

**The Official Journal of the Northern California Packet Association
Serving Amateur Radio Digital Communications in Northern California**

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President's Message

Gary Mitchell, WB6YRU

The NCPA will have its annual meeting at Pacificon again. Note: this year Pacificon will be in San Ramon, not Concord. (The details are in the box on the first page.) As usual, there is a fee for Pacificon itself, but you don't have to pay anything to attend the NCPA meeting.

This will be the meeting when we'll vote on the new bylaws. As many of you know, this came about because of reduced participation and the inability to obtain a quorum at most meetings recently. Technically, this prevents us from doing much of anything, including electing directors.

On that last point, the terms of the currently listed directors have expired. So, legally, the board (if you can still call it that) can't work on the band plans, decide channel usage, nor do anything else.

Effectively, this means the organization

is currently semi-comatose. Short of a sudden increase in participation, this change to the organization is the only thing I can think of that will get us operating again. Until then, dealing with this problem is about the only thing we can do. So, this is important.

If we don't get a quorum *this* time, we'll have to mail out ballots. In that case, an affirmative reply from 2/3 of the full membership would be required. Failing that, we'd become completely dormant until participation perks up again.

The latest revision of the proposed bylaws appears in this issue. Not a lot has changed from the draft published last time. Mostly, the changes are just a few minor fix-ups and wording changes to improve clarity.

Also added was a preamble. I just thought it might be a good idea to give a little background and mention basically what the deal is with these changes.

If anyone has any comments, suggested changes, or nitpicks, please get them to me soon. It's possible we could alter something during the meeting, before the

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vote, but it would be better to have the whole thing settled before then.



NCPA Annual Meeting

The NCPA will have its annual meeting at 10 AM, Saturday, October 18, at Pacificon '03. This year, Pacificon will be at the Marriott hotel in San Ramon. We'll be in Suite 157. Suite 157 is in the first floor guest hallway, beyond the health club.

From Highway 680 in San Ramon, exit east on Bollinger Canyon Road. Take the first left onto Sunset, then left again onto Bishop Drive. The Hotel is on the left at 2600 Bishop Drive. See www.pacificon.org for info about Pacificon.

News from the ARRL

From *The ARRL Letter*, August 8, 2003

LEAGUE DOCUMENTS DIGITAL MODES

With a new Web page on digital mode

specifications, ARRL hopes to make answering the question "Is that mode legal?" a lot easier.

Until 1995, the only permissible digital modes under Part 97 rules were RTTY and modes that used ASCII codes. On November 1 of that year, the FCC--acting on an ARRL petition--agreed to allow the

use of any digital mode, providing its technical characteristics were "publicly documented"--§97.309(a)(4)--and the HF digital mode explosion began in earnest.

To make finding technical specifications for existing and emerging digital modes more convenient, ARRL now provides technical documentation for many modes now in use on its "§97.309(a)(4) Technical Descriptions" page <<http://www.arrl.org/FandES/field/regulations/techchar/>>.

"We needed a better place to find whether a technique has been published," said ARRL Technical Relations Manager Paul Rinaldo, W4RI, in explaining the move to make the information more readily available. "A place on the Web seemed to be the best way of letting the amateur community know that a technique is published as well as providing an accurate technical description of what it is."

The documentation is adequate to recognize the technique or protocol when observed on the air, to determine the call signs of stations in communication and to read the content of their transmissions. The page currently contains technical descriptions of CLOVER, CLOVER-2000, G-TOR, PACTOR, PACTOR-II and PSK31. Volunteers are developing documentation for MT63, PACTOR-III, MFSK-16 and Q15X25 for later addition.

The ARRL invites help from designers, manufacturers, users and user groups to fill in the gaps for additional modes. Send information or inquiries to ARRL Technical Relations Manager Paul Rinaldo, W4RI <w4ri@arrl.org>.



Using Part 15 Wireless Ethernet Devices For Amateur Radio

Background:

In 1989 Al Broscius, N3FCT suggested the use of Part 15 Spread Spectrum wireless ethernet devices that were

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The digital band plan as well as other information about the NCPA, are available on the Web at: <http://www.n0ary.org/ncpa>

The NCPA Board of Directors meets electronically in order to transact association business and meet with members and interested amateurs. The address for the board remailer is: ncpa@kkn.net. Anyone can subscribe by sending e-mail to ncpa-request@kkn.net with the command "subscribe" (without the quotes) in the body of the message.

becoming available for amateur packet radio use.

There are numerous manufactures of these devices. They operate on the shared 900 MHz, 2.4 and 5.7 GHz bands with speeds between 1.5 and 11 Mbps.

In early 1997 TAPR began development of a 1 watt, 128 Kbps 900 MHz FHSS radio, suggesting this is the future for amateur packet radio.

In late 1999 the FCC relaxed Amateur Spread Spectrum rules. Allowing any commercially available Part 15 SS device to be reclassified under Part 97. (Prior only certain spreading codes where allowed) Part 97.311- current Amateur spread spectrum rules

Today:

We know it is possible for unlicensed Part 15 devices to obtain omnidirectional ranges up to about 5 miles and directional ranges up to about 17 miles using high gain antennas.

We should also realize that greater

communication ranges are possible (if necessary) by reclassifying these devices under Part 97. We are then allowed to modify them using pre-amps, RF amplifiers and high gain antennas. Then by placing a central routing node in the middle of town on top a tall building/tower or hill, they can serve as a inexpensive high speed alternative to existing packet radio systems.

True, some urban areas may be very infested with Part 15 devices already. But you have 3 bands to choose from, and you shouldn't have any problems if you use FHSS, with one watt amplifiers before your antenna polarized the opposite of everyone else.

My Experiences:

I have experimented with Proxim's Symphony 1.6 Mbps Frequency Hopping Spread Spectrum 2.4 GHz network card. It was only \$130 and as a Part 15 device coupled with an old 24 dB MMDS 2.5 GHz partial screen parabolic antenna (previously used for receiving rural wireless cable) you could easily obtain ranges up to 6 miles line of sight.

(See *High Speed Amateur Packet Radio Using Part 15 Wireless Ethernet Devices*
<http://www.qsl.net/kb9mwr/projects/wireless/plan.html>)

Low Cost Wireless Network How-To-our abundance of documented, experiences, work and research (which includes homebrew bi-directional amplifier designs and path-loss calculators)

Re-classifying:

All commercially available Spread Spectrum Wireless Ethernet Devices are suitable for Amateur Use. However there are 3 things you may need to pay attention to when re-classifying.

- 1.) *You need to identify your station every 10 minutes by transmitting your callsign in ASCII or by some other method that is publicly documented.*

I suggest having a script send out a ping every 10 minutes with your call sign embedded in it.

DX Spotting Nodes

September 2002

<u>Location</u>	<u>Call</u>	<u>Alias</u>	<u>Frequency</u>	<u>Coverage</u>
California City	K6ZZ		144.490	Antelope Valley area
	EARN8		144.490	Oak Peak
Castro Valley	W6RGG	DXCV	145.770	East, West, South SF Bay area
	K6EL	DXC	145.670	Chico
	K6EL	DXW	145.670	Oroville, Red Bluff
Hanford	K6EL	DX	144.950	South Fork Mtn - Redding area
	K6UR	DXFRES	144.950	Bear Mtn, Fresno area
	K6UR	DX7	145.770	Mt. Adelaide, Bakersfield
	K6UR	DX16	145.770	Oakhurst
Livermore	NF6S	DXL	145.770	Tri-Valley area
Los Gatos	N6ST	DXLG	146.580	Santa Cruz Mtns, Monterey Bay
	N6ST	DXF	146.580	Santa Cruz/Los Gatos
Oakdale	K6OQ		146.580	Modesto area
Penngrove	K6ANP	DXANP	145.670	Sonoma County
Reno, Nevada	N7TR	RENODX	144.950, 146.58, 441.500	(2400 baud), 51.7
	N7TR	PCDX1	146.580	Low Level in Reno
	N7TR	PCDX	144.950	Virginia City, NV
	N7TR	DX2400	441.500	(2400 baud)
Rio Linda	K6NP	DXRL	144.950	Sacramento, Woodland, Davis

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2.) You will need to keep your operations within the 2400-2450 MHz amateur overlap if you plan to re-classify under Part 97.

This is only an issue on the 2.4 GHz band with FHSS, all other bands have full overlap & DSSS systems can be set by user for center freq below 2.45.

Order your Symphony directly from Proxim and send a copy of your license and they will program your card's country code to that of Australia, shifting operation in the 2400-2445 section.

3.) If you need to amplify your signal over 1 watt PEP you will need to incorporate automatic transmitter power control.

You may need to buy a expensive commercial amplifier (such as Teletronics Bi-directional SmartAmp) to accomplish this.

If you're like me and are seeking a

simple way to build a high speed, affordable, RF network, where you mimic the internet and have web pages, conferencing, FTP and so on, I encourage you to look into this technology and use it. If you use this technology and would like to share your experiences, or if you have questions, you may contact me.

Steve, KB9MWR



Legal Q&A regarding Ethernet over amateur radio

Q Are we allowed to reclassify a part 15 device for amateur use?

A Equipment that has been certified for use in another service may be used on amateur frequencies by a licensed amateur as long as it meets all appropriate standards. (97.315)

Q Since wireless ethernet cards use a

tcp/ip variant digital protocol to communicate is this legal?

A Any digital code may be used as long as the technical characteristics are publicly documented. To further this, if commercial products are available that facilitate the transmission and reception of the communications incorporating these codes they are considered to be "specified." Therefore wireless ethernet is legitimate. Even if it were not publicly documented such as a homebrew protocol it would be classified as an unspecified digital code which is also permitted under [97.309(a)].

Q If we re-classify these wireless ethernet cards under Part 97, how do we legally ID?

A Careful review of 97.119(3) shows that identification for data emissions may be made by transmitting your call sign using a specified digital code [see 97.309 (3) & (4)] such as ASCII, or you may ID by some other method that is publicly documented. I suggest embedding your call sign in a ping packet to be sent out every 10 minutes. Another method to embed your call sign within the ethernet datagram is to configure your call sign as part of your network name. Your call sign will at least be encapsulated inside an ethernet frame. This is perfectly acceptable and reasonable since the technical characteristics of wireless ethernet are publicly documented. The rules no longer really specify how you must ID. Anyone with a sniffer on the link will be able to see your call sign.

Q Is streaming/transferring MP3's or other types of music over a wireless amateur data link permitted?

A The music prohibition concerns the playing of music itself on the air. So there is no problem here. Please refer to the famous "trading of MIDI synthesizer commands over the air" example.

Q Are there any speed and or bandwidth constraints for data that we need to pay attention to?

A The maximum data speeds and bandwidths are:
 50.1 - 148 MHz 19.6 kb 20 kHz
 222 - 450 MHz 56 kb 100 kHz
 Above 902 MHz No limits
 [97.307(f)(1)]

Packet Sysops of Northern California Packet Bulletin Board Systems January 2003

Call -----	Location -----	User Ports -----
WH6IO	Benica	144.99, 145.71&+, 145.75&, 433.43&+
WA6ZTY	Berkeley	144.97
KE6I	Berkeley	145.01&, 433.43&
N6RME-1	Diamond Springs	145.07
N6CKV	Gilroy	144.99
N6LDL	Los Gatos	144.97, 145.71&, 441.50
KD6DG	Redding	145.09
W6CUS-1	Richmond	145.63
N0ARY-1	San Jose	144.93, 433.37&
K6YV	Sonora	144.97
WA6EWV-1	South Lake Tahoe	144.97
W6YX-9*	Stanford Univ	* 145.75+
W6SF	Stockton	144.99

Keys:

- & = 9600 Baud Port
- + = TCPIP Port
- * = Currently Inactive

Q *Wouldn't accessing a manufacturer's web site over an amateur data link violate 'no commercial' activity rules of ham radio?*

A I see no reason that this would violate Part 97. In fact, since the rules now allow you to conduct commercial transactions (as long as they are only for your own private use), presumably you could even buy radio equipment on line from a manufacturer's website, as long as you instigated the transaction, not the store. I can't think of why this is any different than the famous "buying a pizza with an autopatch" case that was specifically decided by the FCC a number of years ago.

Q *Is there something about doing this via the Internet that would make it fundamentally different than doing it via*

an autopatch?

A As an amateur (part 97) internet data link, only hams would be allowed to legally use it. I see no reason why someone else in your family (a third party) couldn't view web info over an amateur data link. As long as the responsible licensed amateur is supervising the operation (locally or remotely).

Q *How would you limit access (to this repeater) to just hams?*

A All DSSS and FHSS systems have some sort of user settable security ID, which restricts what equipment talks to what. Also you can implement common TCP/IP tricks (firewalling, or whatever) for further security.

Q *As a Part 97 network we can't encrypt*

our network can we? What about eavesdroppers (people running sniffers) grabbing our passwords?

A This probably isn't much of an issue for a private network, but I can see it being an issue when porting traffic over the internet. Keep in mind how the FCC rules are stated: "An amateur station shall not intentionally obscure the meaning ..." Encrypting just login & password strings doesn't obscure the meaning does it? Also using encryption can be classified as an "unspecified" digital code, which is permitted as long as you provide public documentation for it. Which can be fulfilled by posting your encryption key on your internet webpage, for example.

Steve Lampereur KB9MWR

NCPA

The Bylaw re-write of 2003

The following is the proposed amended bylaws resulting in the NCPA changing into a committee. For the most part, this draft is very similar to what appeared in the previous *Downlink*. There are a few minor changes and a preamble was added. Comments and suggestions are encouraged. This version may be modified before the final vote is taken.

The goal is to lighten the work load on those very few who are doing all the work and to make it easier for the organization to function during the increasing inability to obtain a quorum.

Deleted text is in ~~strike out type~~, added text is in *italic type*.

CONSTITUTION OF THE NORTHERN CALIFORNIA PACKET ASSOCIATION

This document shall serve as the CONSTITUTION and BYLAWS of the Northern California Packet Association, (*NCPA*), a *non-profit organization*, and may be referred to as either.

PREAMBLE

The Northern California Packet Association was originally formed in the late 1980's to function as a "round-table" organization for the various Amateur Radio packet special interest groups in the region. With the increasing popularity of Amateur Radio packet at the time, the Association quickly became a general membership organization.

Apparently due to competition from the internet, interest and participation in Amateur Radio packet started to wane in the late 1990's. Eventually, participation in the Association dropped to a level where it became necessary to revise these Bylaws in order to enable the Association to continue functioning efficiently. In 2003, it was decided to change the Association from a general membership organization into a committee structure, resembling its original format. In doing so, the main concern was to retain the open and democratic nature of the organization.

ARTICLE I Purpose

The Northern California Packet Association is ~~an educational, research, and public service organization~~ a *committee of packet special interest groups and others involved in Amateur Radio digital communications*. The purpose of the Association is to foster the development of digital Amateur Radio communications in Northern California (*approximately the top two-thirds of the state*). 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 *through both general band planning and defining specific activities on digital channels. General band planning efforts include* 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 of the digital users in those areas and as the Association should so decide.

ARTICLE II Members

{Note: Paragraph A is split into two paragraphs, A and B; the rest are re-lettered accordingly}

A. Any individual or bona fide Amateur Radio club *or group involved in digital communications, band planning, or interested in* the coordination of digital communications may become a Member upon making application and paying the dues. *The Association shall make every effort to include at least one representative from each known digital special interest group within the Association's territory. If there is no representative for a particular digital special interest group or no one from that group wishes to participate, the Association is not required to operate as if it has a vacant seat, nor will this affect the achievement of a quorum.*

B. Memberships run from the time of joining until the same date the following year. 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.

C. Each bona fide Amateur Radio club *or group* 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 *or group*, and they shall remain in effect until ~~he~~ *the Secretary* is notified otherwise.

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

E. 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 *or passwords* may be withheld from such a request.

F. 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.~~ *This restriction may be waived upon two-thirds vote, but each Member retains the right to disallow their name to be included in any such distribution.*

{Note: The original paragraph F is split into two paragraphs, G and H}

G. Amateur radio operators 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 *in the Association* ~~before the Board~~.

H. *Secondary Members. Individuals merely interested in digital communications may join in a secondary capacity and thereby achieve greater participation in the Association's activities. ~~Such representatives~~ Secondary members may ~~shall not become~~ have voting rights nor count towards a quorum, ~~members of the Board because of that status~~, but the ~~Board~~ Association shall make every ~~an~~ effort to obtain and fairly weigh their opinion before making decisions concerning the interests of the group. Secondary Members are not necessarily subject to the Member duties, rights, and provisions mentioned elsewhere in these Bylaws. Secondary Members may not be required to pay dues unless they cause the Association to incur some costs related to their participation (such as receiving the newsletter).*

I. *Dues shall not be excessively more than that reasonably needed to keep the Association solvent. The Membership may vote to waive dues in some cases, including but not limited to instances in which the paying of dues is a significant impediment to the participation of a recognized digital special interest group.*

ARTICLE III Committee Structure Board of Directors

A. ~~The Association shall be run by a Board of Directors (Board) as a committee which, at a minimum, shall each year originally consist of seven individuals representatives from each of the various recognized digital special interests in the Association's territory. For purposes of achieving a quorum, if any such group chooses not to participate, the Association may proceed as if that group doesn't exist. elected at the Annual General Meeting and have a term of one year. 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.~~

~~B C. Board Meetings shall be held in Northern California unless all Board at least two-thirds of the 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, as per Article VI, 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 representing digital special interests (one each) shall constitute a quorum to do business.~~

~~C D. The Board Association may elect to meet electronically (e.g. internet remailer) so long as all Directors and Officers Members who wish to participate have approximately equal access. Such meetings may occur often and deal with single issues as they come up. As far as is practical, every effort must be made to make such meetings as open and accessible as face-to-face meetings.~~

~~E. 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. {Note: This matter is addressed below.}~~

~~E. If the number of voting members ever consists of fewer than three, the Association shall be considered dormant, in which case the remaining members should make a good-faith effort to fill the vacant seats with reasonable candidates. If this dormancy lasts for ninety days or more, each member may have their membership expiration frozen as of the date the Association went dormant.~~

ARTICLE IV Officers

A. ~~Officers shall be appointed by the Board elected by the membership. 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 membership Board.~~

B. ~~The Association shall have five the following 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~~ *Membership* may designate individuals or committees to assist in specific duties (Appointees). Technical committees, frequency coordinators, *web-master*, *newsletter editor*, and the like are examples. The ~~Board~~ *Membership* 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~~ *Membership*, and the ~~Board~~ *Membership* may ~~remove~~ *dismiss* such persons from their positions and/or redefine their authority at any time. The ~~default~~ term of office of Officers and Appointees ~~terminates on April 30 of each year~~ is one year, *or as specified by the Membership*.

ARTICLE V General Meetings

A. ~~There shall be at least one General Meeting held each year. An Annual General Meeting shall be held once per year, the time and date to be announced in the newsletter or by separate written notice, as per Article VI, at least 30 days in advance. 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 *In person (face-to-face)* 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. ~~Meetings may be held on-line (electronically) or in any other similar non face-to-face format so long as each attendee has approximately equal access.~~

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~~ *three* Members may submit to the Secretary a petition calling a ~~General~~ Meeting. The petition shall state the date (at least thirty ~~three days~~ *33* 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 is not available~~, 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.~~

Items of business may be brought before a Meeting without prior notice; however, thirty days prior notice is required for actions to amend this Constitution or to revoke a membership in the Association.

E. Fifteen percent of the Membership, but at least ~~ten in number~~ *half of the members representing recognized digital special interest groups (one each)*, must be present at a ~~General~~ Meeting to constitute a quorum. ~~and a~~ *A* majority of the Members ~~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.

F. ~~Members who are unable to attend a Meeting, but wish to vote on any issue, may submit their proxy to the Secretary. The Secretary must have possession of all such proxies prior to the vote.~~

G. ~~If a vote is pending and there is no quorum, the Secretary shall solicit the votes of the Membership in a timely manner, (acceptable methods include, but are not limited to mail, e-mail, telephone, packet, fax, etc.). If all current members have been so notified and have had a reasonable opportunity to vote, that constitutes a quorum.~~

ARTICLE VI Required Notice

A. Notice of Meetings must be sent to all Members by newsletter or other notification, including but not limited to: mail, e-mail, telephone, packet, fax, etc. thirty days before the Meeting. If the newsletter is published on-line (i.e. available as a web page on the internet), it is considered to be "sent" once it is available on the internet. However, to assure that the Members will see on-line notices of meetings, notification shall be sent within three days, by a reasonably sure and quick method, including but not limited to: e-mail, telephone, fax, etc., advising them that the on-line newsletter or notice has been updated with new important information. New Members shall be informed as to the web address (URL) of any on-line newsletter or notice, current Members may also be re-notified from time to time.

B. If action to remove a Board Member or revoke a membership in from the Association is to occur, written notice must be put in the mail to the affected party at least ~~15~~ fifteen 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 or similar notice preceding the ~~General~~ Meeting at which the vote is to be taken. The newsletter or similar notice to all Members shall be given as per Article VI ~~put in the mail by first class mail~~ at least thirty days before such meeting.

ARTICLE VIII Implementation

This Constitution shall become effective *and will supersede all previous versions* ~~on an interim basis, until the next General Meeting, when approved by the Board Membership at the 2003 Annual Meeting. It shall be submitted to the membership for approval at the next General Meeting, and it shall become effective upon their approval.~~

Digital Channel Allocations for Northern California

N C P A

April 2003

50 MHz

50.60-50.80 (20 kHz channels, non-specific at this time)
51.12 SCA backbone
51.14 BBS
51.16 Keyboard to Keyboard
51.18 Experimental
51.62 TCP/IP, 9600 baud
51.64-51.68 (20 kHz channels, non-specific at this time)

NOTE: On this band adjacent channel interference is harder to overcome for repeaters. NARCC requests that any new six meter permanent packet installations (such as nodes) please check with their six meter coordinator. You don't need to get a formal coordination, but they would like to be aware of your station and have an opportunity to check for possible conflicts first.

144 MHz

144.31 BBS
144.33 Balloon & experimental
144.35 Keyboard to Keyboard
144.37 BBS LAN forwarding
144.39 APRS (U.S. and Canada)
144.41 Duplex, lower half (145.61 upper half, 1.2 MHz split)
144.43 TCP/IP (OK to run duplex with 145.65)
144.91 Keyboard to Keyboard (and EOC)
144.93 BBS
144.95 DX Spotting
144.97 BBS
144.99 BBS
145.01 User access
145.03 Keyboard to Keyboard
145.05 Keyboard to Keyboard
145.07 BBS
145.09 BBS
145.61 duplex, upper half (144.41 lower half)

145.63 BBS
145.65 TCP/IP 9600 bps (OK to run duplex with 144.43)
145.67 DX Spotting
145.69 BBS
145.71 9600 bps
145.73 BBS
145.75 TCP/IP
145.77 DX Spotting
146.58 DX Spotting

NOTE: Allocations from 144.31 through 144.43 are relatively close to the weak-signal sub-band—please watch your FM deviation.

220 MHz

219.05-219.95 100 kHz channels, Backbone
223.54 LAN
223.56 LAN
223.58 LAN, Gilroy (GARLIC)
223.60 LAN, Sacramento Valley (SACVAL)
223.62 LAN, South Bay (SBAY)
223.64 TCP/IP
223.66 Keyboard to Keyboard
223.68 DX Spotting Backbone
223.70 LAN, Monterey Bay & North Coast (MRYBAY)
223.72 LAN, North Bay (NBAY)
223.74 Backbone, DX Spotting

NOTES:

- 219 channels are by coordination only. There are currently political problems with using 219-220, making them unavailable in most of northern CA.
- On 223.58, TCP/IP interlink (Sacramento) is secondary, not to interfere with node uplink.

440 MHz

431.45 / 434.85 Duplex (100 kHz)
431.55 / 434.95 Duplex (100 kHz)
431.65 / 438.40 Duplex (100 kHz)
431.85 / 438.60 Duplex (100 kHz)
431.95 / 438.70 Duplex (100 kHz)
433.05 TCP/IP backbone (100 kHz)
433.15 BBS backbone (100 kHz)
433.25 DX Spotting backbone (100 kHz)
433.33 Experimental (60 kHz)
433.37 BBS, 9600 baud
433.39 DX Spotting
433.41 BBS LAN
433.43 9600 baud TCP/IP
433.45 BBS LAN
433.47 Keyboard Interlink
433.49 TCP/IP
433.51 Keyboard to Keyboard
433.53 Keyboard to Keyboard (and EOC)

433.55 BBS LAN
441.50 Any digital

900 MHz

903.500 1 MHz wide, TCP/IP
904.500 1 MHz wide, TCP/IP
915.500 1 MHz wide, experimental
916.100 200 kHz wide, experimental
916.300 200 kHz wide, experimental
916.500 200 kHz wide, experimental
916.650 100 kHz wide, experimental
916.750 100 kHz wide, experimental
916.810 20 kHz wide, experimental
916.830 20 kHz wide, experimental
916.850 20 kHz wide, experimental
916.870 20 kHz wide, experimental
916.890 20 kHz wide, experimental
916.910 20 kHz wide, experimental
916.930 20 kHz wide, experimental
916.950 20 kHz wide, experimental
916.970 20 kHz wide, experimental
916.990 20 kHz wide, LAN links (Contra Costa County only)

NOTE: 900 MHz activity is on a non-interference basis to vehicle locator service. This sub-band is not considered suitable for omnidirectional systems. Use for point-to-point links only.

1296 MHz

1248.500 1 MHz wide, experimental *
1249.000-1249.450 Unchannelized, experimental
1249.500 100 kHz wide, experimental
1249.600 100 kHz wide, experimental
1249.700 100 kHz wide, experimental *
1249.800 100 kHz wide, experimental*
1249.870 20 kHz wide, experimental
1249.890 20 kHz wide, DX Packet Spotting
1249.910 20 kHz wide, experimental*
1249.930 20 kHz wide, experimental*
1249.950 20 kHz wide, experimental*
1249.970 20 kHz wide, experimental*
1249.990 20 kHz wide, experimental*
1250.500 1 MHz wide, experimental
1251.500 1 MHz wide, experimental
1297.000-1298.000 Unchannelized, experimental
1298.500 1 MHz wide, experimental*
1299.000-1299.450 Unchannelized, experimental
1299.500 100 kHz wide, experimental
1299.600 100 kHz wide, experimental
1299.700 100 kHz wide, experimental*
1299.800 100 kHz wide, experimental*
1299.870 20 kHz wide, BBS LAN
1299.890 20 kHz wide, DX Packet Spotting
1299.910 20 kHz wide, BBS LAN

1299.930 20 kHz wide, experimental*
1299.950 20 kHz wide, experimental*
1299.970 20 kHz wide, experimental*
1299.990 20 kHz wide, experimental*

* Full duplex channel pairs at 50 MHz separation, example:
1249.910 ↔ 1299.910

Definitions

9600 BPS Stations using 9600 baud with direct FSK (G3RUH, TAPR, etc.) modems.

Backbone No uncoordinated stations. These channels are for specific purposes as defined by the NCPA and/or affiliated groups. These are frequencies where the various BBS, nodes, and networks forward traffic and are very high volume channels. Please use the normal user entry points of the network you want to access rather than these channels.

BBS These frequencies are for user access to a full-service BBS. Keyboard-to-keyboard is tolerated. Please don't put high level nodes or digipeaters on these channels since they are local. A low-level direct link or node that links into a backbone on another frequency is the proper implementation.

Duplex Simultaneous transmit and receive by a single station, including digital repeaters. Duplex channels are intended for high-volume applications. 9600 baud or higher is encouraged, but not required at this time.

DX Spotting Northern California DX packet spotting network. No other activity should be on these channels.

EOC Emergency Operations Center Any group participating in or set up for emergency communications in support of appropriate government agencies.

Experimental Anything goes except full service BBS or any 24 Hr/Day services (nodes, gateways, etc). This is where you can test new gear, programs, etc. These channels may be reassigned in the near future, so no permanent activities please.

Forwarding same as *backbone*

Keyboard to Keyboard Primarily chat channels. These are also the primary emergency channels, including EOC usage. No continuous high-volume activity such as full service BBS, DX Spotting, and TCP/IP servers.

Interlink same as *backbone*

LAN Local Area Network. BBS's are grouped into LAN's for

more efficient forwarding. A LAN frequency is the forwarding channel within a LAN and to the backbone. Please do not attempt to access the BBS network on these channels.

Personal mailbox/mailedrop A BBS-like system, often running entirely within a TNC, with a small number of users that handles information of a personal, local or special-purpose nature. A mailbox is allowed on keyboard-to-keyboard channels ONLY if it does not forward with other BBSs. Mailboxes may forward with full-service BBSs on LAN channels at the discretion of the BBS SYSOP.

TCP/IP Stations using TCP/IP protocol on top of AX.25. Some AX.25 tolerated to communicate to TCP/IP stations if a compatible p-persistence access method used.

User Access User access to a network. This is for the next generation of packet which is expected to operate like the internet. Users would access such a network on these frequencies. The load on these channels may be rather high, like BBS channels. The activity may be any combination of BBS, keyboard, TCP/IP, or other modes.

Procedure for changes

Send requests for changes to either the frequency coordinator or the NCPA board. The frequency coordinator will then present the request to the board along with suggested assignments. The NCPA board, elected by you, the packet user, makes all assignments.

Misc. Info.

Packet tends to splatter if the deviation is set too high. Please keep your deviation to less than 5 kHz.

Except for the 219-220 MHz segment, the NCPA currently does not coordinate individual stations, nodes, etc. leaving that to the special interest groups. BBS station coordination is done by the PSNC in Northern CA. DX spotting is coordinated by DXPSN. Some digital has been coordinated on auxiliary channels by NARCC.

The NCPA board conducts most of its meeting activity electronically by internet e-mail remailer, ncpa@kkn.net. As with face-to-face board meetings, interested persons are welcome. For more information about the remailer send email to

ncpa-request@kkn.net with just the command HELP in the message body, nothing in the subject, and an email message will be sent to you. Subscribe by using the command SUBSCRIBE in the message body. Subscribing to the remailer is like attending a continuous NCPA board meeting. One must subscribe before posting messages.

Northern California Packet Association

The NCPA fosters digital communications modes of amateur radio through education, band planning, and acts as an umbrella organization for various packet special interest groups. Your annual dues helps pay for this newsletter and other educational materials activities. If you might be interested in getting more involved, please let us know.

Call: _____ Home BBS: _____ e-mail: _____

Name: _____ Address: _____

City: _____ State: _____ Zip + 4: _____ Phone: _____

- New Membership Renewal Change of Address I'm an ARRL Member
 One year: \$10 Two Years: \$20 Three years: \$30
(make checks payable to NCPA)

Please indicate your area(s) of interest:

- BBS SysOp BBS User APRS NET/ROM TCP/IP High-speed packet
 DX Packet Spotting Network Keyboard to Keyboard FCC/legal issues Other:

NCPA *Downlink*
Northern California Packet Association
PO BOX K
Sunnyvale CA 94087

First Class