



# Zero Beat



Hampden County Radio Association, Inc. - our 47th ARRL affiliated year

November 1994

Volume 3 Issue 3

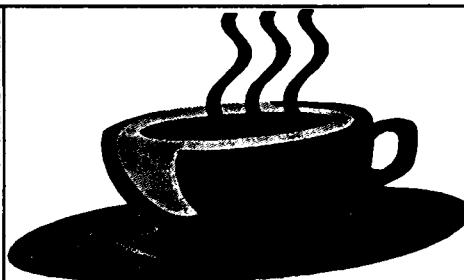
## H.C.R.A. Notes.....

Last month's HCRA meeting featured an open forum. Special thanks go out to You the Members who attended the meeting! The 35 people who attended help to give the club some helpful feedback and enjoyed a nice social at the same time. It was very successful and will likely become an annual meeting in years to come in October.

The HCRA is looking for someone to take over the packet BBS. Anyone interested must own their own equipment and are subject to board approval. Anyone interested should contact any board member at the next meeting.

It is also that time of year to renew your HCRA membership. You will find an application on page 3 of this issue. For the first time in many years, due to increased costs, the HCRA was forced to increase dues this year to \$13.00. In addition to renewing yourself, consider telling a friend about our club and bring them to an upcoming meeting. The HCRA would like to continue to grow even more. Please try and get your application in as soon as possible.

H.C.R.A. Classified: Bob Stephens, W1MM would like to get rid of his back issues of CQ and QST



**This month will feature the popular annual auction. Be sure to attend! Coffee special. Buy 1 and get refills for free!**

magazines. They are free of charge. The taker must either take the entire supply, or just the CQ or the just the QST's. His supply consists of the following:

- CQ 1985 thru 1991
- QST 1980 thru 1991 Each set is bounded by year.

They are in good condition. If interested pick up at Bob's QTH. Robert M. Stephen, 20 Lindor HTS, Holyoke, MA 01040. For directions call him @ (413) 532-6020.

See you at the December social!

## Next HCRA Meeting.....

The next Hampden County Radio Association will Take place on Friday night November 11, 1994 and will feature the popular HCRA's annual auction. This meeting is always full to capacity year after year, so be sure to arrive early! Come out and purchase that long awaited piece of ham gear, or consider selling the items you no longer use. It should be an entertaining evening. Doors will open at 6:30 and the auction will start promptly at 7:30 P.M. See the rules on this page. Bring your friends!

**Feeding Hills  
Congregational Church  
JCT of Routes 57 & 187  
Feeding Hills, Massachusetts**

The next board meeting will take place on November 17th, 1994 and will be at Barry Mason's QTH. If you are interested in attending, please ask Barry N1JK for directions at the next meeting. Remember, anyone can attend the board meetings.

## November Auction Rules....

**HCRA CLUB AUCTION**  
Friday November 11, 1994  
Feeding Hills Congregational Church  
6:30pm : Setup and Inspection  
Auction Starts: 7:30pm

\*\*The HCRA takes 10% off the final selling price. Minimum should be clearly marked on the item by the seller.

\*\*The auctioneer has the right to combine items in the interest of time. The decision of the auctioneer is final.

\*\*All equipment, boxes, junk, etc. must be cleared from the church by either the buyer or the seller. No disposal facilities are available at the church.

\*\*All items must be marked with the call (or first and last name, if not a ham) of the seller. If the seller is not present, the call of the person bringing the items should also be clearly marked.

\*\*Donations to the club will be gladly accepted. They should be clearly marked as such.

\*\*All sales are final!

\*\*Auctioneer's discretion is final!

\*\*Items will be auctioned off on a first come, first served basis. The items closest to the auctioneer (first in the door) will be put up first. Members of the board of directors will be in attendance to assure that all items are placed in the proper order.

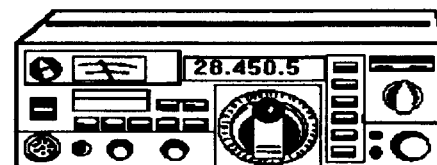
\*\*The club treasurer (Greg, N1AEH or his representative) will record the final selling price and calculate the club percent. No moneys will be disbursed during the auction itself. Individuals will receive payment for items sold only after the auction has been completed, at the next meeting or by prior arrangement with Greg.

\*\*Items to be auctioned must be related to amateur radio, electronics or computers. Please! No television sets unless they are in working condition.

If there are any questions, please contact Steve Nelson at (413) 596-8216. 73 Steve, WA1EYF Auctioneer

**The HCRA is geared for another great year! The entire board has been filled and we are busy at work looking to make this year as good as last. See page 2 for the new board listing.**

## Happy Thanksgiving!!



## In This Issue....

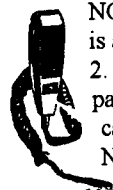
November Auction Rules.....	Page 1
Nicad Batteries - Fact and Fiction.....	Page 2
President's Message.....	Page 2
New Board Listing.....	Page 2
Membership Application.....	Page 3

# Nicad Batteries - Facts and Fallacies.....

**R**echargable nickel cadmium batteries, have with reasons, become a popular source of power for portable and handportable equipment. They can provide reliable service over many years if due account is taken of their peculiarities. Yet it remains true that many amateurs are failing to appreciate not only the full capabilities but also the limitations of nicad cells used in battery packs.

J. Fielding, ZS5JF, in "Nickel cadmium batteries for amateur radio equipment" (Radio ZS September 1987, pp 4-5) provides a useful survey of the facts and foibles of nicads. The following extracts from his article attack some of the common myths and also provide some safety hints.

1. "Rapid charging causes a decline in cell capacity."



NOT TRUE provided that the charge is always terminated at a safe point.

2. "You should not charge only partially discharged cells as this causes a loss in capacity."

NOT TRUE. It is not necessary to

discharge fully nicad batteries before charging. In fact, THE OPPOSITE is true. Repeated partial charging gives an increase in the number of charge/discharge cycles compared with full-discharged cells.

3. "White crystals growing on the tops of nicad cells means that the seal is faulty and the cell should be scrapped."

NOT TRUE. The electrolyte (potassium hydroxide) is extremely searching and can penetrate the seals used in minute quantities. These crystals are potassium carbonate, which is harmless and can be removed with soap and water. The action of the carbon dioxide in the atmosphere reacts with the electrolyte to form the crystals. After removing the crystals, it is recommended that a smear of silicon grease is applied to slow down the growth of new crystals. The amount of electrolyte lost in this way is insignificant.

4. "I have a cell which appears to take a charge, but after the normal charging period the open circuit voltage is very low.

"I have been told I should throw it away." NOT TRUE. The reason the cell won't take a charge is usually due to the minute crystalline growth across the internal electrodes, caused by prolonged storage. A cure that nearly always works is to pass a very high current for a very short time through the affected cell. This fuses the internal "whisker". Discharging a large electrolytic capacitor is one method of doing this. But note that in a battery the faulty cell MUST be isolated from the other cells since zapping the complete battery will not usually result in a cure. Charge the capacitor to about 30v and then discharge it through the faulty cell. Several attempts may be required to clear a stubborn cell.

5. "A battery contains a cell with reversed polarity, the only cure is to replace it." NOT TRUE. The reversed cell can usually be corrected by a similar technique as that given for #4. After re-polarizing the cell, the complete battery can be recharged the normal way. Full capacity can be regained after about five cycles.

Continued on Page 5

## 1994-95 H.C.R.A.

### Board of Directors



#### Officers

<b>President</b>	N1IJK	Barry Mason
<b>Vice President</b>	N1GVV	Adam Olson
<b>Treasurer</b>	N1AEH	Greg Stoddard
<b>Secretary</b>	N1DUY	Jim Sebolt

#### Directors

##### Expiring 1995

N1FOW	Mike Griffin
N1KBY	Jeff Hugabone
N1RAL	Daniel McKay
WA1OHR	Everett Paluska

K1PZS	Harvey Broverman
K1CYD	George Corcoran
NR1L	Kevin Hilinski
KA1YZV	Donald Lynch

**Coffee + Donuts:** Don + Betty Mish  
**Zero Beat:** Kevin Hilinski NR1L - Editor, Mike Griffin N1FOW & Barry Mason N1IJK - Zero Beat Assistance (folding & stamps)

## President's Message

**G**reetings! As usual, I hope this newsletter finds you all well. Please note that this month's meeting will be held on **FRIDAY, NOVEMBER 11, 1994, ONE WEEK LATER THAN USUAL.** The church is having a function of their own, so we had to push back our meeting.

This month's meeting is our annual auction, and I hope to see you all there. Steve, WA1EYF will be our auctioneer again this year. Steve always does a great job, and it's a good time to pick up great deals. Just to give you an idea of what's coming up, we are planning a slide show on comet Shoemaker-Levy, that hit Jupiter, a primer on how to buy a computer without getting taken to the bank, and a radio astronomy topic to be announced later.

Also, make sure you take advantage of our big discount on ARRL books we are offering! Details follow later in the newsletter.

Also, we are starting a USB net. Details will be given at the auction for time and frequency. Hope to hear you there!

See you Friday the 11th!

73, Barry N1IJK

# Hampden County Radio Association, Inc.

P.O. Box 482  
West Springfield, MA 01090-0482

## Application for Membership

Call Sign: \_\_\_\_\_  
New: \_\_\_\_\_ Renewal: \_\_\_\_\_



Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ Listed: Yes: \_\_\_\_\_ No: \_\_\_\_\_

License Class: (Circle your answer)  
Studying    Novice    Technician    Tech+    General    Advanced    Extra

ARRL: Life Member: \_\_\_\_\_ Member: \_\_\_\_\_

VE: (Circle answer) Advanced    Extra    General    Expiration: \_\_\_\_\_

If you are a VE, would you be willing to participate in the HCRA's VE program?  
Yes: \_\_\_\_\_ No: \_\_\_\_\_



List Family Members Here:

Regular HCRA membership is \$13.00 The cost of the membership is used for items such as *Zero Beat*, the meeting hall, and insurance. Additional family members are FREE at no additional cost. Just mark these people in the place marked above. If you are under 18 years of age, dues are only \$5.00. Please consider including a donation to help the HCRA in future endeavors. All donations are tax deductible to the extent of the law. Please fill out this form and make a check payable to the Hampden County Radio Association, INC. to the address listed above, or bring the form along to any club meeting. The HCRA appreciates your support!

Membership Dues: \$ \_\_\_\_\_  
Donation: \$ \_\_\_\_\_  
Total Enclosed: \$ \_\_\_\_\_



**Zero Beat is a monthly publication except in July and August by the Hampden County Radio Association, Inc. Any article may be reprinted as long as credit is given to the publication and its author(s). This issue would not be possible without the help of Mike Griffin and Barry Mason. Thanks, EDITOR**

# HCRA Book Sale

Get a great deal on a League book through the HCRA. Excellent discounts.  
\$\$\$\$\$

1995 Handbook <i>new edition, re-edited</i> , soft cover	Reg \$30.00 Sale \$25.00
New edition antenna book with software <i>newest</i> edition with antenna modeling software	Reg \$30.00 Sale \$25.00
Operation manual excellent for the <i>new</i> ham, good reference for the veteran	Reg \$18.00 Sale \$15.00
1994-1995 repeater directory a <i>must have</i> for all traveling hams	Reg \$6.00 Sale \$5.00

Use this form to order books. Payment can be cash or check, made out to HCRA. Get in your order if you really want one of these books. We will only be ordering the quantity that our members request. Book orders must be in by the end of the auction. Orders will be ready for pick-up at the December social. Give this form to either Greg, N1AEH or Barry, N1IJK.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Call signs: \_\_\_\_\_

Phone number: (\_\_\_\_) \_\_\_\_\_

# Nicad Batteries - Facts and Fallacies (Con't)

6. "A nicad battery should be stored only in a discharged state."

NOT TRUE. It can be stored in any state of charge. Due to its inherent self-discharging characteristics it will eventually become fully discharged after a sufficiently long period of storage. To recharge the battery before returning it to service, a "conditioning" charge of 20h at the normal charging rate is recommended. Afterwards charge normally; full capacity can again be expected after about five cycles.

7. "It is not advisable to keep a nicad battery on permanent trickle charge as this causes permanent degradation of the cells."

NOT TRUE. So long as the trickle charge current is adjusted correctly, the charge can continue indefinitely without loss in cell capacity. The safe current can usually be obtained from the manufacturer's data, but 0.025C is a reasonable guide (i.e. about 100mA for a 4Ah cell and PRO-RATA). This enables the battery to remain fully charged.

ZS5JF also lists seven safety points that should be considered by users:

1. DO NOT short circuit a fully-charged battery. This if prolonged, can cause excessive gas production with the danger of possible rupturing of the sealed case.

2. Nicads contain a caustic electrolyte: this is perfectly safe as long as common sense is used in the use and handling of the cells.

3. A nicad can supply a very high current for a short period (a 4Ah cell can supply over 500A for a few seconds). Sufficient thought should be given when selecting a fuse between the battery and the equipment. The connecting wire should be capable of passing enough current to ensure the fuse blows quickly in the event of a short circuit.

4. DO NOT use a partially-discharged cells with fully-charged ones to assemble a battery. Assemble the battery with all the cells discharged and then charge them as a battery.

5. DO NOT carry a fully- or partially-charged battery on a aircraft without taking the proper safety precautions. A short-circuited battery pack can be a



time bomb in such situations. Consult the relevant IATA regulations or ask at the airline check-in.

6. DO NOT subject battery packs to very high or low temperatures. Never dispose of a battery pack in a fire or throw it out with domestic waste. If it cannot be disposed of properly it is probably best to bury it in the garden in a safe spot.

7. DO NOT discharge battery packs below about 1V per cell, otherwise there is a possibility of cell reversal.

ZS5JF provides a good deal of other information on charging nicad batteries, and gives as a reference a Varta publication of 1982 "Sealed Nickel Cadmium Batteries" from which some of his notes may have been

derived. (G3VA)

Those interested on becoming a Member of the RSGB may inquire to:

RADIO SOCIETY OF GREAT BRITAIN  
Lambda House  
Cranborne Road  
POTTERS BAR, Herts EN6 3JE U.K.

73 de Gian MODA I7SWX

**Editor's Note:** Special thanks to HCRA member Rudy Zerdecki WB1CXC who submitted this article.

## Notes From The ARRL.....

### LEAGUE REPLIES TO WRC-95 PREPARATORY

The ARRL has commented on an FCC Notice of Inquiry in preparation for the next International Telecommunications Union World Radio Conference, scheduled for November 1995, in IC Docket 94-31. (The League's comments were filed July 15, 1994.)

The League urged that any consideration of realignment of the 7-MHz band (see lead story) be held until the WRC scheduled for 2001, to give fixed and mobile services time to relocate to higher frequencies. The ARRL had earlier suggested that the issue be considered in 1999 but has now moved that back two years.

A WARC-92 proposal (the last "WARC") to realign the band to the benefit of both broadcasters and amateurs was not adopted.

In the matter of the 2300-MHz band, the League said that the directive in the 1994 US Omnibus Budget Reconciliation Act that protects amateurs means that an international allocation for the Mobile Satellite Service at 2300 to 2310 or 2390 to 2420 MHz should not be considered.

Finally, the League said again that a future agenda item should be an "International Amateur Radio Permit." Such an "automatic reciprocal" permit is already available among the countries of the European Conference of Postal and Telecommunications Administrations (CEPT), and International Amateur Radio Union (IARU) has been promoting such an agreement among its members in ITU Region 2 (South and North America).

Reprinted from the *ARRL Letter*



## Welcome New Members!

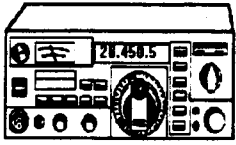
The HCRA is proud to welcome the following new members: These people received free memberships from the HCRA VE session at the Flea Market this past April:

**Jorece Messmer, Leonard Targonski, and Francis Leaf III.** - Congratulations and welcome!

These people received free memberships at the HCRA VE session this past July:

**Teresa McClellan, Dennis Parent, and Edwin Putnam.** - Congratulations and welcome to the club!

# November Meeting: Annual Auction



**Friday November 11, 1994**

Doors Open at 6:30 P.M.

Auction will begin at 7:30



## Ham Radio, Computers, and Electronics

**\*\* Please note the auction date has been moved from the original date! \*\***

**Attention HCRA Members:**

It is now that time of the year again, time to renew your membership. Please complete the membership application on page 3 and turn it in as soon as possible. You can either mail it to the club's P.O. box or you may simply return it with your payment at the next meeting. Consider bringing a friend this month and introduce them to our club and all that we offer. We would love to see the membership grow even more!

*Amateur Radio Specialties*

76 Ogden St.

Indian Orchard, Mass. 01151

Antennas and Amateur

Related Accessories

Stan Bates N1INB

(413) 543-5654



Editor: Kevin S. Hilinski NR1L

Hampden County Radio Association, Inc.  
P.O. Box 482  
West Springfield, MA 01090-0482



Forwarding + Address correction requested

First Class Mail

RC1T E V C R 14 I 10/94

