NCPA *Downlink*

In This Issue

The President's Letter

Chris Marley, N6RAL

Welcome to our Spring 1990 issue of the NCPA Newsletter. This is the first quarterly issue published under your recently elected board of directors. I believe it reflects well on our new charter as an "Umbrella Organization" for several diverse digital communications interest groups. We currently have funding for four quarterly issues, and the board has committed to publish these on a quarterly basis for the rest of this year.

You can expect to see a variety of articles of interest to a broad range of Amateurs in our future issues. More importantly however, the NCPA Newsletter is the primary method for many of you to learn what your organization is doing for you. You have not elected a small group of dictators, but rather a group of facilitators, who require your input to be able to represent your interests. We will be publishing agendas for future general meetings, and I solicit your suggestions. In addition, there are regular Board of Directors meetings, in which we will be glad to consider any suggestions which you have or issues which you'd like to raise.

The common element here, which you might have noticed, is YOU. All of us on the Board would like to know that we are accurately and fairly representing your interests. The easiest way to insure this is to GET INVOLVED, or at least give us some feedback. Let us know how we're doing. We will publish comments, pro and con (space allowing). Thank you, and here's to the start of a great year.

Chris Marley, Acting President

N6RAL @ N6IIU

There's More to a BBS than Messages

Larry Kenney, WB9LOZ

If you're like most users of a packet Bulletin Board System, you're quite familiar with the B, H, K, L, R and S commands, but you seldom use any of the others. When checking into a BBS, the majority of the users get a list of the recent messages, read two or three of them that they find of interest, and then disconnect. Occasionally, they'll enter a message or two, or kill one addressed to them, but that's about the extent of their usage.

All BBS systems offer several other commands that can be both fun and very useful to you. There are commands for listing, downloading and uploading files, for getting information about the BBS, other users, nodes and digipeaters, commands for copying and editing messages, for talking to the sysop, or for even playing games. There are 5 different BBS software packages in use in Northern California: the W0RLI Mailbox and Gateway program, the WA7MBL BBS program, AA4RE's REBBS, MSYS from WA8BXN, and WD6CMU's OSKbox program. The format of the commands can vary slightly from one system to the next, so use the H command for specific details from the help file.

First, let's take a look at the file commands, W, D and U. The W (WHAT?) command is used to get a list of the file directories available to you. You're apt to find directories on packet information, BBS and node listings, the National Traffic System, ARRL and RACES bulletins, AMSAT/OSCAR, general amateur topics, weather, software, or any number of other subject areas. The directories on each BBS are set up individually by the system operator (sysop), so they vary from one system to the next. Included with the directory list is an ID letter or

Editorial

Mike Chepponis, K3MC

Hello, again!

Yes, everybody, we've finally gotten the NCPA Downlink back into production! Many are to thank for this, but a certain pulling together surely helped!

First off, let me say that anybody who joined NCPA way back when NCPA first started and only received one newsletter will be receiving NCPA newsletters throughout the coming year.

Everybody's membership will be up on April 1, 1991 (honest! NCPA Membership runs from April 1st through March 31st...), so you will want to renew then.

But you should see what we've got planned for you! This issue marks the first of 1990, the Spring 1990 edition. We have similar feature-packed editions planned for Summer, Fall, and Winter of 1990. Of course, I, as your humble editor, respectfully requests that the article writers among you help me out by providing some interesting and timely material that you'd like to share with fellow NCPA members...

Oh yeah, note that we've changed the name to the NCPA **Downlink** because that's what the Board wanted it to be way back when, and we've changed the cover price, too (cheap!). Plus we've tried to make the layout of this newsletter consistent and highly useful. Please tell us what you think!

As usual, something of this magnitude doesn't happen all by itself. So some thanks are in order. First, we thank Tony KI6HH for doing a SUPER job in producing our first issue of the NCPA newlsetter. You have to admit, it was certainly a bang-up job! We (the current staff) certainly have some big shoes to fill to do as well as Tony's superb first newsletter! And for the rest of the crew, please check out the little box on the right. You support is appreciated!!!

Articles can be sent to me in several ways. Via the BBS network is best, and via TCP/IP or Internet is just as good. Via US Mail is OK, too, as long as your article is on an IBM-PC compatible or Macintosh diskette (any size, any density) - I **much** prefer electronic articles to articles on paper, as we must enter any articles on paper into an electronic form. BUT, don't let that stop you if you don't have the ability to produce electronic copy, we'll gladly accept paper copy!

So, we're back! And with your help, we'll maintain the high standards that you have come to expect of us.

Vy 73!

-Mike

BBS: K3MC@K3MC.#NOCAL.CA.USA.NA

TCP/IP: mike@k3mc.ampr.org

Internet: k3mc@apple.com or mac@leg.ai.mit.edu

US Mail: 211 Kansas Way, Fremont CA 94539

How to use @USA

Robert Knapp, WW6L

The NORCAL network will resume carrying @USA bulletins on 9 April 1990. Before sending a bulletin "@USA", please ask yourself the following questions:

1. Is the matter of NATIONAL IMPORTANCE? If it is of regional interest, a regional distributor such as "@ ALLCAN", "@ ALLCA", "@ ALLUSW" may be more appropriate.

2. Is it TIMELY? Remember, it may be several days before the bulletin gets widely distributed. If time is important, distribute it more narrowly.

3. Is it as SMALL as it can be? Wasted bytes impede distribution, and may result in the message being reduced in priority.

4. Is it SALE or WANTED? If so, it will be passed through WW6L only if you include a statement that distribution for a reasonable time with a regional distributor has been unsuccessful. Examples: (1) messages re: swap meets, club meetings, bus trips and local issues are OUT. (2) messages about events occuring within ten days are OUT. (3) decorative asterisks, ^G (imbedded bells), and excessive blanks will jeapordize having your bulletin distributed.

73, Bob, WW6L

There's More to a BBS

Continued from page 1

name for each directory. Make note of it. Entering W followed by this ID letter or name will give you a list of files in that particular directory. The files available to you contain a virtual library of information.

Reading or downloading the individual files is accomplished with the D (DOWNLOAD) command. Enter D followed by the ID letter or directory name, then the file name exactly as it's shown in the list, including any dots. Remember that computers require exact entries to work properly, so be careful when entering the name of the file.

If you have information for a file that you would like to place on the BBS for other users, you do so with the U (UPLOAD) command. Most systems allow you to enter a file directly, but some require that you enter the file as a

message to the sysop and he then makes a file out of it. Check your help file to see if the UPLOAD command is available. If not, consult your sysop.

The BBS programs also have a variety of other commands that are used for getting frequently updated information. All have the I (INFORMATION) command available. Depending on the type of system you use, I can get you information on upcoming events, operating notes, helpful hints, information about the hardware and software of the BBS, or user information such as name, home BBS, city, state and zip code. Another command that's available on most systems is the J command, used for getting a list of ports available, a list of stations heard on each port, stations that have recently connected or that are now using the system, or a list of nearby digipeaters, nodes and gateways. Other commands that provide information are the S (STATUS) command on W0RLI systems, the P (PATH) command on MSYS

that shows the path used by a station when connecting, Q (QUERY) command on WD6CMU for accessing the "White Pages" user directory, and V (VERSION) on both W0RLI and MSYS BBSs.

The W0RLI and WD6CMU systems offer the C (COPY) command for making copies of a message. This is very useful when you have a message that you want to send to more than one station. You can enter the message once and then make copies of it for other stations.

ET (EDIT TRAFFIC) is available on W0RLI systems for making changes to NTS messages, and M (MODIFY) is available on WD6CMU for changing information on messages you have entered.

Most of the software packages allow you to enter your name, home BBS, city, state and zip code using the N command and variations of it. It's required before you do anything else on W0RLI systems. You can use the T command to TALK to the sysop with W0RLI and REBBS, get the MESSAGE of the day with the M command on MSYS, and on WD6CMU you'll find the E (EXECUTE) command for using various programs and playing games!

As you can see, there's more to a BBS than just messages. Check the help file for a complete list of commands available on the BBS you use and then try them out. Spend a little extra time and have some fun seeing what's available to you. You won't be disappointed!

MAKING SURE YOU RECEIVE YOUR MESSAGES

Many packet users check into more than one BBS on occasion. Maybe you're in a hurry and want to leave a message for someone and the BBS you regularly use is busy, so you check into another one to leave the message. Or you might check in to another system to see what files are available. "BBS DXing" is discouraged, but for many there are two or three local BBSs that can be accessed quite easily.

No matter how many systems you check into, you should remember these two very important points.

- Use only ONE BBS as your "home BBS". Whenever you

Packet and NTS

Steve Harding, KA6ETB

In the week to ten day period following the Loma Prieta earthquake several thousands of messages were sent into and out of the area. I have heard figures as low as 6,000 and as high as 15,000. The correct figure is most likely somewhere inbetween.

The point is that a great deal of disaster related traffic (primarily health and welfare inquiries) was passed through our BBS packet system. For the most part, things went well, due to diligence and dedication of a handful of packeteers.

However, several problems became apparent. The NCPA is addressing these problems. A committee has been formed to analyze the successes and failures of the system to handle large volumes of traffic quickly. This committee will most likely have a report ready for the next meeting of the NCPA board of directors.

The biggest problem we had was delivery of incoming messages. This problem was two-fold.

1-The traffic poured into the area at an alarming rate. As NTS NCN packet manager, I sent several bulletins to the outside world trying to stem the tide. Kinda like the little dutch boy at high tide.

2-Most of the trained message handlers were also ARES and RACES volunteers. These folks had other things to do besides handling traffic.

So, the traffic was sent to those BBSs that were still up and handling traffic, where it sat until someone could find the time to take it. In some cases, the traffic sat for as long as four days.

Normally, we have designated BBSs to which NTS traffic is sent for delivery. These stations are chosen because of their geographic location and the willingness of one or several volunteers to accept responsibility for the traffic. During the disaster, several other BBSs willingly accepted traffic, even though there was no one there listed as NTS manager. This left the delivery of H&W traffic up to anyone who checked in.

So, how do we solve this problem? Simple. We need more folks trained as traffic handlers. It's easy; there is no formal training involved, and any ham can do it.

Take a look on your home BBS for a directory of files ending in .NTS. These files contain all the information you need to get started. In particular, download the file HOWTO.NTS. This will tell you how to take a message from the BBS and how to place a message into the system.

If you can't find the directory on your BBS, ask your sysop about it. If he does not have the files, have him contact me and I will forward the files to him.

The NTS Northern California Net has published a handbook for traffic handling. The handbook contains all the information needed to handle traffic through the CW and voice nets, as well as by packet. If you would like a copy, send $5 to Al Drasky (WB6YOU), 3672 Arcadian Drive, Castro Valley, CA 95456.

Traffic handling is fun and, once you have the information, it's easy. I have been handling traffic for over ten years and have enjoyed it tremendously. In fact, I haven't mailed a Christmas card in over five years (look at all the postage I've saved.).

Give it a try. Then you'll be prepared for when the "Big One" hits.

73...Steve (KA6ETB)

NTS NCN packet manager

EOT

There's More to a BBS

Continued from previous page

have to enter the callsign of your "home BBS", always enter the same one each time.

- Make sure you use the call of a full service BBS, one that carries bulletins and is part of the forwarding network.

There are very important reasons for this. The "White Pages" directory is used very frequently by people to find out where to send messages. If you use different callsigns, the directory information will be vary and no one will know for sure what call to use. In addition, some of the BBS software uses this "home BBS" information to make sure your mail reaches you. It will automatically check the "White Pages" for the "home BBS" of the addressee whenever a message reaches its destination. If a message is misaddressed, the software will make a correction and try to send the message to the right system.

If you use different callsigns, your messages can be sent from one BBS to another, then possibly back again, often looping between systems, never reaching a final destination. If you use a TNC mailbox or personal BBS callsign, the forwarding system won't have any idea where to send the message since these calls are not included in the forwarding files of most systems. As long as you list the same callsign every time and use the call of a full service BBS, you can be assured that your messages will reach you.

Larry Kenney, WB9LOZ

NCPA Education Coordinator

EOT

Make Your Radio Work on 430 to 440 MHz.

Eric Williams, WD6CMU

Now that NARCC has allocated new packet channels in the 430MHz band, the next step is find a way to operate there. The following is a collection of messages I received in response to a bulletin asking for 430MHz radio modifications. If you know of any others, please send them to WD6CMU @ WD6CMU.

73, eric

Icom IC-3200A
from N7FSP

Here is one modification that I found that will convert your Icom IC-3200A for operation on the 430–440Mhz band. This is a very simple modification and does nothing to harm the radio, no trace cuts, changing ICs or any of those problems. The only minor problem is that you lose all your memories when it is first done, so if you need to, write those 2 meter assignments for re-entry afterward. Since the radio will only operate on the 430–440Mhz portion of the UHF spectrum afterward use on 440–450Mhz can only be done only after the modification is cancelled.

Just inside the front panel of the Icom IC3200A on the top there is a circuit board that can be seen with the top cover of the radio removed. There are several components that can be viewed from this angle, look for a jumper marked "J-8", this is for reference only. To the side of this jumper, towards the small ribbon cable going to the display there is another jumper labeled "J-10", this is next to the Capacitor labeled "C-4", also in this neighborhood is a mounting screw (just for reference). The only "mod" that you need to make is to lift the jumper "J-10" for a few minutes and re-install the jumper back in the same location that it was removed from — that is all!

To undo your "mod" turn off the radio and at the same time depress the "function" button and indicated in the owners manual and normal operation of the Icom IC-3200A is resumed.

I have verified the frequency and sensitivity of the radio after the "mod" was completed and the frequency display is accurate but the sensitivity at the lowest portion of the band on my '3200 was a bit deaf. Proper tuning of the VCO would certainly allow better performance.

Kenwood TM-721a and Icom IC-45a
from WA6NHC

To get the Kenwood TM-721a to transmit/receive in the 430–440 range (only) and 144–146 range (only, cuts down the extended range entirely) add a 0 Ohm resistor (a jumper) on the CPU at point R113 (the end closest to the ground point. This programs the CPU as if it were a TM-721e (Europe) model. The actual designator for this resistor is R123. A CPU reset is required after this mod.

On the Icom IC-45a, it appears that if you change the crystals X3 (35.745MHz in the American version) to 34.912MHz and X4 (33.929MHz in the American version) to 33.095MHz that this will (with slight retuning) cause the '45a to become a '45e. I have not tested this, but the schematic shows only this difference.

Yaesu FT-4700
from SV0DR @ SV1IW

FT-4700 Frequency expanding modification. Following example shows programming for 138–174Mhz, and 420–460Mhz.

1. Remove front panel.

2. Locate jumper spots 1,2,5,9,10,13 and short them with solder carefully.

(Other jumper spots must remain as current on the control unit.)

3. Turn power on, and set the display for the lower edge of UHF band (420.000),using up/down buttons, and dial. Then press D/MR button.

4. Set the display to 460.000 and press D/MR. The display shows 47.75 (IF frequency of UHF). Press D/MR, and then UHF coverage is programmed.

5. Set the display frequency to 138.000 and press D/MR. Then set to 174.000 and press D/MR again. the display now shows the VHF IF frequency at 17.3. Press D/MR again. Now both band coverages are programmed.

6. After this modification the repeater shift is set to 000mhz, so it must be set using the F and RPT buttons on both

bands. Re er to page 27 of manual for details.

7. Remember that transmitting outside the amateur bands is prohibited unless you have a special license.

Yaesu FT-727R

Modification for extended coverage. (This will work for both the old and new CPU versions)

-Remove the battery pack

-locate the RAM backup switch according to your manual (this will be the switch FARTHEST away from the battery terminals)

-Turn the switch off, count to 4, then turn it back on

-Replace the battery pack

-Turn the rig on. The readout should be entirely blank. If it is not, you probably did not wait long enough before turning the switch back ON, so repeat the above procedure.

-Type in the following: '001111'

-The rig should now come to life. You will have to reprogram all the memories as well as the repeater splits for both bands. The display will now cover 100–199, 400–499MHz, but it obviously won't work over this range. Mine covers 139–153, 420–460.

- The reset code is in your manual

Icom IC-04

1. On the logic matrix, remove D402.

2. Add D402, D403 and D404 with the cathode at 4 o'clock and the anode at 12 o'clock. (You may use any signal diode such as 1N914.)

3. Add D405 with the cathode at 8 o'clock and the anode at 12 o'clock.

4. If you have a newer IC-04AT, the VCO cover will have holes in it that allow access to the tuning coils. If you have an older IC-04AT you will have to cut a hole in the VCO cover using a pair of small diagonal cutters (be careful!).

5. Retune the VCO to cover your desired frequency spread. My IC-04AT goes from 441MHz to 473MHz, which is pretty good.

6. Any frequency may be entered directly on the keypad (starting with the 10 MHz digit).

EOT

A New Service, The Callsign Server

Douglas Thom (N6OYU)

One of the problems I found with packet communications, after I did a few keyboard to keyboard connections and log-ins to BBS's, is what else does it do for me. I can send mail to all these people out there in packet land that I do not know, or I can watch messages fly by that don't interest me..... What is missing is a true user application. Hmm... I thought, there has to be something we can do for the packet community. One afternoon, I was logged into the Internet (a world wide computer network) and saw a message that a group of people were putting a project together to acquire a copy of the Amateur Radio Callsign database from the F.C.C. Great, here it is.... I could put together a service whereby people could contact my packet station, and lookup a callsign. This could be an interesting service, and if successful, provide something of use to the community. Since I knew one of the people involved in getting the data, I contacted him, and got a copy of the database. As it turned out, the actual data file is 108 Megabytes in size and contains over 435,000 callsigns. Unfortunately, it only contains US callsigns, but that's a great start. Each record of the file has in addition to the callsign, both the mailing and station addresses, the class of license, previous callsign, renewal/process/expiration dates, and even the persons birthdate! Wonderful.... now all I had to do was figure out how to give access to this data from my packet station, where was I going to store this huge database file, and how do I tell people about it....

Enter the KA9Q TCP/IP package....

I was working on another project, porting the KA9Q TCP/IP package to the Macintosh, when several people asked the same question, what are we going to do with TCP/IP, it is certainly a neat system, but without applications to use it, it suffered the same old problem. Then the light flashed, how about interfacing the call sign database to one of the TCP/IP servers... like the **finger** server. The **finger** server is a utility built-in to the TCP/IP package that allows a remote station to query your station for basic information. Great idea said Dewayne (WA8DZP, the programmer who did all the work!), and in a few days he had written the initial code to access the callsign data file. It took several more weeks of debugging and testing, but finally we had an extension to the **finger** command. Below is an example of how this all works. (**Bold** character are typed by the user)

```
net> finger %wa8dzp@n6oyu
SYN sent
Established
[N6OYU]

Name:               DEWAYNE L. HENDRICKS
License:            WA8DZP              License Class: E
Mail address:       43730 VISTA DEL MAR, FREMONT, CA 94539-0000
Station address:    43730 VISTA DEL MAR, FREMONT, CA
Effective date:     May. 17, 1988  Expiration date: May. 17, 1998
Previous Callsign:              Previous Class:    A
Birthdate:          Oct. 11, 1949        Process date: May. 17, 1988
```

DXPSN Operating Tips

Chuck Strobel, K6PBT

Here are some tips for better personal operation and system performance of the DX PacketCluster.

1. Use **TALK** instead of **AN-NOUNCE** when possible.

2. Avoid doing long SH/DX lists every few hours. Action certainly isn't that HOT between one's many connects/disconnects.

3. Sending WWV announcements? How often? Do a SH/WWV/1, it may have been reported already!

4. Before sending an **ANNOUNCE DX** query, check the system database. By a **SH/DX (call) (band) (comment search), SH/HEADING (pfx), SH/SUN (pfx), SH/MUF (pfx), SH/OBL** (pfx), etc. may give you the info you want.

5. Save keystrokes. See **USER.CMD** for the short form by entering **TY USER.CMD**. Remember it best to view **GENERAL & BULLETIN** files during non busy times.

6. AVOID personal connects on your local node frequency! Turn OFF beacons and reduce your **CHECK** polling.

7. Maintain a healthy signal into your node. If not, it only has to try harder. Staying connected for days, even weeks is easy. Keeping a good user-node signal, right TNC parms, and user skills will do it.

So, following some of the guidelines may help you and others keep connected and move DX announcements more quickly through the network. Please help.

Thanks! 73 & DX Chuck.

```
Close wait
Last ACK
Closed (Normal)
```

Note the use of the **%callsign@n6oyu** syntax in this command. The typical **finger** command looks like this:

```
net> finger doug@n6oyu
```

This will look for a text file named "doug" on the system diskette, and copy it's contents to the TNC. With the Callsign server extension, we added the **%** to tell the **finger** server to lookup the following callsign in the database, and return that information to the TNC.

As it turns out, TCP/IP allows the use of another command to query information provided with the **finger** command. This involves using the telnet command (telnet is the command used for keyboard to keyboard communications with another TCP/IP station). This gets fairly complicated, but suffice to say that it works. Below is another example of using the telnet command to get the same information:

```
net> telnet n6oyu 79
SYN sent
Established
[N6OYU.norcal.ampr.org]
%ka9q

Name:              PHILIP R. KARN JR
License:           KA9Q          License Class: E
Mail address:      25B HILLCREST RD, WARREN, NJ 07060-0000
Station address:   25B HILLCREST RD, WARREN, NJ
Effective date:    Sep. 27, 1988  Expiration date: Sep. 27, 1998
Previous Callsign:          Previous Class:
Birthdate:         Oct. 4, 1956       Process date: Sep. 27, 1986

Close wait
Last ACK
Closed (Normal)
```

In the above example the **79** tells the telnet server to forward the request to the finger server, which in this case is the **%ka9q** on the next line. The server processes the request as before.

This was all fine, but what about all the rest of the packet user's out there that do not have the TCP/IP package up and running? Well, as it turns out TCP/IP as implemented, will support ax25 connections as well, and even provides a mail box function. So Dewayne also wrote some additional code to extend the mail box function to also make an Inquiry of the database. This addition of the **I)nquire** command to the mail box code now provides the ax25 connects access to the database. Below is a sample of the process:

```
Connect N6OYU
Conn pending
Connected
<carriage return>
[NET-$]
Welcome to the N6OYU.norcal.ampr.org TCP/IP Mailbox
(C)hat (I)nquire (S)end (B)ye
I K6LLK

Name:              JOHN D. CRONIN JR.
License:           K6LLK         License Class: E
Mail address:      1543 FORDHAM CT, MOUNTAIN VIEW, CA 94040-0000
Station address:   1543 FORDHAM CT, MOUNTAIN VIEW, CA
Effective date:    Dec. 9, 1986  Expiration date: Dec. 9, 1996
Previous Callsign:          Previous Class:
Birthdate:         Jan 1, 1944        Process date: Dec. 9, 1986
(C)hat (I)nquire (S)end (B)ye
B
Disconnected
```

Now all packet user's have access to the Callsign server, via several different mechanisms. Since the bringing up of the sever, there have been over 3500 accesses over a 6 month period. The service proved especially useful during the last Field Day exercises, with several hundred requests during the weekend. An additional observation is to see what each new user does with the server. First, almost without exception, everyone looks up their own callsign!.... Then they look up their friends....

A Conversation With W0RLI

Anthony Straight, KI6HH

One of the best known and most influential characters in the story of Amateur Packet Radio is Hank Oredson. Hank, of course, created the highly successful W0RLI RBBS, which he humbly calls "the mailbox", or just "mb".

Hank was a prime mover in the early days of NEPRA (New England Packet Radio Association), which set up a network and an administration that deserves study by those undertaking any similar job.

Yours truly has induced the normally reclusive Mr. Oredson to share some of his views and insight into the state of packet radio and RBBSs.

NCPA: Now then, Hank, what do you expect you will do next, and what philosophy will guide you?

W0RLI: In 1988, I gave away all the preceding source code to other folks and said "You guys carry on, please, I'm done". What I'm doing right now is whatever amuses me, period. If this is useful elsewhere in the network, that's fine, and if it isn't, that's fine.

NCPA: People still look to Hank Oredson as the "guru", the groundbreaker in BBSs.

W0RLI: Oh yes, I understand.

NCPA: There are things coming up that you might want to be in on. For example prioritizing of messages...

W0RLI: I'd probably want to not do that. As soon as you prioritize messages, than you run into the political problem of which one should go first.

If I put out any such code, it will detect the existence of my call sign and prioritize that first.

Most of the kind of stuff that can be done with the existing network has already been attempted and we've kind of settled out on what can be done with it.

The prioritized thing was all tried back in '85 in great detail and abandoned by everyone fairly quickly after we discovered what happened when you did that.

NCPA: And what was the problem with it — the political deal?

W0RLI: Absolutely. Giant priority wars. Gee whiz — we did the whole thing and prioritized by message type, message size, destination, everything.

What happened was, of course, "You gotta do me first". and "My message was only 8193 bytes! Now gee whiz, that's only one byte over the limit. You should've let it go."

NCPA: Maybe a soft limit on the priority...?

W0RLI: There's always a hard limit. It's the top of where your soft limit stops. That's when "the closets are full".

NCPA: If it were all up to you, could you make it work?

W0RLI: I just wouldn't do it. I don't feel that any message should have priority over any other message.

NCPA: What about health and welfare traffic?

W0RLI: Why should that have priority?

NCPA: Because it is more important than my bulletin about my rig for sale.

W0RLI: To whom?

NCPA: I think we could reach that consensus.

W0RLI: I'm not convinced that we could actually reach such a consensus. The main [problem] comes with NTS versus personal messages.

NCPA: A personal message is a personal message...

W0RLI: No. NTS messages are things outside ham radio, and I believe they should have last priority after everything that has to do with ham radio. Personal messages should come ahead of bulletins. I would prioritize things: P, T, B, or P, B, T, maybe.

[Ed. note: P, T, and B, are "flags" denoting personal, NTS, and bulletin messages, respectively.]

Emergency traffic, I believe, will always be handled by humans, never automatically, and so it doesn't matter. The priority on every single message will be what the local operator decides it to be.

NCPA: As far as emergency service goes, packet radio can handle volume traffic if your emergency lasts long enough, but if you have an acute emergency...

W0RLI: You handle it on voice.

NCPA: Would you say there is no future of that sort in packet radio?

W0RLI: Absolutely.

NCPA: Why would you necessarily think so?

W0RLI: Because it needs to be handled in real time, and packet radio is not a real-time system. Regardless of what anyone claims it to be, it isn't. We can't make a good real-time system out of it.

Packet is not a real-time system, and we can't make a good real-time system out of it.

NCPA: Would "demand forwarding" help in that respect?

W0RLI: Not at all. That just moves the problem around. It doesn't actually change much of anything.

NCPA: The packet cluster guys seem to have fair success at quickly announcing the presence of DX stations.

W0RLI: Yes, but the volume of traffic that can be handled is insignificant.

NCPA: It's very small for DX announcements, but they have a priority scheme whereby they can also transfer messages, and have them take a back seat to DX announcements.

W0RLI: That's right. We're not talking about enough traffic to be really useful for anything. We're talking a few lines of a few dozen characters.

NCPA: So the channel is generally idle most of the time?

W0RLI: No, the channel is generally totally, solidly busy with hidden nodes banging against each other, and a very small amount of traffic actually gets passed. It is worth watching 146.58 to see how poorly it actually works. My guess is that they're down to 20 to 30 baud effective throughput. It's an interesting theory but I do believe that voice will be the mode of choice for handling acute emergencies until we get more network.

NCPA: More network?

W0RLI: More bandwidth.

NCPA: Faster modems, specifically?

W0RLI: And better use of the connectivity.

NCPA: What about reading the mail, besides the problem with the frame number looping around?

[Ed. note: Each packet is given a number, 0 to 7, by the transmitting station. The receiving station acknowledges a frame by number. It is conceivable that a station "reading the mail" could miss exactly eight packets, and erroneously conclude that none had been missed.]

W0RLI: There are many worse problems. It has been tried; it doesn't work. There is a scheme that will probably appear in AX.25 version 3, that will allow for point-to-multipoint, which will help.

NCPA: Several stations will acknowledge a single frame?

W0RLI: Yes, a station can send a frame once to a group of addresses. It turns out it actually doesn't help much.

NCPA: In my particular situation [at KI6HH] I can copy solidly everything that goes to at least three BBSs, each by way of a digi. If the other everybody could copy...

W0RLI: Problem is, it just doesn't work. Been down that road and found that it's a dead end.

My actual opinion is that the best thing NCPA could do to move things forward would be to concentrate on the network management, and creating better network. That's the place that we need to move things forward right now. Doing all the palliatives that we have been doing just keeps us standing in place. Whether there are new features that come up in BBSs is really unimportant right now.

NCPA: Would you like to drop in a few specific ideas about what we ought to pursue?

W0RLI: I'd really like to let somebody else do that. Until this group gets its act together and stops doing all the infighting and builds an actual network, I no longer have any interest in whether the folks around here succeed or not.

NCPA: At the board meeting, I believe we made some inroads on the

infighting issue. We had all the groups, and we were at least talking. The band plan had something to do with it.

W0RLI: We now need also a node plan, and an authority that can tell people: "Get that digipeater off that frequency." "Shut that transmitter down." "Turn this one on on this frequency." "No, you can't put this node cluster up unless you support the following baud rates."

NCPA: There was a thing called the "enforcement committee..."

W0RLI: Oh, yuck! Here we go! That's the wrong way. You have to do the exact opposite. You have to say "Oh! you've got some wonderful stuff in our network and our network really needs you. If you could just do this that would be just superb!"

That was the NEPRA way. We got them to go to a meeting and everybody just drooled all over them. "Oh this is just wonderful! If you could conceivably move this from 145.01 to 145.05, you'd actually connect this whole region together, and people would just love you! Let's not do it permanently, let's just try it until the next NEPRA meeting and see how it goes. We'll buy the crystals. Don't worry about the crystals. We have a crystal pool" We'd pull some crystals and hand them to him.

We'd literally suck everybody right in and thus get the network moved around to where it would work. As for the few renegades, nobody would use their equipment.

NCPA: How did you handle the bad guys? The guys who really wanted to cause trouble?

W0RLI: Don't talk to them.

NCPA: You mean lock them out?

W0RLI: Not at all, just don't talk to them. They send you a message: bit bucket. Even though there are a whole bunch of people doing things that we have specifically asked them not to do with the N6MPW nodes, we will never consider locking them out. We will continue to ask politely that [certain practices cease], that we would prefer that they didn't do that. They will continue, probably, to do it, but we won't stop them from doing it. We will just continue to say "We wish you wouldn't do that".

EOT

The Callsign Server

What is all this running on? Well, the database file is on a 300 Megabyte Hard Disk drive which in turn is connected to a Macintosh Plus computer running Apple's AppleShare fileserver software. The radio is a Yaesu FT-211RH connected to an AEA PK-232 TNC and another Macintosh Plus computer running the Macintosh version of the KA9Q TCP/IP package. The two computers are connected together via LocalTalk (Apple's networking system). Additionally my Macintosh II color system and a LaserWriter IINTX printer also share the network.

The future holds many changes for the service. The first will be, of course, a more current data file. Next, we plan on changing the method of access. As it stands currently, the only was to get callsign information is to directly connect to my station via either ax.25 or TCP/IP. What we plan on is similar to the white pages lookup now available in the PBBS network. You will be able to send a message to the system, with whatever means you have, and the system will send a reply message with the callsign information you requested. Now back to the coding....

Oh... One last note. You can connect to my station on the TCP/IP frequency of 145.75 Mhz.

Douglas Thom N6OYU is a Technical Support Engineer for Apple Computer, Inc. He has been with Apple for just over 10 years, and currently is president of the Apple Amateur Radio Group. For additional information you may contact him at: N6OYU@K3MC, thom@apple.com, or Digikron Systems BBS (408) 253-1309.

Dewayne Hendricks WA8DZP is an independent consultant, specializing is network communications/software. He has spent the past 15 years working with Amdahl, Apple, and IBM on numerous systems integration projects. He can be reached at: WA8DZP@K3MC, WA8DZP@tandem.com, or via Compuserve.

EOT

A Summary Of Telephone File Transfer Protocols

Ted J. Mieske, KB6IUY

I've noticed, during the course of working with many BBSs, that there is getting to be a slough of transfer protocols. I have attempted to put together a list of the most common (and some uncommon) protocols in use today, with an explanation of each.

Notice that a transfer protocol is not the same as an error control protocol. Many transfer protocols include an error control protocol, but some do not. The transfer protocols that do not include error control are usually used with a modem that incorporates its own error control.

Readers are requested to advise the author of modifications and additions to file transfer protocols.

We will examine these protocols: ASCII, XMODEM Checksum, XMODEM CRC, Relaxed XMODEM, BIMODEM, IMODEM, JMODEM, KERMIT, LYNX, MODEM7, SEALINK, TELINK, WXMODEM, YMODEM, YMODEM-B, YMODEM-G, and ZMODEM.

Some references are included to the author's favorite terminal program, QMODEM, which includes many of these protocols, and provides for the use of others as separate programs called by QMODEM.

ASCII

ASCII stands for American Standard Code for Information Interchange. It consists of 128 7-bit codes (0 to 127) that represent the upper- and lower-case alphabetic characters, numbers, and control codes.

Most systems now support 8-bit ASCII with extended codes (128 to 255). While the first 127 are common among computers, many of the extended codes are not.

When ASCII mode is selected, XON/XOFF flow control should be enabled, if possible, at *both* ends.

When you select ASCII for the transfer method, be aware that line noise could make that nice looking documentation appear funny on the other end. Remember, this *is not* an error checking protocol.

After you have selected a file to upload, QMODEM will prompt you for the transfer option to be used. The options are: (1) Prompted, (2) Time delay, (3) No delay.

Each one has its advantages and disadvantages depending on what kind of computer you are talking to.

1. "Prompted" asks you for the character to look for before sending a line of data. The prompt character cannot be a space.

2. "Time delay" asks you to enter a number in hundredths of a second to wait, before sending a line of data.

3. "No delay" is exactly that: Send as fast as possible until it is all sent. (The author does not recommend this option.)

XMODEM

Ward Christensen

This is the oldest protocol, developed by Ward Christensen in the late 70s and was the first in public domain.

There are two methods currently used in public domain to compute the validity of data sent via XMODEM. They are the original "checksum", and the more sophisticated "CRC".

XMODEM Checksum

128 byte packets

The first method is called checksum. In checksum, the data block has all of the bytes added together and is then ANDed with the hexadecimal value "FF". Another way to look at this, is 128 bytes are added up by their ASCII value, divided by 256, and the remainder thrown away. While checksum is a pretty reliable method of insuring that the file you sent is correct, errors can creep in. The rate of error detection is somewhere near 99.6%. Packet number 1 is sent first, not number 0.

XMODEM CRC

The second method is 16-Bit error checking called CRC, short for Cyclic Redundancy Checking. This method has an error detection rate of 99.9969%. QMODEM looks for this mode before a transfer, and if it is not available, it will switch to checksum. Most communication software is intelligent enough to figure out which is being sent when you

download. If you select the wrong one, it will be corrected automatically.

Relaxed XMODEM

Relaxed XMODEM is nothing more than standard XMODEM with the timing relaxed by a factor of 10. In other words, it takes ten times longer for the error condition to be generated. CompuServe users will appreciate this. In fact, it was because of the way CompuServe handles XMODEM that this was created.

BIMODEM

Erik Labs

512 to 1024 byte packets

BIMODEM uses a 32-Bit CRC to detect transmission errors. It also allows for Batch transfers of more than one file along with time and date stamping. Like ZMODEM, this has many switches available, plus it has a customizing menu for paths and so on. A major feature of BIMODEM is its ability to do *full duplex* transfers. Yep: It can send two different files in two directions at the same time at 200cps or greater. Just released in December '88.

IMODEM

John Friel

128 byte packets

The IMODEM protocol was created by the Forbin Project. It was the first protocol to take advantage of modems that have internal error correction. A good example would be MNP. MNP protocol can be implemented on the hardware, usually inside your modem. When two modems connect using MNP, the modems do all the checking and retransmission necessary for a clean exchange.

You might ask yourself, "How does communication software take advantage of MNP?"

The modems are always verifying the data, so there are no errors in the transfer. IMODEM is a block oriented transfer method that uses no ACK or NAK in the XMODEM sense. Every block that goes out is guaranteed to get there the way it was sent, so IMODEM does not wait for the other computer to say if the block was correct or not. That is handled by the modems.

"But why does CTS have to be used?"

The CTS signal is used to temporarily halt the flow to the modem when an error occurs. If they didn't, most communication software would overflow the modem and lost data would result.

"What are the advantages of IM-ODEM?"

IMODEM showed an impressive 115 blocks a minute at 2400 baud. To put that in perspective, normal XMODEM (or XMODEM CRC) could only get about 88 blocks a minute at 2400 baud. Remember, to use IMODEM, the modems must have an internal protocol and CTS checking must be turned on.

JMODEM

Richard Johnson

128 to 8192 byte packets

JMODEM is a cross between XMODEM and ZMODEM. It will start out at 128-byte blocks, and work its way up to a maximum block size of 8192 bytes providing that there are no errors on the line. If there are arrors, it decreases the block size until recovery occurs. At 2400bps, I have seen 266 characters per second move across a 2400bps link. Released January 1989.

KERMIT

Frank de Cruz

1024 byte packets

KERMIT was developed at Columbia University under the guidance of Frank de Cruz and released into the public domain. It's a block, or packet, protocol and uses 7- or 8-bit transmission. The protocol is designed to convert the 8th bit when needed, and send it using a technique called "8th bit quoting" or "prefixing".

Some of the later versions of KERMIT include data compression, file attributes, and sliding windows. The sliding window adds full duplex mode to the protocol.

LYNX

Matthew Thomas

128 to 1024 byte packets

LYNX is based on the assumption that the connection between the two sites is capable of full-duplex transmission. LYNX will send a stream of data while simultaneously polling the receive buffer for any interruptions from the other end. On half duplex links, this will not work. But since almost all modems in use today are capable of full-duplex operation, this specification should not be a problem.

The reason that LYNX makes full use of full-duplex operations is to insure optimum transfer speed. When transmitting information, LYNX spends very little time waiting for the other end to respond. On certain occasions (after the file header is transmitted or after recovering from a line error) LYNX will wait for the other end to resynchronize. This handshaking is in the best interest of all parties because when errors occur, loss of sync is quite possible if the proper hand is not shaken.

LYNX dynamically adjusts packet size from 128 to 1024 bytes. (Actually, for the technically inquisitive users out there, LYNX will drop to a 64-byte packet if an error-prone situation becomes rampant.)

Run-length-limited (Is that what RLL stands for?) compression is applied to transmitted data. Obviously, if a packet's size can not be reduced by RLL encoding, it will be transmitted in its original form, however inefficient it may be.

LYNX can resume aborted, crashed, and hung-up file transfers. This is similar to DSZ's resume feature.

MODEM7

Ward Christensen

128 byte packets

This is a multiple file, block oriented protocol that sends a header before each file. This header information includes the file name, but not the file size, date, time, or attributes. This protocol will also look for CRC first, and if not found, will send checksum of file. It is particularly useful for file transfers with older BBSs and CP/M computers.

SEALINK

Thom Henderson

Sliding Window

SEALINK is a sliding window protocol, developed by Thom Henderson, which operates like and with XMODEM. Its main purpose is for calling other locations that are going through a satellite relay link or packet switched networks, and has the fastest turnaround time possible, with a 20% speed increase over XMODEM. SEALINK can send up to six 128-byte blocks before requiring an ACK.

TELINK

Tom Jennings

128 byte packets

TELINK, developed by Tom Jennings, is another variant of XMODEM. This protocol is similar to MODEM7, but adds the file size and creation date information to the file name header. It also allows multiple file transfers. TELINK is found mainly on FIDO BBS systems.

WXMODEM

Peter Boswell

Sliding Window

WXMODEM, developed by Peter Boswell, is also another variant of XMODEM. It is a full duplex sliding window protocol that allows the transmission of up to four XMODEM blocks before requiring and ACK from the other end. WXMODEM is especially useful over data networks such as Tymnet, Telenet, Datapac, and others because it is fully capable of handling network flow control and because the full duplex sliding window features reduces the turnaround time.

YMODEM

Chuck Forsberg

1024 byte packets

(true 1k XMODEM)

YMODEM is a modified version of XMODEM CRC developed by Chuck Forsberg. It allows sending 1024 byte blocks as opposed to XMODEM's 128 byte blocks. This is transparent to the end user. This transfers at approx. 122 blocks a minute at 2400 baud. This is also known as 1k XMODEM. Packet number 1 is sent first. [Compare YMODEM-B. — ed.]

YMODEM-B (batch)

YMODEM-B is the same as YMODEM, except that it allows multiple-file (batch) transfers. File names can

CONSTITUTION OF THE
NORTHERN CALIFORNIA PACKET ASSOCIATION

This document shall serve as the CONSTITUTION and BYLAWS of the Northern California Packet Association, and may be referred to as either.

ARTICLE I
Purpose

The Northern California Packet Association is an educational, research, and public service organization. The purpose of the Association is to foster the development of digital Amateur Radio communications in Northern California. This field is occupied foremost by individual Amateurs who, individually and in groups, make efforts to research, design, test, construct, operate, and use digital systems. These individuals and groups also make efforts to recruit and educate others in the field. All of these efforts can benefit from planning and coordination, and it is the purpose of the Association to provide the forum for such to take place. To achieve these goals the Association is organized to function as a working group, rather than as a social organization, and it shall, among other things, strive to do the following:

1. Improve the state of the art in the field of digital communications via Amateur Radio.

2. Encourage and educate interested persons and groups in the area of digital communications via Amateur Radio.

3. Encourage the construction, operation, and expansion of local, regional, national, and worldwide communications systems using digital methods via Amateur Radio.

4. Encourage the development of new and diverse methods of digital communications.

5. Bring together a cross-section of all the diverse interests in the field of Amateur Radio digital communications so all will have a voice and the opportunity to offer their knowledge, experience, talents, and goals to the benefit of the digital community.

6. Select frequencies for digital use, working with users and coordination groups for non-digital modes, with an aim to maximize the ability of the Amateur Radio Service to accomplish its purposes as set out in Federal Regulations.

7. Coordinate use of digital frequencies so that the goals of the digital community are best facilitated.

8. Represent the interests of the Northern California digital community in its contacts with others, such as regulatory bodies, coordination groups for non-digital modes, and digital coordination groups serving other geographical areas.

9. Perform all these activities in Northern California, plus in any contiguous areas if the digital users in those areas and the Association should so decide.

ARTICLE II
Members

A. Any individual or bona fide Amateur Radio club interested in the coordination of digital communications may become a Member upon making application and paying the dues. New memberships run from the time of joining until the first March 31 thereafter. Renewal memberships run from April 1 to March 31. Memberships automatically expire unless renewal dues are submitted. Membership may be denied or revoked for cause. "Cause" is defined as conduct by the Member inimical to the Association's interest, and shall include, among other things, the inability to work with others in carrying out the Association's purposes.

B. Each bona fide Amateur Radio club which joins the Association shall designate a person to act as their representative. A club may also designate an alternate to serve if its representative is absent. Such designations shall become effective when the Secretary is notified of them by the club, and they shall remain in effect until he is notified otherwise.

C. Each individual Member and each representative (or alternate) of each club which is a Member shall have one vote at General Meetings of the Association.

D. All records of the Association shall be open to the inspection of any Member, and any Member shall have the right to timely copies of such records at cost and in any reasonable format requested. Only information in the nature of access codes may be withheld from such a request.

E. Lists of names of Members, as well as other information provided by the Association from its records, shall be used only for internal matters concerning the Association or the digital community it serves. Such lists shall not be used for solicitation, by other associations, for publication, or for commercial purposes of any kind. The Board may in writing waive these restrictions in circumstances where they deem it appropriate.

F. Members may band together to form Special Interest Groups in cases where they share an interest in a specific aspect of digital communications. They may select individuals to represent their group before the Board and thereby achieve greater participation in the Association's activities. Such representatives shall not become voting members of the Board because of that status, but the Board shall make an effort to obtain and weigh their opinion before making decisions concerning the interests of the group.

ARTICLE III
Board of Directors

A. The Association shall be run by a **Board of Directors** (Board) which shall each year originally consist of seven individuals elected at the April General Meeting to serve for one year beginning May 1. The Board may at any time elect additional individuals to the Board in order to achieve a Board reflecting the diversity of interests in the digital community; however the maximum size of the Board shall be eleven members. These additional Board members shall, upon their election, have equal standing with the electing members and they shall have terms of office to expire at the same time as those of the electing Board. Each Board member must be an individual Member of the Association.

B. The Board shall manage the Association, and it shall perform other duties attributed to it by custom or law.

C. Board meetings shall be held in Northern California unless all Board members agree otherwise. Board meetings may be called by any three Board members. To have a Board meeting, each Board member must have been notified of it

or have waived the right to notice. Notice may be put in the mail, sent digitally, or phoned to each Board member at least 4 days before the meeting, or publication in the newsletter will suffice. Half of the Board members constitute a quorum to do business.

D. A majority of those voting on any matter is required for it to pass. *Exception*: An affirmative vote of two-thirds of the Board members is required to remove a Board member from that body or revoke a membership in the Association.

ARTICLE IV
Officers

A. Officers shall be appointed by the Board. Officers need not be Members of the Association, nor must they be members of the Board. The Officers shall carry out the day-to-day management of the affairs of the Association in accordance with direction given them by the Board.

B. The Association shall have five Officers with duties as follows:

1. The **President** shall run Association meetings. His primary function is to coordinate. He shall strive to get other people to do as much as possible and thus increase involvement by others.

2. The **Vice President** shall assist the President, and shall perform the President's work if the President is absent.

3. The **Secretary** shall keep the Association's records, except financial and property records. He shall keep minutes of meetings and issue Association correspondence.

4. The **Treasurer** shall handle the Association's money. He shall make reports on the Association's financial condition as needed. He shall keep an inventory of any materials owned by, or on loan to the Association.

5. The **Newsletter Editor** shall produce the Association's newsletter. The newsletter shall be sent to all Members of the Association, all Board members, all Officers, and all Appointees. It may be sent to others at the Editor's discretion. All notices of General Meetings and minutes of all General and Board Meetings shall be published in the newsletter. Newsletters giving notice of a General Meeting must be placed in the mail thirty days before the Meeting.

C. In addition to the duties specifically listed, each Officer shall have the duties attributed to his office by custom or law.

D. The Board may designate individuals or committees to assist in specific duties (**Appointees**). Technical committees, frequency coordinators, and the like are examples. The Board shall specify the extent of the authority of such Appointees in the motion appointing them.

E. Officers and Appointees serve at the pleasure of the Board, and the Board may remove such persons from their positions and/or redefine their authority at any time. The term of office of Officers and Appointees terminates on April 30 of each year.

ARTICLE V
General Meetings

A. A GENERAL MEETING shall be held, as far as practical, every April. Additional General Meetings may be held during the year upon being called by the Board, or upon petition of the members per paragraph C of this article. General Meetings shall always be in Northern California.

General Meetings shall be held only on Saturdays or Sundays, with a starting time no earlier than 10 a.m. The purpose of General Meetings is to provide a line of communications between the Board and Officers on one hand and the Members and members of the public on the other.

B. The final power in the Association rests with its Members; a vote by the Members prevails over a vote by the Board if they conflict. Any Member may bring any action up for a vote, but only if notice of the topic to be voted on has been published in the newsletter. The Editor shall include any notices of this type submitted to him by a Member.

C. Any fifteen Members may submit to the Secretary a petition calling a General Meeting. The petition shall state the date (at least 33 days hence), time, place, and topics to be discussed. The petitioners shall then within three days place a copy of the petition in the mail to all usual recipients of the newsletter. If the Secretary's office is vacant or he cannot be located in Northern California, delivery of the petition to another Officer or a Board Member shall suffice.

D. Items of business may be brought before a General Meeting by the Board of Directors without prior notice in the newsletter, but such notice is always required for actions at a General Meeting to amend this Constitution, to remove a Board member, or to revoke a membership in the Association.

E. Fifteen percent of the Members, but at least ten in number, must be present at a General Meeting to constitute a quorum, and a majority of those voting on a measure is required for it to pass. *Exception*: Two-thirds of those voting is needed to amend this Constitution, remove a Board member, or revoke a membership in the Association.

ARTICLE VI
Required Notice

If action to remove a Board member or revoke a membership in the Association is to occur, written notice must be put in the mail to the affected party at least 15 days beforehand, so that he can have his say at the General or Board Meeting where the vote is to be taken. Temporary actions of this type may be taken without notice in an emergency, but no final action may be taken without it.

ARTICLE VII
Amendments

Amendments may be made to this Constitution only by the Members (not by the Board of Directors). Proposed Amendments shall be set out in full in the newsletter preceding the General Meeting at which the vote is to be taken. The newsletter shall be put in the mail by first class mail to all Members at least thirty days before such meeting.

ARTICLE VIII
Implementation

This Constitution shall become effective on an interim basis, until the next General Meeting, when approved by the Board. It shall be submitted to the membership for approval at the next General Meeting, and it shall become effective upon their approval.

Ratified by vote of the general membership,
February 4, 1990

NCXPN General Meeting Minutes

Don Simon, NI6A

> NCXPN is a special interest group (SIG) of NCPA (Northern California Packet Association) dedicated to implementing solutions and augmenting AX.25 linking such as Net/Rom, BBS utilization, etc.

MINUTES: NORTHERN CALIFORNIA AX.25 PACKET NETWORK (NCXPN) MEETING March 24, 1990. Richmond Red Cross.

Host: EBPRA (East Bay Packet Radio Assn) and East Bay Amateur Radio Club (EBARC).

INTRODUCTIONS AND HANDOUTS

10:00 A.M.Coffee, Muffins, Fruit, Tea, informal Networking, and a tour and usage of the W6CUS EBARC radio station.

10:40 A.M. Meeting began with 34 persons present mostly consisting of BBS sysops and Net/Rom sysops from SJV, SCV, EBAY, SF, SAC, and Oregon ARRL Sections. Brief self introductions immediately followed.

A written agenda was passed out and additions to the agenda were accepted. Hand-outs by AL7IN detailed the NW DX Packet Cluster System, the Oregon/Washington and Borderlines VHF/UHF packet System, and the Oregon Packet Society. This last handout pointed out that in Oregon alone an average single port Net/Rom node costs around $555-$1350 per port without cavities and that the average single port BBS approximately $1250 to $3000 dollars. (Dual port systems cost considerably more, especially HF GateWay systems.) The NetWork dollar value of the linked Oregon AX.25 system approaches $100,000 and many thousands of man hours of installation and maintenance.

This very well-done hand-out points out to the reader, what it will cost to simply to keep providing the users the services that they have come to expect and some idea of what it will take to improve the network to meet the demand and expectations over the next couple of years by adding ports and upgrading to higher speed modems and radios capable of such speeds as well as providing reliable and redundant packet services for disaster communications. The hand-out concludes that users should support their local packet group if they wish to help pay their way on the network.

ORGANIZATION: KB6TKL NCXPN DIRECTOR

Discussion led by, Larry, wb9loz, as to what kind of structure NCXPN should undertake. It was agreed that it was not desired to be burdened by administrative duties, board meetings, constitution, newsletters, post office boxes, insurance, bank accounts, incorporation, formal membership, etc. The structure of the Northern California Sysops Association served as a model of an organization who targeted, funded, and implemented needed projects without a formal structure except dedication in making the NetWork more efficient (as the guiding rule). NCXPN as a SIG of NCPA could have space on the NCPA Newsletter if desired.

It was agreed that each NCXPN project have a PROJECT MANAGER who would solicit aid in the form of technical assistance, equipment, sites, funding, etc in order to facilitate such projects as/if needed. All project managers should make known to the packet community as a whole what projects they are working on in order to prevent wasteful duplication and also in order to better utilize the potential resources in order to expedite the common goal. All donation therefore should be earmarked to a specific project and given directly to that project manager. Should the NCXPN acquire any general funds, they will be put toward any projects that the NCXPN deems valuable at a general NCXPN meeting.

Phil Marcelis, KB6TKL @ K3MC, graciously agreed to act as NCXPN Director. The director's duties were defined as being to:

Act as the representative of NCXPN inbetween meetings in order to act as a contact point for NCXPN to help resolve conflicts and also to serve as the contact person with nearby X.25 networks in neighboring areas such as Southern California, Nevada, utah, Oregon, etc, in order to improve the network.

Keep members informed of issues and progress.

Ascertain progress on projects from project managers and to report such progress back to the membership.

Collects and distributes all relevant NCXPN information.

Arrange for the appropriate date and location of the next NCXPN meeting, keep an agenda, and inform the packet community in ample time of such.

Delegate all or any of the above.

It was suggested that the next meeting occur either in Sacramento or San Jose areas, but most favored the present location. The location will be decided by KB6TKL.

ARES/RACES PACKET UTILIZATION PROJECT COORDINATOR: WA6AEO

Brad unfortunately could not make this meeting, but being contacted afterwards wishes to continue to develop projects and provide coordination in projects in which AX.25 methods may be used during disaster and public service situations. Brad has been especially involved in the establishment of a procedure in which BBS can be tied together on 145.09 MHz given a large Northern California disaster and the loss of most nodes and/or digipeaters. Contact WA6AEO @ N6VV if you are working on an ARES/RACES packet project or have some ideas for one or wish to participate in the future.

BBS ALTERNATE PATH MANAGER: WB9LOZ

Larry, WB9LOZ, has been working with the BBS sysops to establish alternative paths during non-disaster situations when an essential node or path fails. There is an alternative route now to every forwarding BBS in NCXPN at this time in case of a failure of any node. Some of these paths are "sloppy" but work. Sysops, please send WB9LOZ @ W6PW all alternative paths to other BBS and on what frequencies and via what nodes if there are any changes.

HF ROUTE TO SOCAL AGAIN SOUGHT

K6RAU spoke about SOCAL VHF path problems via the KREG (N6VV-2), BULLION (K6RAU-3), and K6IYK-10 (Sometimes with WA6ODZ-4 (CAP) in the middle) Sierra Net. Traffic is getting through, but it is less than optimum mainly due to unreliableness the 200 mile plus path between Bullion and K6IYK-10 Various remedies are being attempted at WA6ODZ-4 to act as an intermediary.

The old coastal route is at the present almost useless. W8AKF has asked for a station on 30 M to establish a HF link to SOCAL again. Any one who can put up a decent antenna for 30 M and a station configured at the minimum as a dual port BBS, please send W8AKF @ W8AKF a message. Obviously we need a high speed and redundant (READ RELIABLE) backbone to the LA area. This has been a dream for nine years.

We can use site help in building some parallel UHF/VHF links to SOCAL. Anyone out there with resources such as sites, expertise, equipment? Contact Phil, kb6tkl, for coordination.

WHITE PAGES COORDINATION: WB9LOZ

Difficulties in the W0RLI BBS code were discussed regarding the White Pages (WP). It seems that any W0RLI BBS will take WP information set @ WD6CMU or W6PW and will not let them through. Only RE BBS and MSYS BBS will not trash this data. Thus WP data is only getting out to the Middle West but no WP data is coming back to update Northern California BBS. WB9LOZ has offered the service of updating Northern California BBS so that their users will be able to utilize the most recent WP data and will ask the cooperation of N6VV again to copy data to him. It was agreed at the NCXPN that all sysops present would like this data if Lew could arrange it for the Northern California Community. WB9LOZ will ask Lew again for his help to facilitate this service. If you are a sysop who wants the latest Northern California WP updates, contact WB9LOZ @ W6PW.

BBS COORDINATOR: SANCTION MANAGER: K6RAU

K6RAU will continue to sanction and coordinate new BBS or BBS frequency shifts as he has been doing since AA4RE passed on the job 6 months ago. Fred has established a fair and effective procedure in which to accomplish this task involving the approval of any existing BBS on the user frequency, the agreement of a GateWay forwarding NCXPN BBS to forward to the new BBS, and other various criteria. All BBS sanctions will conform to the NCPA packet utilization bandplan. All those planning a packet BBS change in frequency or a new BBS, please contact K6RAU @ K6RAU and he will do all he can to accommodate everyone.

WO6Y, Solano County, is currently down for good. There was an apparent conflict with the DXSPN on 145.77. K6RAU will contact N6VV to establish possible replacement frequency. Problems like this can be worked out through NCXPN, but K6RAU must be informed of any problems.

FREQUENCY COORDINATOR: AA4RE

Roy, AA4RE, was unable to attend, but will continue in his role of obtaining new packet frequencies for BBS and Net/Rom usage. While K6RAU coordinates what

BBS will occupy already coordinated BBS packet frequencies. AA4RE is the one coordinating new packet frequencies and their usage. The Bay Area is still experiencing extreme congestion on 2 meters and new frequencies are being considered, but much congestion can be solved through education and better organization. Projects that can increase the spectrum utilization are and will continue to be tasked with NCXPN support. NCPA publishes the current packet bandplan and they are available on most BBS as well.

EDUCATION MANAGER: WB9LOZ

No one has heard from W6ZRJ who graciously volunteered at the last meeting to help with education. WB9LOZ has been doing MUCH NEEDED education bulletins on behalf of NCPA for the past two months and even previously. He will continue to do so. MUCH OF THE CONGESTION, MISGUIDED DISTRIBUTION DESIGNATORS, EXTRA SYSOP FATIGUE, AND OTHER PROBLEMS CAN BE ATTRIBUTED TO EDUCATION PROBLEMS. Larry is doing a tremendous job on may fronts. Let's help him please in sending out instructive, non-emotional, and positive educational bulletins where we see problems being repeated. There are many topics that need addressing. Larry is also keeping a list of possible Packet Speakers for your area. If you are interested in being a packet speaker or need a speaker for your local area, send Larry a message @ W6PW.

NTS Packet Manager: KA6ETB

Unfortunately, Steve, KA6ETB could not make the meeting, although he wishes to continue in that spot. He has done tremendous amount of quality work in the past and will act as NCXPN NTS Manager. Steve Maintains the NTS zipcode routing data base and coordinates the NTS packet manager at all NTS packet BBS. K7VA, packet NTS manager at WA6RDH, spoke briefly about NTS and packet and illustrated a recent problem that some Solano County traffic is being stuck at N6VV BBS and not forwarded. It was agreed that the Standard Operating Procedure should problems arise with misrouted or stagnant NTS traffic (more than two days on any BBS), that KA6ETB @ N6LDL be contacted and a description of the problem communicated. KA6ETB will then either contact the sysop involved who may have a forward file set incorrectly or check his own NTS zipcode data base to determine the most efficacious solution. K6RAU mentioned that there was an ARRL NTS/PACKET conference regarding packet and health and welfare traffic to occur soon in New MExico and that W6ZRJ was to present the NCPA position paper. No one else knew of such a meeting nor any NCPA position despite there being four NCPA board members at the meeting. Concern was voiced that such meetings and positions be undertaken in the open in the future so as to give BBS sysops a chance to participate in the decision making process (especially HF GateWay BBS sysops). Subsequently, it was found that such a meeting was planned (but unannounced) for the following weekend at W6ZRJ's house to plan the NCPA policy statement.

HIGH SPEED LINKING

KA6FUB had agreed to be coordinator of the high speed linking move, but could not make the Saturday meeting. As most know, we will most likely be asked to vacate our 220 backbone system shortly because of the recent refusal of the FCC to be held accountable (and our inability to make them so) to the public service sector and congress. Our initial move to the 430 MHz band may have to be at 1200 baud unless we can agree on a workable scheme of high speed modems and radios. If you are working on any high speed modems that can be affordably adapted to amateur radio, if you are working on direct

FM radios or wide band rf decks capable of handling high speed data, or have any resources (technical, hardware, or funding) to share, please send the information to Dennis, who will keep track of the various projects going on in this regard and will attempt to plug those together who may be working on specific parallel systems. It was agreed at the NCXPN meeting that the issues of junk bulletins, congestion, limited distributions, competition, could all be greatly reduced if we could put in place a network which would be able to handle the additional quantity without further degradation. It was recognized that most of present problems would be solved by faster and smarter hardware, but in the meanwhile we are forced with temporary solutions. WE NEED TO BUILD THE HIGH SPEED NETWORK. SEND HELP TO KA6FUB @ KA6FUB.

9600 BAUD FAX MODEM PROJECT MANAGER: WD6CMU

Each technical high speed project will require specific attention. Eric, WD6CMU, has agreed to take on investigation of the 9600 baud FAX modem adaptation to amateur packet radio. Preliminary reports say that this QAM modem will occupy a normal FM voice bandwidth and does not require a true FM radio. Its' effective throughput is reported to be at about eight times that of 1200 baud systems. The 9600 baud FAX chip is relatively inexpensive having been heavily mass produced. Some software work may be needed to make this chip adaptable but its outlooks look promising. Our thanks to Eric who has agreed to take on this experiment. Any one out there with info or help, please contact Eric, WD6CMU @ WD6CMU.

DUPLEX DIGIPEATING AND LAN TOPOLOGY:WB6RQN

Brian Lloyd, WB6RQN, recently moved to the Bay Area from Maryland and who was active on the East Coast side of the first East/West WormHole, spoke immediately before lunch on building a full duplex digipeater, LAN topology, and network development. Brian is an excellent speaker and had much good and well presented ideas. A very short synopsis; Most transmitters on packet are over deviating. Set the drive from your TNC to your transmitter at 2.8 KHz. Duplex Digipeating prevents the hidden node problem and is an effective LAN manager, low level nodes are more effective than high level nodes, users should be assigned packet frequencies to avoid hidden node problems, etc. Space will not allow us to detail Brian's very entertaining and educational talk, but one may pick up June 1988 "73" Magazine for more details on the Duplex Digipeater idea.

Some opposition to Brian's ideas were voiced, mainly being that California's topography of hills and valleys necessitates the use of high level nodes and makes the problem of hidden nodes more complex than in commercial telephone systems or flat-land Eastern and Mid-Western regions where geographical location is more closely correlated to rf propagation characteristics. The problem of how to assign hams to certain frequencies also promised to be burdensome in an area such as Northern California. In any case, there is great need to trouble shoot the present network and take in new ideas where ever they are practical and this debate hopefully will continue. Brian also is available as a speaker for local clubs. Contact WB9LOZ @ W6PW for further info on speakers.

Forty minutes were taken for lunch as the Pizza arrived at around 1 P.M.

NCXPN GUIDELINES: STANDARDS MANAGER: KE6LW

After lunch, we focused on "JUNK BULLETINS". It was acknowledged that one man's junk was another man's medicine and vis versa. We acknowledged that such a declaration of "JUNK" ultimately reflects a sort of censorship, a value judgement on someone's part, but judgement is necessary because of today's congested network. It was agreed that certain types of bulletins should be clearly disallowed such as criminal activities, clear violations of FCC rules, bulletins that are false, commercial, ostensibly misleading, etc. But what about bulletins that are in the "grey" area? Who decides?

The following was agreed upon:

KE6LW will write up guidelines, which will detail on the very clear areas of what is "good operating standards" for any bbs sysop. These will be merely guidelines and all NCXPN sysops are free to carry whatever they chose to on their BBS for their users. There will be no attempt to tell a sysop what he should carry except to remind sysops of that for the sake of network decongestion we would like to discourage BBS DXing so we hope that local BBS will carry most of the same bulletins thus preventing extra loading on the link frequencies. KE6LW will periodically solicit new guideline material and send out proposals. Proposals will be voted upon at NCXPN Meetings. We hope we can avoid any accusations of arbitrary censorship by having most of us subscribe to some sort of NCXPN Guidelines and/or Network Standards. We would request all gateway BBS to at least forward all such type of traffic as meets the NCXPN standards to their served LAN. If the gateway BBS chooses to kill the bulletin afterwards for his own user, that remains his/her own prerogative.

Since the high speed network has not yet been implemented, we have congestion both on HF and on the backbone. The further removal congestion was accomplished by eliminating the @ USA distribution. This was brought about by most HF networks not willing to support @ USA. It thus leaves Northern California without a general all USA bulletin distribution designator. Oregon, Southern California, and most of the rest of the US has this ability. It seems that Northern California is one of the very few areas that cannot handle it. After much discussion, it was decided that if WW6L or any other BBS is willing to handle the @ USA distribution to Southern California or elsewhere outside of Northern California and that it does not collapse the backbone, then such is desirable. It was noted that in years past, we did support such type designators and that Northern California is now being isolated in a unique way from the rest of the US packet world.

After discussion it was voted that all NCXPN sysops hold and not forward bulletins older than 10 days using this automatic feature in the init.mb file of W0RLI's latest BBS (11.9) code. WW6L will talk with N6VV to see how to reactivate @ USA or effect a better plan. It is understood that N6VV will not forward @ USA on HF and such is not being requested.

Better sysop education files for users on all BBS and more educational bulletins would also help.

To avoid nuisance listings and nuisance readings of bulletins, it was suggested that all users send their bulletins with a descriptive title. KE6LW will attempt to determine what the NCXPN recommended "TO" fields should be in order to help users find relevant bulletins in specific subjects. It was recommended that "TO 4SALE" not be used because of possible zipcode wildcard routing con-

NCXPN Meeting
Continued from previous page

fusions and that for sale items be sent SB "SALE". Other categories will help under true conferencing BBS software arrives. Suggested BBS guidelines would include a beginner sysop manual explaining how the bbs forwarding system works in NCXPN, how to handle zip-code forwarding and NTS traffic, what bulletin designators are supported, etc. Send any suggestion items to KE6LW @ KE6LW.

NET/ROM NODE PARAMETER COORDINATOR: WA6JCW

Much spectrum inefficiency can be caused through poor parameters set at NET/ROM nodes, thus education for NET/ROM sysops is valuable. Furthermore, optimum parameters at one site may not be optimum at another location given different conditions. For instance depending on where your NET/ROM node is located, the minimum node quality may have to be set higher in order to reduce the node list to a manageable level and to utilize the spectrum more efficiently.

Running the BPQ switch is also an area where many are not experienced and the optimization of such parameters involves in most cases education. To the end of efficiency, the NCXPN, NET/ROM parameter coordinator, WA6JCW, will attempt to collect input from NET/ROM sysops and BPQ switch sysops and then share this information with the rest of us. No attempt will be made to "dictate" to anyone what to do, but we will attempt to create a forum to alleviate congestion in a responsible manner and will make this information available to others. Share your problems and solutions with Bob, WA6JCW @ KG6XX.

HF PACKET BBS COORDINATOR: N6VV

It is inefficient sending outgoing HF traffic to one HF BBS gateway only for that some BBS to send it back out on the backbone for the second time to another BBS HF gateway thereby doubling the congestion originally caused. Since not all HF gateways are on the backbone efficient coordination is necessary to prevent needless congestion, loops, and delayed message forwarding. This has been done in the past by N6VV and the LAN gateway BBS on the backbone. However outlets change, For instance, it was learned at the NCXPN meeting that forwarding North-West traffic to N6IYA who in turn forwards to W0RLI near Portland may be futile at this time because W0RLI bbs lacks connectivity into the rest of the North West Network. So in the meanwhile until this situation clears up, send Washington, BS, and Oregon traffic to N6VV. N6EEG HF gateway is undergoing technical problems and new software is to be installed shortly.

STRAYS

If you are running MSYS on HF, you will have to raise the TXtail because TXD in kiss mode is baud dependent and thus at 300 BAUD it is too fast for practical packet use. Version 1.07 of MSYS 1.07 allows you to set the txtail. K3MC says that the next version of the KISS code will solve this problem. Are there other parameters as well that are BAUD dependent?

PACCOMM is marketing their 9600 BAUD modems but preliminary tests show that through put will be less than 200% that of 1200 BAUD.

EOT

File Transfer Protocols
Continued from page 11

be unique or contain the standard global file name variables (* or ?).

YMODEM-B starts with its first packet labeled number 0 instead of number 1. This packet contains the file name, file size, and time and date stamp for the file being transferred. Each file is sent in sequential order. After the last actual file is transmitted, YMODEM-B sends another packet number 0 with a blank file name to tell the receiving end that the transfer is complete.

YMODEM-G

YMODEM-G is a combination of YMODEM and IMODEM. YMODEM block specifications apply and IMODEM error checking is used. This means that the modems *must* have an internal method of error checking and the CTS and RTS signals must be used. This is like YMODEM with MNP error control.

NOTE: Do not use YMODEM-G or IMODEM if you do not have such a modem!

YMODEM-G (batch)

This is the same as YMODEM-G, above, but allows multiple files to be sent, like YMODEM-B.

ZMODEM

Chuck Forsberg

512 byte packets (Once in SYNC, 1024 is realized!)

ZMODEM uses a 32-Bit CRC to detect transmission errors. It also allows for batch transfers of more than one file along with time and date stamping. Unlike XMODEM and YMODEM,

ZMODEM *does not* wait for the receiver to acknowledge receipt of an error free packet. Rather, it continues sending until the receiver sends a "packet NAK", which causes the sender to re-send that one bad packet. This lack of "turn-around" time delay, is what greatly speeds up ZMODEM transfers.

Another great item that makes this so good is its "crash recovery" capability. Say you're moving a 300k file, and you are 104k into the file, and the phone line goes down. No problem! Just call back the system you were communicating with, and ask for the same file! If the remote site is keeping a DSZ.LOG file, it will know what happened, check what has been sent so far, and then continue with the transfer. The "-r" switch must be used for this to work, and it should be noted that this only works on registered copies.

ZMODEM is an external protocol that is loaded through programs such as QMODEM, and as long as your PC has the standard 8259 interrupt chip on the mother board, it will work. This works like YMODEM, with a 30% speed increase over YMODEM, and only requires you to input the FILE NAME.EXT you want at the senders end; and then will take care of the transfer control at both ends.

New features: As of the March '89 version, data compression is built into ZMODEM for even faster transfers using the "-Z" switch. It should be noted that only ASCII files will be compressed in this way; any file with a .ARC, .ZIP, .EXE, .COM, or .ZOO extension will not! Also, a (169)P(170) switch has been added to show the type of UART that is in use. Once again, this only works on registered copies.

EOT

The Northern California Packet Association is forming a speaker's bureau of people who are knowledgeable in various aspects of digital communications. Subjects will range from basic packet station set up to using the node network and bulletin boards to emergency communications and TCP/IP. Speakers in the bureau would be available to clubs and other organizations to talk about their particular area of expertise. If you would like to participate in this speaker's bureau program, please contact Larry Kenney, WB9LOZ, either by packet message @ W6PW BBS or by calling him at (415) 821-2666 in San Francisco.

73, Larry

NCPA Board Meeting Minutes

Minutes of NCPA Board Meeting June 4, 1989

The Board of Directors meeting of the Northern California Packet Society (NCPA) convened at 1000 PST on August 27, 1989. Present at the meeting were the following individuals:

WA8DZP WD6CMU AA4RE WB9LOZ K9AT K3MC N6VV WB6ZVW N6OYU AA6ER K6RAU WA6AEO

All board members except W6GO were in attendance. The board members are:

N6VV WD6CMU WA8DZP W6GO K3MC AA6ER AA4RE

Proposed Agenda

Lew, N6VV NCPA President, proposed the following agenda for the meeting:

1. Future of NCPA Newsletter
2. New FCC Part 97 effects on NCPA actions
3. NCPA Committee Reports
4. NCPA plans for Pacificon
5. NARCC meeting coverage by NCPA
6. Discussion of NCPA proposed constitution
7. Old NCPA business
8. Next NCPA General Meeting date

Board Actions

Old Business

1. The ATV issue letter written by AA4RE was sent to N6VV and WA6AEO for review. No further action on this matter has been taken since the last board meeting. N6VV performed some transmission tests on 433 with 35 watts from Mt. Diablo during Field Day and found that there was no interference to ATV. The letter is to be sent after it is reviewed.

2. N6VV contacted Pete Eaton regarding the TAPR 9600 bps modems.and there status. He was informed that 100 units have been built to date and that there are 200-300 beta test applications in hand already. NCPA stands a good chance in getting several when they are ready. Lew told Pete of our request for units which would operate on 430 MHz and was told that this would be considered for future models.

3. There was no action on the 900 MHz action item from the last board meeting. Brad WA6AEO was directed to contact the NARCC 900 MHz coordinator to determine their plans for 904 & 916 MHZ. NCPA would like to see 2 MHz wide channels at those frequencies.

New Business

1. Bill K9AT discussed his proposed new constitution for NCPA. A number of amendments to his proposal was approved by the board, which include the following:

- The definition of Northern California was left open for the time being.

- Membership records will be kept by the Secretary

- Term of the Board will begin May 1

- There will be at least one general meeting in April of each year an others as called by the BofD.

- There will be 30 days advance notice for any general meeting.

- Membership expires before the April general meeting.

- New members will get all of the back-issues for that year of the NCPA Download

The board adopted the constitution as modified until it can be ratified at the next general meeting. A copy of the revised draft will be available at the next board meeting.

2. Tony KI6HH, the newsletter editor was not present. The board voted to not fund another newsletter until the future of the newsletter has been discussed with Tony by the board. Lew N6VV will put out a bulletin which will list the correct the correct address for NCPA. The address used in the membership application was incorrect.

3. NCPA will sponsor three session at Pacificon and also have an exhibit booth. Lew N6VV will take over the Pacificon coordination duties from Dewayne WA8DZP who will be attending the ARRL Computer Networking Conference which is the same time as Pacificon.

4. The board voted to reassign two frequencies in the 2M band plan: 145.71 - TAPR High Speed 145.73 - Experimental This move was made to allow greater separation between the TAPR High Speed channel and the existing TCP/IP channel at 145.75.

5. The board voted to recognize Doug N6OYU and Bob K6RTV as the NORCAL TCP/IP Coordinators. Bob handles the Sacramento area and Doug the rest of the NORCAL area.

6. The next board meeting was set for December 3rd at 10:00.

Action Items

1. ATV Position letter is to be reviewed and sent.

2. N6VV is to issue a bulletin listing the correct mailing address for NCPA.

3. Brad WA6AEO is to contact the NARCC 900 MHz coordinator and review their band plan.

Committee Reports

Technical Committee - Mike Chepponis K3MC

The Technical Committee has spent considerable time getting the "Awesome I/O card" interface to the point that commercial development can commence. We expect availability in late October or November. With this card, the proper hardware and networking software, our LAN problems should be banished! No significant progress has been made on the DSY 56KB modems. A paper for the 8th ARRL Computer Networking Conference outlines plans by several member of the Technical Committee on how to structure a high-speed network in NORCAL.

NTS Committee - Steve Harding KA6ETB

The NTS packet information has been updated. I have attempted to send out this new information via bulletins, but there is a lot of info for that type of distribution. Instead, I have recently announced via a bulletin that I will mail a diskette to all BBSs requesting the new info. Please send your current mailing address to me @ WB6ASR if you are interested. New ZIP files have been distributed. We have a new outlet into the Fremont area which has been a "black hole" for NTS traffic on all nets. Also included is new routing for NTS traffic into Canada and the Great Plains states. Other errors have also been corrected. If you have not done so, please make these changes as soon as you can. I have recently

published a handbook for NTS operators. Hopefully, the book contains all a new operator needs to know to "get up to speed" with NTS traffic. The book covers packet as well as the CW and voice nets. I made a presentation on NTS at the September meeting of the Pacific Packet Radio Society (PPRS) and plan to give an NTS presentation at Pacificon in October.

Minutes of NCPA Board Meeting December 3, 1989

The Board of Directors meeting of the Northern California Packet Society (NCPA) convened at 1000 PST on December 3, 1989. Present at the meeting were the following individuals:

WA8DZP AA4RE N6LDL W8GEC KB5IC WD9BIV WA6JCW WG6H WW6L WD6CMU K3MC AA6ER KA6ETB N6VV K6RAU W6ZRJ

All board members except W6GO were in attendance. The board members are:

N6VV WD6CMU WA8DZP W6GO K3MC AA6ER AA4RE

Proposed Agenda

Lew, N6VV NCPA President, proposed the following agenda for the meeting:

1. Old NCPA business
2. NCPA Committee Reports
3. Future of NCPA Newsletter
4. Future of NCPA
5. Next NCPA General Meeting date

Board Actions

Old Business

1. Dewayne WA8DZP reported that as of the board meeting, NCPA had 159 paid members.

2. Eric WD6CMU reported that the current balance in the NCPA account was $886.30.

3. The letter on the ATV issue was not sent. Roy AA4RE promised to take care of the matter for sure this time.

4. Lew N6VV reported on NCPA activities at Pacificon in October. We signed up 42 new members there and all of the NCPA sponsored sessions were well attended. NCPA put on a session which called "Introduction to Packet Radio" which was presented by N6VV. There was also a panel session called "Future of Amateur Packet Radio" with several NCPA members acting as panel members. NCPA also sponsored a talk given by Glenn Elmore W6GN called " The Use of 10 GHz for 1 MB Amateur Packet Radio" and had a booth in the exhibit area.

5. Brad WA6AEO, the NCPA Frequency Coordinator, was not present at the meeting. It was reported that there was no NCPA representation at the NARCC meeting in October.

6. Bill K9AT has not completed the approved draft of the new NCPA constitution so it could not be ratified by the board at this meeting.

New Business

1. Jay W6GO submitted his resignation from the board. He proposed that Bill WG6H serve the remainder of his term. The board approved this proposal.

NCPA General Meeting Minutes

Dewayne Hendricks, WA8DZP

Minutes of Northern California Packet Association General Meeting - February 4, 1990

The annual general meeting of the NCPA was held at the Contra Costa Water District Bldg. in Concord at 1200. The following business of the association was transacted:

1. Lew Jenkins N6VV made an opening statement concerning the history and goals of the NCPA. He also described what happened at the earlier meeting that day of the BBS Sysop Group (now known as the Northern California X.25 Packet Network). The NCXPN is to continue to be an active organization to build packet radio networks under the NCPA umbrella. He then proposed a new role for the NCPA which would make it a global coordinating body for all packet radio organizations in Northern CA. NCPA mission would now just be coordination (frequency and BBS) and education and to act as an umbrella organization for the various packet groups such as NCXPN and DXPSN, etc.

2. The proposed NCPA constitution which had been previously ratified by the board was approved by the membership with only one opposing vote. Copies of the new constitution are available from the NCPA Secretary.

3. A new board of directors was elected. They are as follows:

Mike Bothe KB6OWT

Eric Williams WD6CMU (Vice President)

Steve Harding KA6ETB

Dewayne Hendricks WA8DZP (Secretary)

Bob Sanders WA6JCW

Bob Gobrick WA6ERB (Treasurer)

Chris Marley N6RAL (Temporary President)

4. Patrick Mulrooney N6QMY was appointed to the board by a vote of the new board of directors. It was also agreed to keep one board seat open for a representative of the DX Packet Spotting Network (DXPSN).

5. Mike Chepponis K3MC agreed to be Newsletter Editor. Assisting him will be Eric Williams WD6CMU and Glenn Tenney AA6ER.

6. Roy Engehausen AA4RE will continue as NCPA Frequency Coordinator and Fred Silveira K6RAU will continue as BBS Coordinator until the NCXPN decides otherwise.

7. Doug Thom N6OYU and Bob Meyer K6RTV will continue as TCP/IP Address Coordinators.

8. It was voted to allocate 223.42 as a general use LAN channel. It had previously been used for a link to SOCAL and is now used in SBAY.

9. A motion was passed to have Lew Jenkins N6VV decided who should be allocated use of 145.77 and 145.71. He is to decide if the DXPSN should stay where they are on 145.77 or move to 145.71 after talking to all parties concerned.

10. Larry Kenney WB9LOZ agreed to take over the role of Education Coordinator.

11. The new Board of Directors agreed to meet as soon as possible in order to determine the organization's new role.

EOT

NCPA Board Meetings
Continued from previous page

2. Tony Ki6HH was removed from the position of NCPA Newsletter Editor. Bob Knapp WW6L was elected to that position to replace Tony. Bob intends to put out a newsletter sometime in January.

3. The board decided to replace Brad Watson WA6AEO as NCPA Frequency Coordinator. Roy AA4RE was charged with the task of finding a new coordinator. Roy will assume those duties until a replacement is found. Fred Silveira K6RAU will assume BBS coordination duties.

4. Andy Seybold W8GEC reported on "Project Notify" by Notify Inc. which was setup recently to develop a mechanism to pass H&W traffic via Compuserve, etc. to amateur packet radio outlets. Notify, Inc. is backed by IBM, Apple and other commercial organizations. Andy asked NCPA to look into it to see if it could be involved with the effort.

5. Roy AA4RE was put in charge of a new NTS Task Force. The intention of the task force will be to make recommendations to the ARRL as to how to better handle H&W NTS traffic via packet radio. Other members of the task force are Steve KA6ETB and Doc W6ZRJ.

6. Whither NCPA? Three board members expressed their attentions to resign from the board if no progress is made in finding new volunteers to perform the needed work of the organization. Those board members were Lew N6VV, Dewayne WA8DZP and Mike K3MC. After some discussion, they decided to stay on until the next general meeting.

7. The next NCPA General Meeting was set for February 4, 1990. The place will be determined by Lew N6VV and will be published in the next newsletter.

Action Items

1. Lew N6VV will find a place for the general meeting and notify Bob WW6L so that it can be published in the next newsletter.

2. Roy AA4RE will send out the ATV letter.

3. Roy AA4RE will find a new Freq. Coordinator.

4. Bob WW6L will coordinate getting out a newsletter by January.

Minutes of NCPA Board Meeting March 11, 1990

The Board of Directors meeting of the Northern California Packet Society (NCPA) convened at 1000 PST on March 11, 1990. The following board members were not present:

Bob Gobrick WA6ERB Mike Bothe KB6OWT

For a complete list of current NCPA Board Members, see the NCPA Resource List.

Old Business

1. Larry WB9LOZ reported on an action item from the NCPA General Meeting concerning the use of 145.71 and 145.77. It was decided that 5.71 will now have whatever traffic was on 5.73. 5.73 is a BBS frequency and 5.77 is a DXPSN frequency. WO6Y will remain on 5.77 as a BBS liaison.

New Business

1. Larry WB9LOZ was voted in as a board member. Larry's task will be to develop a plan for NCPA to offer educational services to the NORCAL packet community.

2. There was discussion on the need to have someone who could act as a frequency coordinator to assist the current acting Frequency Coordinator, Roy AA4RE. This person would attend the NARCC meetings as NCPA's representative as Roy is unable to attend NARCC meetings himself. There was no resolution of this item, so it was tabled for further discussion at the next board meeting.

3. The board voted after some discussion to recommend to the NCXPN that they continue to handle BBS coordination with LAN's for the time being.

4. After some discussion, the board decided not to make any recommendations at this time on the formation of a Health & Welfare Committee. NCPA will make a decision on this issue when the emergency community decides on their requirments in the future.

5. The board accepted the invitation of the Pacificon '90 Planning Committee to provide speakers and a booth at this years Pacificon in October. Dewayne WA8DZP will contact the Pacificon people and inform them of NCPA's decision and will act as NCPA's liason to Pacificon. Larry WB9LOZ will look into the possibility of having a series of NCPA sponsered seminars on packet radio which could run concurrently with Pacifion. Larry will report back to the board at the next meeting with a plan for the seminars. Larry also offered to keep a list of volunteer speakers who would be available to talk at radio clubs, etc. on various topics pertaining to packet radio.

6. The board voted to keep Eric WD6CMU on as NCPA Treasurer until there could be a transfer of signature authority over to Bob WA6ERB.

7. The board directed Dewayne WA8DZP to send a letter to the DXPSN to request that they provide a person who could be their representative on the NCPA board.

8. Roy AA4RE is building an NCPA packet database. Eric WD6CMU was directed by the board to report back at the next meeting on the progress of this project.

9. The board directed the NCPA Newsletter Editor Mike K3MC to have the next edition of the newsletter out to the membership by May 1st. Future editions will follow on a quarterly basis. The board decided that all current members of NCPA would have their term of membership extended until April, 1991. This decision was made to make up for the fact that NCPA has only put out one newsletter during the last year.

10. The Sacto TCP/IP group requested that the board make a modification in the NCPA Band Plan for 144.93 to show their existing use of that frequency. The current plan lists this frequency as BBS only. The board voted to make the change as requested. Bob K6RTV also presented the board with a proposal on network planning for NORCAL. The board decided to take the plan under advisment and directed Dewayne WA8DZP to send a letter to Bob to that effect.

11. The board decided that their next meeting will be at 10:00 on May 6th. The meeting will be held somewhere in Concord. A notice will be posted ahead of that date with a correct time and place. Anyone is welcome to attend the meeting.

EOT

Where toFind a BBS

KJ6FY-1	Benicia	144.93
WB6JJI	Tres Pinos	144.93
KA6LRR	Hayward	144.93
KI6YK	Danville	144.93
WD6CMU	Richmond	144.97
N6EEG	Berkeley	144.97
W6FGC-2	Twain Harte	144.97
KB6GOZ	Petaluma	144.97
N6LDL	Los Gatos	144.97
WB6MIF	Magalia	144.97
KI6WE	Pleasant Hill	144.97
KD6XZ-1	Sacramento	144.97, 441.50
AA4RE-1	Gilroy	144.99
KB6DUI	Boulder Creek	144.99
WW6L	Piedmont	144.99
N6MPW	Ben Lomond	144.99
N6OA	Lemoore	144.99
W6PW-3	San Francisco	144.99
N6VV	Pleasant Hill	144.99, 441.50
WA6RDH	Dixon	145.01
KI6EH	Santa Cruz	145.07
N6IIU-1	Palo Alto	145.07
KE6LW-1	Yuba City	145.07
WB6V	Ceres	145.07
KG6XX-1	Carmichael	145.07, 441.50
N6ECP	Redding	145.09
KB6IRS	Soquel	145.09
N6IYA-2	Felton	145.09
K3MC	Fremont	145.09
WA6NWE-1	North Highlands	145.09, 441.50
K6RAU-1	Merced	145.09
WA6YHJ-1	Livermore	145.09
KB5IC	San Jose	145.73
KA6JLT-2	Menlo Park	145.73
WO6Y	Fairfield	145.77
KA6FUB	Martinez	145.79
WB6ODZ-1	Lake Isabella	145.79
KB6OWT-1	Sunnyvale	145.79
N6QMY-1	Fremont	145.79

The Band Plan

144MHz

144.91	keyboard-to-keyboard
144.93	LAN[1]
144.95	DX Spotting Network
144.97	LAN
144.99	LAN
145.01	keyboard-to-keyboard
145.03	keyboard-to-keyboard
145.05	keyboard-to-keyboard
145.07	LAN
145.09	LAN
145.71	9600 baud TAPR compatible
145.73	LAN
145.75	TCP/IP
145.77	DX Spotting Network[2]
145.79	LAN
146.58	DX Spotting Network

220 MHz

223.42	node uplink (SBAY)
223.52	node uplink (NBAY)
223.54	node uplink (EBAY)
223.56	keyboard-to-keyboard
223.58	node uplink ("Other")
223.60	node uplink (SACVAL)

430 MHz

100KHz-wide channels

433.05	TCP/IP
433.15	NET/ROM backbone
433.25	DXPSN backbone

20KHz-wide channels

443.31	backbone
443.33	backbone
433.35	backbone
433.37	backbone
433.39	backbone
433.41	LAN interlink
433.43	digital experimental
433.45	digital experimental & backbone
433.47	NET/ROM interlink, keyboard
433.49	TCP/IP
441.50	all

[1] 144.93 is used by TCP/IP in the Sacramento area.

[2] WO6Y remains on 145.77 as DXPSN/BBS liason.

PPRS is meeting again!

Since October 17th last year, the Pacific Packet Radio Society (PPRS) has been unable to use our traditional meeting place. Some offices at Ampex were damaged by the Loma Prieta earthquake forcing them to use their cafeteria as a substitute office. The cafeteria is finally available to us so that we can meet there as we have for many years.

Beginning May 1st, the PPRS will once again be meeting the first Tuesday evening of every month at the Ampex cafeteria from 7:30 until 10:00 p.m. The Ampex cafeteria is located at 411 Broadway, Redwood City, California.

The PPRS is a group dedicated to users of packet radio. Drop in at one of our monthly meetings, ask questions, get answers, and listen to our guest speakers. Some meetings feature demonstrations, newcomer sessions, and technical sessions. We sometimes even have door prizes, but you have to be there to have a chance to win.

Glenn, AA6ER

President of PPRS

(415) 574-3420 or aa6cr@k3mc

What is NCPA?

NCPA, the Northern California Packet Association, is an organization formed to foster the Digital Communications modes of Amateur Radio. So far, we have defined our goals as:

- **Education**
- **Coordination**

Education means making information available about various Digital modes, and this newsletter is but one part of that education process.

Coordination activities include frequency coordination (NCPA is recognized by NARCC as the official packet radio frequency coordinator) as well as coordinating people and their various uses of packet radio, be they DX Cluster, BBS, TCP/IP, keyboard-to-keyboard, NET/ROM, Traffic/NTS, Emergency uses of packet, or even experimenting with new frontiers of various digital modes.

We in NCPA believe that the next revolution in Ham Radio will come about in Digital Communications Technology, and in the beneficial coordination among all users of ham Digital Communications Technologies.

We invite you to join NCPA! Become part of the most dynamic group of packet folks in Northern California!

NCPA *Downlink*

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