

# W5YI

Nation's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

Telephone: (817) 461-6443

Fred Maia, W5YI, Editor, P.O. Box 565101, Dallas, TX 75356-5101

### ★ In This Issue ★

*New Ham Message Forwarding Rules  
Complete Text of Report & Order  
Code Speed Reduction Denied  
FCC Monitoring In Washington State  
New Zealand Now a CEPT Member  
NARA Proposal for Instant Licensing  
January VE Program Statistics  
February Amateur Licensing Figures  
Amateur Radio Callsigns to April 1st  
ARRL Report on Vanity Callsigns  
Hearing Held on 2.4 GHz Reallocation  
Untangling the Internet Web  
N2JWQ 's Online Repeater Database  
...and much, much more!*

Vol. 16, Issue #9

\$1.50

PUBLISHED TWICE A MONTH

May 1, 1994

## FCC Amends Amateur Packet Message Forwarding Rules

The FCC has relaxed the amateur service rules to enable modern packet radio message forwarding systems to operate at hundreds of characters per second while retaining safeguards to prevent misuse.

This proceeding got its start more than three years ago during the Persian Gulf War when the FCC's Norfolk field office sent violation notices to eleven east coast amateurs. The citations were issued due to a single message that was posted by a Pennsylvania amateur on a packet bulletin board. The message addressed to @USA (all U.S. amateur stations) publicized a 900 number to call to register opposition to the war in Iraq.

The message mentioned a New York City organization known as the "Coalition to Stop U.S. Intervention in the Middle East." One report had it that callers to the 1-900-44-NO WAR number were assessed a \$10.00 charge. A formal complaint was filed with the FCC by another amateur who believed this to be a prohibited business message.

But, instead of issuing a citation against just the message originator, the FCC additionally sent violation notices to the packet (digipeating) stations that unknowingly retransmitted the notice. The point the FCC wanted to get across was that - under rules then in effect - amateurs may not retransmit prohibited communications.

The amateur high-speed message forwarding system is a network of digipeating packet radio stations participating in a voluntary, cooperative,

interactive arrangement. Traffic from the control operator of an originating station are transmitted to one or more destination stations via forwarding stations, most of which are automatically controlled. If the message is not for a receiving station, it is re-transmitted (digipeated) further on down the line. The addressee information is contained in the message header.

Almost instant pandemonium overran the amateur community once word got out regarding the FCC violation notices! Hams would now have to review all messages racing through their automatic relay stations since they were also being held accountable for the violative communications passing through them. Up until this point, amateurs believed that message originators were solely the accountable party. Many feared it would bring down the high-speed amateur packet radio system.

The FCC pointed out that there is no central supervisory authority in the amateur digital network which makes these unsupervised systems easy targets for misuse by uncooperative operators and non-licensees. Moreover, the Commission said that it could be difficult to establish after the fact that a particular VHF station originated a high speed digital transmission. For these reasons, the Commission said there must be on-going oversight of the system and the control operators of the first forwarding stations are in the best position to provide such oversight.

A year ago, the FCC adopted a *Notice of*

*Proposed Rulemaking* which looked toward holding "The control operator of the station originating a message and the control operator of the first station retransmitting that message ...accountable...." The revised wording in the Report and Order, however, states that the message originator is the primary responsible party. This is a significant change, we believe!

On March 30, 1994, the FCC Commissioners adopted a *Report and Order* which ( Effective June 1):

- (1) holds the message originator primarily accountable for its content. (new §97.219(b)
- (2) originators of messages posted for transmission (such as to a "bulletin board") by amateur stations but not yet entered into the packet system must be known to the licensee of the first forwarding station ...or the licensee of the station which enters that traffic into the network must accept responsibility for its content. (§97.219(d)

The Commission also clarified that the station that receives a communication directly from the originating station and introduces it into the message forwarding system is the first forwarding station.

The Commission believes that these rule changes will enable contemporary high speed message forwarding systems to operate as their designers intended, while retaining the minimum safeguards necessary to prevent misuse. The following is the complete text of the Commission ruling on message forwarding in the amateur service:

Before the  
Federal Communications Commission  
Washington D.C. 20554

PR Docket No. 93-85

In the Matter of

Amendment of Part 97 of the Commission's Rules Concerning Message Forwarding Systems in the Amateur Service. RM-7649 RM-7669  
RM-7675 RM-7676  
RM-7681 RM-7904

## REPORT AND ORDER

Adopted: March 30, 1994; Released: April 13, 1994

### 1. INTRODUCTION

1. On March 18, 1993, we adopted a *Notice of Proposed Rule Making ("Notice")*<sup>[1]</sup> in the above-captioned proceeding. In the Notice, we proposed to relax the amateur service rules to enable contemporary message forwarding systems to operate at high speed while retaining safeguards to prevent misuse.<sup>[2]</sup> This *Report and Order* adopts the rules substantially as proposed and incorporates several minor modifications suggested in the comments.

### II. DISCUSSION

2. Message forwarding systems have been a mainstream

operating activity since the inception of the amateur service early in this century.<sup>[3]</sup> The development of digital technology now makes high volume, high speed communications systems practical. This development has resulted in thousands of amateur operators voluntarily jinking their individually-licensed very-high frequency (VHF)<sup>[4]</sup> stations together to form easily-accessible ad hoc message forwarding systems.<sup>[5]</sup> Currently, the control operator of each station is held individually accountable for each message retransmitted. This introduces unnecessary message content review and resultant system delays. The objective of this proceeding, therefore, is to ascertain the accommodations that should be provided for amateur stations operated in contemporary high speed message forwarding systems to eliminate unnecessary oversight procedures. There were forty-two comments and two reply comments filed in response to the *Notice*.

3. The potential for transmitting a high volume of messages cannot be achieved because Section 97.103(a) of the Commission's Rules, 47 C.F.R. §97.103(a), holds each station licensee and control operator accountable for the proper operation of the station. This requires, in effect, the control operator of every forwarding station to review each message for improper content prior to its retransmission.<sup>[6]</sup> The proposed new rule section provided that the control operators of intermediate forwarding stations, other than the first forwarding station, would not be held accountable when their stations retransmitted improper communications inadvertently.<sup>[7]</sup> This approach would facilitate high speed message forwarding yet retain a degree of protection against abuse. We also proposed to restate the definition of the term "repeater" in Section 97.3 of the Commission's Rules, 47 C.F.R. §97.3, so as to preclude any confusion with the accommodations proposed for message forwarding systems.

4. The commenters generally support our approach. They agree with relieving the control operators of intermediate forwarding stations of the need to review every message.<sup>[8]</sup> Our proposal to retain the requirement for the control operator of the first forwarding station to be accountable for retransmitting improper communications, however, drew a mixed response. The American Radio Relay League, Inc., (League) states that the obligation of the control operator of the first forwarding station should be the establishment of the identity of the station originating the message. Only when this is not done should these control operators be held accountable for improper message content.<sup>[9]</sup> Comments from some amateur operators, however, do not deem it necessary to hold any control operator of a forwarding station accountable for improper communications.<sup>[10]</sup> Another commenter recommends that the message format be regulated to assist in the identification of the originating station.<sup>[11]</sup>

5. There is no central supervisory authority in an ad hoc amateur service digital network. The vulnerability of an unsupervised system can make it an easy target for misuse by uncooperative operators and non-licensees. It can be difficult, moreover, to establish after the fact that a particular VHF station originated a fleeting high speed digital transmission. For these reasons, there must be on-going oversight of the system. The control operators of the first forwarding stations are in the best position to provide such oversight. They are the stations that accept, on behalf of the system, messages

from originating stations.<sup>[12]</sup> We will, therefore, accept the League's recommendation. We are amending the rules substantially as proposed to hold accountable only the licensee of the station originating a message and the license [sic] of the first station forwarding a message in a high speed message forwarding system. The licensee of the first forwarding station must either authenticate the identity of the station from which it accepts communications on behalf of the system, or accept accountability for the content of the message.<sup>[13]</sup> The matter of message format, however, will be left with the designers of the systems. Since we believe our modification to the rule is sufficient to insure accountability for violative communications, we see no need to specify any particular message format. The League also requests that we clarify which station in a message forwarding system is the first forwarding station.<sup>[14]</sup> The answer is that it is the station that receives a communication directly from the originating station and introduces it into the message forwarding system.

6 The comments also agree generally that the accommodations for message forwarding systems should not apply to other operating activities such as repeaters and auxiliary stations.<sup>[15]</sup> The League and the Colorado Council of Amateur Radio Clubs (CCARC), among others, suggest that we substitute the word "simultaneously" for "instantaneously" in the redefinition of a repeater.<sup>[16]</sup> We concur with the comments and will adopt these modifications.

7. In summary, we have decided to amend the amateur service rules to accommodate message forwarding systems. We believe these rule changes will enable contemporary high speed message forwarding systems to operate as their designers intended, while retaining the minimum safeguards necessary to prevent misuse.

### III. ORDERING CLAUSES

8. Accordingly, IT IS ORDERED that effective June 1, 1994, Part 97 of the Commission's Rules, 47 C.F.R. Part 97, IS AMENDED as set forth below.

9. IT IS FURTHER ORDERED that this proceeding IS TERMINATED.

#### FEDERAL COMMUNICATIONS COMMISSION

William F. Caton,  
Acting Secretary

#### APPENDIX

Part 97 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

#### Part 97-Amateur Radio Service

1. The authority citation follows:

Authority: 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. §§ 151-155, 301-609, unless otherwise noted.

2. Section 97.3 is amended by redesignating paragraphs (a)(28) through (a)(44) as paragraphs (a)(29) through (a)(45), respectively, adding a new paragraph (a)(28), and revising paragraph (a)(7) and redesignated paragraph (a)(36) to read as follows:

#### § 97.3 Definitions.

(a) \*\*\*

(7) *Auxiliary station.* An amateur station, other than in a message forwarding system, that is transmitting communications point-to-point within a system of cooperating amateur stations.

\*\*\*\*\*

(28) *Message forwarding system.* A group of amateur stations participating in a voluntary, cooperative, interactive arrangement where communications are sent from the control operator of an originating station to the control operator of one or more destination stations by one or more forwarding stations.

\*\*\*\*\*

(36) *Repeater.* An amateur station that simultaneously retransmits the transmission of another amateur station on a different channel or channels.

3. Section 97.109(e) is revised to read as follows:

#### § 97.109 Station control.

\*\*\*\*\*

(e) No station may be automatically controlled while transmitting third party communications, except a station participating as a forwarding station in a message forwarding system.

4. Section 97.205 is amended by adding new paragraph (g) to read as follows:

#### § 97.205 Repeater station.

\*\*\*\*\*

(g) The control operator of a repeater that retransmits inadvertently communications that violate the rules in this Part is not accountable for the violative communications.

5. Section 97.216 is redesignated as Section 97.217.

6. Section 97.219 is added to read as follows:

#### § 97.219 Message forwarding system.

(a) Any amateur station may participate in a message forwarding system, subject to the privileges of the class of operator license held.

(b) For stations participating in a message forwarding system, the control operator of the station originating a message is primarily accountable for any violation of the rules in this Part contained in the message.

(c) Except as noted in paragraph (d) of this section, for stations participating in a message forwarding system, the control operators of forwarding stations that retransmit inadvertently communications that violate the rules in this Part are not accountable for the violative communications. They are, however, responsible for discontinuing such communications once they become aware of their presence.

(d) For stations participating in a message forwarding system, the control operator of the first forwarding station must:

(1) Authenticate the identity of the station from which it accepts communications on behalf of the system; or

(2) Accept accountability for any violation of the rules in this Part contained in messages it retransmits to the system.

#### FOOTNOTES:

- 1 8 FCC Rcd 2202 (1993).
- 2 See Notice at para. 2.
- 3 A message forwarding system is a group of amateur stations participating in a voluntary, cooperative, interactive arrangement where communications from the control operator of an originating station are transmitted to one or more destination stations via forwarding stations, which may or may not be automatically controlled.
- 4 The amateur service VHF bands are the 6 meter (50-54 MHz), 2 meter (144-146 MHz), and 1.25 meter (222-225 MHz) bands. See Section 97.301(a) of the Commission's Rules, 47 C.F.R. § 97.301(a). Currently, the 2 meter band is the most popular band for digital message forwarding systems. The propagation characteristic of the 2 meter band generally is line-of-sight. Ad hoc systems comprised of thousands of VHF stations, however, blanket the United States and beyond.
- 5 The American Radio Relay League, Inc. *AX.25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984*, for example, is operated in systems at rates that produce a communication capability of several hundred characters per second.
- 6 Improper communications are communications prohibited by Section 97.113 of the Commission's Rules, 47 C.F.R. § 97.113. This section recently has been revised to lessen restrictions on communications that amateur stations may transmit. See *Report and Order*, PR Docket No. 92-136, 8 FCC Rcd 5072 (1993).
- 7 Although control operators of forwarding stations other than the first forwarding station would no longer have to screen each message, they would be responsible for discontinuing communications that violate the rules once they become aware of their presence.
- 8 See, for example, comments of Gary R. Mitchell at 1, Lee S. Parr at 2.
- 9 Reply comments of the League at 4.
- 10 See, for example, comment of Charles L. Furlong at 1, James L. Reese at 1, Colorado Council of Amateur Radio Clubs at 1.
- 11 Comments of Alfred T. Yeager II at 1.
- 12 The American Radio Relay League Inc. *AX.25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984*, for example, incorporates provisions to record the trail of message forwarding stations for each message communicated.
- 13 We note that originator authentication techniques in the amateur service are under discussion. See, for example, Jon Bloom, *Empirically Speaking*, QEX ARRL Experimenter's Exchange 2 (November, 1993).
- 14 Comments of the League at 15.
- 15 See, for example, comments of Jay O'Brien at 1.
- 16 Comments of the League at 16, Colorado Council of Amateur Radio Clubs at 3.

#### QUOTES: FCC PERSONAL RADIO BRANCH STAFF

In the view of FCC staff members that we spoke with, the new rules are the minimum necessary to comply with the Communications Act - which requires that licensees control their stations.

#### *On accountability for packet message traffic:*

"The old rule was that every station is responsible for its transmissions," they explained. "We never thought it was unusual to ask someone to review, monitor, ...control what their station was transmitting. But with the advent of digital systems, people were saying that this requirement slows things down.

"We looked at this and everyone agreed that the originating station should be responsible. The first forwarding station is a kind of gatekeeper to the packet system, so they're responsible for authenticating the originator's identity. You know who sent it, or you take responsibility for it.

"The rule says they are not responsible if they inadvertently retransmit violative communications. What is a violative communication? Rule 97.113 indicates that any communication is okay to transmit as long as you are not on the wrong side of a four-part test: Is it a message for hire? Is the message on behalf of your employer? Is it expressly prohibited? Is it for the pecuniary benefit of the station control operator?

"If it passes the test, you're home free. From what we've seen, the amateurs approve of this relaxing of §97.113."

#### *On authentication of users:*

"Amateurs are realizing that they need to protect their digital system because people are not using it the way it's intended to be used. Of course, one of the biggest complaints we have is unlicensed operation. Anyone can figure out the callsign system, and falsify a callsign, and it may take a while for amateurs to catch on that this is an unlicensed person.

"This is the kind of abuse that can occur to a digital system that doesn't have some kind of authentication, some kind of protection, and it has been occurring."

#### *On new definition of repeaters in §97.3(36):*

"The commenters agreed that a repeater does simultaneous and not instantaneous retransmission, and that it is on a different channel. It could be several different channels. But it was not digipeater operation, store and forward retransmission on the same channel. That was not what was meant by repeater. So we tried to pick a definition that describes what people commonly consider to be repeaters."

#### AUTHENTICATION OF DIGITAL MESSAGES!

We think that modern authentication techniques, including perhaps some technology used in digital signatures, could provide the Amateur Service with the authentication required. PBBS software, for example, could be upgraded to require authentication. The PBBS operator could set his system not to forward

traffic from unauthenticated originators.

Digital signatures can be produced with a public-key cryptosystem. The user has two keys, one public and one private. The public key can be disclosed without revealing the private key. This method, the "RSA cryptosystem," was invented and patented by Drs. Rivest, Shamir, and Adleman at the Massachusetts Institute of Technology, and was based on work by Whitfield Diffie and Martin Hellman at Stanford University.

"Electronic documents can be "signed" with an unforgeable "signature" by using a document/private-key combination to produce a signature unique to the author/document," according to the inventors' company, RSA Data Security. The company produces software products that allow anyone, by using only the necessary software and the public key of the author, to verify the authenticity of the document.

## REDUCTION IN CODE SPEED DENIED

The FCC has denied a *Petition for Rulemaking* submitted by Edwin R. Dahl, K17FB (Advanced Class) of Spokane, Washington. Dahl requested on September 7, 1993, that the 20 words-per-minute (wpm) telegraphy requirement be eliminated while retaining the 5 and 13 wpm Morse code requirement.

By letter, Robert H. McNamara, a division chief in the FCC's Washington DC Private Radio Bureau told Dahl said "These matters were the subject of numerous major rule making proceedings which generated many thousands of comments from the amateur community. After considering the views expressed, the Commission adopted the rules which are now codified in Part 97. The current operator requirements, classes, and privileges were developed in accordance with the expressed desires of the amateur community to provide motivation for amateur operators to advance their communication and technical skills. You have not presented sufficient evidence to justify revisiting the matter at this time. ...your request to change the telegraphy requirements is repetitive and is denied." (Letter dated: March 18, 1994)

## ZEALOUS FCC MONITORS IN WASHINGTON STATE

If you're a marine radio operator in the state of Washington, you had better know your Rules and Regulations. Washington is the leader in marine-radio fines, according to a recent *Seattle Times* newspaper story. In all other states in 1992, the FCC issued 207 marine fines, but Washington alone earned 232 fines, totalling more than \$340,000.

The FCC's Ferndale, Washington monitoring facility is "home of the hardest-working, heaviest-fining inspectors in the entire FCC," the Times reported. "Twenty-four hours a day, 365 days a year, the 10 employees at the Ferndale office listen: to hunters using

radios illegally to track and shoot elk. To commercial fishermen who ignore FCC rules. To recreational boaters who haven't a clue how to properly operate their marine radios."

The fine for using the wrong channel is \$8,000 for businesses and \$2,000 for individuals, but the fine can be reduced if the violator has a license and no prior record of infractions.

The Times quoted a spokesperson for Sen. Slade Gorton's (R-WA) office as saying, "What we've got is our own little FCC office going nuts fining people." Gorton's staff considered closing the FCC office by eliminating its financing from the Federal budget. The staff reportedly spends a fair amount of time trying to persuade the FCC to reduce fines issued by Ferndale.

## NEW ZEALAND NOW A MEMBER OF CEPT

The April 1994 issue of "*Break In*", the journal of 3,200 member NZART, (New Zealand Association of Radio Transmitters, Inc.) reports that "New Zealand has been placed on the map of international amateur radio with the move by the Ministry of Commerce to become signatories to the CEPT agreement on mutual recognition of amateur radio licenses. Licensed New Zealand amateurs (novice excluded) have reciprocal privileges, short term, in most European countries, including the United Kingdom, without application. Similarly, European CEPT amateurs have reciprocal privileges in ZL."

The CEPT community is made up of 31 nations (basically all of Europe, Scandinavia and the United Kingdom) who recognize the amateur radio licenses of other CEPT countries without further licensing. There are two CEPT license classes. Class one (which requires code knowledge) permits all band operation. Class 2 permits operation on all bands above 30 MHz. ARRL is on record as favoring CEPT-type licensing rather than the FCC's proposal to have VEs examine alien amateurs and approve 60-day temporary amateur radio operation while in the United States.

- For the first time in many years, educator and former ham-of-the-year **Carole Perry, WB2MGP** will not be among the attendees at this year's Dayton Ham-Vention. She is entering the hospital the week before Dayton to have spinal surgery.

- **The National Amateur Radio Association has filed comments opposing the FCC's "Instant License" proposal** that uses the new amateur's initials in a temporary callsign. NARA likes the concept, however, and alternatively suggests that VE groups be assigned WZ-by-3 letter call signs which they would issue to new amateurs with a numerical identifier suffix. The VE call letters and numerical suffix would be added to session records sent to the VEC who would become the source of temporary call sign information.

# W5YI REPORT

Nation's Oldest Ham Radio Newsletter

Page #6

May 1, 1994

## JANUARY VE PROGRAM STATISTICS

January	1992	1993	1994
No. VEC's	18	18	18

### Testing Sessions

VEC	1992	1993	1994
ARRL	40.2%	54.0%	52.6%
W5YI	42.3	32.0	37.7
CAVEC	3.8	3.4	2.4
WCARS	1.1	2.9	1.9
GtLakes	4.1	1.5	1.2
SunnyV	1.1	1.2	.6
Others (12)	7.4	5.0	3.6
<b>Year-to-Date Sessions</b>	<b>709</b>	<b>681</b>	<b>848</b>

### Elements Administ.

VEC	1992	1993	1994
ARRL	43.3%	58.1%	55.6%
W5YI	35.2	25.0	29.1
WCARS	1.6	3.5	2.0
CAVEC	2.9	2.4	1.7
SunnyV	1.8	1.7	1.6
GtLakes	3.6	2.1	1.5
Others (12)	11.6	7.2	8.5
<b>Year-to-Date Elements</b>	<b>13650</b>	<b>10835</b>	<b>12909</b>

### Applicants Tested

VEC	1992	1993	1994
ARRL	42.8%	57.4%	57.1%
W5YI	36.7	25.6	30.7
CAVEC	2.9	2.4	1.8
WCARS	2.6	3.6	1.8
SunnyV	1.8	1.6	1.4
GtLakes	3.3	2.1	.9
Others (12)	9.9	7.3	6.3
<b>Year-to-Date Tested</b>	<b>7946</b>	<b>6432</b>	<b>7451</b>

January	1992	1993	1994
Pass Rate - All	66.7%	65.5%	64.5%
Applicants/Session	11.2	9.4	8.8
Elements/Applicant	1.7	1.7	1.7
Sessions Per VEC	39.4	37.8	47.1

### Administrative Errors by VE's/VEC's

January	1992	1993	1994
Defect. Applications	0.6%	0.4%	0.1%
Late Filed Sessions	3.2%	3.4%	*17.2%
Defective Reports	0.3%	0.1%	0.0%

(\* Almost all were ARRL-VEC sessions)

**Note:** The two largest VEC's, (ARRL/W5YI) accounted for 90.3% of all January 1994 test sessions, 84.7% of the exam elements and 87.8% of the applicants.

[Source: Personal Radio Branch/FCC; Washington, D.C.]

## FEBRUARY AMATEUR LICENSING STATISTICS

February	1991	1992	1993	1994
----------	------	------	------	------

New Amateurs:				
New Novices	1810	1260	764	193
New Tech's	307	2764	3042	2356
<b>Total New:</b>	<b>2162</b>	<b>4092</b>	<b>3880</b>	<b>2589</b>

<u>Upgrading:</u>				
Novices	2060	888	513	262
Technicians	670	*635	*670	*488
Generals	400	417	418	284
Advanced	275	299	268	171
<b>Total:</b>	<b>3405</b>	<b>2239</b>	<b>1869</b>	<b>1205</b>

<u>Renewals:</u>				
Total Renew:	69	120	190	1240
Novices	6	62	82	72

<u>Purged:</u>				
Total Dropped:	11	33	33	24
Novices	3	8	1	3

<u>Census:</u>				
Indiv. Oper.	504360	551198	596225	631042
Change/Year	+41233	+46838	+45027	+34817

### Individual Operators by Class: (and % of total)

Extra	Advan.	General	Technic.	Novice	Total:
-------	--------	---------	----------	--------	--------

<u>February 1991</u>					
54246	105628	120241	129386	94859	504360
10.8%	20.9%	23.8%	25.7%	18.8%	100.0%

<u>February 1992</u>					
58146	108059	123001	164535	97457	551198
10.6%	19.6%	22.3	29.9%	17.6%	100.0%

<u>February 1993</u>					
61930	110313	125805	198206	99971	596225
10.4%	18.5%	21.1%	33.2%	16.8%	100.0%

<u>February 1994</u>					
65439	111900	125799	230649	97255	631042
10.4%	17.7%	19.9%	36.6%	15.4%	100.0%

Club/	(1990)	(1991)	(1992)	(1993)
RACES & Military:	2450	2429	2431	2392
<b>Total Active:</b>	<b>506789</b>	<b>553629</b>	<b>598656</b>	<b>633434</b>
% Increase	+8.9%	+9.3%	+8.1%	+5.8%

(\* = Does not include Technicians upgrading to Tech Plus)

### AMATEURS BY CALL SIGN GROUP:

Group	Extra	Advan.	General	Technic.	Novice	Total
A	36648	659	241	7	0	37555
B	4483	30168	52	6	1	34710
C	15017	44071	66918	98768	40	224814
D	9045	36887	58482	131807	97212	333433
Other	246	115	106	61	2	530
<b>Total</b>	<b>65439</b>	<b>111900</b>	<b>125799</b>	<b>230649</b>	<b>97255</b>	<b>631042</b>

[Group "A"=2X1 & 2X2; "B"=2X2; "C"=1X3 "D"=2X3 format.]

[Source: FCC Licensing Facility, Gettysburg, PA]

## AMATEUR RADIO CALL SIGNS

...issued as of the first of April 1994:

Radio District	Gp. "A" Extra	Gp. "B" Advan.	Gp. "C" Tech/Gen	Gp. "D" Novice
0 (*)	AA0QI	KG0LO	(***)	KB0LYV
1 (*)	AA1IV	KD1TZ	N1RMF	KB1BGS
2 (*)	AA2RH	KF2UA	N2YBR	KB2QXD
3 (*)	AA3HG	KE3MC	N3RPA	KB3BBC
4 (*)	AD4QG	KR4NY	(***)	KE4KAL
5 (*)	AB5TB	KJ5VI	(***)	KC5FON
6 (*)	AC6AP	KN6YT	(***)	KE6FTE
7 (*)	AB7BL	KI7WH	(***)	KC7BDO
8 (*)	AA8OI	KG8HH	(***)	KB8RSM
9 (*)	AA9KI	KF9UM	N9EHC	KB9IXF
N. Mariana Is.	AH0W	AH0AQ	KH0CK	WH0AAAY
Guam	WH2D	AH2CU	KH2JB	WH2ANK
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii	(**)	AH6NF	WH6SV	WH6CRD
Kure Is.			KH7AA	
Amer. Samoa	AH8I	AH8AG	KH8BB	WH8ABB
Wake W. Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska	(**)	AL7PO	WL7QW	WL7CHL
Virgin Is.	WP2G	KP2CC	NP2HG	WP2AHU
Puerto Rico	(**)	KP4WM	(***)	WP4MNV

## ARRL COMMITTEE REPORT ON VANITY CALLSIGNS

The American Radio Relay League Committee on developing a response to the FCC's Vanity Callsign proposal made the following recommendations:

- (1.) All amateurs be eligible for participation in the program after an initial phase in period.
- (2.) The \$70.00 Regulatory fee set by congress (\$7.00 a year for 10 years) should be changed to one time administrative processing fee.
- (3.) Any callsign held prior to the start of this program shall be considered a sequential callsign and exempt from any fee.
- (4.) A phase-in period should be adopted to allow the Commission a chance to process the expected heavy initial submission of vanity callsign applications since no additional FCC application processing manpower will be available.
- (5.) Phase-in periods may be perceived as "gates". As each succeeding gate opens it will admit applications from a new group as well as any group allowed by a previous gate.

Gate one... would allow applications from holders of previous callsigns who have lost their original call through failure to renew at the proper time or having moved from one location to another mandating a change of callsign. A callsign could be recovered even if it did not match the applicants current permanent address. Included in this group would be those who wish to obtain the callsign of a direct family member. Clubs with lapsed club licenses should also be allowed to recoup those callsigns in the first group.

Gate two... would include all Extra Class licensees and

those allowed by gate one. Clubs wishing to obtain the callsign of a deceased member could do so in the second gate if the trustee were an Extra Class licensee.

Gate three... would include all Advanced Class licensees and those included in gates one and two.

Gate four... At this point the system would be thrown open to anyone else wishing a vanity callsign.

(6.) Family members should have first choice of a silent key's call. Should no family member desire the call, the club should have next choice. The number of members of a club should be raised to at least 4 to be considered a "radio club".

(7.) A call is considered "vacated" when its previous owner has been assigned a new vanity callsign. The vacated callsign should not be reassigned for a two year period.

(8.) The number of vanity callsign choices should be increased to 25 to reduce processing and correspondence time if the 10 requested callsigns are all unavailable.

(9.) The re-issuance of callsigns of silent keys would not be disrespectful. The callsign is really the "property" of the Commission and is "loaned" to the licensee for the term of the license. It should become eligible for re-issuance once the renewal grace period had expired.

(10.) The FCC should continue issuing callsigns to amateurs within the continental 48 states with the number in the callsign appropriate to the mailing address.

(11.) Outside the continental 48 states applicants should be required to furnish the Commission with some form of documentation indicating permanent residency.

(12.) The Committee recommends that 1X1 callsigns, such as K2A, be made available for limited duration special events of national significance.

## OFFICIALS REPLY TO ARRL CONCERNS ON 2.4 GHZ

The National Telecommunications and Information Administration (NTIA) proposes to move federal government stations out of certain bands in order to reallocate spectrum for new commercial services, as required by recent legislation. W5YI Report previously detailed the schedule and frequencies for these changes, which include spectrum in the 2.4 GHz band available to the Amateur Service on a secondary basis to the government systems there (such as radar).

The NTIA plan would reallocate 2300-2310, 2390-2400 and 2402-2417 MHz. The agency, which is responsible for frequency use by government stations, said it believes that these bands are "very lightly used by radio amateurs, as compared to lower frequency bands."

Amateurs and the ARRL are very concerned about what may happen when the NTIA turns this spectrum over to the FCC for reallocation to the private sector. At a hearing on the subject in Washington on April 7, ARRL representative Paul Rinaldo, W4RI told NTIA officials:

"The Amateur Service shares a number of bands

with the Government and has for many years, and it's turned out to be an excellent sharing arrangement. Now if you have so many megahertz shared in such a way that it was never a problem, and the cognizance of those bands now goes to the FCC, the FCC is not going to sit on those bands. They are going to reallocate them to someone who will occupy the bands. So our concern is that high density users will move into those bands, and therefore the amount of spectrum that the Amateur Service can use is diminished as a result."

NTIA Office of Spectrum Management director Richard Parlow replied, "We certainly understand those concerns. We tried to play the balancing game as best we could. You must understand there are many trade-offs. We also recognize that the Commission will have to, in some fashion, recognize that the amateur service does provide a service and does things for the American public, in safety, national security and emergency preparedness. They're going to have to take that into account. I expect that you and your representatives will not sit idly by and be silent in the proceeding."

Rinaldo: "There is another concern. The Amateur Satellite Service has a number of bands of different bandwidths. One band may be an input frequency, another an output frequency. The amateur satellite band of 1260-1270 MHz has ten megahertz. That is an uplink band only, and what goes up must come down. Now we end up with an imbalance if those two megahertz that have been identified [2400-2402 MHz, to be retained as-is by the NTIA plan - Ed.] are just the only ones.

"Of course, we're not just talking about current amateur satellites," W4RI continued, "because there are not only amateur satellites on the drawing board, but they're actually being built right now to occupy some of that spectrum. So we are concerned about matching spectrum, both up and down. We'll be following up with you on this."

NTIA officials were not optimistic that major changes would be made in the various bands to be reallocated. Eventually the playing field will move to the FCC, which will have the unenviable job of applying this newly reallocated spectrum to commercial, and probably auctionable, uses while dealing with the question of existing uses such as Amateur Radio.

### **UNTANGLING THE WEB - CHAPTER 3** **Getting on the Internet, Hassle-free**

In our last two installments we covered the evolution of the Internet. What started out some 25 years ago as an experimental military fail-proof data network is now in the process of being privatized to the commercial sector. Along the way, the Internet, funded by the National Science Foundation, became the informa-

tion highway of the academic and research community. Today, firms everywhere are jumping on the Internet information bandwagon.

Soon, the Internet will become a consumer communications product. The reality is, however, the network was initially designed for the computer professional ...not the mass market. For the beginner, the four biggest hurdles in getting connected to the Internet are: (1) establishing an account, (2) obtaining the needed software, (3) the difficulty of software installation and then (4) negotiating through the network.

Actually most of the needed "software" and "tools" are online freeware or shareware. And several commercial packages which accomplish specific functions are available. So far, however, the total Internet solution for the novice is not available.

Short of a dedicated connection, the best way to directly access Internet using a PC over the phone lines is through SLIP (Serial Line Internet Protocol) or PPP (Point-to-Point Protocol) software. Which one you use depends on the service provider. Both protocols make you a full-fledged player on the Internet. There is a big difference between direct (complete) and remote third-party or shell network access.

The Point-to-Point Protocol is the newest and probably the most desirable. A disadvantage is that you need a high-speed modem; 1,200 or 2,400 bps simply isn't fast enough. PPP operates over the phone lines at 9,600 bps and faster. (14,400 bps is even better.) The faster speed is important for transferring or copying files and a side benefit is the reduction in online time.

### **What is "Internet In A Box?"**

As mentioned in our last issue, help for the Internet newcomer appears to be on the way! **Internet In A Box** is a new software product that should provide a simple solution to Internet access. It answers the question, What do I need? How do I get on? ...and once on, What do I do with it? We took the liberty of contacting the publisher (O'Reilly & Assoc.) to learn more. Here is what we found out.

In a nutshell, The Box is basically a kit of needed Internet materials most of which are already available piecemeal. You could compare Internet In A Box to a assembled computer, rather than to its hardware and software components. While a professional can build a computer from its "ingredients," most neophytes do not have the expertise - or know what is needed..

A joint venture of O'Reilly and Associates, Inc., (Sebastopol, CA) and SPRY, Inc., (a Seattle-based internetworking software firm) Internet In A Box indeed has the potential to bring the Internet to the masses.

Reportedly, it offers simple installation and connectivity, contains easy-to-use navigational tools and features a well-conceived system for organizing the



best resources available on the Internet.

It will be the first shrink-wrapped "plug-and-play" consumer package to provide the total solution to direct Internet access. You can bet that other TCP/IP DOS and Windows Internet "solutions" will follow.

The advance publicity says "Internet In A Box provides instant connectivity, a multimedia Windows interface, a full suite of applications, and the first interactive guide to the Internet."

### Just what's in "The Box?"

- Optional automatic connection to the Internet via a service provider (service fees are determined by the provider)
- Global Network Navigator (GNN), the first interactive guide to the vast information resources of the Internet, which uses AIR Mosaic, an advanced, multimedia information browser
- AIR Series Internet Applications for Windows, including electronic mail, USENET news reader, drag-and-drop FTP (file transfer), telnet (a log-on utility), and Gopher (a retrieval tool.) All are SPRY's streamlined interactive versions of existing Internet utilities.
- Two books that clearly describe how to use these resources, including a guide to getting started and a special edition of Ed Krol's best-selling Whole Internet User's Guide and Catalog.

### What kind of system do I need?

To use Internet In A Box, you will need the following minimum requirements:

- MS-DOS 3.0 or later
- Windows 3.1 or later
- A mouse
- 2 MB of RAM
- 9600 baud modem ...or faster

Everything else is in "The Box."

### Access to the Internet

Sprint Communications, Inc. launched Sprintlink in 1992 specifically to automatically access the Internet via a "1-800" phone number. While Internet In A Box features the SprinkLink TCP/IP-based service, you do not have to use it if you already have a PPP Internet account. You can use the stand-alone version of Internet In A Box with your existing access provider. If you choose instant access through SprintLink, you'll pay a monthly fee of \$9.95 plus an hourly connect fee of \$9.95. There is no setup or installation fee.

### How much does Internet In A Box cost?

List price is \$149, the street price will probably be in the \$100 range when it becomes available later on this summer. A Mac version will follow.

### **EXCLUSIVE INTERVIEW WITH CONWAY YEE, N2JWQ, Originator of the New Online Repeater Database**

Will you be able to access repeater listings as you navigate on-line along the information superhighway?

The answer is...maybe, depending on who has their way--the ARRL or the individual users of Internet. An interesting copyright controversy is shaping on Internet, the ever-expanding computer network of networks, particularly on the Internet ham radio bulletin board/discussion forum (or "newsgroup") known as rec.radio.amateur.misc.

Copyright law is still unsettled as to what protections, if any, extend to e-mail traffic out there in cyberspace, although as the information highway expands, this issue will have to be addressed. But one thing is for sure; the American Radio Relay League is very protective of the data in the ARRL Repeater Directory, a lucrative publication containing some 19,000 listings of voice and digital repeaters that makes its annual debut each year at the Dayton Hamvention.

We recently had a chance to talk to Conway Yee, N2JWQ [a graduate student at Columbia University pursuing a PhD in Bioengineering as well as an MD degree at the State University of New York at Stony Brook!] about his vision for an Internet repeater database. Conway is currently based at the University of Pennsylvania in Philadelphia, where he is conducting his doctoral research.

**W5YI:** What exactly is the online repeater database and when did you get the idea to make this sort of information available to Internet users?

**A.** The online repeater database is a machine-readable repeater listing in database format. I started the project soon after I finished my first etext ("The Scarlet Pimpernel" released by Project Gutenberg) in the Spring of 1993 and was looking around for another interesting project.

[The Gutenberg Project is aimed towards making public-domain documents, such as classic novels and short stories, freely available in machine readable format, i.e., electronic text. Generally that means some volunteer keyboards the entire book from scratch in "plain vanilla ASCII"!]

There was an active discussion on rec.radio.amateur.misc on such an online repeater directory listing, and I thought it was a good idea.

The purpose of the online listing is to allow the user to sort the data in any way he wishes. The advantage of an online database is obvious, since it allows arbitrary user searches, it is more easily updated to correct for errors, new repeaters, repeaters, repeaters that no longer exist, and changes in repeater status.

With the flexibility allowed with an online database, the user can sort by frequency to take advantage of band openings. He can sort by a specific route for a business trip or vacation. With a printed database (such as the ARRL Repeater Directory), you are limited by the vision of the editors of the database.

The response to the idea was overwhelmingly positive; I received 150 e-mail messages supporting the project before I stopped saving messages. Virtually everyone loved the idea.

**W5YI:** But you did receive one dissenting opinion, but it was an important exception: the ARRL, right?

**A.** Unfortunately, the League will not give permission to use the data in the ARRL Repeater Directory in any form. From what I understand, the League believes that they own a copyright on the data itself and that others may not use the data. I am no legal expert so at the beginning, I checked with someone who is up on copyright law to see if this database project was legal. Since you can't copyright "facts" or "ideas" under the copyright law, there didn't appear to be any copyright-infringement problems, and as far as I was aware, I was in the clear. However, a portion of the facts contained within the online directory would have their origins in the various incarnations of the ARRL Repeater Directory.

Since then, I have received two polite but firm letters from ARRL General Counsel Chris Imlay, N3AKD (along with one telephone conversation that I initiated) that indicated the League will take legal action against me for copyright infringement if I use either the compiled data contained in the ARRL Repeater Directory or its format as the basis for the online database.

**W5YI:** What is the basis for the League's beef with you?

**A.** Again, I am no legal expert. But as I understand it, the League's position is as follows: the Repeater Directory is an original compilation of facts, and under the copyright law, a compilation [a collection and assembling of preexisting data] can be copyright as a creative expression, even if it contains only facts; This includes the characteristics of the repeater (e.g., O for Open), and the geographical location/coverage of the repeater.

The ARRL also indicated that they are required by the law to enforce their copyright or they will have waived any rights to protect its copyright, and the substantial revenue it generates, in the future.

N3AKD also indicated that some of the material in the ARRL Repeater Directory is copyrighted by the regional frequency coordinators, and is only used by the League by agreement. The League therefore doesn't have the authority to grant permission to use that material, assuming it wanted to.

**W5YI:** Were you discouraged by the League's response?

**A.** I was rather surprised. My main wish is to avoid legal trouble in the first place. Remember, this project is a volunteer project to begin with. It doesn't pay to risk everything in a lawsuit. The League may be right

or it may be wrong; I don't know. But I had viewed the ARRL as an advocate for amateur radio. This project clearly is in the interest of amateur radio so I originally couldn't see any reason why the League would object.

This is a project started by hams for the benefit of hams. It is entirely for the benefit of the amateur service. The charter of the ARRL (which appears on page 9 of every issue of QST) specifically states that it promotes "interest in Amateur Radio communication and experimentation" and stands "for the advancement of the radio art." The online database is entirely within the spirit of these goals.

I am an individual and in no way capable of matching the legal resources that the ARRL can place against me. The ARRL lawyers can litigate and achieve whatever aims the League wishes even if I am proven entirely correct. Nevertheless, I am interested in pursuing the completion of an online repeater directory because I firmly believe it is something that is in the best interests of the amateur service.

Since the ARRL is a membership organization "of, by and for the radio amateur," I am hoping that some reasonable compromise can be reached.

**W5YI:** Do you think your online database might qualify under the "fair use" exception to the copyright law--the fair use exception allows the use of copyrighted information without permission for certain educational or non-profit purposes in some circumstances?

**A.** I haven't the foggiest idea. I am not a legal expert. On an ethical level, I see no problems with the project. Legally, I don't know.

**W5YI:** What is the current status of the project?

**A.** The online database has been "detoxed" and "revived"! I've started by posting about 750 repeater entries on [rec.radio.amateur.misc](http://rec.radio.amateur.misc) and [rec.radio.info](http://rec.radio.info) on Internet.

I am complying with the ARRL requirement not to use their Directory as a source of information. The revised project is and will take input primarily from users, with coordinator input where this is possible (a volunteer who is working with me has written to coordinators for their data). If this project becomes self-perpetuating, data for the online database will generally come from the users themselves. The current project does not require the use of copyrighted data since it relies on user input.

In terms of accuracy, the online repeater database will probably rely on the honesty and good faith of its users. This project also will require a great deal of manpower; I am working with a number of volunteers but can always use more help. I can be reached on Internet at the following address:

[yee@mipg.upenn.edu](mailto:yee@mipg.upenn.edu)