

12-90

# Zero Beat

Hampden County Radio Association, Inc.

Our 43rd ARRL affiliated year  
Special Service Club

Serving Greater Springfield, MA

## Next Meeting

### Christmas Social and Show & Tell

**December 7th, 8:00pm**  
**Feeding Hills Congregational Church**  
**Corner of routes 57 and 187**

**Munchies will be served, and equipment will be on display. If you have something you'd like to bring for demonstration, please call Steve WA1EYF at (413) 596-8216.**

**Next VE exam will be December 5th, 7:00pm at the Agawam High School**

**Next meeting will be December 7th, 8:00pm at the Feeding Hills Congregational Church**

**There will be no Board of Directors meeting in December**

#### Club Officers

President—Stan Hilinski, **KA1ZE**  
Vice President — Bob Lafleur, **NQ1C**  
Secretary — Jim Sebolt, **N1DUY**  
Treasurer—Greg Stoddard, **N1AEH**

#### Board of Directors

Charlie Dunlap, **K1II**      Bob Cohen, **K1CPJ**  
Larry Lemoine, **N1EPE**      Fred Stefanik, **N1DPM**  
Steve Nelson, **WA1EYF**      Frank Potts, **NC1I**  
Cliff Junkins, **W1UWX**      Scott Cohen, **KAIQAS**

*Articles from this newsletter may be reprinted as long as credit is given to Zero Beat*

## President's Comments Free!

Now that I have got your attention, let's get started. First on the free list is a little free advice. Thanksgiving is now passed, and I hope everyone has recovered from all the bird. I thought I would burst after the feast so to work the calories I spent some time working on the antenna system. The January VHF contest is just around the corner. Let's get our stations in order before the cold winds of winter blast their icy nails into any of our outdoor projects. I know the saying "An antenna won't work unless it is put up in the snow or rain", but neither will we if we should suffer an accident while working in poor weather. We can still function working on antennas on a sunny day with the temperature in the 30's and no wind. Antenna projects have been completed or are being worked on at the QTH's of Jeff K1BE, Stan KA1ZE, Roy, KC1OR, Al NA1W, Bob NQ1C, Paul, W1ETH, Art W1NY, and Steve, WA1EYF. I'm sure any of the above would be willing to offer free advice to anyone requesting it.

For those who read this far, I now take pleasure to offer something else that is free! Our December social. Bring your YL, XYL, and start December holiday season with the HCRA. Finger foods and desert will be served thanks to Larry, N1EPE. I look forward to exchanging holiday greetings with all of you at the social.

73, Stan.

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### Club Meeting Time Change?

We have heard comments from some of you that you would like the meetings to begin earlier in the evening. What do you think? Let us know! If you'd like the meetings to start earlier, what time? You can discuss this with any officer or board of director so that we can discuss this matter further at future board meetings. Thanks.

## • Tidbits •

This is the TidBit column, which will be run monthly. In it you will find tidbits about local amateur radio happenings, as well as general tidbits about amateur radio. What will make this column work? YOU! I cannot know every tidbit there is to know about amateur radio, so I rely upon you to tell me about them. No, you don't have to write a whole article — just a sentence or two about something interesting that has happened or will happen. If you're not sure that your tidbit is the right type of information, give it to me anyway! It's better to get too much than too little.

So here we go...

- Art, W1KK, was recently heard experimenting with a 650 foot openwire fed 60 foot high loop antenna on 2 meters on (146.520 simplex) running 1 watt using a crystal controlled rig.

- The first radio amateurs association in the world was the Radio Society of Great Britain. It was founded in 1913 and, one year later, the ARRL was created in the U.S. Today, the ARRL is the biggest in the world.

- John, AC1T, recently completed a trip to Italy, and did not even bring one radio. Now, that's a *real* vacation! He did however take enough pictures to keep Kodak operating in the black for another year.

## 1990 US and DX Callbooks

### \$28.00 each

**Place your order at the meeting, or send  
your check to the club PO Box. Callbooks  
will be delivered in December.**

## Review of the RA4-50 Rutland Arrays 6 meter beam

By  
Jeffrey J. Duquette K1BE

I bought one of the first RA4-50 6 meter antennas from Rutland Arrays. I'm not able to put up a mega beam like Fred or Stan, and I had previously purchased the 220 and 432 antennas made by Rutland, and was most impressed.

I assembled this 4 element beam in about 30 minutes, with my three year old's help. Mechanical construction is very solid. There were no burrs to cut me or other problems with the pieces. I thought the antenna went together easily. The thing I disliked the most was the U bolts for the elements. Thought those were of poor quality. Tough to line them up with the holes, too. Once they were on, I felt they would hold fine. Thing I liked best were the element plates, which I felt were very well made.

Feedpoint impedance is 50 ohms, with a weather proof N connector. VSWR at 50.250 is expected to be 1.1:1. The boom is 12 feet long and the measured gain is 8.25 dbD. It has a very good front to back ratio. (26db) Wind surface area is 1.2 square feet, and it is rated to survive 120 mph winds.

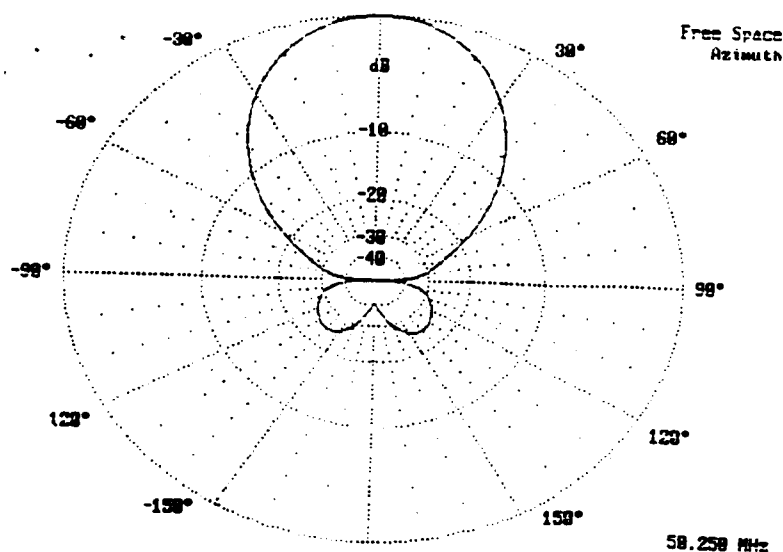
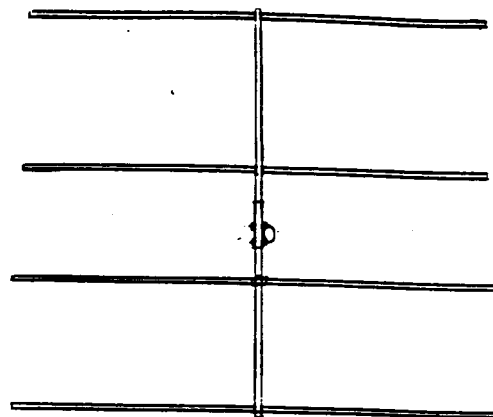
If possible, I'd make the pressed fitting on the end of the gamma match tube fit more closely on the N connector. As installed, it touches in only one place. I thought of soldering a small washer over it to make the inner hole smaller, but decided not to.

I do all of my antenna work by myself, and this was installed atop the new tower by my lonesome. I had no problem handling this beam and it went in easily. I fed it with RG 8. My cheap SWR meter did not even indicate a reflection, the needle barely moved in the reverse direction above 1!

One thing I always do on antennas is to mark each section as it's assembled so that I can take it apart and put it together quickly without instructions. For example, I mark each section by its name, D-1 and then mark on the the elements as it is assembled, 1-1. That would be where the element went into the splice tube, I marked on the element, I marked on the splice tube. The opposite side would be marked 2-2. Then I just line up the numbers when I reassemble it. And all elements are numbered 3-3, 4-4, 5-5, etc. The antenna I bought from DownEast Microwave used color stripes to align the masting. The red goes to red, the blue to blue. Makes it harder for the nummies to assemble the boom or elements backwards.

Overall impression of the antenna is excellent mechanical quality and design. I won't be really testing them all until

the January 1991 VHF Sweepstakes, but then it'll be an acid test. See you on the air and during the contests. Look for me on five bands; 50, 144, 220, 432, and 1296 from FN32!



### RG 8 A/U Coaxial Cable Sale!

A limited amount of high quality foam core RG 8 A/U is now on sale. Local radio stores sell a poorer grade RG 8/U for 42¢ per linear foot. This coax is brand new, with 96% shielding. Here's your chance to save money and improve performance.

Price: 500 foot roll, \$160. (32¢ foot)

100 foot lengths, 35¢ foot

Odd lengths 37¢ foot

You can call and order ahead or buy it at the next meeting, 730-2584 weekdays 8-4

#### LOSS IN db PER 100 FEET

TYPE	IMPEDANCE	3.5	7	14	21	28	50
RG 8/U	52 ohms	0.3	0.45	0.66	0.83	0.98	1.35
RG 8 A/U	52 ohms	0.25	0.36	0.53	0.67	0.80	1.1

# Uploading and Downloading Files To/From a Packet BBS.

You are probably familiar with the procedures for reading and sending messages on your local packet BBS system. And you can use these same procedures for reading and sending messages on any packet BBS system; The procedures for reading and sending messages are basically the same for WORLL, AA4RE, MSYS, and WA7MBL systems.

The procedures for downloading and uploading files from the file section vary from one software package to another. This article will give a brief description of the procedures used to download and upload files from those BBS systems running the AA4RE software. These procedures are somewhat different than those used on WORLL, MSYS, and WA7MBL systems.

To get a list of file areas available to you, use the "W" command. This command will display all the file section names, like this:

```
W1NY bbs: 901025/0351z, 48888 >
```

```
w
```

Files are available on the following topics:

CLUB-- Club Activities & Info

INFO-- General Information

AMSAT-- Amsat & Oscar

IBM-- IBM PC Files

MAC-- Macintosh Files

Each area contains files of a specific subject matter. To list the files in a particular area, you again use the W command, but follow it with the name of the area you wish to list. For example, if you wanted to see what files are available in the INFO section, you would use the following command:

```
W1NY bbs: 901025/0351z, 48888 >
```

```
w info
```

```
COAXNUM      2K  NICADS      6K  PRIVATE.RAD  5K
```

```
CONNECT.BEG  6K  NOCODE.TXT 15K  QM.TXT       1K
```

```
CONNECT.INF  2K  PRIVACY.RAD 9K  R7000.MOD    28K
```

```
74K / 1,106K / 21,309K
```

The filenames and their sizes are shown. At the bottom of the list is the total size of the files in this section, the amount of space free on the disk, and the total size of the disk. You can also display the file's date in place of, or along with, the file's size. Use the "H W" command for more information.

To download one of the files listed, use the "D" command. The command is followed by the name of the file section, and then the

name of the file to download. For example, to download the file COAXNUM:

```
W1NY bbs: 901025/0352z, 48888 >
```

```
d info coaxnum
```

```
Subject: Coax Numbering From Belden
```

The procedure for uploading (sending a file) to the BBS is similar to downloading a file. Decide what directory you want to upload the file info, and decide upon a file name. For example, to upload a file about the December club meeting, you might want to use the following command:

```
W1NY bbs: 901025/0355z, 48888 >
```

```
u club meeting.doc
```

```
Enter file, end with Control-Z or /EX
```

The December meeting will be a Christmas social, with lots of goodies.

Hope to see you there!

```
/EX
```

```
File saved.
```

You can also download and upload files using binary protocols such as YAPP and XMODEM. You must have software on your computer capable of these binary protocols. The "DB" command works similar to the "D" command, except that you must specify a binary protocol name before the file section name. For example, to download the file R7000.MOD with YAPP protocol, you might do the following:

```
W1NY bbs: 901025/0356z, 48888 >
```

```
db yapp info r7000.mod
```

```
Start your binary transfer now.
```

Uploading files with a binary protocol works similarly. Use the "H U" and "H D" commands for more information.

You may have trouble with binary files on some AA4RE systems that are running older versions of the G8BPQ node software. There was a problem that prevented the binary transfers from working. The latest version of G8BPQ, v3.59, seems to have solved the problem. Binary transfers should work OK on any AA4RE system running v3.59 or later of G8BPQ.

-- NGIC

*(reprinted from the NEDA Quarterly)*

## For Sale

Etherneq equipment for sale from Bernie O'Donnell KA1HXH, (413) 596-8950

- 1 3Com (Altos) server 586-40A
- 2 Wyse WY-100 terminals
- 2 Transceivers, model 3C-100
- 1 Network interface card (new in box)
- Cables and connectors
- Ethershare/print/mail software and documentation

\$850 or best offer, or trade for ham equipment

## How To Contact The Editor

- 1) Call me at (413) 737-8503
- 2) U.S. mail to Bob Lafleur, NQ1C, 45 Ionia Street, Springfield MA 01109-2519
- 3) Packet mail to NQ1C @ W1NY.MA
- 4) TCP/IP mail to bob@nq1c.ampr.org (ip address 44.44.0.35) - I hang out on the 147.075 pkt repeater
- 4) CompuServe mail to 75146,3122
- 5) America Online mail to Skid6
- 6) Internet mail to 75146.3122@CompuServe.com
- 7) GENIE mail to SKID
- 8) Come visit me at my house. Shack tours are free.

# Calendar of Events

<b>December</b>	<b>5</b>	<b>VE Session</b>
	<b>7</b>	<b>Christmas Social</b>
<b>January</b>	<b>4</b>	<b>Meeting</b>
	<b>10</b>	<b>Board Meeting</b>
	<b>19-20</b>	<b>VHF Contest</b>
<b>February</b>	<b>1</b>	<b>Meeting</b>
	<b>6</b>	<b>VE Session</b>
	<b>7</b>	<b>Board Meeting</b>
<b>March</b>	<b>1</b>	<b>Meeting</b>
	<b>6</b>	<b>VE Session</b>
	<b>7</b>	<b>Board Meeting</b>
<b>April</b>	<b>5</b>	<b>Meeting</b>
	<b>11</b>	<b>Board Meeting</b>
	<b>28</b>	<b>Fleamarket</b>
<b>May</b>	<b>3</b>	<b>Meeting</b>
	<b>9</b>	<b>Board Meeting</b>
<b>June</b>	<b>5</b>	<b>VE Session</b>
	<b>7</b>	<b>June Banquet</b>
	<b>13</b>	<b>Board Meeting</b>
	<b>29-30</b>	<b>Field Day</b>

Rutland Arrays highest performance yagis available! 10m: RA5-28, 5 elements, 8dBd gain. 6m: RA4-50, 4 elements, 12' 4" 8.25dBd. RA7-50, 7 elements, 26' 6" 10.5dBd. 2m: RA8-2UWB, 8 elements, 11' 9" 13.5dBi gain. FO12-144, 12 elements, 17" 4" 12.6dBd. FO15-144, 15 elements, 24' 8" 13.7dBd. 220: FO16-220, 16 elements, 17' 3" 14dBd. 70cm: FO11-440, 11 elements, 6' rear mount 12dBd. FO22-432, 22 elements, 14' 15.8dBd. FO25-432, 25 elements, 17' 3" 16.5dBd. FO33-432, 33 elements, 24' 3" 17.8dBd. We also have stacking frames and power dividers. Call or write for our catalog. 1703 Warren Street, New Cumberland, PA, 17070. (717) 774-8298, 7:00-10:00pm EST.

Authorized dealer: Fred Gore KA1TBS  
(413) 569-3579

Receive Only	Freq. Range (MHz)	N.F. (dB)	Gain (dB)	1 dB Comp. (dBm)	Device Type	Price
P28VD	28-30	< 1.1	15	0	OGFET	\$29.95
P50VD	50-54	< 1.3	15	0	OGFET	\$29.95
P50VVG	50-54	< 0.5	24	-12	GaAsFET	\$79.95
P144VD	144-148	< 1.5	15	0	OGFET	\$29.95
P144VDA	144-148	< 1.0	15	0	OGFET	\$37.95
P144VVG	144-148	< 0.5	24	-12	GaAsFET	\$79.95
P220VD	220-225	< 1.8	15	0	OGFET	\$29.95
P220VDA	220-225	< 1.2	15	0	OGFET	\$37.95
P220VVG	220-225	< 0.5	20	+12	GaAsFET	\$79.95
P432VD	420-450	< 1.8	15	-20	Bipolar	\$32.95
P432VDA	420-450	< 1.1	17	-20	Bipolar	\$49.95
P432VVG	420-450	< 0.5	16	+12	GaAsFET	\$79.95
<i>(Price of switches)</i>						
SP28VD	28-30	< 1.2	15	0	OGFET	\$59.95
SP50VD	50-54	< 1.4	15	0	OGFET	\$59.95
SP50VVG	50-54	< 0.55	24	-12	GaAsFET	\$109.95
SP144VD	144-148	< 1.6	15	0	OGFET	\$59.95
SP144VDA	144-148	< 1.1	15	0	OGFET	\$67.95
SP144VVG	144-148	< 0.55	24	-12	GaAsFET	\$109.95
SP220VD	220-225	< 1.9	15	0	OGFET	\$59.95
SP220VDA	220-225	< 1.3	15	0	OGFET	\$67.95
SP220VVG	220-225	< 0.55	20	+12	GaAsFET	\$109.95
SP432VD	420-450	< 1.9	15	-20	Bipolar	\$62.95
SP432VDA	420-450	< 1.2	17	-20	Bipolar	\$79.95
SP432VVG	420-450	< 0.55	16	+12	GaAsFET	\$109.95

Every preamplifier is precision aligned on ARR's Houston Precision HP8070A/HP8080A state-of-the-art noise figure meter. All our preamplifiers are for receive applications only. Inline preamplifiers are rf switched (for use with transceivers) and handle 25 watts transmitter power. Mount inline preamplifiers between transceiver and power amplifier for high power applications. Other amateur, commercial and general preamplifiers covered in the 1-1000 MHz range. Please include \$2 shipping. U.S. and Canada. Connecticut residents add 7% sales tax. C.O.D. orders add \$2. Air mail to foreign countries add 10%. Order your ARR Rx only or your preamplifier today and start hearing like never before.

## Advanced Receiver Research

Box 1242 • Burlington, CT 06013 • 203 582-9409



## Two New Nets For Beginners

Two new nets have been started to help those just starting off in Ham Radio. Tuesdays at 8:00pm on the 449.175 repeater, and Thursdays at 8:00pm on 28.480 MHz, the beginners net will meet. If you're new to Ham Radio you might want to check out these nets. If you're an experienced operator, you might stop by these nets to give the newcomers a helping hand. For more information, contact Fred Gore, KA1TBS, at (413) 569-3579.

LOOP YAGIS: 902 Mhz 33 element \$89 kit, \$109 assembled and tested. 1296 Mhz 45 element \$89 kit, \$109 assembled and tested. 1296 55 element "Super Looper" \$99 kit, \$124 assembled and tested. 2304 Mhz 45 element \$75 kit, \$89 assembled and tested. Also available: element and hardware kits for above. 2 and 4 w power dividers. Discount on complete arrays. Solid state line power amps. 13vDC: 1296 - 8W in, 35W out \$315. 1W in 20W out \$265. 4W in 70W out \$695. GaAsFET preamps: 902 Mhz .8dB \$90. 1296 .8dB NF \$90. 2304 Mhz 1dB max NF \$140. SHF System no-tune transverter kits, w/144 Mhz IF now available for 903 thru 3456. Write or call for complete catalog. DOWN EAST MICROWAVE, Bill Olson, W3HQT, Box 2301, RR-1, Troy Maine 04907. Information and orders telephone (207) 948-3741

## Ham Radio for the Compleat Idiot

The following is an actual letter. The original was typewritten, and all spelling and grammar has been carefully left intact, including errors.

To Mr. (name omitted)  
District Manager for Alabama  
Radio Shack  
3300 N. Pace Blvd  
Pensacola, FL. 32505  
Dear Sire,

This letter is complain about the problems I have having with the ham radio model number 19-1101 I had got from your company Radio Shack. I had this shipped special to me from your store 1096 Eastdale Mall Montgomery Alabama. I was got this because I think that i would get transmitt furthur that I did with the TRC 217 40 channel walkie talkie.

The problem that had first was when I was going to hook this radio HTX-1000 to the antenna the conektor on the radio was wrong it wouldn't attach to my cable. I was able to hook it finally by making a small change in in the connektor. As soon as I tried to use it there was no sound coming at all. This happened for two days and I never did get to talk to anybody the whole two days. That day the cable company came knocking my door and said there was something causing problems at my house and disconnected my radio from the cable line. you knew when I bought the Radio that I was going to use that for my antenna. You didn't tell me not to why not?

Next time I decided to put the HTX-1000 in my automobile I thought I would see how it worked their. I hooked it to my CB-antenna and at least I could hear people. But what happens now is no one wants to talk to me because they says you have to have a licens to talk on them. Why? I don't have to have a licens to talk on my CB. They'll talk to me there. Anyhow it don't matter much anymore because somebody done took the radio HTX-1000 from my automobile.

What I would like for you Radio Shack to do is refund my money because I don't have the radio anymore and it's not my fault i dont and I think you should give me back my money. Also the cable

company here says that I hurt something in there line and want to be paid fix it. It will cost \$27482.98 to fix the equipment they say was damaged because you didnt tell me not to hook it to the cable. Please remit to me the check for \$27758.53 for damages due. To save this matter from going to court the check must be in my hand by June first or I will turn this over to my attorneys of law.

Thank you

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## OO (Oh! Ohh!)

**Editorial by Jeffrey J. Duquette, K1BE  
Reprinted from The Clearinghouse**

Official Observers (OO) are one of the many thankless tasks volunteers take on to benefit amateur radio. I recently had the misfortune to purchase a transceiver from K5ZH. Back in the good old days, you could send off money and get something back that was as advertised. Hams are not like that anymore. The radio I bought was advertised "10 weeks new" and I paid top dollar under that trusting assumption. When it arrived it seems that the owner welded two nuts to the bottom, and looks like he used a blowtorch. When I wrote to him, the answer was basically "tough luck, buddy". What does this have to do with OO's?

Well, the entire culture of amateur radio has changed. When you mention to someone that their signal is not up to snuff, you're more likely to receive an obscenity in return. Constructive comments are taken as a personal affront, and provoke mild to violent abuse. The gang gets on the local repeater to discuss the "Gestapo" style of OO's. Even the hams who don't agree with the comments are two wimpy to stand up for what is best for the amateur radio service.

OO's are not interested in being policemen. The amateur radio service needs self policing more than ever. Band segments will be lost due to the rude and obnoxious behavior of a very few people. Some hams also seem to operate under the assumption that the Federal Communications Commission does not exist. The FCC does issue letters, citations, fines, and prison sentences. An amateur who served several months in prison came out and did the exact same thing, and now faces a fine of \$100,000 and five more years in prison.

# Is Ham Radio Safe?

by Bill McGurk, N1CAS

Several news stories have appeared lately in local newspapers and in ham radio magazines concerning the danger of amateur radio. The Associated Press released a story saying there was an increased rate of death due to certain types of cancer in amateur radio operators.

Some stories described the possible dangers of being exposed to electromagnetic fields, including high voltage power lines (high current 60Hz wiring), microwaves, ham radio equipment, and video display terminals. Other articles talked about the possible hazards of toxic chemicals such as polychlorinated biphenyls (PCB's) used in some capacitors and dummy loads. Also included were chemicals for etching PC boards, repairing fiberglass, asbestos, and fumes from soldering.

As a result of the last article I read, "Is Amateur Radio Hazardous To Your Health" by Dr. Shulman (Oct. 89 QST) I have made some changes in my shack. Dr. Shulman, a physician who specializes in cancer surgery, reviewed much of the current research as it relates to amateur radio operators. He gives some excellent preventative suggestions for hams which I have included below.

When operating on the low bands in my shack, I sat very close to my 30 amp power supply. As a result of his suggestions I have moved it several feet away from my operating position. I was also in the process of constructing a headset with an antenna attached for my handy talkie which I was planning on using when I go hiking in the mountains or bike riding.

Dr. Shulman described research that studied the RF energy absorbed by the tissues in the head (eye, brain, muscle, fat, and bone) while holding the transmitter in vertical and tilted positions about the head. The study indicated the presence of a "hot spot" in the eye while using a 1/2 wavelength antenna (1.0 watt) and one in the frontal portion of the brain while using a 5/8 wavelength antenna (1.0 watt). Needless to say I am not going to mount the antenna on my headset. I hope you will also get some new ideas from his recommendations.

He goes on to say "we should recognize a relatively newly identified environmental hazard and that amateur radio operators should take those simple measures which decrease the possibility of our personal exposure to electromagnetic fields or toxins that we may contact as a consequence of our interest in amateur radio.

Dr. Shulman concludes by saying on the basis of the research papers he studied it is now apparent that the data derived so far must be considered significant enough to support further research and that additional information is needed and will ultimately be forthcoming on this important issue.

Should we continue to use our ham radio equipment? He states that most experts would have no hesitation regarding their own personal use of currently available amateur radio equipment, provided that it was properly installed and operated and that the recommended precautions were followed.

I wrote this article because Dr. Shulman's recommendations helped me make some positive changes in my shack. I hope the following recommendations will be of value to you.

## Preventive measures:

1) Do not stand or sit close to your power supplies or linear amplifiers while operating, even when they are in stand-by mode.

2) Stay at least 24 inches away from any power transformer, electric fans, or other sources of high level 60Hz magnetic fields while in operation.

3) Do not tune up or operate a high powered linear amplifier while the shields or covers are off.

4) Run your transmission lines away from where you or other people sit in or near your shack.

5) Properly terminated coaxial transmission feed lines should be used in preference to open-wire or end-fed antenna installations which come directly into the transmitter, as the RF radiated from a coaxial feedline is much lower.

6) Use common sense about placing all antennas well away from yourself and others, especially VHF, UHF, and particularly microwave applications. No one should be in the near field of an antenna.

7) No person should be near any transmitting antenna while it is operating. This is especially true for all mobile or ground mounted vertical antennas. The use of indoor transmitting antennas which are close to people in a house or apartment should be reconsidered.

8) Use the minimal power needed to make a QSO, especially if the antenna is less than 35 feet above the ground.

9) Hand-held radios should be used on the lowest power setting needed to carry out communications.

10) Hand-helds should be kept as far from the head as possible when operating. The use of a separate microphone or similar device is recommended.

11) Transmissions using a hand-held radio should be kept as short as possible.

12) Power density measurements should be made before running more than 25 watts in a VHF mobile installation, particularly if the antenna is rear-deck mounted and passengers may ride in the back seat. The safest mobile antenna location is in the center of the metal roof.

13) The development of an accurate inexpensive power density meter would be of major benefit to the amateur radio community so that RF power density measurements could be taken in all radio installations. Because of the current high cost of such devices, groups of amateurs or clubs may wish to purchase one and share in its use.

14) Soldering should only be done in a well ventilated area. A small fan should be used to blow away toxic fumes.

15) When using toxic chemicals, such as when etching PC boards or repairing fiberglass, wear gloves and goggles, use proper tools, and avoid contact with any of the chemicals. If accidentally contaminated, wash off the compounds immediately with copious amounts of water. Again, the importance of always working in a well ventilated area with personal protective covering cannot be overemphasized.

16) Hazardous chemicals, such as those in the PCB class, are used in some capacitors and dummy loads. Use extreme care in handling these materials, and consult with the appropriate local authorities to determine the proper means of disposing of these chemicals in an environmentally responsible way.

## HCRA Membership

Dues for the Hampden County Radio Association are \$9/year. As a member of the HCRA you will receive 10 issues of Zero Beat, possible special notices of meetings, the ability to vote for officers and directors at the annual meeting, and the ability to submit your score towards the club score in the January VHF contest.

You may sign up at any meeting by seeing the club treasurer, Greg Stoddard N1AEH, or you may send your payment along with name, address, call, and license class to HCRA, P.O. Box 482, West Springfield MA, 01090-0482.

Membership is open to all licensed amateurs. A non-amateur may join the HCRA as an associate member.

Feel free to contact any of the officers listed on the front of this newsletter if you have any questions about the club.

## VE Exams

Exams are sponsored by the HCRA on the first Wednesday of each month at 7:00PM *sharp* at the Agawam High School. VE's are also needed. If you are interested in taking an exam or helping give exams, please contact Jeanette WC1O at 786-1463.

Next VE exam will be December 5th at the Agawam High School.

## HCRA Meetings

First Friday of each month at  
Feeding Hills Congregational Church  
Center of Feeding Hills  
Intersection of routes 57 & 187  
Doors open at 7:30 PM  
Meeting starts promptly at 8:00 PM

## Local Nets

HCRA 10 Meter Net	Thursday 9:00 PM 28.650
Nutmeg VHF Traffic Net	Daily 9:30 PM 146.28/88
80 Meter Ragchew Net	Tuesday 8:00 PM 3.709 Mhz
WMPN	Daily 6:00 PM 3.937
WMSN	Tuesday & Thursday 7:30 PM 3.713
WMN	Daily 7:00 PM 3.562
WMTN	Monday-Friday 1:00 PM 146.31/91
CPN	Monday-Saturday 6:00 PM 3.965
	Sunday 10:00 AM 3.965
Mt. Tom Information Net	Wednesday 7:30 PM 146.34/94
Mt. Tom Swap Net	Follows Mt. Tom Information Net
Mt. Tom Emergency Net	Sunday 8:45 AM 146.34/94
WMA Tfc Net Cycle 3	Tue, Wed, Thu 4:00 PM 146.34/94
RASON	Daily 9:00 PM 146.13/73
WESCON	Daily 8:30 PM 147.78/18
CN	Daily 7:00 & 10:00 PM 3.640
CSN	Monday-Friday 7:30 PM 3.720
BEARS Traffic Net	Daily 9:15 PM 145.11(-)
Beginner Net	8:00pm Tue 449.175, Thu 28.480

Hampden County Radio Association, Inc.

P O Box 482

West Springfield MA 01090-0482

Editor: Bob Lafleur, NQ1C

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*If your call is blue,  
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