

http://hcra.org

February 2015

February Meeting

Special points of interest:

- HCRA Annual Show and Tell March 6th
- MTARA Swap Meet
 March 7th
- Visit the HCRA <u>facebook page</u>.
- Don't forget to check out <u>hcra.org</u>
- Visit Summits on the Air http://www.sota.org.uk
- 2015 New England ARRL Convention Aug 21-23 http://www.boxboro.org

Don't forget March is the Show N Tell.

Get your projects ready!

Check page #8 for ideas

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Join us Friday February 6th at 7:30, in the Holyoke Medical Center Auxiliary Conference Center

W1 QSL BUREAU

By Eric Williams KV1J

Eric Lives in Marlborough, MA with wife Ann, N1FOR, daughter Jennie W1JNE and son Matthew W1MAT. He was first licensed in 1967 as WN1HON and is an active home brewer and contester. He is on the DXCC Honor Roll and operates annually from Miquelon as FP/KV1J. He has been active with Emergency Management since the mid '70s and is the Communications Officer for the City of Marlborough.

Eric's early career was as an Electrical Engineer doing digital circuit design and EMC testing. He retired after over 30 years with Digital/Compaq/HP as Manager of Corporate Standards and Policies. Eric started working for the Bureau in 2004 as a Letter Sorter. He is now Co-Manager of the Bureau with Dennis Egan, W1UE.



For directions to The Holyoke Medical Center Auxiliary Conference Center:

Only 2 meetings left to get your tickets for this years raffle!

HCRA's raffle is for a Elecraft KX3!



For a mere \$10 donation to the HCRA, you get a chance to win an assembled KX3 by Elecraft valued at around \$1000.

This is an very popular and excellent HF portable radio that has an excellent receiver, low power consumption, can run on external power or 8AA batteries internally, it can transmit up to 12W and has plenty of options like an 100W amplifier, 2M mod-

ule, pan adapter, ATU, Roofing filters, internal battery charger, custom CW paddle and others that can be added later.

HCRA has printed only 250 tickets and we will start selling them during field day 2014. Tickets will also be sold at meetings and other events throughout 2014 and part of 2015. The drawing will happen when all 250 tickets have been sold or during MTARA's Hamfest in March of 2015.

Raffle is just for the Elecraft KX3 Transceiver only. Microphone and paddles not included. Drawing Date Subject To Change.

HCRA IS NOW ON CLUB LOG

HCRA is now listed as a Club on Club Log (Http://www.clublog.org). For those who don't what club log is, it's similar to other online logbook sites such as LoTW, eQSL.cc and QRZ.com's logbook. By creating an account on Clublog.org and uploading your logbook periodically, you will be able to get a detailed analysis of your activity as well as providing information for large scale reports. Club log is also known for providing tools that can be embedded into your website or QRZ page. A lot of major DXpeditions use club log as a way for operators to check and make sure that they are in their logbooks by doing daily uploads.



(Checking to see if you've indeed made contact with an expedition that uses Club log)

Another feature club log provides is the ability to create clubs within the club log website. This allows you to see the activity from other members from within the club and even compete with other clubs. This can lead to some friendly competition to get the most DX contacts overall or throughout the year. There was enough interest from HCRA members to where we've created a League and it's open to any HCRA and club log members. We encourage you to join the HCRA Club if you already have a club log account. There are detailed instructions available on HCRA.org (<u>http://www.hcra.org/2015/01/04/hcra-is-now-on-club-log/</u>). We already have 20 members in our league on club log.

Rank	Callsign	160	80	60	40	30	20	17	15	12	10	6	DXCC V	Slots	Range
1	NV1Q+3	1	4	0	9	1	23	21	24	33	37	0	106	153	38 yrs
2	KK1W+1	0	1	0	8	9	9	12	8	29	11	0	66	87	39 yrs
3	WN1E+1	0	4	0	22	1	27	3	41	5	25	0	64	128	24 yrs
4	W1MJB	0	1	0	0	1	11	13	6	24	16	0	53	72	12 yrs
5	AB1WT	0	2	0	1	0	13	15	19	11	13	1	48	75	1 yrs
6	NT1K+2	0	6	0	8	1	13	0	12	4	17	0	43	61	5 yrs
7	W1MSW	1	4	0	8	1	12	3	12	6	14	0	40	61	5 yrs
8	K1VOI	1	5	0	6	7	9	2	12	4	15	0	37	61	14 yrs
9	WD1S+2	3	6	0	19	0	8	0	18	0	0	1	31	55	3 yrs
10	KX1X	0	0	0	14	0	8	0	13	0	12	0	30	47	18 yrs
		160	80	60	40	30	20	17	15	12	10	6			
11	N3IMU	0	3	0	14	0	11	0	16	0	16	0	29	60	3 yrs
12	N1FTP ★	0	0	0	2	0	3	0	7	4	<mark>1</mark> 0	0	18	26	7 yrs
13	KB1VWQ	0	2	0	3	0	2	0	0	0	0	1	4	8	4 yrs
14	W1MOR	0	0	0	0	0	2	0	2	0	1	0	4	5	2 yrs

(Current list of active HCRA members on Club Log for 2015)

Current list found at the following address (Just click "Generate DXCC League" button) <u>http://www.clublog.org/league.php?club=189</u>

At the time of writing this, we're already a few weeks into the New Year and you can see using the above chart how hard some of the members are working. For the first couple weeks Dave Cayen (WN1E) maintained the lead for most DX contacts. However Juergen Malner (NV1Q) was determined to beat Dave and now maintains the lead. Jeffrey Myers (AB1WT) is doing quite well with the use of wire antennas. The year is still young and it's possible for you to grab a top spot.

Hope to see you on the charts!

GROWING HAM RADIO: THE FOUR TYPES OF HAMS

This was a letter that appeared on the eHam.net website. I thought is was very interesting. It is being reprinted here with the permission of the author, James "Scott" Duckworth NA4IT

It has occurred to me that among old and new hams, there are four basic types of "hams" or reasons that these "hams" got their license.

The first is the electronics geek that wants to truly learn about amateur radio. This person is more than willing to explore the many facets of what amateur radio has to offer. They are even open to serving the public through ARES, RACES, ACS, SATERN, or other groups. And they enjoy learning. They are like sponges, willing to self-study, and also learn from others. They love experimentation in antenna and equipment.

The second is the operator that while they do want to learn about amateur radio, they operate solely to "make contacts". They want entries in the logbook. They aren't into conversations, passing traffic, serving the public. They just want the bragging rights to show off their operating provess as it pertains to making the contact.

The third is the casual operator. They may or may not be interested in learning more about amateur radio, and are not interested in serving the public. All they care about is taking to others. And usually, they frequent only a few frequencies. Some even have a mentality that radio is "my four and no more", meaning if you aren't a part of their circle, then don't bother talking to them.

Then there is the ham radio operator who is basically a "prepper". They got into amateur radio simply to be able to communicate when the next disaster comes, or heaven forbid, the government should take over. Unfortunately, most ham radio preppers are so misguided in what they need to do to be able to communicate effectively, they are doomed to failure.

What should the ideal amateur radio operator look like? First, they don't have to be a geek. They do need to want to learn about amateur radio and be willing to explore. There is so much more than repeaters and "store bought" equipment and antennas. They should be interested in making contacts, but finding out how that other person is communicating. What kind of rig, antenna, etc? They should have a concern for being able to communicate when the chips are down, if no other reason to keep themselves and their family safe. And lastly, realize, there are a whole lot more people beside just their little circle of friends.

So, how do we grow amateur radio? Will it take a disaster hitting home? I hope not. But, some how, some way, old and new amateurs alike have to grow, when it comes to our craft. It's not enough to sit back and let the ARRL and FCC "call the shots". We need learning and input from all. Just because someone is a new ham doesn't mean they don't have anything to offer. And by the same token, just because you have a new technician license doesn't mean you know everything.

A college adviser said this to me: "You can't learn it all in one day, but you should learn something every day. If you stop learning, you die mentally."

What have you learned today? What have you shared with another ham today? Are you dying mentally as a ham radio operator?

VOLUNTEER'S NEEDED AT THE BOSTON MARATHON

From AB1RL (VIA Reddit.Com/r/amateurradio)

For years, the Boston Marathon has relied on a big group of ham volunteers to provide communications support for the race. For 2015, they've even put together a Communications Committee to review event plans and make sure we're as useful as possible to the race. I'm one of seven hams on that committee.

We need almost 300 volunteers to keep all the communications running smoothly. If you can make it, I hope you'll sign up to join us. I've worked at the Marathon for a few years now. You really get put to work, and the energy of the race and the community around it makes it really rewarding.

Race day is April 20, and there are assignments available all along the course. The Boston Athletic Association has more information about volunteering on their site . That's also where you sign up to volunteer . The registration deadline is February 10, so don't put it off. If you have any questions, feel free to send me a message.



Thanks, and I hope I'll hear you there!

FROM THE SHACK



Well here goes nothing.

Not much to talk about this month. I have been pretty busy with family and work. But I did manage to do a couple things radio related and some neat things in the upcoming month.

So, first we went to the ARRL cabinet meeting. Some of the things that was comment on was:

W1AW/P had over 3 million Q's

33.2 thousand New hams

7.2 thousand VE sessions

165 thousand ARRL members

500 WRTC Volunteers

Gro lights have terrible ballast giving off excessive noise

Boxboro is Saturday Aug. 22 2015, if interested in volunteering contact Mike K1WTF. Tickets are \$20. Thinking of going every year.

We then went to New York and picked up another 40 meter beam for the club for Field Day.

And now on to other news:

Starting on February 17, the FCC no longer will routinely issue paper license documents to Amateur Radio applicants and licensees. The Commission has maintained for some time now that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System ULS, although the FCC has routinely continued to print and mail hard copy licenses. That will stop next month.

Under the new procedures, a new license applicant who already has an FRN and provides a valid e-mail address under "Applicant Information" in the ULS will receive an official ULS-generated electronic authorization via e-mail. New license applicants lacking an FCC Registration Number will receive in the mail an FRN and a temporary password to access the Commission Registration System (CORES), but will no longer automatically receive a license document; they must request one by changing their "Paper Authorization Preference" in the ULS License Manager.

The ARRL and other Amateur Radio commenters also worried that unless a license document is printed on distinctive paper stock, its authenticity could be questioned in such situations as obtaining vanity call sign license plates. To address this, the FCC said the watermark "Official Copy" will be printed on each page of an official authorization that a licensee prints out from the ULS. The WTB recently stopped using distinctive paper stock to produce hard copy licenses and has been printing these on "standard, white recycled paper." The Bureau noted that the distinctive paper stock it had been using was six times more expensive than the plain recycled paper it now uses.

School clubs are busily prepping their stations for The "Winter/Spring Term" School Club Roundup which gets under way Monday, February 9 at 1300 UTC, and continues through Friday, February 13, at 2359 UTC. Stations may operate no more than 6 hours in any 24 hour period (up to a maximum of 24 hours).

At the ARRL Board meeting on January 16-17, changes were approved to the DXCC program rules regarding remote operation and to the VHF+ contest program rules. The DXCC changes aligned the awards's rules with those of the ARRL contest program which have been in effect for several years. The new rules for VHF+ contesting go into effect with the June VHF Contest and allow the use of spotting assistance, self-spotting, and multiple-band transmissions in all categories of operation. Updates to the online rules for both DXCC and contests will be published soon.

Could that gigantic radio burst detected from 5.5 billion light years away just be some alien amateur testing a new solar-system-sized amplifier? Or maybe it was just the start of a CQ Galaxy-Wide Contest! Maybe it was a very short DXpedition to a black hole - "This was our first view of the AHHHHHHHHhhhhh....!

73 all

KB1NWH

Local happenings

Sundays: 0845: Western Mass Emergency Net 146.94, PL 127.3 - W1TOM/R

First Monday: Southwick Regional RACES Drill, 1845, 146.49 Simplex

Mondays: 1930: HCRA 10m Net 28.375

Tuesdays: 1930-2000: 146.94, PL 127.3 - W1TOM/R - Hampshire County Emergency Net

Wednesdays: 1930: MTARA Info net 146.94, PL 127.3 - W1TOM/R - includes NTS Net

2000: MTARA Swap net: 146.94, PL 127.3 - W1TOM/R

2000: MTARA Simplex Net - starts on 146.94 - PL 127.3, then goes to 146.42 direct (simplex) Usually starts immediately following the swap net.

Thursdays: 2100: Weather Net (Roger, K1PAI Net Control), 1st Thursday of every month: 147.090 MHz, All other Thursdays: 147.000, PL 127.3 - W1TOM/R

Fridays: 1200: BB's (Brown Baggers Luncheon) Munich House 13 Center Street Chicopee, MA 01013

Club meetings & VE sessions

1st Friday of the month 7:30 PM, HCRA Club Meeting, Holyoke Hospital Auxiliary Conference Center, 575 Beech St. Holyoke MA 01040 (no meetings held in July or August.) <u>http://www.hcra.org/meeting-location/</u>

3rd Friday of the month 7:30 PM, MTARA Club meeting, Red Cross building 506 Cottage St, Springfield, Mass. (no meetings held in July or August)

4th Friday of the month 6:00 PM, Technician, General, and Extra Class License Exams, Holyoke Hospital Auxiliary Conference Center, 575 Beech Street, Holyoke, Mass. Hosted by the Western Mass VE Team (WMVET). Contact: David Cote, w1fab@arrl.net

Third Monday of the month 7:00 PM, Franklin County Amateur Radio Club meeting, Room S301,Greenfield Community College (no meetings held in July or August) http://www.fcarc.org/

4th Monday of February, May, August, November 7:00 PM, FCARC VE Exams, Unitarian Church, Main Street, Northfield <u>http://www.fcarc.org/</u>

Join the ARRL or renew your membership!

ARRL members enjoy:

- QST Magazine
- Members-Only Web Services
- Technical Information Service
- Member Discounts
- Outgoing QSL Service
- Continuing Education
- ARRL as an Advocate
- Regulatory Information Branch
- Public Relations for Amateur Radio
- ARRL Field Organization
- ARRL-sponsored contests
- Operating Awards
- Local Clubs
- Amateur Radio Emergency Service
- Hamfests and Conventions
- Volunteer Examiner Coordinator Program

http://www.arrl.org/membership

HCRA contact list

President, Ed LaCombe KB1NWH kb1nwh@comcast.net Vice-President, Eric LaCombe W1MOR w1mor@comcast.net Treasurer, Dave Cain AA1YW aa1yw@arrl.net Secretary, Dave Fant WM1B wm1b@arrl.net At Large, Jeff Bail NT1K nt1k@nt1k.com Newsletter, Gary Fields WA1MOW wa1mow@arrl.net Programs, Larry Krainson W1AST wb1dby@comcast.net Membership, Rich Wheeler N1KXR n1kxr@comcast.net Technical, Bob Meneguzzo K1YO k1yo@comcast.net Skywarn Liaison, Eric Tuller N1QKO et-n1qko@juno.com VE Session Liaison, Dave Cote W1FAB w1fab@arrl.net



DOTS & DASHES:

HAM COLLEGE EPISODE #1

The guy's at Amateurlogic TV have released another episode of "Ham College". This is a new show for those wanting to join the hobby and new Hams as well. You can find Ham College, along with episodes of AmateurLogic TV at:

www.amateurlogic.tv

TICKETS FOR THE 2015 NEW ENGLAND ARRL CONVENTION NOW ON SALE

Tickets for the 2015 Boxboro convention are now on sale. This year the event will be held August 21, 22, & 23rd, at the Holiday Inn, Boxboro, Ma.

As you may have noticed, we are breaking are usual "every other year" schedule having a convention this year, so help us spread the word to your friends and acquaintances that there IS a convention this year.

The committee is lining up speakers, forums and exhibitors, so many details are still to be announced. However, Gordon West WB6NOA is confirmed as the keynote speaker at our Saturday banquet.

And finally.. be the first on your block to get tickets. <u>http://www.boxboro.org</u>

INTERESTING HAM RADIO WEB SITES:

If you're into mobile operating, here is the web site for you.

As the first line of the web site says: "This site is dedicated to mobile amateur radio operators, old and new alike. Whether you're into HF, or VHF operation, I trust the information presented will increase your enjoyment of our great hobby. "

http://www.k0bg.com

CONTESTING:

FEI	BRUARY 2015 CONTEST	5	
Feb 7	Vermont QSO Party	www.ranv.org	CW, PH, Dig
	Minnesota QSO Party	www.w0aa.org	CW, PH, Dig
	British Columbia QSO Party	www.orcadxcc.org	CW, PH, Dig
	AM QSO Party	www.antiquewireless.org	AM Phone
Feb 8	North American CW Sprint	www.ncjweb.com	CW Only
Feb 14	New Hampshire QSO Party	www.w1wqm.org	CW, PH, Dig
	Old Man Inter. SSB QSO Party	www.omiss.info	SSB Phone
Feb 21	ARRL Int'l CW DX Contest	www.arrl.org/contests	CW Only
Feb 27	CQ WW 160 Meter SSB	www.cq160.com	SSB Phone
Mar 1	North American RTTY QSO Party	www.ncjweb.com	Dig Only
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Hands-Only™ CPR





Push hard and fast in the center of the chest. Learn more at handsonlycpr.org



FOR SALE:

If you have a piece of Ham Radio equipment to sell, send photo and details by the 20th of the month, to walmow@arrl.net.. All submissions will be screened for appropriateness, and content. The decision to publish is at the discretion of the ZB Editor



FOR SALE:

A Kenwood TS-430S. It has had the WARC modification done, so now it transmits on all bands. It includes both a CW & SSB filters installed. It has a solid transmitter with 100 watts out on CW, with an excellent receiver sensitivity

It also includes a Kenwood MC-60 Desk Microphone, along with the original hand microphone, manual, and box.

Asking \$500

Contact Ron McBride K1MCB at k1mcb@arrl.net

Missed out on the last time we had badges available for order? Well have no worries because they're back! Break the ice and let others know who you are with a stylish new badge. Sorry, the old style badges are no longer available.

They are just \$12

To order go to hcra.org or see Larry W1AST



If you have any Amateur Radio related equipment to buy, sell, or trade. Or If you need a piece of equipment. Email wa1mow@arrl.net to list in Zero Beat.

AREA SWAPFESTS:

2015

Feb 14 Algonquin Amateur Radio Club Flea Market Feb 14 Connecticut Valley FM Association Feb 15 New England Antique Radio Club Swap Meet Radio Amateurs of Northern Vermont Feb 28 Mar 7 Mt Tom Amateur Radio Association Ham Fest Mar 14 Eastern Connecticut Amateur Radio

Mar 15 Southington Amateur Radio Association

Marlborough, Ma Springfield, Vt Westford, Ma So. Burlington, Vt Chicopee, Ma Dayville, Ct Southington, Ct

www.nlem.org www.cvfma.org www.nearc.net/swapmeetinfo.htm www.ranv.org/hamcom.html www.mtara.org www.qsl.net/k1muj/hamfest/hamflea3.pdf www.chetbacon.com/flea2015.pdf

Some of the projects from last years Show 'N Tell Are you ready for 2015's Show 'N Tell?



Jeff's NT1K air launcher



Jim's KK1W quad copter

NIFJ

Steve's N1EOE go kit



Eric's W1MOR go kit

NUTS AND VOLTS MAGAZINE LAUNCHES NEW HAM RADIO COLUMN

Nuts & Volts Magazine is a very popular magazine in the hobby robotics and Maker Faire communities. It is a natural that Amateur Radio be part of it.

Photos by Frandy Johnson N1FJ

A large segment of the readers are part of high school robotics programs. It is a natural fit for students from the FIRST Robotics Competition, and the FIRST Tech Challenge. It is a great opportunity to build interest

in ham radio among these high school students.

Well-known ARRL Contributing Editor Ward Silver, N0AX, has debuted a new column for *Nuts and Volts* magazine -- "The Ham's Wireless Workbench." *Nuts and Volts* is written for "the hands-on hobbyist, design engineer, technician, and experimenter," which describes a lot of radio amateurs.

"The general idea is to open the door to ham radio for electronically inclined folks who either may not be aware of the hobby or who may find some of our technology interesting and/or useful," Silver said. "This is an excellent opportunity to provide outreach to the active and growing electronic 'maker' -- or do-it-yourselfer -- audience."

Every other month, Silver will cover a topic that showcases some aspect of Amateur Radio technology that is not typically covered by non-ham media. Such topics, he said, would include



such things as antennas, transmission lines, connectors, propagation, transmitters, and modulation -- areas not often discussed outside of *QST* and other ham radio publications. His first column in the January 2015 issue is an introduction to antennas -- specifically how to make a VHF/UHF ground plane for listening to NOAA weather stations. First, though, Silver acquainted his readers with ham radio and pointed out that several *Nuts and Volts* editorial staffers -- including the print and digital publication's editor, Bryan Bergeron, NU1N -- as well as contributors and many readers are radio amateurs.

by Chris Codella, W2PA

12/22/2008

Across

1. Diploma word 6. Tiny PCB parts 10. Junkbox item, say 14. Like a nerd 15. Grid resistor 16. All over again 17. Irish prefix -VOX 18. 19. '60s Novice transmitter maker 20. Heathkit Novice rig 22. VU4 island 24. Azimuth 90 26. What a lid is, for example 27. Best Yagi spacing 31. Pick up, on the bands, say 34. OE peaks 35. 4S7 group 40. This puzzle's theme 43. "Get lost!" 44. What a poor CW filter does 45. SU river 46. Beams, towers, amplifier - to a DXer, say 48. You feed an ant. with it, very generally speaking 52. VU royal YL 54. ER land 57. Popular Novice rig (and tube) of the 50's 62. Like Darth Vader 63. 2006 contest held in PY 65. Label on a wattmeter 66. Give up 67. Unlucky number, in Rome 68. Plantain lily

1	2	3	4	5		6	7	8	9		10	11	12	13
14	\vdash	⊢	\vdash	⊢		15	╈	\vdash	+		16	\vdash	\vdash	t
17	\vdash	\vdash	┢	┢		18	+	┢	+		19	\vdash	+	t
20	⊢	⊢	┢	⊢	21			22	+	23		⊢	1	t
				24	+	┢	25			26	┢	⊢		t
27	28	29	30		\vdash		31	32	33					
34	⊢	⊢	⊢			35		⊢	┢	\vdash	36	37	38	39
40	\vdash	⊢	⊢	41	42		+	\vdash	+	+	⊢	\vdash	+	t
43	⊢	⊢	⊢	⊢	┢	⊢	+	⊢			44	⊢	┢	t
				45	\vdash	⊢	+		46	47		\vdash	-	t
48	49	50	51				52	53		-				
54	\vdash	⊢	\vdash	+	55	56		57	+	\vdash	58	59	60	61
62	\vdash	⊢	\vdash		63	⊢	64			65	⊢	\vdash	+	t
66	\vdash	┢	\vdash		67	\vdash	+	\vdash		68	\vdash	\vdash		t
69	+	+	+		70	+	+	+		71	+	+	-	╋

Vintage Beginnings

69. New Englander hams70. _____-Uda71. Hex

Down

- r, say 1. Took to court with eaking 2. Windows alternative 3. Amps per Volt 4. Cooper maker 5. High points 6. Kills, as a dragon er 7. Restroom sign 8. Packet payload 9. RF effect neter 10. Song of praise 11. JA cartoon art r, in 12. Restore a PS, say 13. Drake Novice transmitter
- 21. Tit for _____ 23. Physicist Paul 25. Ponderous one 27. Drift, as an odor 28. Hip bones 29. P5-land (abbr.) 30. To be, in old Rome 32. Duck: (in DL) 33. "Got it!" 35. Natural ground system 36. FIGS partner 37. VE3 lake 38. PJ title 39. Ceramic insulators, say 41. Sierra follower 42. Phi follower 46. Preceeds a 'J' 47. Halves of thirds

48. AC-1 maker
49. Group of 13
50. Trombone part
51. What an amplifier in standby does
53. Char. code
55. Z lead-ins
56. Opera solo
58. Quad element
59. QSL mgr's expectation
60. Part of IARU (abbr.)
61. Controlled a Novice's freq., once
64. Welding type - was heliarc, once

ARE YOU READY?

Do you have a First Aid Kit in your "Go Bag"?

When was the last time you checked it's Contents? You should check it once a year for dates & quality.

If you do not have a First Aid Kit, The Red Cross recommends the following:

- Absorbent compress bandage
- 25 Adhesive band aids
- 1 roll adhesive cloth tape
- 5 Antibiotic ointment packets (5 grams)
 5 Antisentic wipes
- 5 Antiseptic wipes
 2 Aspirin packets (81 mg)
- 2 Aspirin packets
 1 Space blanket
- 1 Space blanket
- 1 Breathing Barrier w/one way valve)

- 1 Instant cold compress 2 Pairs non-latex gloves
- 2 packets Hydrocortisone ointment (1 gram)
- Scissors

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- 1 Roller bandage 3"
- 1 Roller bandage 4"
- 5 Sterile pads 4X4
- 5 Sterile pads 3X3
- Oral thermometer (Nonglass)
- 2 Triangular bandages Tweezers
- First Aid Booklet



January's Puzzle





Here is your exciting copy of February's Zero Beat!

Only 2 meetings left to by you KX3 raffle tickets!

Hampden County Radio Association P.O. Box 562 Agawam, MA 01030-0562