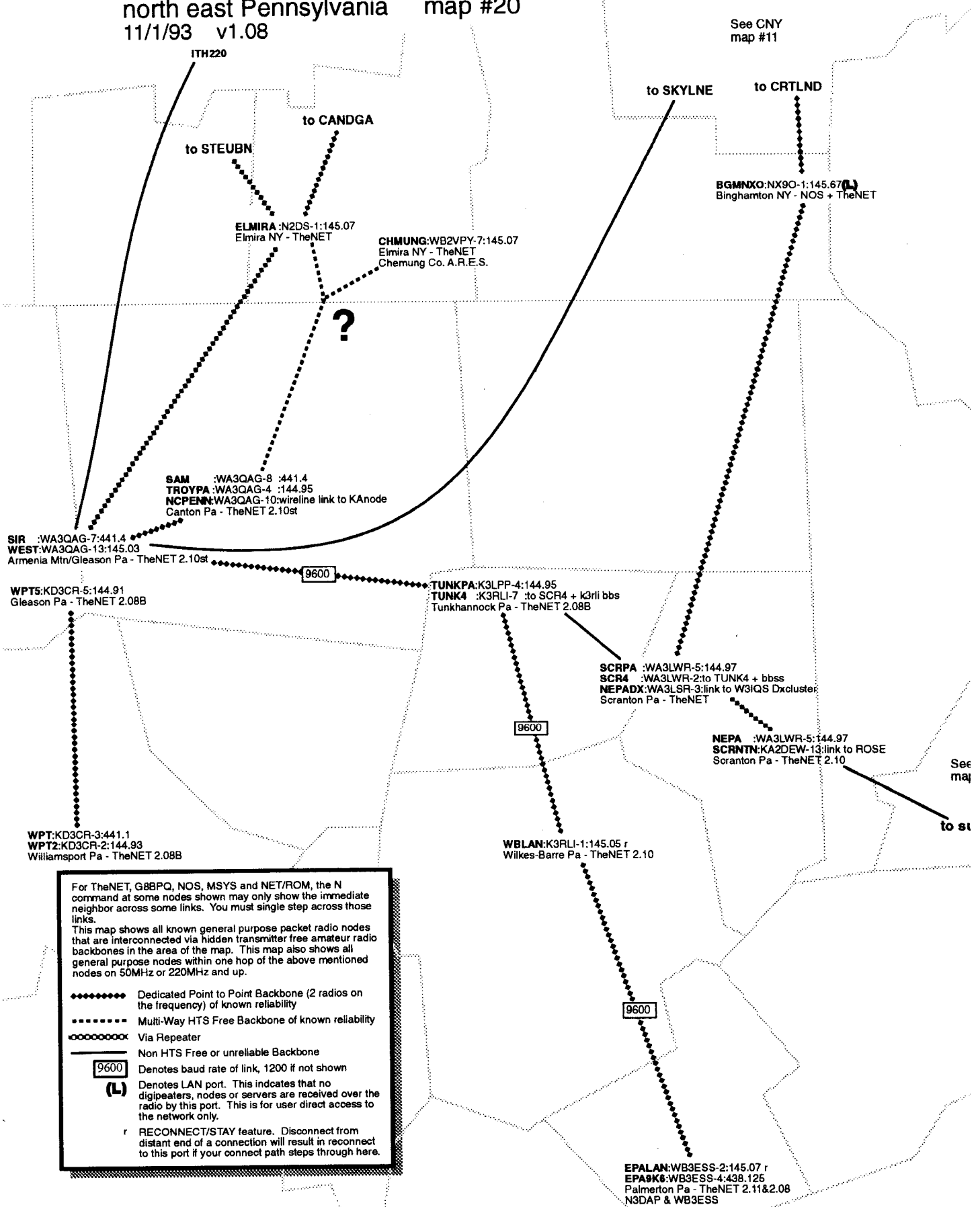
- Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- Multi-Way HTS Free Backbone of known reliability
- Via Repeater
- Non HTS Free or unreliable Backbone
- Denotes baud rate of link, 1200 if not shown
- Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

9600

(4)

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

north east Pennsylvania map #20
11/1/93 v1.08



See CNY map #11

See map

to st

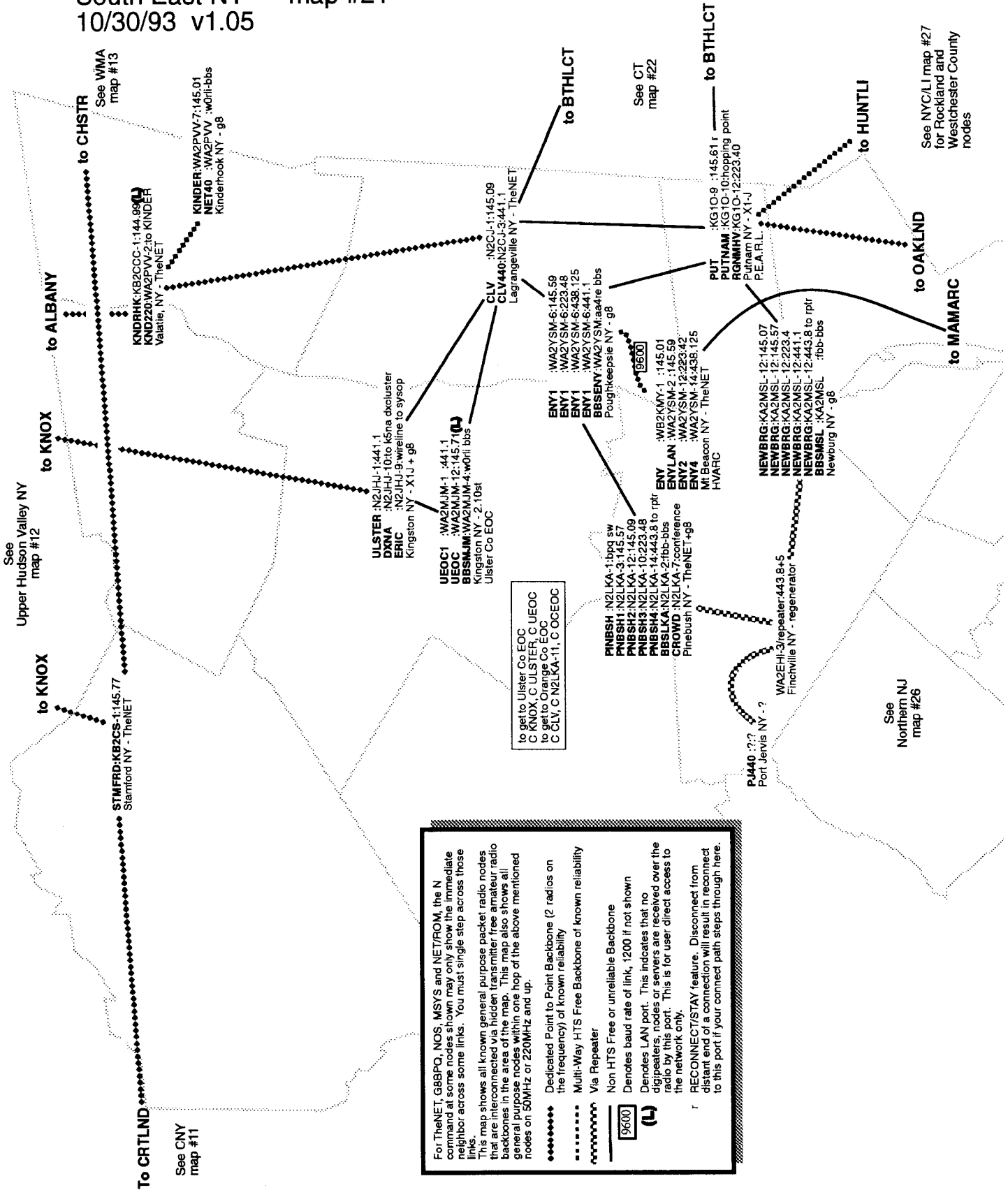
For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

- Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- Multi-Way HTS Free Backbone of known reliability
- Via Repeater
- Non HTS Free or unreliable Backbone
- 9600 Denotes baud rate of link, 1200 if not shown
- (L) Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

South East NY map #21
10/30/93 v1.05



For TheNET, GBBPG, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 50MHz or 220MHz and up.

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[9600]

(H)

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

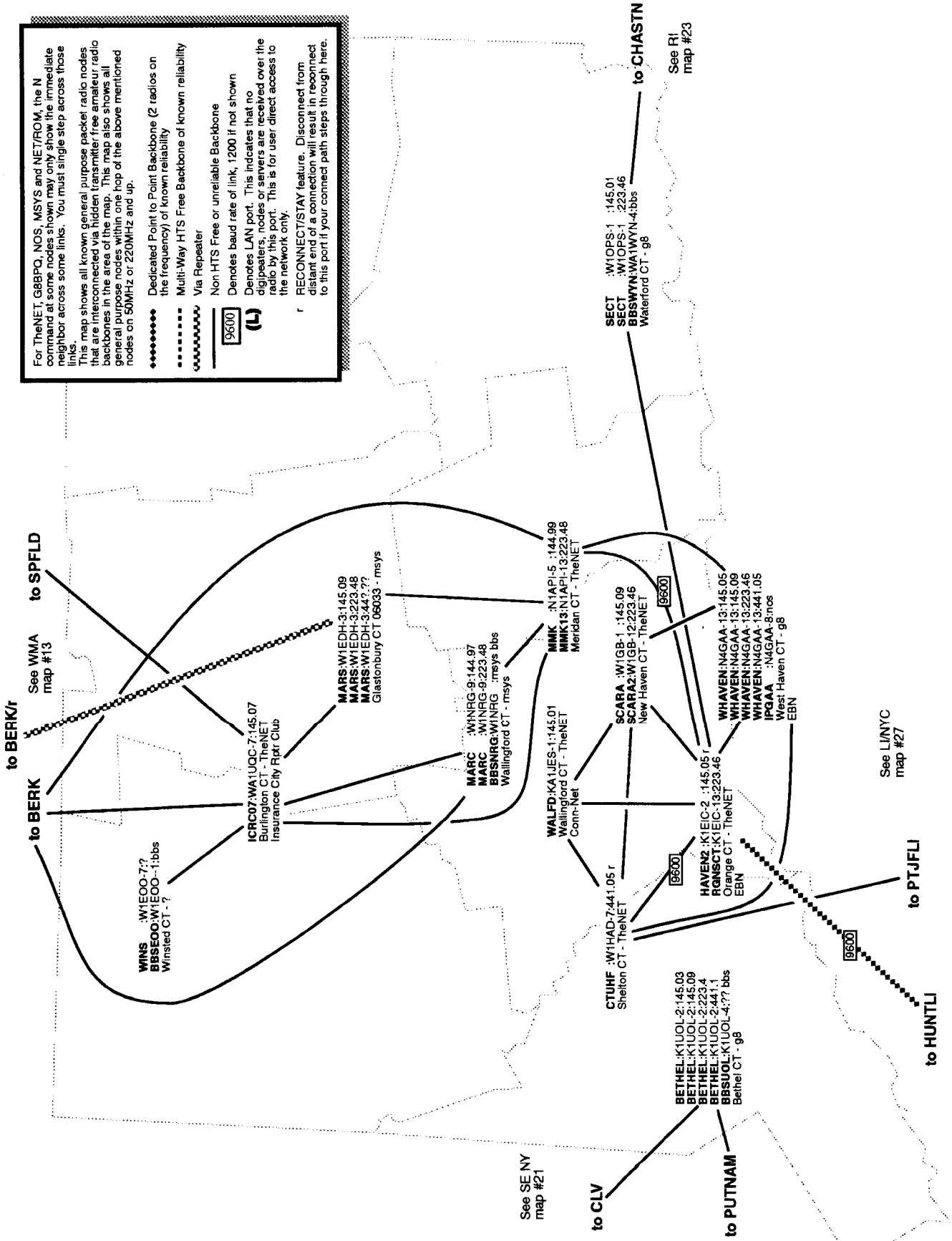
Connecticut map #22
10/30/93 v1.04

For TheNET, GBBPO, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes on 30MHz or 220MHz and up.

- ◆◆◆◆◆◆◆◆◆◆ Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- ◆◆◆◆◆◆◆◆◆◆ Multi-Way HTS Free Backbone of known reliability
- ◆◆◆◆◆◆◆◆◆◆ Via Repeater
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- Denotes baud rate of link, 1200 if not shown
- Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r RECONNECT/STAY feature. Disconnect from distant end or a connection will result in reconnect to this port if your connect path steps through here.

9600
(L)



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Rhode Island map #23
11/01/93 v1.03

See E MA
map #14

to MEDFD2

LINCON:KA1RCI-7:145.05
LINCON:KA1RCI-7:223.4
LINCON:KA1RCI-7:223.57
LINCON:KA1RCI-7:440.7
LINCON:KA1RCI-7:28.105
satellite type F1ND call sign
BBSRCH:KC1CE .:ril bbs
IPRCI :KA1RCI-8:tcprip
Lincoln RI - g8

2400

RI :K1AD :145.05
RI6:K1AD-6:443.0
RI2:K1AD-2:223.67
Providence RI - TheNET
Brown R.I.C.

2400

WCRANS:KC1CE-7:145.05
BBS1CE :KC1CE .:ril bbs
West Cranston RI - g8

2400

PVD:KA1RCI-1:223.4
Cranston RI - TheNET

EPROV :KA1WNB-7:145.03
EPROV :KA1WNB-7:223.46
EPROV :KA1WNB-7:28.103
BBSWNB:KA1WNB:ril bbs
E. Providence RI - g8

BROCK2:NHKBT-4:145.01?
BROCK2:NHKBT-4:223.4
BBSKBT:NHKBT .:ril bbs
Brockton MA - g8

MATT :KA1THM-7:145.01
MATT :KA1THM-7:145.7
BBS1THM:KA1THM .:ril bbs
Fall River MA - g8

to CAPCOD

See Cape Cod
map #24

to SECT

See CT
map #22

CHASTN:NILEE-7:145.05
CHASTN:NILEE-7:223.46
Chantown RI - g8

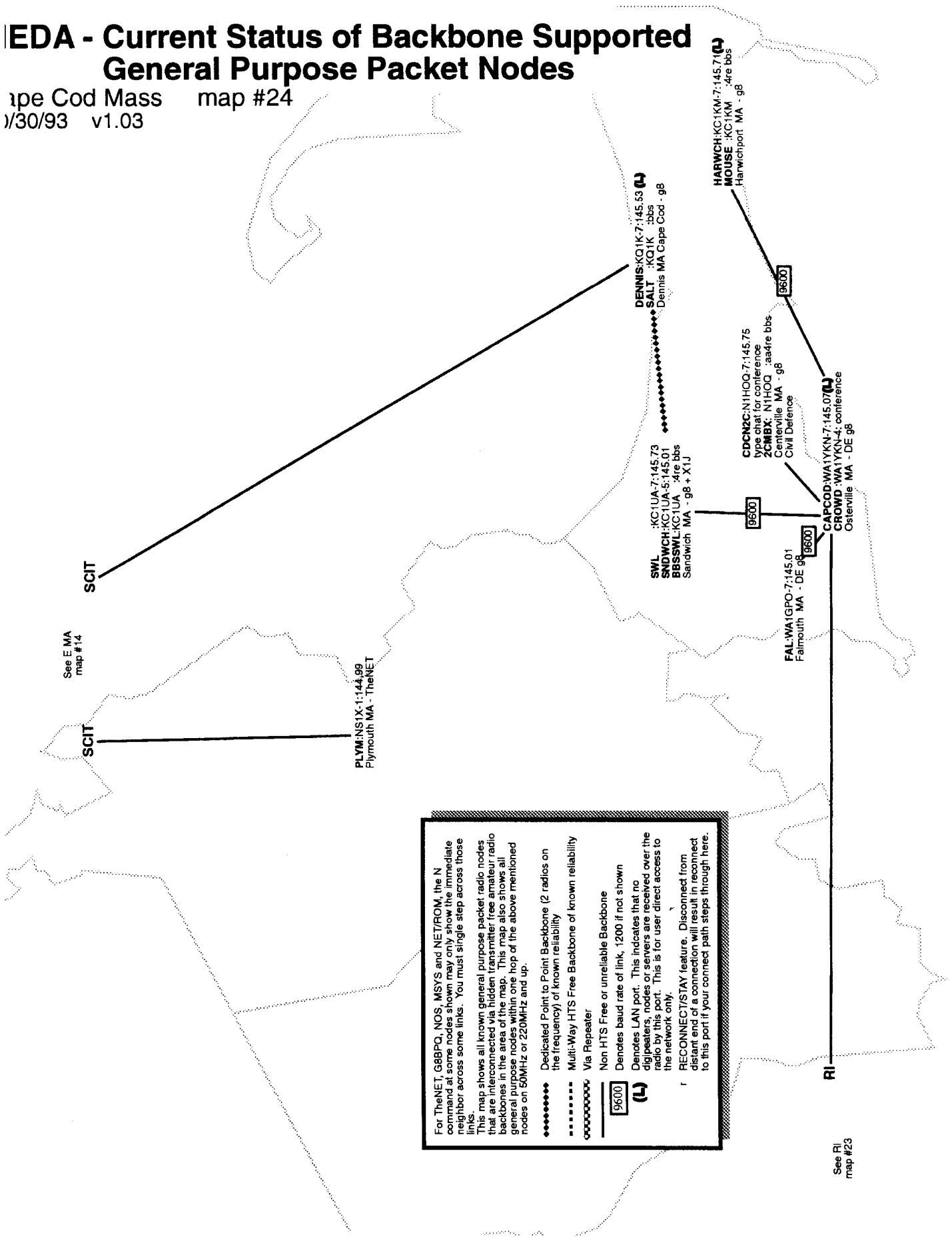
For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

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EDA - Current Status of Backbone Supported General Purpose Packet Nodes

ape Cod Mass map #24
 1/30/93 v1.03



See E MA map #14

SCIT

SCIT

PLYM: NSIX-1:144.99
 Plymouth MA - TheNET

DENNIS: KQIK-7:145.53
 SALT: KQIK
 Dennis MA Cape Cod - g8

HARWCH: KC1KM-7:145.71
 MOUSE: KC1KM
 Harwichport MA - g8

CDCN2C: N1HOQ-7:145.75
 type chat for conference
 2CMBX: N1HOQ :aa4re bbs
 Centerville MA - g8
 Civil Defence

SWL: KC1UA-7:145.73
 SNDRWCH: KC1UA-5:145.01
 BBSWL: KC1UA :4re bbs
 Sandwich MA - g8 + X1J

FAL: WA1GPO-7:145.01
 Falmouth MA - DE g8

CAPCOD: WA1YKN-7:145.07
 CROWD: WA1YKN-4: conference
 Osterville MA - DE g8

See RI map #23

For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

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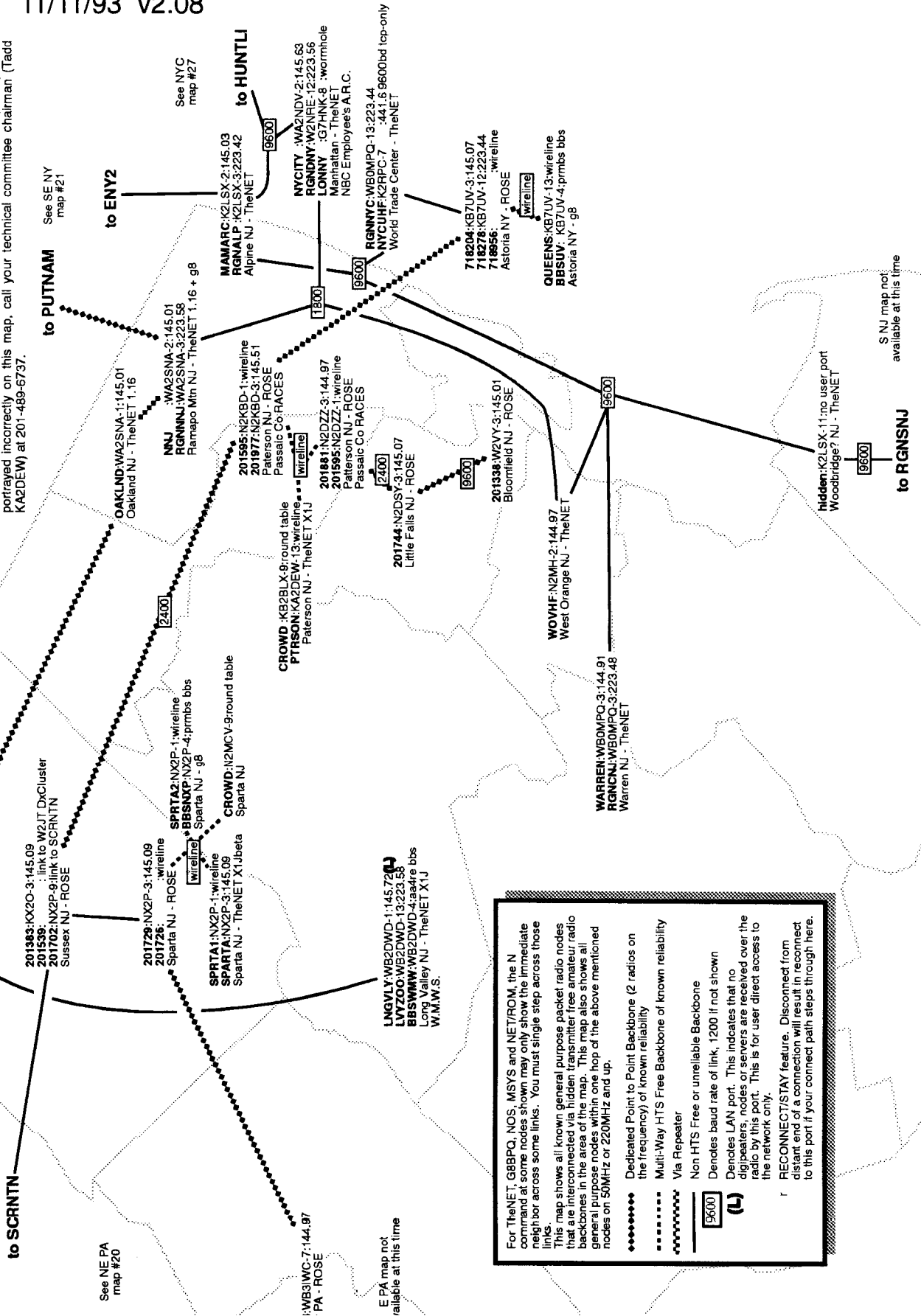
- ◆◆◆◆◆◆◆◆◆◆ Dedicated Point to Point Backbone (2 radios on the frequency) of known reliability
- ◆◆◆◆◆◆◆◆◆◆ Multi-Way HTS Free Backbone of known reliability
- Via Repeater
- Non HTS Free or unreliable Backbone
- Denotes baud rate of link, 1200 if not shown
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9600 (L)

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Northern New Jersey Map #26
11/11/93 v2.08

site, or that it is within one HTS laden hop of a well connected site. I have avoided nodes that are only available from the network over a link of more than several hidden transmitters. In some cases I was arbitrary about what 'several' meant, mostly due to time constraints. It is a bug in some of the systems being mapped here that the #node names are obscure and do not hint at the location of the node while connect is disabled so one cannot connect across those links to find out where one has arrived. This makes for a poorly mappable system. Please fix! One of the purposes of this map publication process is to fish for missing information. If you believe that you have information that is not portrayed or portrayed incorrectly on this map, call your technical committee chairman (Todd KAZDEW) at 201-489-6737.



For TheNET, G8BPQ, NOS, MSYS and NET/ROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

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- ◆◆◆◆◆◆◆◆◆◆ Via Repeater
- ◆◆◆◆◆◆◆◆◆◆ Non HTS Free or unreliable Backbone
- ◆◆◆◆◆◆◆◆◆◆ Denotes baud rate of link, 1200 if not shown
- ◆◆◆◆◆◆◆◆◆◆ Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- ◆◆◆◆◆◆◆◆◆◆ RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

9600

(L)

S NJ map not available at this time

E PA map not available at this time

See NE PA map #20

See SE NY map #21

See NYC map #27

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

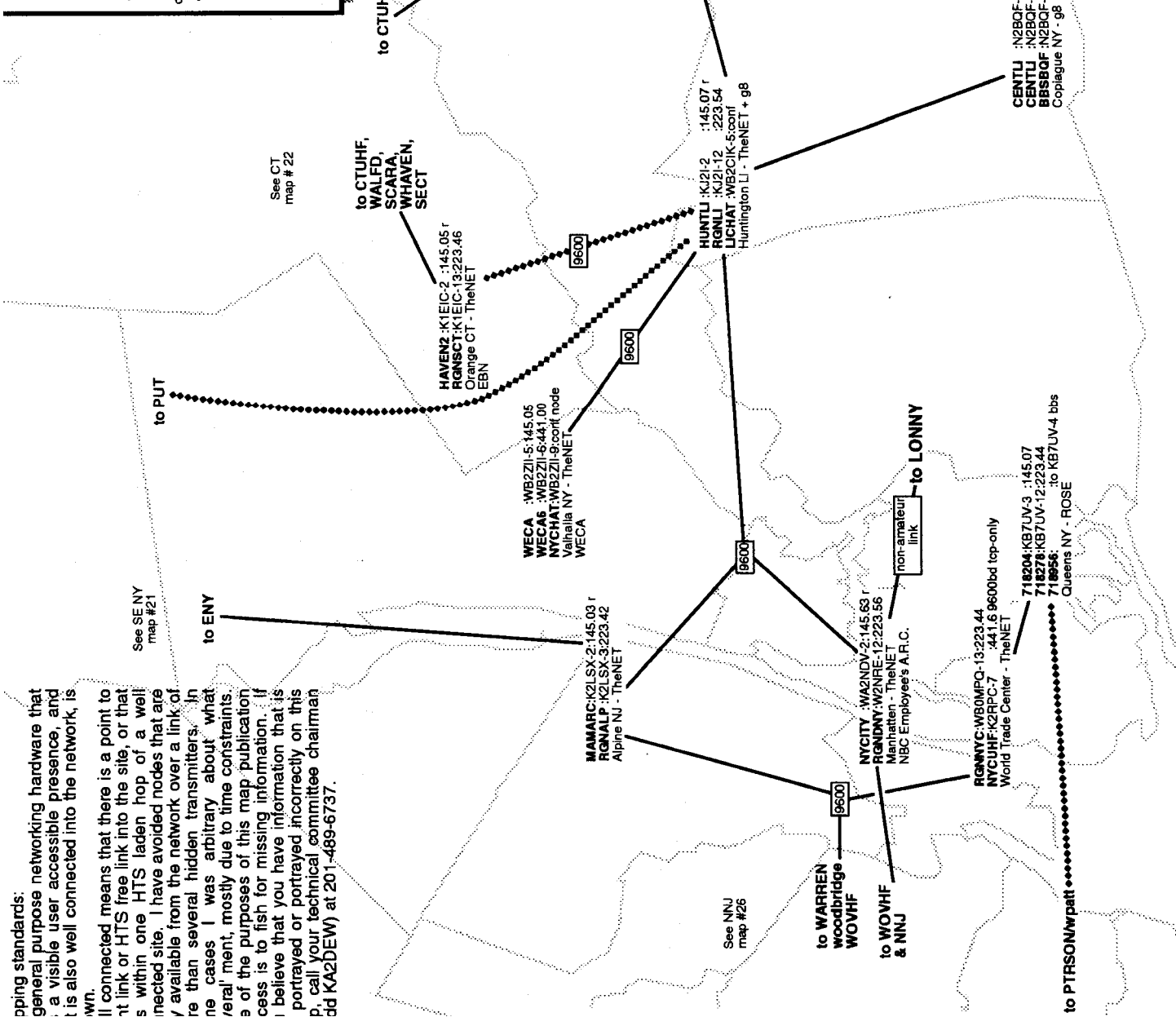
NYC and Long Island map #27

10/30/93 v1.06

command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links.

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 - - - - - Multi-Way HTS Free Backbone of known reliability
 oooooo Via Repeater
 Non HTS Free or unreliable Backbone
 Denotes baud rate of link, 1200 if not shown
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 RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.



ping standards:
 general purpose networking hardware that
 a visible user accessible presence, and
 it is also well connected into the network, is
 wn.
 ll connected, means that there is a point to
 t link or HTS free link into the site, or that
 s within one HTS laden hop of a well
 inected site. I have avoided nodes that are
 y available from the network over a link of
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 p, call your technical committee chairman
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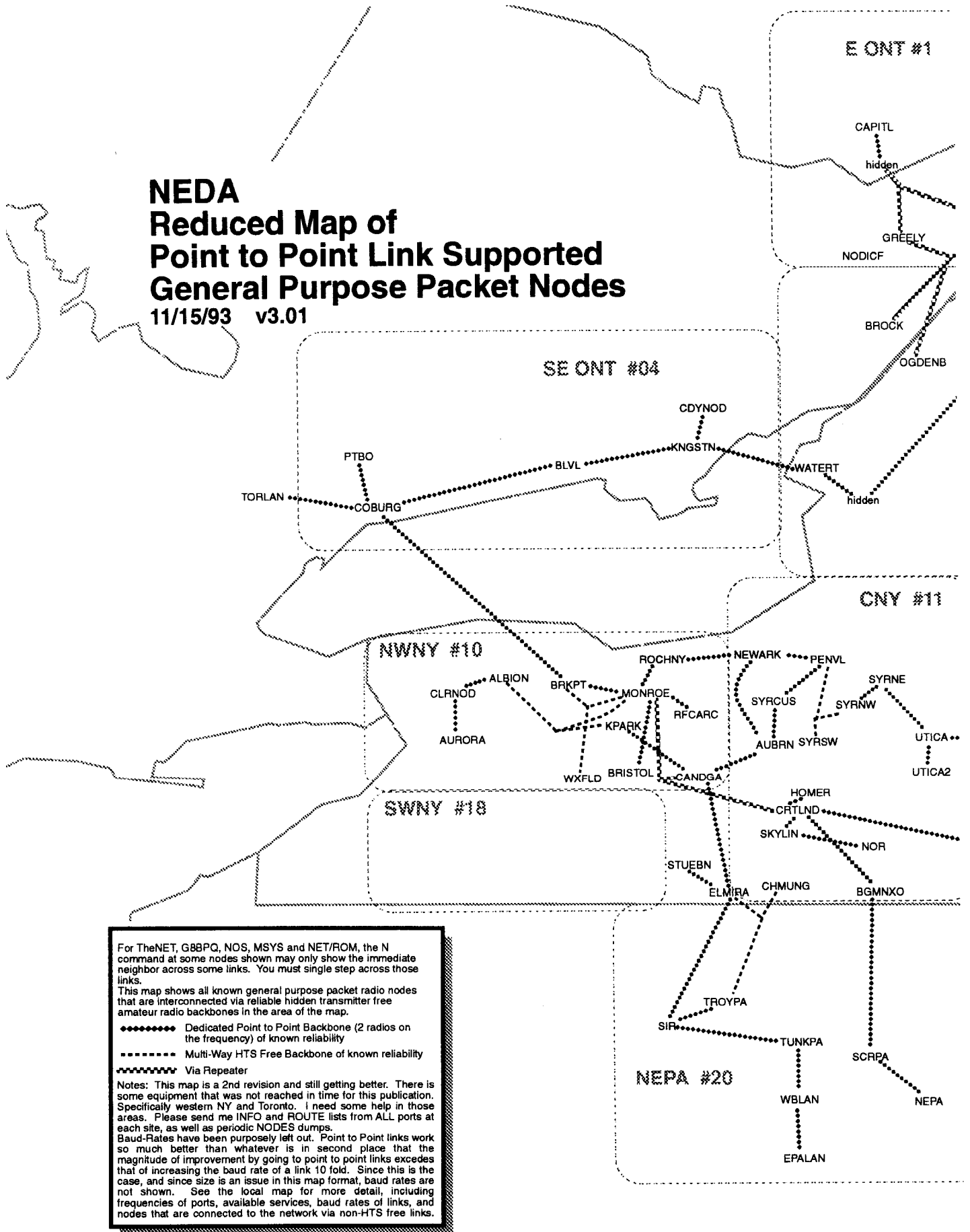
See SE NY map #21

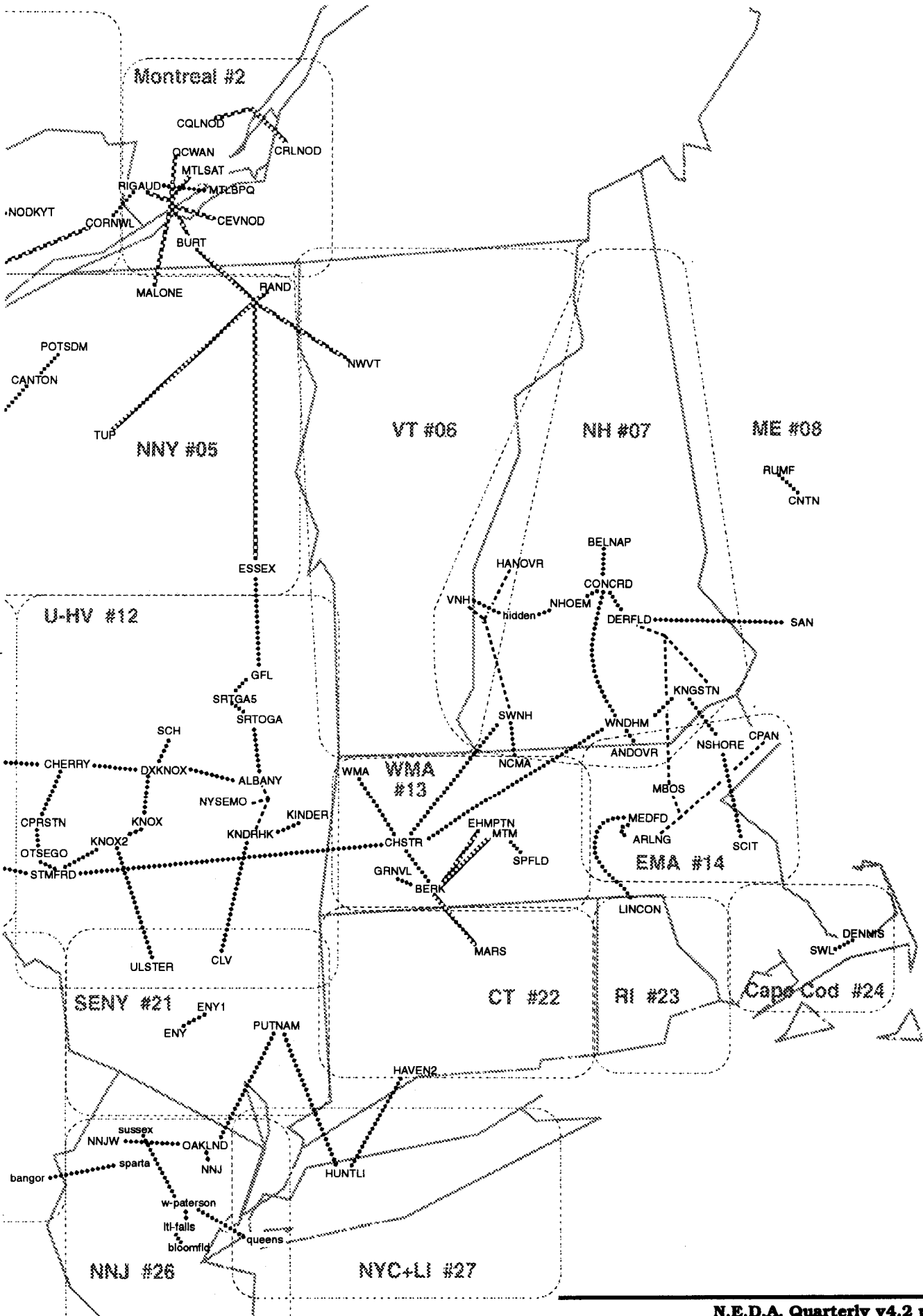
See CT map #22

See NNJ map #26

NEDA Reduced Map of Point to Point Link Supported General Purpose Packet Nodes

11/15/93 v3.01





TheNET X1-J MODE command

#	Min	Max	Function
		NEDA	
1	0	1	Hardware handshake host control mode flag Allow Esc C and Esc D commands on RS-232 port when not matrix
2	0	3600	CWID repeat period (seconds) Disable CW ID
3	4	10	CWID speed (10's msec's per dot) This number doesn't matter because CW ID is disabled above
4	0	3	Nodes broadcast channel enable flags: 0=none, 1=HDLC only, 2=RS232 only, 3=Both ports 3/both ports if backbone, 2/matrix only if user port
5	0	3	Crosslink protocol selection: 0=crosslink, 1=KISS, 2=KISS+selcopy, 3=KISS+allcopy matrix mode for TheNET node stack operation
6	0	255	TX keyup delay (10's of milliseconds) depends on what kind of radio is used. Make this is optimised
7	0	1	Full duplex enable flag 0 if simplex
8	0	65535	RS232 (port 1) node broadcast period (secs) This causes 2x normal speed update for RS-232.
9	0	3	Node broadcast algorithm control flags: 0=off, 2=RS232 port, 1 & 3 not normally used 1 may be a good idea on backbones. Try it and keep an eye on it, otherwise use 0.
10	600	3600	Beacon interval (seconds) beacons are enabled/disabled in the PARMs command. 10 minutes is the time at any rate
11	0	2	Connect redirection to BBS flag This controls what the "C" command, all alone, will do
12	0	127	Help messages enable flags, 8 bit TALK & case this enables: please wait (1) + all cmds for sysop (2) + routes are alias:callsign (16)
13	0	3	Hash node broadcast disable (one bit per port) disable all #node broadcasting
14	0	1	Enable extra aliases monitoring if set 0=don't recognise BBSalias etc... Set to 1 on user port if BBSalias etc.. is set up
15	0	1	Enable auto reconnection to node after remote dis enable on user-access ports and # nodes, disable on network-stepping-points for BBS benefit
16	0	3	Slime trail control. Each bit controls a function: Bit 0 if set hides slime trails in nodes listing Bit 1 if set causes slime trails to be ignored set on all non-gateway ports.
17	0	3	Digipeat control. Each bit controls a function: Bit 0 set causes node to refuse digi'd L2 uplinks Bit 1 set, node refuses to allow digi downlinks set on all TNCs which are not ROSE gateway ports

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North East Digital Association Membership Application

Welcome to NEDA and Packet Radio. This is the official membership form for NEDA.

Some general information about NEDA:

NEDA is a club formed in 1989 to promote packet radio and to lead the development of a general purpose, user accessible wide area packet radio network.

NEDA's area of interest includes the north eastern United States, Quebec, Ontario and the Maritime Provinces..

NEDA publishes the *NEDA Quarterly* as a periodical four times a year. The *NEDA Annual* is published each year as well. Associate w/Quarterly and Voting Members receive these documents by mail. The club distributes the magazine at flea markets as well.

NEDA's administration is based on 6 directors, 6 director alternates and several appointees. The six directors of the board are elected by the membership for two year terms. The six alternates are appointed by the elected board. Three of the directors are elected each year. The appointees include recording secretary, membership secretary, treasurer and editor. The board meets four times a year in various locations within the club's

area of interest. Those meetings are open to the voting membership and are fully documented in the minutes which are published in *The NEDA Quarterly*. The club bylaws are available with a SASE to the club's mailing address.

NEDA members sponsor general interest and specific interest packet meetings throughout the region of interest of the club. Those meetings may be announced in *The NEDA Quarterly* and meeting results may also be published. Other packet radio clubs can request space in *The NEDA Quarterly*. NEDA's focus is to publish information on packet radio and packet radio networking.

The dues structure of NEDA is as follows:

Subscription membership with US address \$15
 Voting membership with US address \$25
 Subscription membership with Canadian address \$20
 Voting membership with Canadian address \$30
 Upgrade to voting membership all countries \$10

All membership rates are US funds only. Canadian applicants should send funds in a Postal or Bank Money-Order in US funds. Non-US or Canada applicants, libraries and other Amateur Radio clubs should contact NEDA at the mailing address for information and rates. Thank you. This form is dated Q41-052393.

Membership Applying for - Check one box:	
US Associate/Subscription Membership, \$15/year <input type="checkbox"/>	US Full/Voting Membership, \$25/year <input type="checkbox"/>
Canada Associate/Subscription Membership, \$20/year <input type="checkbox"/>	Canada Full/Voting Membership \$30/year <input type="checkbox"/>
Upgrade to Full/Voting Membership, \$10/year <input type="checkbox"/>	Information Update Only <input type="checkbox"/>

Check here if this is a RENEWAL or if you've ever been a NEDA member before.

Enter # of years you wish to pay for: Amount Enclosed:

Name:

Address:

City: State or Province:

Country, USA/Canada Zip:

Callsign: Full Service BBS at which you get your packet mail

@
 Example: N3EIC @ KA2EIA.pa

Home Phone:

Other Computer addresses we can contact you at: (TCP/IP, FIDO Net, Internet, CompuServe etc.)

If a NEDA member gave you this form, what is his or her callsign?

If you are a RACES or ARES member in NEDA's area of interest, put your county here:

Make Checks to NEDA.
 Address this form and all other correspondence to:
 NEDA
 Box 563
 Manchester NH 03105

Note to NEDA representative: if you are handing an Annual to this new member, please date the "Intro Pkg" box.		Office Manager		Membership Secretary	
Receiving Officer:	Funds to Treas	Saved in DB	Intro Pkg Mailed	Form to Rec Sec	
Amount:					
Date:					

TheNET Sysop's Help Sheet

Parameter	Function v2.08	LAN	Bkbn	U/G
1	Minimum Quality For Auto Update1	50	50	50
2	HDLC Channel Quality	0	203	50
3	RS-232 Channel Quality	203	203	203
4	Obsolescence Count Init Value	3	3	3
5	Obsolescence Count Min For Broadcast	4	1	4
6	Nodes Broadcast Interval (sec)	1800	1800	1800
7	FRACK (sec)	4	1	9
8	MAXframe	1	1	1
9	Link RETRIES	10	10	10
10	Digipeating 0=no; 1=yes	0	0	0
11	Validate Callsigns 0=no; 1=yes	1	1	0
12	Host Mode Connects	0	0	0
13	TxDELAY (10ms)	35	35	35
14	Broadcast Via Port b0=radio; b1=RS-232	2	3	3
15	Pound Node Propagate 0=no; 1=yes	0	0	0
16	Connect Command Enable 0=no; 1=yes	1	0	1

EPROM parameters				
17	Destination List Length	100	100	100
18	Time-to-live Initializer (hops)	9	1	9
19	Transport Timeout (sec)	200	200	200
20	Transport RETRIES	2	2	2
21	Transport ACK Delay (sec)	1	1	1
22	Transport Busy Delay (sec)	180	180	180
23	Transport Window Size	2	2	2
24	Congestion Control Threshold	4	4	4
25	No-Activity Timeout (sec)	7200	300	7200
26	P-persistence (see text)	128	255	64
27	Slot Time (10ms)	20	1	20
28	Link RESPTIME [t2 timeout] (10ms)	50	20	50
29	Link T3 Timeout [CHECK] (10ms)	65000	65000	65000
30	Station ID 0=msg;1=after; 2=always	1	0	1
31	CQ Broadcasts 0=no; 1=yes	1	0	1
32	Heard List Length	20	20	20
33	Full Duplex 0=no; 1=yes	0	0	0

Parameter	Function v2.10	LAN	Bkbn	U/G
1	Minimum Quality For Auto Update1	50	50	50
2	HDLC Channel Quality	0	203	50
3	RS-232 Channel Quality	203	203	203
4	Obsolescence Count Init Value	3	3	3
5	Obsolescence Count Min For Broadcast	4	1	4
6	Nodes Broadcast Interval (sec)	1800	1800	1800
7	FRACK (sec)	4	1	9
8	MAXframe	1	1	1
9	Link RETRIES	10	10	10
10	Validate Callsigns 0=no; 1=yes	1	1	0
11	Host Mode Connects	0	0	0
12	TxDELAY (10ms)	35	35	35
13	Broadcast Via Port b0=radio; b1=RS-232	2	3	3
14	Pound Node Propagate 0=no; 1=yes	0	0	0
15	Connect Command Enable 0=no; 1=yes	1	0	1
16	Destination List Length	100	100	100
17	Time-to-live Initializer (hops)	9	1	9
18	Transport Time-out (sec)	200	200	200
19	Transport RETRIES	2	2	2
20	Transport ACK Delay (sec)	1	1	1
21	Transport Busy Delay (sec)	180	180	180
22	Transport Window Size	2	2	2
23	Congestion Control Threshold	4	4	4

EPROM parameters				
24	No-Activity Time-out (sec)	7200	300	7200
25	P-persistence (see text)	128	255	64
26	Slot Time (10ms)	20	1	20
27	Link RESPTIME [t2 time-out] (10ms)	50	20	50
28	Link T3 Time-out [CHECK] (10ms)	65000	65000	65000
29	Station ID 0=msg;1=after; 2=always	1	0	1
30	CQ Broadcasts 0=no; 1=yes	1	0	1
31	Full Duplex 0=no; 1=yes	0	0	0
32	Telemetry unit only			
33	Telemetry unit only			

Parameter	Function v1.1, 1.16 & X-1	LAN'	Bkbn	U/G
1	Destination List Length	100	100	100
2	Minimum Quality For Auto Update1	50	50	50
3	HDLC Channel Quality	0	203	50
4	RS-232 Channel Quality	203	203	203
5	Obsolescence Count Init Value	3	3	3
6	Obsolescence Count Min For Broadcast	4	1	4
7	Nodes Broadcast Interval (sec)	1800	1800	1800
8	Time-to-live Initializer (hops)	9	1	9
9	Transport Timeout (sec)	200	200	200
10	Transport RETRIES	2	2	2
11	Transport ACK Delay (sec)	1	1	1
12	Transport Busy Delay (sec)	180	180	180
13	Transport Window Size	2	2	2
14	Congestion Control Threshold	4	4	4
15	No-Activity Timeout (sec)	7200	300	7200
16	P-persistence (see text)	128	255	64
17	Slot Time (10ms)	20	1	20
18	FRACK (sec)	4	1	9
19	MAXframe	1	1	1
20	Link RETRIES	10	10	10
21	Link RESPTIME [t2 timeout] (10ms)	50	20	50
22	Link T3 Timeout [CHECK] (10ms)	65000	65000	65000
23	Digipeating 0=no; 1=yes	0	0	0
24	Validate Callsigns 0=no; 1=yes	1	1	0
25	Station ID 0=msg;1=after; 2=always	1	0	1
26	CQ Broadcasts 0=no; 1=yes	1	0	1

Notes:

The above parms are those as approved by the technical committee for nodes participating in NEDA networking technology.

A **LAN** port is a port that is on a frequency which has no other nodes nor any servers. The port would be used by stations who mostly acquire data *from* the network. These parms would be incompatible with a crowded channel.

U/G indicates a port on a frequency which would be used by users and/or servers and/or other nodes. This includes LAN frequencies which have, since creation, have acquired KAnodes, digipeaters and/or other nodes and servers.

Bkbn indicates a port that talks to a single other node which is similarly configured.

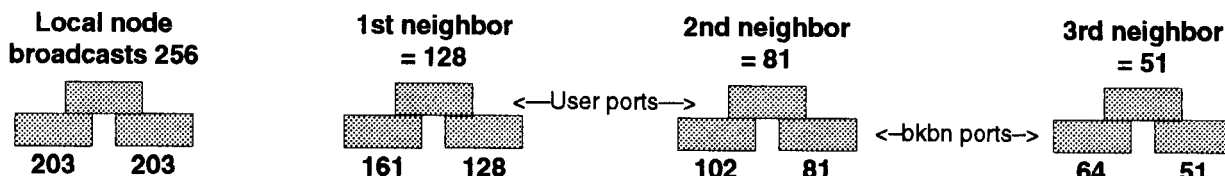
While some of these parms may be adjusted to local needs, please be sure to keep all L3/L4, and values effecting node propagation, as listed. It is each node manager's job to *Gateway* to adjacent nodes which are not using compatible parameters.

These parameters are not settings recommended for user/home station TNCs.

If you have input or questions on any of this information please send to NEDA @ WB2QBQ attn NTECH.

This information is current as of time of publication. Check with your local Volunteer Regional Contact person for updates or changes to parameters being used in the network. Nodes using TheNET "work alike" softwares should match the effective values of these parms as closely as possible.

This drawing represents the node quality value for a single node as it propagates through several node hops.



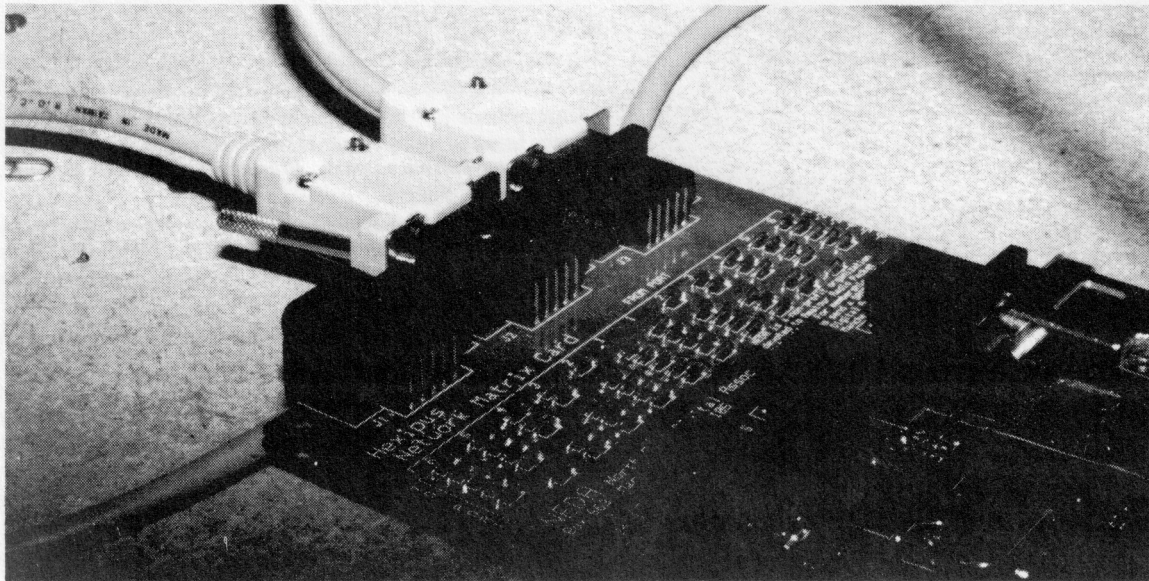
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The NEDA Quarterly is the official journal of the North East Digital Association. It is published four times annually. Distribution is around 1000 copies including paid members and public relations purposes. Paid membership at the time of publication was 498.

NEDA is a non-profit club formed for the purpose of promoting free access general purpose amateur radio packet networking.

NEDA's mailing address is :
NEDA - Box 563, Manchester NH 03105



Note on Hexipus!!

NEDA's Hexipus is sold out! The club had 200 of the boards made when there was no other source for the device. There are now two more sources and we are out of Hexipus boards. Please contact one of these two vendors for your diode matrix needs. Both are cheaper than NEDA's prices and have reasonable quality. Thank you for your support.

NX2P EZ-Matrix 5 port coupler board

This board is as well made as the Hexipus and easier to assemble as it uses DIP packages instead of individual diodes. Board requires TNC to coupler cables, sold separately. Price is \$32.95 as a kit, from: NX2P Electronics, 321 East Shore Trail, Sparta NJ, 07871 201-729-6927 Write for information

ANS NETRIX 6 port board

This board is different in that it does not require cables to connect up to six TNCs. It plugs directly into PacComm TNCs and requires inexpensive adapters to plug into MFJ or DRSI TNCs. Price is \$24.95 as a kit, from:

Amateur Networking Supply, POBox 219, Montvale NJ, 07645

Write for information