



the RARa RAG

Published by

ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 37

JANUARY 1985

NO. 5

PACKET RADIO — AN UPDATE AT JANUARY 4th RaRa MEETING

by Ronald Jakubowski, K2RJ

Switching node; teleport station; AX.25 link layer protocol— These are some of the buzz-words of the most exciting new mode of communications to hit ham radio since slow-scan TV. Packet radio will revolutionize the way we handle traffic not unlike the way the electronic keyer revolutionized CW. Since Ray Williams, WA2RYT, spoke to us last December at Kodak Park, Packet radio (and packet data transmission in general) has been expanding its horizons by leaps and bounds.

At this month's RaRa meeting (8 p.m., Friday, January 4th at the 40/8 Club, 933 University Avenue), some members of the newly-formed Rochester packet group will present an update and a demonstration of Packet Radio. This group is so new that it doesn't even have a name yet! I'm sure they will put on an entertaining and informative program.

RRRA NEWS

Funds are slowly being raised for the RC-850 repeater controller for 28/88. Our goal is to have enough to get the basic unit by late spring or early summer. This means that we need a donation from each and every repeater user.

What will the new controller mean to you?

- A "smart" autopatch that will give hand-held coverage to most of the area.
- Expanded "Fuzz-Buzz" capability.
- Mailbox — Leave messages for your friends.
- Tail Messages — Learn of meetings, special events.
- Special net and weather alert modes.
- Extended control capabilities for Teleconference Nets, Westlink Radio Network, remote voting receivers, etc.
- And much, much more!

We need your help to bring the 28/88 machine into the 1980's. Bring your tax-deductible donation to the RRRA meeting at Pittsford Town Hall January 18th at 8:00 p.m., or mail it to RRRA, Inc., P.O. Box 92031, Rochester, NY 14692.

WINTER FUNFEST FEBRUARY 9th AT MENDON PONDS PARK

by Dave Bernheisel, N2DPF

The first annual RaRa Winter Family Funfest will be held Saturday, February 9th, at Mendon Ponds Park (Hopkins Point Lodge). We have reserved a lodge and have planned an enjoyable event for everyone. The fun begins at 12 noon and doesn't stop until 6 p.m. Hot food will be served all afternoon and hot beverages will be available at all times.

In addition to cross-country skiing, sledding and other outdoor activities, there will be plenty of room inside for visiting with old friends and making new acquaintances by the fire. (Maybe we can have a Trivial-Pursuit tournament.)

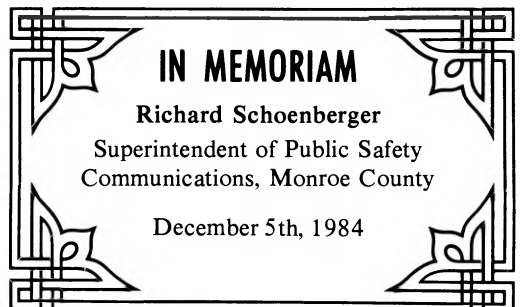
There will be a dessert-baking contest with prizes awarded to the winning entries. So plan to bring some type of baked 'goodie' (cookies, cakes, pies, rolls, etc.) to enter in the contest and to share with everybody when the judging is over.

The cost for this Funfest will be only \$2 per person, up to a maximum of \$5 per family. **If you plan to attend, please make your reservations by January 27th.** Please tell us how many people in your family (including yourself) will be attending by sending a QSL card or post card with your name and call to: *RaRa Winter Funfest, P.O. Box 1388, Rochester, NY 14603-1388, or by calling Dave Bernheisel, N2DPF, at 244-1856.* **Do not send any money with your reservation.** The fee will be payable at the Funfest. We look forward to seeing everyone there!

IN MEMORIAM

Richard Schoenberger
Superintendent of Public Safety
Communications, Monroe County

December 5th, 1984



the RARA RAG

Published by
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

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REMORSE

I hate code! Well, not true hate, but of all the modes of amateur radio that I enjoy, code is at the bottom of the list. I did however, manage to increase my code speed enough to pass my Extra Class exam. Even with no great love for the sport, I did not find it the monumental task that some have described it to be.

When I was first introduced to the code, nearly fifteen years ago, my well intentioned "Elmer" taught the code to me completely wrong and made my life much more complicated. Each dot and dash was painstakingly prolonged to the point of agony. This of course left no doubt as to which was the dot and which was the dash. The dots were long enough to have a cup of coffee, and during the dash I had time to visit the men's room.

During the 1960's the Air Force conducted some extensive tests to determine why people experienced the famous 10 words-per-minute "plateau". The reason quickly surfaced that to the human ear there was very little similarity to long drawn out dots and dashes and normal (technically correct) morse code. The modern method which works much better, is to keep the character speed high (13-18 wpm) and simply change the spaces between characters to suit the speed wanted. As the person's ability to copy increases, the intercharacter spacing is reduced and, in no time, your code speed is increased the desired amount.

Now before you begin to think that it is all going to be easy, there's more. Another very important aspect to picking up your code speed is practice, practice, practice. You must practice *every* day. 15 to 30 minutes sessions two or three times a day. You *cannot* increase your code speed by practicing once a week. Try to copy W1AW at least four or five times a week. Especially the 18 wpm bulletins. Another important trick is to train yourself to ignore those characters that you do not recognize immediately and set yourself for the next character. Many people try to figure out a letter they missed and consequently miss a whole word. If you don't recognize a character immediately, forget it. You will still copy enough to understand the QSO.

So there you have three major pointers which should enable anyone to upgrade their code speed. If you were taught incorrectly as I was, you may have to work a bit harder, but with practice it *will* all come together in no time at all. 73 and good luck - PRACTICE, PRACTICE, PRACTICE.

Tnx Fred, KK2T
via METROPLEX NEWSLETTER

VOL. 37 JANUARY 1985 NO. 5

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The RaRa RAG (USPS 605-440) is published monthly except July and August by the Rochester Amateur Radio Association, 446 Cedarwood Terrace, Rochester, NY 14609. Subscription price \$1.00 per year (included in \$7.00 annual membership dues). Second class postage paid in Rochester, New York. Postmaster - send address changes to RaRa Rag, P.O. Box 1388, Rochester, NY 14603-1388. Full permission is granted for reprinting articles provided a credit line is given to the RaRa RAG. The RAG exchanges with other organization's publications.

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GUEST EDITORIAL

ALONG LEAGUE LINES...

The radio spectrum is a valuable and scarce resource. Seeing that it is put to the best possible use in the public interest is a responsibility of the Federal government. In the United States, the responsibility is shared by two agencies: the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA). The FCC looks after the interests of the nongovernment users (including state and local government agencies). The NTIA looks after the Federal government users.

Of course, the public interest is not static; it must be reexamined on a continuing basis, particularly in the face of rapid technological development. Frequency allocations which made sense in years past may be inefficient or unnecessary today. New uses for the radio spectrum are constantly being developed; their potential for public benefit must be weighed against their impact upon other radio service occupants. Decisions cannot be made solely on a technical basis; economics must be entered into the equation. Once a substantial investment has been made in equipment, its owners will resist change. To illustrate the point, to a surprising degree today's radio spectrum allocations reflect planning conducted during the Second World War! For this reason, an allocations decision based upon short-termed benefits invariably will turn out to be wrong.

Land mobile interests in this country have drawn a bead on a section of the Amateur VHF band (220 MHz), in anticipation of government radiolocation operations being phased out by the end of the decade. FCC has taken no position on this last issue; the 220-MHz band must be discussed during joint NTIA/FCC long-range planning activities before any FCC action could be forthcoming.

- Some proponents of the land mobile service see 216-222 MHz as a good place to introduce Amplitude Companded Sideband (ACSB) into everyday use. (ACSB is a technique that allows closer spacing of radio channels.) But if ACSB holds promise for the land mobile service, should the users of that service not be encouraged to adopt the technique by introducing it into existing bands, with suitable incentives for making the switch? How can a mode of communication touted for its spectrum-conserving characteristics be used to justify an expansion of the land-mobile allocations?

JANUARY RAG CALENDAR

- 4 - RaRa Meeting, 8:00 p.m.,
40/8 Club, 933 University Avenue
- 9 - RaRa Board of Directors meeting,
QTH of N2BNE
- 9 - February *Rag* Deadline
- 10 - Packet Club, 7:30 p.m.,
Tele-Connect Systems, Inc.,
320 South Avenue
- 11 - Rochester VHF Group annual Contest-
Kickoff, 8:00 p.m., County Social
Services Building, 111 Westfall Road
- 12 - Amateur Radio Exams, County Social
Services Building, 111 Westfall Road
- 12-13 - January VHF Sweepstakes
- 15 - RDXA meeting, 8:15 p.m.,
Colonial Hotel, 1127 Empire Boulevard
- 18 - RRRRA meeting, 8:00 p.m.,
Pittsford Town Hall

- Television broadcasting continues to occupy the lion's share of the radio frequency spectrum that is most suited to land mobile use. Yet, in recent years there has been a tremendous increase in the number of television viewers served by cable – and a corresponding decrease in the number of viewers who rely on over-the-air reception. Should this dramatic shift not be reflected in any long-range spectrum planning?

- The main culprit in gobbling up radio spectrum is not the transmitted television signal – it's that the FCC continues to sanction inferior TV receiver design. The specifications for UHF television receivers date back a third of a century, to a time when it was a trick just to make a set work at those frequencies.

- The telecommunications needs of our mobile population are being met in a variety of new ways: cellular telephone service, digital paging and dispatching, and other techniques which are more spectrum-efficient than conventional land mobile techniques. Shouldn't these new techniques be encouraged and allowed to develop before more spectrum is turned over to land mobile use?

Just as there is room for disagreement on questions of land management – the use of our national forests, for example – so there is room for honest disagreement on spectrum management questions. But, at least let us be certain that the right questions are being asked!

THE RaRa Rag 20 YEARS AGO

JANUARY 1965

by Ed Gable, K2MP

A special combined RaRa and VHF Group meeting was held on January 8th at the Farm and Home Center. From Syracuse, Ed Ewald, K2HXE, President of Carrier Wave, Inc., gave a very interesting talk on new developments in printed circuits and how to make your own.

Local high scorers in the November SS contest were Chuck Hilliker, K2IML, high man followed by LaMar Ray, WB2FMX, and Fred Becker, K3CEI, all on phone. CW leaders were Dick Bourne, WA2HUV; LaMar Ray, WB2FMX; and Pat Meyers, WB2RJH. Len Gessin, WA2ZNC/2 took first place in the VHF category with Dan Hadfield, WN2PCP, taking Novice honors.

Ray Leigh's RDXA News column reported ZS7R, XT2HV, VQ9HB, and TU2AU/5U7 as the ones to catch. John Morris, K2BPV, in his VHF column, reported that Otto Bluntzer, WA5IZK, gave a nice talk to the VHF Group on VTVM tricks and operations. VHF Group officers for 1965 were Carl Thorenson, K2HCD, Chairman; Charlie Burke, WB2EUE, Vice-Chairman; and John Morris, K2BPV, Secretary, with Lin Stewart, WA2CJL, 6 Meter net director.

Cappy Capauldy, K2UXF, and Helen Smith, WA2YRH, announced the Dinner-Dance to be held in the Manger Hotel on February 13th. Bud Young, WA2UGE, won the Heath Monitor scope award and, for the first time in recent memory, Jim Sims, W2GDB, went home empty handed!

Heart of Oak Tower Company, Inc.

Offers their newest tower, Model 15-20. Several heights available.

This tower is ecologically and environmentally correct, blends in with surrounding landscapes and enriches the atmosphere. Completely free standing - no guy wires required.

Requires minimum maintenance. Some patience is required with installation of this tower.

Complies with all building codes, no restrictions when installed off curb lines and twenty feet inside property lines, notwithstanding the utility company's right of way.

I will have a limited number of kits available at the next meeting.

*Edgar, KA2FKO
via SJRA HARMONICS*

REPEATER REMINDERS

Of course you all use courteous operating procedures on the machines, but just so you can tell the "other guy," here is a brief refresher:

1. To get into an ongoing conversation just insert your call during a pause.
2. Leave a few seconds before you key the mike; someone may have an emergency call, or want to join in.
3. Give a breaker the courtesy of finding out what he/she wants BEFORE you start your "monolog."
4. Currently, you only need to identify ONCE every ten minutes, and when you sign off.
5. You do NOT have to:
 - (a) give the other person's call
 - (b) say "and the group"
 - (c) say portable or mobile
 - (d) phonetically spell your name
 - (e) call CQ
 - (f) say "down the log," "destinated," "my very best 73's all around," "temporarily clear," or any of the other superfluous remarks that clog up a busy repeater.

Tnx - METROPLEX NEWSLETTER

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(AT BULLS HEAD)

"What The Heck Is "Packet Radio" And Why Do I Need It?"

by Dick Groth, WB2NBU

That's the first question that ran through my head a year ago when I first became aware there was such a thing as Packet Radio. Being a computer hacker anyway, plus being a ham, I soon found out that "Packet" was the perfect marriage of the two vices. This does not mean that you have to own a computer to be involved with Packet since any type terminal plus a TNC (terminal node controller) will put your 2 meter rig on the air as a Packet station. A computer only enhances your capabilities to do such things as store incoming data and transfer files between stations.

Simply stated, a Packet is a group of ASCII characters (information) surrounded by control signals and error detection features. The control signals contain such things as who sent the Packet, where it is going and other housekeeping information. The error checking is necessary to insure that every Packet is received exactly as sent or it is repeated until it is! The beauty of all this is that we can send messages to a specific station and know that it got there in perfect shape even when the other station is unattended. Packet is really a sophisticated type of RTTY that has many important advantages. Most Packet networks are centered around a Packet repeater or "digipeater" as they are called. The unique feature of the digipeater is that it can operate on a simplex channel since it is a store and forward type of device. Many pairs of users can be connected at the same time through the repeater and not be aware of each other. In fact, unless a station deliberately tells its TNC to monitor everything on the channel, the station will recognize only those transmissions meant for it. The next logical step of course is for digipeaters to be able to talk to each other from city to city and thus form a cross state or even cross country network. I believe that in the not too distant future that Packet will be the most reliable form of information and traffic handling available to hams.

There are Packet clubs forming all over the U.S.A. and activity is growing fast. ARRL is very supportive of Packet and is now publishing a new Packet-Radio Newsletter called the "Gateway". This newsletter is excellent and is available for \$6.00 per year for members of ARRL. There is also a newly formed Packet club active in Rochester that is looking for new members.

Amateur Radio is not being left behind in this age of the home computer revolution. Packet

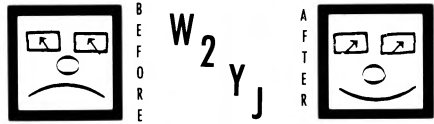
PACKET IN ONTARIO

The Hamilton Amateur Packet Network (HAPN) now has two digipeaters on the air: VE3PKO on 145.710 MHz, and VE3PKT on 145.650 MHz. One of these machines is in Toronto, and one of them is just south of Toronto. Most of the stations on HAPN are using Vancouver TNCs modified to run AX.25 protocol. Stewart Beal, VE3MWM, even has AX.25 and the Vancouver protocol running on his VADCG TNC. If you are in the area, HAPN runs a voice net on two meters - 147.735/147.135 MHz, Monday night.

Tnx GATEWAY



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GATEWAY:

New Packet Radio Newsletter

The ARRL has begun publishing a newsletter devoted to packet radio interests called *Gateway*. It is mailed every two weeks and is edited by Jeff Ward, K8KA. A year's subscription (25 issues) is \$6 for ARRL members and \$9 for non-members.

radio allows the amateur to combine his or her interest in the radio art with the High-tech world of computers. With the communications potential of amateur radio added to the information processing of the computer, the coming years should show a dramatic increase in the capability of the typical ham station. Get in on the ground floor of this exciting new mode.

The Packet club currently meets the second Thursday of each month at Tele-Connect Systems Inc., 320 South Avenue, at 7:30 p.m. For more information on local activity, call Dick Groth, WB2NBU, at 427-7041 or Fred Cupp, W2DUC, at 381-9825.

CANADA LICENSE STATISTICS

What's the current amateur population of Canada? According to DOC, here's the breakdown as of 1984 August 24: British Columbia - 3916, Alberta - 1928, Saskatchewan - 791, Manitoba - 791, Ontario - 8633, Quebec - 4016, New Brunswick - 722, Nova Scotia - 1118, Prince Edward Island - 206, Newfoundland and Labrador - 456, Yukon Territory - 51, and Northwest Territories - 69, for a total of 22,697 amateurs in all. The Amateur Service is growing, but only by 3-4% a year. Total amateur population for March 31, 1983 was 21,822, for 1982 March 31 was 21,225.

Tnx - ARRL LETTER

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10 METER BEACONS

Freq.	Call	Location	Notes
28.175	VE3TEN	Ottawa, Canada	
28.200	DLØIGI	W. Germany	Alternates with 28.205
28.2025	9J2B	Zambia	
28.2025	Z55VHF	Natal, RSA	5W, GP at 1850 ft. ASL
28.205	DLØIGI	W. Germany	
28.2075	W4ESY/M4RD	Florida, USA	
28.209	WA1IOB	Mass., USA	
28.210	3ØØMS	Mauritius	GP Ant.
28.2125	ZD9GI	Gough Is.	
28.215	GBØSX	England	
28.2175	VE2TEN	Quebec, Canada	4W
28.220	5B4CY	Cyprus	26W, GP Ant.
28.225	HG2BHA	Hungary	
28.25	EA6AU	Baleaic Is.	
28.225	VE8AA	Yukon, Canada	
28.230	ZL2MHF	New Zealand	50W, Vert Dipole
28.235	VP9BA	Bermuda	
28.2375	LA5TEN	Oslo, Norway	
28.240	OA4CK	Lima, Peru	
28.240	PY1CK	Rio de Janeiro, Br	
28.242	KA9NFE	Illinois, USA	
28.2425	ZS1CTB	RSA	
28.2425	LU4FM	Argentina	
28.245	A92C	Bahrain	NW/SE Dipole
28.2475	EA2HB/EA2OIZ	Spain	
28.249	ZZ1ANB	Zimbabwe	
28.250	PAØGG	Netherlands	
28.251	ON5AV	Belgium	
28.2525	VE7TEN	Vancouver, Canada	4W
28.255	LU1UG	Argentina	5W - GP Ant.
28.2575	DNØTE	Germany	40W
28.260	VK5WI	Sa. Australia	
28.261	VK2RSY	NSW, Australia	
28.2625	VK2WI	NSW, Australia	
28.265	PY2EXD	San Paulo, Br	
28.270	ZS6PW	RSA	
28.271	VK4RTL	Queensland, Austr	

NEW SCHEDULE FOR OSCAR 10

AMSAT-OSCAR 10 has a new operating schedule, effective immediately. The following mode schedule is an adjustment to allow more operating time.

Mean Anomaly	Mode	Time
0- 99	B	Mon Thru Sat
100-117	L	Mon Thru Sat
118-218	B	Daily
219-234	Off	Daily
235-256	B	Daily

Mean Anomaly 0-256 is one complete orbit starting at perigee. Perigee is the lowest altitude of the orbit in the southern hemisphere. Apogee is the highest altitude of the orbit in the northern hemisphere. Apogee would be mean anomaly 128 or ½ an orbit. One complete orbit is 699.5 minutes.

Tnx - ARRL LETTER

28.2725	TU2ABJ	Ivory Coast
28.2725	9L1FTN	Sierra Leone 10W Vertical Dipole
28.2775	DFØAAB	W. Germany 40W GP Ant.
28.280	YV5AYV	Caracas, Venezue Rotary Beam
28.280	LU8EB	Argentina 5W
28.284	VPØADE	Falkland Is. 8W-V Beam to G Land
28.286	KAIYE	Hamlin, NY, USA 2W Vert. Dipole
28.287	WØQMV	No. Carolina, USA 20W GP Ant.
28.288	W2NZH	New Jersey, USA 3W GP Ant.
28.290	VS6TEN	Hong Kong 4W GP Ant.
28.2925	LU2FFV	Argentina 5W GP Ant.
28.295	VU2BCN	India, New Delhi
28.296	W3YD	Maryland, USA 1.5W Vert. Dipole
28.2975	ZS1STB	RSA
28.299	PY2AMI	San Paulo, Br 10W Vert. Dipole
28.315	ZS6DN	RSA
28.335	WKSAMI	Sa. Australia
28.888	W6IRT	California, USA
28.890	WD9GOE	USA
28.992	DLØNF	W. Germany

Tnx KAIYE/2

FCC ALLOCATES MORE RESERVE

FCC took on some of its thorniest allocations problems on November 21, those dealing with the "land mobile reserve" in the 800 and 900 MHz bands. Faced with nine petitions requesting 80 MHz of space where only 41 MHz is available, the Commission took these actions:

1. Adopted a Notice of Proposed Rulemaking (NPRM) looking toward allocation of 8 MHz for a new multi-use, primarily non-urban UHF mobile satellite service.

2. Adopted an NPRM considering 845-851 and 890-896 MHz as additional spectrum for common-carrier cellular service.

3. Adopted an NPRM proposing additional 12 MHz for Private Land Mobile, with 12.5 kHz channel spacing, at 896-902 and 935-941 MHz.

4. Adopted a Report and Order allocating 6 MHz for a government and non-government fixed service, grandfathering in existing studio-to-transmitter links.

5. Adopted a Report and Order allocating 3 MHz additional space for studio-to-transmitter links.

6. Declined to allocate space for a new Private Radio Communications Service (PRCS). FCC cited the greater needs of the Land Mobile Service and the availability, public acceptance and rapidly declining costs in the Cellular Radio Service as factors.

7. Decided against making an allocation in the 900-MHz region for cordless telephones.

8. Decided against providing for air-to-ground and railway public telephone services in the 900-MHz region, saying that this service would be a luxury available to a small segment of the public, and not a necessity even for those who want to use it.

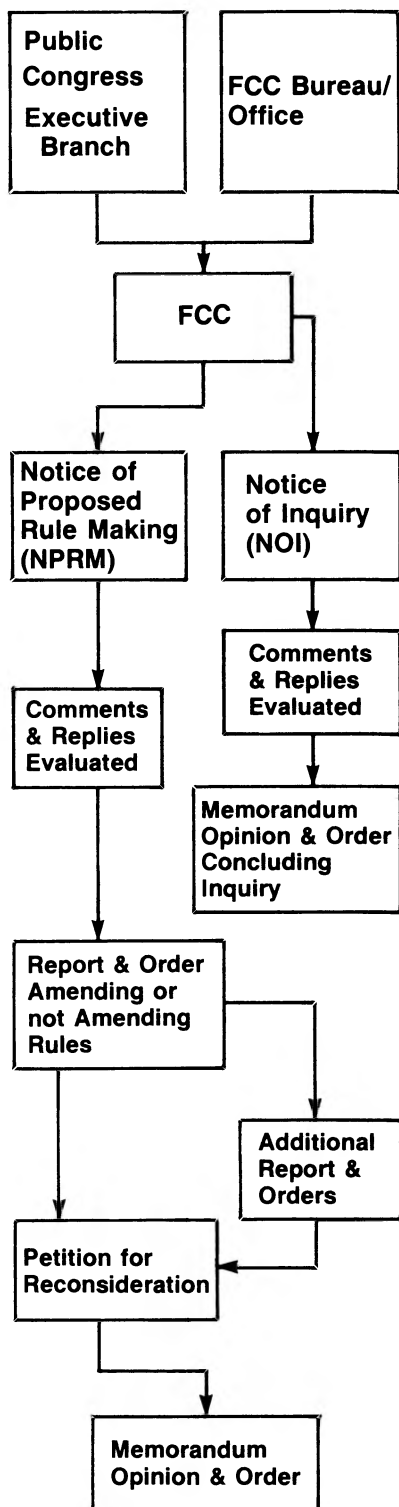
Although the LMCC petition, RM-4829, requesting additional frequencies was apparently dealt with at this meeting, there was no mention of 220 MHz at all. We will not know what action, if any, the FCC plans to take on 220 until the actual release of the NPRM. Details will appear in *QST*.

Tnx ARRL LETTER

FOR SALE - Eico-Oscilloscope - \$35. Call Earl W2WQV, 377-7401.

WANTED - Heathkit Test Equipment Course - EE3105, Experimenter and Trainer - ET3100B. Call KA2OMT, 473-4262.

How FCC Rules Are Made



EPA To Rule On Radiation Hazards

Are FM and TV... or for that matter, amateur radio towers dangerous to your health? The Environmental Protection Agency's **Non-Ionizing Radiation Branch** claims that there are "hot spots" (such as in downtown Honolulu) where the radiation is so densely concentrated that it could cause "heat stress, damage organs and even effect changes in body chemistry." The EPA says that people that live and work within 150 feet of TV or FM towers run the risk of permanent eye, testicle and internal organ damage.

Non-ionizing radiation can penetrate the body and literally heat it from the inside out in much the same manner a microwave oven does. The voluntary government guideline of 1,000 microwatts per cubic centimeter is due to be revamped by the EPA's **Office of Radiation Programs** very shortly.

One Washington source said that the EPA will adopt an "Advance Notice of Proposed Recommendation" within 60 days specifying a new RF radiation exposure limit of 100 mw/cm³ but also asking for additional public comment. The EPA was originally scheduled to announce the new exposure limit this past June. The EPA says they might not adopt an exposure limit if public comment indicates one is not necessary.

The new 100 mw/cm³ guidelines, if adopted, could impact the amateur community since VHF/UHF transceivers (particularly hand-helds which are held close to the face) exceed this limit.

QEX — EXPERMENTER'S NEWS

Are you looking for a newsletter that is both newsy and technical? Would you like to learn or experiment with Packet Radio, RTTY, computers and amplitude compandored single sideband? QEX: The ARRL Experimenter's Exchange may be the newsletter for you.

For a fraction of the cost of other Amateur Radio related newsletters, you can subscribe to one full year of QEX. Past articles include Thoughts on Antenna Design, AMTOR in Australia, Packet Meteor Scatter Communications and computer programs for the TIMEX/SINCLAIR AND C 64. Paul Rinaldo, W4RI, Senior Technical Editor of QST, reports on digital communications and what is developing in the ARRL electronics laboratory. Feature columns such as BITS takes a look at new products and VHF+ Technology, edited by Geoff Krauss, WA2GFP, keeps us up to date in this area.

If you are interested in subscribing to QEX, take a moment to fill out the order card below. When mailing in your check or money order, please include this form.

The broadcast industry is very concerned since some stations would have to reduce power and reconsider planned tower construction. And what about amateur VHF/UHF antenna arrays in residential areas?

Tnx W5YI REPORTS

QEX

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Prices subject to change

without notice.

Renewal New Subscription

ARRL Membership Control # _____

Name _____ Call _____

Address _____

City _____ State or Province _____ Zip or Postal Code _____

Profession: _____ Signature _____

Payment Enclosed

Charge to my

Mastercard

VISA

American Express

Account # _____ Valid from _____

Signature _____ Good thru _____ MC Bank # _____

Date _____

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