

# ZERO BEAT

HAMPDEN COUNTY RADIO ASSOCIATION, INC.

Springfield, Mass.

ARRL Affiliated, 31st Year

March, 1980

## HAMPDEN COUNTY RADIO ASSN.

### Club Meeting

Feeding Hills  
Congregational Church  
Corner Routes 57 and 187  
Feeding Hills, Mass.

March 7, 1980 8 PM

George Woodward, W1RN, from the ARRL will speak on Narrow Band Voice Modulation. NBVM may become as important to amateur radio and other communications as SSB and this should be a very good talk to hear.

George is co-editor of The Radio Amateurs Handbook and also writes occasional pieces for QST.

Before joining the headquarters staff in 1977, George worked 11 years in the electronics industry, most recently as a field service representative for Weinschel Engineering. His work at Weinschel included experience with microwave instrumentation at frequencies up to 110 GHz.

George was first licensed in 1962 as KN3TQM, and has held the calls K3TQM and K3GW. In addition to his extra class amateur license he has held a commercial radiotelegraph license.

## GENERAL MOTORS TOUR

A group of amateur radio operators from the H.C.R.A. will be taking a tour of the General Motors Assembly Plant in Framingham, MA, on Friday, May 9, 1980. The group will depart from the Fairfield Mall in Chicopee at 4:30 P.M. sharp. Any amateur wishing to attend should contact Al Sittard WB1EMN at 593-9034 or Jack Dumont K1ZQB at 533-6432 by the April 11th meeting. If enough persons are interested, a bus will be rented.

## WESTERN MASS EMERGENCY NET

The Western Mass Emergency Phone Net remains as active as ever. As an added incentive for checking into the net, an award is now available. Don, W1UPH, has announced the following info: "How to earn a certificate of membership to the Western Mass Emergency Net.

Twelve points in a three month period will earn a certificate. Note that a certificate may be earned by checking into either 75 meters or 2 meter W1EN 12 times in three months. If any other net duties are performed a certificate may be earned sooner. This certificate is honorary and has no bearing or affect on ARES membership. Everyone, member or not, is always welcome and encouraged to check in.

The W1EN meets every Sunday morning at 0830 local time on 3937.4khz on SSB. A liaison station will report to the following FM repeaters to take check ins at 0900 local time:

146.34/94 K1ZJH/RPT Mt. Tom  
146.10/70 WR1AEF Westfield  
146.31/91 K1FFK/RPT Mt. Greylock  
146.46/147.46 W1UD/RPT  
146.37/97 WR1ABO Worcester  
147.81/21 K1NBS/RPT Warren

(please turn to page 3)

## NOTICE

THE APRIL MEETING HAS BEEN RESCHEDULED FROM FRIDAY APRIL 4, 1980 to FRIDAY APRIL 11, 1980 IN OBSERVANCE OF PASSOVER AND GOOD FRIDAY.

HAMPDEN COUNTY RADIO  
ASSOCIATION, INC.

PRESIDENT

Larry Soltz WBI CJH 567 3444

VICE PRESIDENT

Ron Beauchemin WBI ETS 593 9852

SECRETARY

Andre Bouchard WBI BZW 786 2301

TREASURER

Paul Kress WAI ZKT 568 8291

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Al Sittard	WBI EMN
Ollie Passburg	NIA FK
Jack Lo Monaco	WAI YYK
Steve Shore	WAI ZE V
Ray Morin	KAI CRG
Jack Dumont	KI ZQB

league stressing the need for a law prohibiting the sale of transmitting equipment, capable of operating on the ham bands, to unlicensed individuals. We must also stress to those we buy from our great concern over the indiscriminate sale of ham rigs without checking first for proof of a license from the buyer. You should notify a club officer when you notice an illegally operating station. Our predecessors have always relied upon themselves to police the ham bands, notifying the FCC after proper demonstration of wrongdoing. We must speak out strongly now before our frequencies become the duplication of the present eleven meter band.

73,  
Larry, WBI CJH

ZERO BEAT STAFF

Editor	Paul Kress	WAI ZKT
Tech Editor	Gent Lam	WAI CQT
VHF/UHF Ed.	Frank Potts	WAI RWU
Typing	Jack Lo Monaco	WAI YYK
Circulation	Duke Dugas	KAI DTH
Staff Reporter	Jeff Duquette	KI BE
Contributor	John Balboni	ACI T
Contributor	Joe Dumais	WBI EMB
Contributor	Bert Snyder	WBI DTZ

FIELD DAY

In the February issue of Zero Beat we mentioned that it was not to soon to start thinking about field day. Your Board of Directors has been reviewing possible sites for field day and a site in Granville, Mass. is the tentative selection for this years expedition which will be held on the last weekend in June. Final plans have not been made but stations and operators will be needed for all bands for a 24 hour period starting at approximately 2:00 PM (local time) on Saturday. All members are urged to participate including members who are novices and non-amateurs. This is a great way to have fun and learn about amateur radio. If you don't want to operate, your hands and spirit will also be welcomed to help with antennas, and logging, and who knows, maybe we'll need a cook or two.

The spot in Granville sounds great - more next time.

The President's letter

Our hobby is being threatened now more than ever before. Not only are the eleven meter side-banders operating into our ten meter band in increasing numbers, unlicensed individuals are now buying two meter handie-talkies and operating (so far) on the simplex frequencies. It has been verified that they are buying ham gear locally (100 mile radius). Although it is not illegal to sell ham rigs to unlicensed individuals it definitely threatens the very existence of our hobby. We must act now! First, write to the FCC and the

YOUR EDITOR SPEAKS.....

The New Jersey office of your editor recently called the Wall Street Journal for permission to reprint an article of interest to Amateur Radio from that publication. The article dealt with the current status of the sunspot cycle and the anticipated effects on communication which may occur as the sunspot cycle wanes. This subject affects all bands of amateur radio throughout the world; directly on the 10, 15, and 20 meter bands and indirectly on the 40 and 80 meter bands.

Unlike other publishers which have granted their permission to reprint technical articles of interest to amateur radio, the Wall Street Journal would only allow us to reprint the article at a cost of \$.20 per each copy printed by us or provide us with reprints for inclusion in our paper at a cost of \$.21 per print, a total cost of \$ 50 for one issue of Zero Beat. This, of course, was too expensive for a non-profit, public service group such as ours. The article will not appear in this publication.

If you have the opportunity, however, we do suggest that you read the article on the sunspot cycle which appeared on page 1, column 4, of the February 13, 1980, issue of the Wall Street Journal.

Some people speak from experience and others, from experience, don't speak.

ELECTIONS

Club elections are on the way! Now is the time to begin thinking about becoming a club officer or director and help make your club function.

If you have an interest or if you are willing, please don't be shy - let one of your present officers know of your interest.

10 METER NET

As net manager for our club's 10 meter net, I've seen the check-ins go from 20 to 2 people per session? Six club members should be rotating as net control, W1NY, and we don't hear from them. Is the 10 meter net passé? Should we bury it again for a few years? Should we go to a club net on say 146.47 or 146.49, .52, etc?

If check-ins don't go up, we will probably drop the net sessions. It's the best place to get all the INFO on what is going on in the HCRA; Board meeting results, future club meetings, and other club activities are usually spelled out. Let us know what we should do with your club net.

73,  
Jeff, K1BE

W1EN (Cont'd.)

The Point System

- One point for check in on either 75 mtrs or 2 mtrs.
- One additional point for net control or liaison to two meters.
- One point for each message handled on this net (Originated, Relayed or Delivered)
- Two points for declared emergency, either search or weather, (We hope this one is not used)
- One point for ARES membership.

Send your request for a certificate with a listing of points earned to:  
Donald S. Johnson W1UIH  
24 Allen Ct.  
Hampden, MA 01036  
Please include an SASE (4x9½).

For additional ARES (Amateur Radio Emergency Service) please contact:

Bill Hall W1JP

Ed. Note. Certificate winners will be listed in ZERO BEAT. This is one of the most important pieces of wall-paper you can get. Let's go!

**SWR!**  
**Meters, Tuners & Misuse**

I get the feeling that there may be a great deal of misconception about the use of SWR meters and tuners for its reduction. Maybe I'm wrong. If everyone understands that an SWR meter gives information that applies directly to the exact point in the transmission line where it is inserted and no place else, then the rest of this article can be ignored. If you were unaware that an SWR meter inserted at any appreciable fraction of a wave length away from the finals of your rig does NOT show the reflected wave seen by your finals, then you had best read on.

Any conditions at the antenna that result in a reflected wave set up a standing wave ratio on the transmission line. As the name implies, the ratio of outgoing to incoming voltage varies from point to point along the line, but at any fixed point it remains constant. A tuner inserted in the line can be adjusted so that its output appears to be at a different location on the SWR curve. It most emphatically does NOT make SWR disappear. If the tuner is adjusted so that its output is at a null, a meter at that point will so indicate, but a meter a quarter of a wave length farther on will show a maximum. If that is where your transmitter is you may have done more harm than good.

A tuner can be inserted in the transmission line wherever it is physically most convenient in the ham shack, but the SWR meter should be as close to the final output as can be managed. If you have a linear with built-in SWR meter it tells you just what your finals see no matter what any meter farther along the line may say. So if you buy or build an SWR meter, put it as close to the RF out as you can. If the meter is in the tuner, then the same applies to the tuner.

Bert, WB1DTZ

**SOLVING THE CALL LETTER  
IDENTITY PROBLEM**

by Eric G. Shalkhauser, W9CI

The confusion among radio Amateurs over callsigns is not a new problem, though the FCC's new callsign program does not help the problem any. Early Amateurs before the days of the FCC made up their own callsigns, but this period did not last long.

The early assignment of call letters among United States Amateurs was simple: the district number (1-9) was followed by either two or three letters of the alphabet. But as Canadian and foreign stations were contacted with similar and often identical call letters, confusion arose unless an additional first character was added. To correct this problem, the ARRL initially suggested that the United States Amateur simply use "de" and the Canadians the letter "v" before giving their call. This soon proved inadequate and gave way to an assigned alphabetical letter as follows:

A-Australia	M-Mexico
C-Canada	R-Argentina
F-France	Z-New Zealand
S-Spain	N-Netherlands
U-United States	O-South Africa
G-Great Britain	P-Portugal
I-Italy	C-Cuba

This plan was first adopted as of December 15, 1922, however these letters did not conform to those assigned by the countries respective governments. Additional letters were required from time to time and assignments were made by the ARRL Operating Department. Several two-letter "prefixes" were needed toward the termination of this method of call-letter designation. The letters were used for a time by all Amateurs, except in Britain where permission was not granted.

It was not until 1928 that the letter "W" formally was required for use as a prefix by American Amateurs. Not until almost 30 years later was the letter "K" added as a prefix. Later it was necessary as the Amateur population grew to add WA, WB, WD and now the whole mass of prefixes brought in to use in early 1978. □

via QCC News, Chicago QCWA chapter

"QNI, QTC"

Passing traffic on CW seems to make some club members very leery. The Western Mass Net (daily at 7:00 PM, 3562 KHz) is there to help you learn the net procedures, Q signals, and send/receive area traffic. It is confusing at first! The beauty of CW is saying a lot very quickly. A normal check in would sent: "GE QNI, QRU K". In about 3 seconds you have said: good evening, I'm checking into the net, no traffic.

One misconception to clear up is that you have to be a speed demon in CW. No way, José! The net is usually about 15 WPM and net control will send at the speed you check in, when he talks to you. Don't feel frustrated because you can not copy WITM passing a message to W1BUR. Old timers even twitch in high speed code! It is much more important that you send readable code at a comfortable speed for you. Zipping along to fast, then having to send five fills wastes time.

There is the New England Novice Net if you're below 10 WPM. But WMN would be glad to have you when you are about 13 WPM. Listen in to get an idea what's going on. Get a "Q" signal chart and translate. Then someday we'll hear a QNI, QTC from you!

Jeff, K1BE

FOR SALE

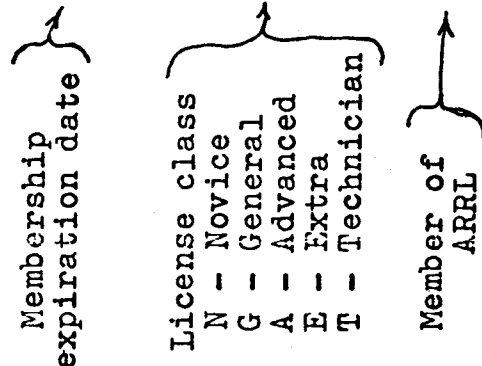
The incomparable Yaesu FTDX 570 transceiver. 560 watts PEP SSB, 500 watts CW on all bands 80 thru 10. Includes 600 Hz filter, RIT, WWV, cooling fan, noise blanker, 25 and 100 KHz cal., VOX, CW breakin with adjustable sidetone. Phone patch terminal, recently re-tubed. Mic and manual included. Call:

Jerry Griffin, W1PGT  
(413) 567 0367

Our address file for club members occasionally needs a review to update information and to add information that may be missing. The address label on the outside of your Zero Beat has all the information that is presently in our computerized file. If you wish to make any changes, please make corrections and mail the corrected label to your editor whose name and address appear near the address label.

A sample label with all information looks like this:

Kress, Paul J.    W1ZKZ  
216 Eastwood Drive  
Westfield, Ma. 01085  
Oct 80            G            ARRL



MEMBERSHIP ROSTER

The HCRA membership roster will be published in the April issue of Zero Beat. Your call, name, and town will appear as follows:

W1ZKZ    Paul    Westfield

Your last name, street address or telephone number WILL NOT be published. Once such a list is published, details on winning awards for working HCRA members will be forthcoming.

If you would prefer not to have your name included on such a list please call Paul, W1ZKZ, at (413) 568 8291 or send a postcard saying something like: Please do not publish my name. Don't forget to include your name and call if you write.

## WHO ARE AMERICA'S OLYMPIC TORCH-BEARERS?

A momentous event will occur in the United States between Jan. 31 and Feb. 8, 1980. For the first time in America's history the genuine Olympic flame will be ceremoniously transported from the Temple of Hera in Greece to Lake Placid, New York, site of the XIII Olympic Winter Games stopping first at Langley Air Force Base, a U.S. naval vessel and Yorktown Virginia.

But who will transport this distinguished visitor that makes the Olympic Games official? It is a team of some 100 people each with special skills, stamina, determination and the true Olympic spirit of the whole man dedicated to excellence. It is 52 runners who hand-carry the flame, 20 ham operators who provide the sole communications which secure the logistics, safety and punctuality of the troupe, and 30 coordinators and support personnel to oversee the complex 1,000 mile transport through six states and 100 ceremonies.

Early in 1979 the Olympic Organizing Committee approached the American Radio Relay League (ARRL), international headquarters of Amateur (ham) Radio, with a request for a select group of skilled radio operators. Ham radio was chosen as the only feasible means of communications because of its 65 year reputation for excellence in public service communication. The Olympic Committee was looking for clear, reliable, instantaneous communication over short and long distances for a two week period. Mobile and portable equipment operated by 20 Amateur operators with professional communications skills would answer the need within the 17 vehicle caravan. In addition, hundreds of volunteer hams will be present at local ceremony sites providing the necessary links between the caravan and local officials, police and emergency personnel.

Who are the Torch Bearers? They are the Torch Relay team, a family of Americans who are contributing their skills in the true Olympic spirit of brotherhood and excellence. They are 100 strangers dedicated to sharing the Olympic spirit with millions of Americans through the 1980 Olympic Torch Relay Run.

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### ARRL BULLETIN NR 5 January 21, 1980

FCC Gettysburg reports that because of a programming error in early January, a number of Amateur licenses were issued with expiration dates five days after issuance. Holders of such licenses need not communicate with FCC. They may continue operating, and as soon as possible, will receive superseding licenses through the mail.

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### ARRL BULLETIN NR 6 January 21, 1980

A reciprocal operating agreement between the United States and Spain became effective on December 21, 1979. U.S. amateurs seeking operating permission in Spain should contact the Union de Radioaficionados Espanoles, P.O. Box 220, Madrid 4, Spain, for information on application procedures.

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"QUICK AS A WINK" PRINTING  
454 MAIN STREET  
WEST SPRINGFIELD  
(413) 736-8184

"IF IT NEEDS INK-BRING  
IT TO "QUICK AS A WINK"

# American Radio Relay League

## HAM GEAR INSURANCE OFFERED

The ARRL is now offering an insurance package to its members to protect your ham gear against fire, theft or other losses. The package does *not* include antenna systems, but it covers your rig and accessories whether at home, in your car, or even at a Field Day site. ARRL officials describe the package as being better coverage at lower cost than others currently on the market. The plan was designed specifically for "Hams" and its success is directly related to the number of members that participate.

Most ARRL members have already received a brochure describing the insurance package, but for your convenience, we will reprint key parts of it here.

### PERILS COVERED:

This policy insures against direct physical loss or damage caused by:

- (a) Fire, lightning;
- (b) Tornado, cyclone, windstorm, hurricane, hail;
- (c) Explosion;
- (d) Collision of the transporting vehicle with any other vehicle or object, it being understood that the Company shall not be liable for loss or damage caused by the load or any portion thereof coming in contact with any other object unless the transporting vehicle also collides with such object, coupling of cars not to be deemed collision;
- (e) Overturning or upset of the transporting vehicle;
- (f) Collapse of bridges, trestles, culverts, elevated roadways, manhole covers and roadway drain basins;
- (g) Riot, riot attending a strike, and civil commotion;
- (h) Aircraft or by object falling therefrom;
- (i) Smoke (meaning only smoke due to a sudden, unusual and faulty operation of any heating or cooking unit, only when such unit is connected to a chimney by a smoke pipe, and while in or on the premises described in this policy, excluding, however, smoke from fireplaces or industrial apparatus);
- (j) Earthquake, volcanic eruption, subterranean disturbance or other convulsion of nature;
- (k) Stranding, sinking, burning or collision of vessels, including general average and salvage charges incurred;
- (l) Theft.

### CLAIM SETTLEMENT BASIS:

Covered claims will be settled on a "replacement cost" or equivalent basis. Equipment is *not* depreciated at claim settlement time as is with most homeowners coverage.

### DEDUCTIBLE:

Ten Percent (10%) of the insured value, subject to a \$50.00 minimum per loss. Deductible does *NOT* apply if homeowners deductible is paid.

### PREMIUM COST:

\$1.00 per \$100.00 of replacement value. (Minimum premium is \$10.00, regardless of coverage in amounts less than \$1000.00 replacement cost.)

### POLICY YEAR:

Policy will become effective on the first day of the month following receipt of the premium and application. (Please allow at least sixty (60) days from the date the application and check are mailed for the policy to be issued.)

# HOW TO ENROLL

- A. List on the application ALL radio equipment owned or leased. The member must insure ALL of his equipment valued at more than \$50. He may *not* be selective. (Excluding antennae, towers, and rotators.) Use a separate sheet of paper if more space is needed.
- B. List a total "replacement" value for each piece of your equipment both in the home and automobile.
- C. After arriving at the total replacement cost, compute annual insurance premium based on the rate of \$1 per \$100 of total replacement value. Minimum premium \$10.
- D. Make check or money order payable to G & H Insurance Administrators and return with completed application to: G&H Insurance Administrators, Inc., 8330 Moberly Lane, Dallas, TX 75227

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CUT ALONG THIS LINE

## APPLICATION FORM:

**PLEASE PRINT LEGIBLY**

1. Name of Applicant \_\_\_\_\_
2. QST Control No. (from QST Label) \_\_\_\_\_
3. Address \_\_\_\_\_
4. Address of Principal Location: \_\_\_\_\_
5. Give details of previous losses during the current year and the preceeding three years, including dates, amount of loss, and cause of loss: \_\_\_\_\_  
\_\_\_\_\_
6. Has any insurance company cancelled or refused to issue any similar insurance during the current year and the preceeding three years: \_\_\_\_\_  
If yes, what company and why? \_\_\_\_\_
7. The premium check must be made payable to:  

**G & H INSURANCE ADMINISTRATORS, INC.**
8. Use this listing to describe *all* radio equipment in your possession. (Use separate sheet of paper if more space is needed.)

Description Including Manufacturers Name, Model and Serial Numbers or Other Identification	Date of Purchase	Purchase Price \$	Amount of Insurance (Replacement) \$

Blanket on Miscellaneous Items (Valued under \$ 50.00 each)	\$	
Sub Total of Insurance	\$	
Annual Administration Charge	\$ 5.00	
Total	\$	

9. \_\_\_\_\_  
Signature Date

10. Mail application and check today to: **G&H Insurance Administrators, Inc.**  
8330 Moberly Lane, Dallas, TX 75227

Underwritten by: National Union Fire Insurance Company of Pittsburgh, Pennsylvania.  
It is understood and agreed that the completion of this application does not bind the company to issue nor the applicant to purchase this insurance. Coverage is not effective until the policy is issued.

### PROGRAM ADMINISTRATION

This program will be administered by Bonn A. Gilbert, President of G & H Insurance Administrators, Inc., with offices at 8330 Moberly Lane, Dallas, Texas 75227. Toll-free IN-WATS lines are provided for your convenience. Please call 800/527-3304, should you need assistance or additional information.

**ENROLLMENT IS LIMITED. APPLY TODAY**



FOR SALE

BIRD Ham-mate RF Directional Watt-meter, Model 4352 (50-150 MHz, 0 - 40/400 Watts) with manual, immaculate condition. \$ 50. Pick up or I will ship UPS.

Hugh, W1PN, 155 Amity Street, Amherst, Ma. 01002 (413) 549 5062.

VHF Scanning Receiver, Heath GR-110, with crystals for 146.94, 146.70, 146.73, 146.79, 146.88, 146.91, and 147.00. Kit alone cost \$ 129.95. Complete with crystals, in excellent condition, for \$ 75. Pick up or I ship UPS. Hugh, W1PN, 155 Amity Street Amherst, Ma. 01002 (413) 549 5062

Sell or trade for other ham gear:

TH2MK3 Triband beam, 10-15-20 meter, \$75.

AR 40 Rotor with control box \$ 50.

40 foot telescoping mast with guy wires \$ 50.

5 Ponh Parachutes in container - Hustler; 7 TU modifications, 28'; 24' reserve unmodified.

Interested in two meter rig for the car, or two meter amplifier, or converted CB to 10 meter ham.

Willing to dicker.

Jeff, K1BE evenings. 569 6739

Drake ML-2 Two meter FM Transceiver with AC/DC supply, 10 watts, touch-tone pad and Xtals for 11 Frequencies including: 34-94, 52-52, 40-00, 31-91, 16-76, and more. mint condition. \$125.00

Astatic D-104 xtal mike with push-to-talk G-stand. \$17.00

Call Jack, K1ZQB after 5:30 PM at 533 6438

QSL BUREAU COLUMN

Here is where we try to answer questions that you might have about the buro.

Q. I've usually received one envelope a month from the buro. There hasn't been anything for three months, what gives?

A. First off, there is no guarantee of "monthly service", and you should not expect it. However, some of the reasons for the change could be:

1. The letter is now with a new sorter, who's a little slower. It's a volunteer job and people work at it when they can.
2. The sorter is on vacation or otherwise not available.
3. The sorter died and we're looking for a new one. All the books have to be checked, and the dead file updated before a new sorter takes over.
4. No QSLs for you have been coming in. (Lord Forbid! Better that the sorter died!)
5. You've run out of postage/envelopes
6. The Post office has been losing them.

This is a free service and a real bargain. The people do a good job. Don't expect lightning service.

By the way, your sorter has been in the hospital, and will soon be back sorting your cards.

---

*All in his head*

RIVERHEAD, N.Y. He called for a second (AP) — George Dillard time during the wee hours Monday, and Police Officer David Cheshire went to Dillard's home. Putting his ear next to Dillard's head, Cheshire heard the music too.

The police dispatcher advised the 56-year-old carpenter to "just go take a couple of aspirin."

"So I did that. (But) after I lay down, the music jive started up in my ear again," Dillard said.

Fiddling with a radio at the same time, the officer discovered it was WKCI-FM, across Long Island Sound in Hamden, Conn., that seemed to be playing through Dillard's skull.

TIDBITS

WB1CJH new area four Civil De-  
fence Radio Officer. Congradula-  
tions, Larry..... N1PF has 17  
students in his general class....  
W1YCA passed Advanced.....Zero  
Beat won AWARD FOR EXCELLENCE in  
The Amateur Radio News Service com-  
petition.... No word yet about the  
Eng/Amp Director's Newsletter com-  
petition.... W1JP new Section Emer-  
gency Coordinator, W1UPH new Net  
Manager for Sunday morning WMEN...  
K1LCHI on 2 meters now, also  
studying for his Advanced....AC1T  
going to try for his First Class  
commercial ticket.... W1KUE vaca-  
tioning in sunny Florida. Isn't  
that where we sent all our snow  
this winter?... K1ZOC is having  
his eye operated on. Our prayers  
are with you Joe.... N1CM back into  
his house that was hit by lightening  
last year.... N1CQ chats on .34/.94.  
while manning the xmtr on Mt Tom  
for a local television station...

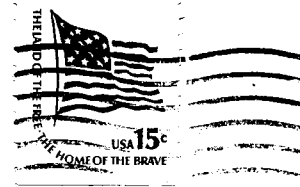
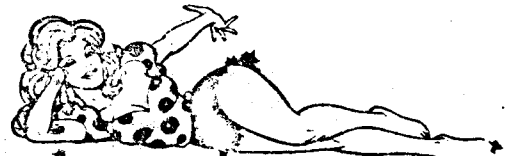
Hamden County Radio Assn., Inc.  
Paul J. Kress, WA1ZKF, Editor  
216 Eastwood Drive  
Westfield, MA 01085

WANTED: ARTICLES FOR  
ZERO BEAT!!

Think you've got nothing to  
say? Well, how about reviewing  
your new (or old) rig? Review your  
newest antenna, tower, etc? What  
do you like/dislike?

SPACE: That's Right, we've got  
space to fill in Zero Beat. All  
club members we never hear from:  
How did you get into amateur radio?  
What do you like best about it?  
How did you join the HCRA? What do  
you like about the club?

SOS: We need to know what you  
are doing. HELP by sending a post-  
card with details about your new  
equipment, working rare DX, the new  
harmonics, etc. Tnx.



ZERC BEAT, March, 1980

FIRST CLASS MAIL



AC1T

NOV 30 1980