



The Minuteman Repeater Association

The Minuteman

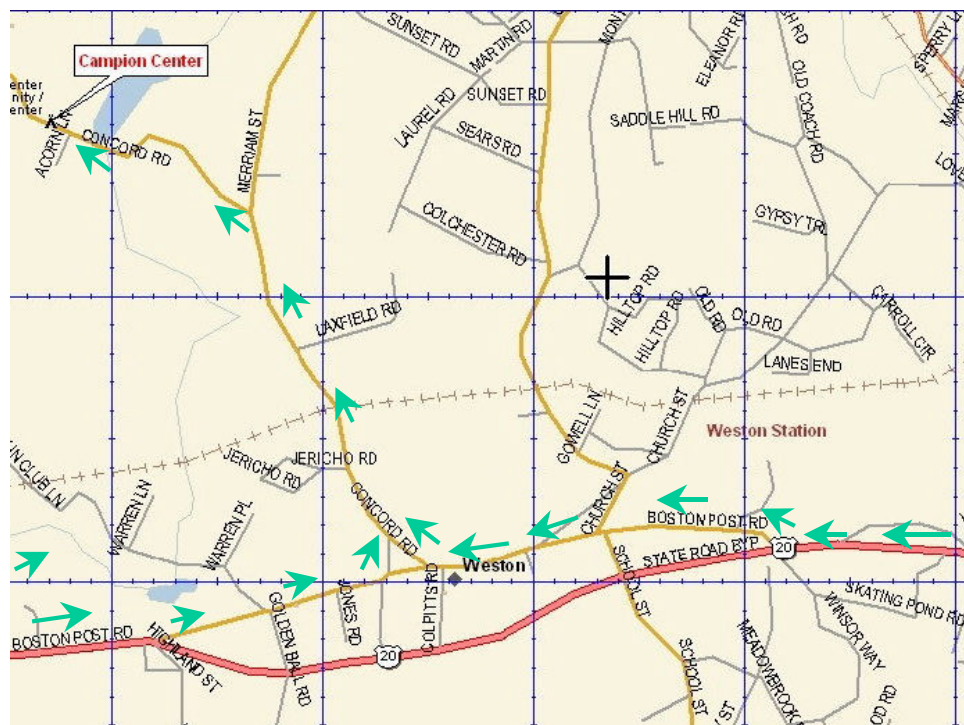
Volume 35, Number 5

May 2006



May (Annual) Meeting — 17 May 2006

The meeting is at the **Campion Center** in Weston at 7:30 PM.
Terry Stader, KA8SCP, will be discussing Seabrook Emergency Procedures.
 Elections will also be held — see article below.
 Talk-in on 146.79



The Campion Center
 19 Concord Road, Weston

From Rt. 128

Take Rt. 128 to Rt. 20 WEST in Waltham. Take right from Rt. 20 onto Boston Post Road. Take right from Rt. 20 onto Concord Road. The Campion Center is on Concord Road. At the fork in the road, before arriving at the Campion Center, bear left.

From Rt. 20 heading East

Head East on Rt. 20. After entering Weston bear left onto Boston Post Road. From Boston Post Road turn left onto Concord Road. At the fork in the road, before arriving at the Campion Center, bear left.

MMRA Elections

Nominations are open for the election at the May MMRA meeting. Two directors and the following officer positions will be elected: President, Vice President, Treasurer, Secretary, and Clerk.

Nominations will remain open until the election. If you have interest in any office, even just for curiosity sake, please send eMail to contact@mmra.org.

Current Slate

President	Bob DeMattia	K1IW
Vice President	Steve Telsey	N1BDA
Secretary	John McGovern	W1JMC
Treasurer	Kevin Paetzold	K1KWP
Clerk	Bob Evans	N1BE
Director 2006-08	Tom Muise	W1CDA
Director 2006-08	Bill Thorpe	WA1NLR

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About the Minuteman Repeater Association

The Minuteman Repeater Association (MMRA) is dedicated to Amateur Radio and public service. The MMRA maintains a large system of repeaters in Eastern Massachusetts.

The MMRA meets on the 3rd Wednesday of September, November, January, March, and May. Meeting time, locations and talk-in frequency vary. These are announced in the newsletter and on weekly nets. Meetings are open to all interested parties.

The Minuteman newsletter is mailed one week before each meeting. Members are encouraged to submit articles. Articles may be sent to the editor via email to newsletter@mmra.org. The deadline for articles is the last Friday of the month preceding the meeting.

Each Tuesday evening at 8PM the MMRA links most of the repeaters for an open net. The topic is "Technical Information and Other Stuff". Please join us.

Membership in the MMRA is open to all radio amateurs. Annual dues are \$25 per individual or \$35 per family. See our website for details.

Email to the club leadership should be sent to contact@mmra.org. The MMRA maintains a web site at: <http://www.mmra.org/>

An email distribution list for club members named "MMRA" has been established at: <http://www.yahoogroups.com/>

No part of this newsletter be copied or posted elsewhere without prior approval from the club. Your cooperation in this matter is greatly appreciated.

Repeater and Frequency Information

Location	MHz	PL	Call	Note
Bolton	29.620	131.8	W1OJ	Affiliated, PTL
Marlboro	53.810	71.9	W1BRI	PTL
Norwell	145.250	77.0	AC1M	Affiliated, PTL
Mendon	146.610	146.2	N1BHI	FTL
Quincy	146.670	146.2	W1BRI	PTL
Stoneham	146.715	146.2	N1NVL	PTL
Weston	146.790	146.2	N1BE	PTL
Brookline	146.820	146.2	K5TEC	FTL
Brookline	146.985	88.5	W1FCC	Affiliated, PTL
Marlboro	147.270	146.2	W1MRA	PTL (to 10 Meters)
Hopkinton	223.940	103.5	N1BHI	FTL
Quincy	224.400	103.5	N1KUG	FTL
Weston	224.700	103.5	N1NOM	FTL
Marlboro	224.880	103.5	W1MRA	FTL (to 10 Meters)
Weston	442.700	88.5	N1NOM	(coming soon)
Norwell	443.600	88.5	NS1N	Affiliated, PTL
Stoneham	446.725	88.5	N1NVK	PTL
Milford	446.825	100.0	WA1QGU	Affiliated, PTL
Brookline	447.875	136.5	K1IW	Affiliated, FTL
Shrewsbury	449.575	88.5	W1BRI	FTL
Marlboro	449.925	88.5	W1MRA	Network Hub
Marlboro	144.390	none	W1MRA	APRS Digipeater
???	145.630	146.2	W1MRA	Fox Box

Internet	Echolink node 94940 connects to the Network Hub
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Notes: FTL = Full Time Linked (usually to the Hub).
 PTL = Part Time Linked (on schedule or demand).
 Most repeaters link to the MMRA hub. Several can link to an alternate destination.
 Additional repeater information is on the MMRA web site.

PL: PL is required to prevent interference. The code **750** will temporarily disable the MMRA PL requirement.

Using the Autopatch: Only the hub has a telephone line.
 (1) Link to the hub if necessary.
 (2) Then bring up the patch using the 449.925 autopatch codes.

Control codes are sent to members upon receipt of dues.

MMRA Finances ~ by Kevin Paetzold (K1KWP) Treasurer

I have been the treasurer of the MMRA for the last two years (I previously served in other officer positions for several years). Most members are aware of the general membership meetings which are held five times each year. There is also another set of meetings of the MMRA which usually occur in the months which do not have general membership meetings. Even though these meetings are generally known as the "Board Meetings" all members are invited and encouraged to attend as this is the forum where most decisions (and votes) that relate to the policies, operation, and funding of the club and the repeater system occur. Information which is presented at the "Board Meetings" generally includes detailed financial information. The purpose of this article is to make some of this financial information visible to the membership at large.

The MMRA fiscal year runs from the time of the elections (which occur at the May meeting each year) to the next election. The May 2005 through May 2006 fiscal year will conclude at this year's election meeting on May 17 at which point the May 2006 through May 2007 fiscal year will commence. Some of the numbers presented in this article are actually estimates because the final bill for some accounts (for example the May electric bill) has not yet been received. However the numbers given are probably accurate to within one dollar or so of what the actual number for the year will be.

In our last fiscal year (May 2004 through May 2005) income was **\$5689.34** and expenses were **\$4372.61**. That means the income exceeded expenses that year by **\$1316.17**. (We had a surplus.) The MMRA's total income this year (May 2005 through May 2006) was **\$4895.73** and the expenses were **\$5154.25**. That means that expenses exceeded income by **\$258.52** this year. (We had a deficit.) For the two years from May 2004 until May 2006 the total income exceeded expenses by **\$1058.21** (a surplus). All information after this point in the article is for this year (May 2005 through May 2006).

MMRA income comes primarily from membership dues which was **\$3740.00**. There was also an addi-

tional **\$85.00** in dues for the 2006-2007 year which were collected this year. We received **\$649.13** in donations from members this year. In addition there was miscellaneous income of **\$421.60** which essentially came from the sale of surplus equipment sold by the President and authorized by the board.

Almost all of the actual repeater hardware which makes up the system was donated by members at no cost to the MMRA. However MMRA expenses this year include **\$2188.19** for repeater equipment, antennas, or incidental repair cost. This includes costs associated with the Brookline and Mendon repeaters, the new radio for the APRS digipeater, and repairs to the various other repeaters.

The MMRA paid **\$600** for electricity at the Marlboro West repeater site which includes the 449.925, 147.27, and 224.88 repeaters and the 53.81 receivers. 449.925 hosts the phone line, used for auto-patch, and for which the MMRA was billed **\$280**.

Printing / postage for the newsletter is **\$427.50**, *this could be saved if more members received the newsletter via email*. The MMRA carries liability insurance at **\$525** per year. Rent for Marlboro East is **\$150** per year. Other expenses of **\$286.26** include the PO box, keys to repeater sites, the yearly corporation fee, the cost of our May meeting at the Campion center, and other minor costs.

Although the numbers in this article indicate that the MMRA operated in the black for the last two years it is important to remember that an event such as a lightning strike could present a large unforeseen set of expenses at any time which would rapidly use up any surpluses that we generate.

I hope that this article has given the members who do not attend the "Board Meetings" some insights into some of the recurring costs for operating the system as well as the one time costs that occur when putting new and/or improved repeaters on the air. If you would like more information about these aspects of the MMRA I strongly encourage you to attend one or more board meetings in the future.

Repeater Report — by Bryan Cerqua, W1BRI 146.61

History:

This repeater was originally acquired about 10 years ago in early 1996. It was my first time working with a GE MASTR II base station. I remember reading the GE manual while stuck in my hotel room when I had to work in Canada for 10 weeks. In November of 2005 the repeater was removed from the Marlboro site and taken to my QTH for renovation in preparation for the new Mendon site. Over the next 4 months I worked on the repeater installing the interface panel that was originally constructed by **Walter, N1HBR** for the 449.925 repeater, and other improvements discussed later. The repeater was first installed in the Mendon site on January 28th, 2006. Several trips to the Mendon site were made by **Jim, AE1C** and myself to prepare grounding and the underground PVC cable run. In early March the new DB224 antenna was installed and the repeater placed on the air.

Renovation:

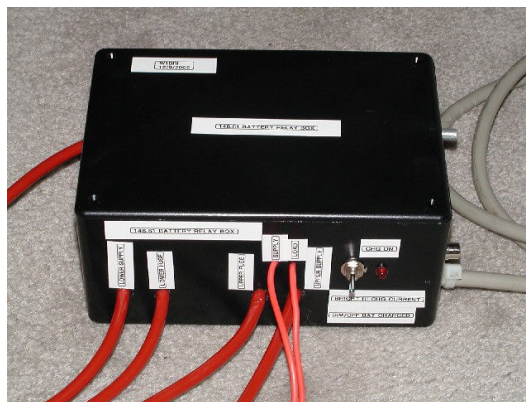
The repeater upgrade was made easy due to having all the wiring for the SCOM 7K controller in place on the interface panel. This interface panel originally made by **Walter, N1HBR** has some very nice features, such as a speaker selector for monitoring all the input and output audio paths for each port. It also has switches with LEDs to disable the RX and TX control signals for test and trouble shooting.



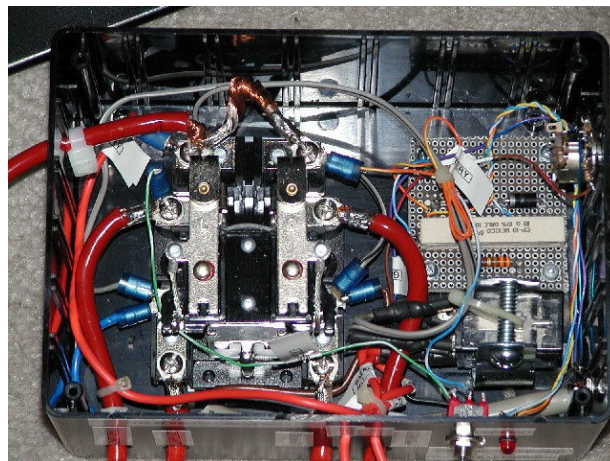
The Interface Panel

This repeater uses two link radios, one for linking to the 449.925 HUB repeater and another that links to the Milford, 446.825 repeater. Both radios are mounted on a 19" rack shelf that is mounted above the 7K controller. The shelf had to be cut down some to allow the back cabinet door to fit on.

Emergency battery backup power is also present on this repeater. The battery is a very large gel cell donated by **Roger, WA1NVC**. A relay box was built that switches the repeater over to the battery upon AC power failure. The charging circuitry is also contained in this box. When using battery power the repeater runs at low power (25W) to extend the battery life.



**The
Battery
Box**



Battery Box — Opened

Repeater Report — 146.61

Site preparation:

The grounding supplies given by **Clark, N1NVK** saved the club lots of money. The system uses poly phasers on all the antenna feeds that enter the shelter. A large copper bar mounted on the wall below the two-meter duplexer is used to ground the lightning arrestors. Number 6 copper wire runs outside the shelter to a ground rod near the telephone pole.

Grounding



Thanks to **Jim, AE1C** for digging a 1-foot deep trench for the PVC pipe for running the cables between the base of the telephone pole and the shelter. When it came time to run the cables through the



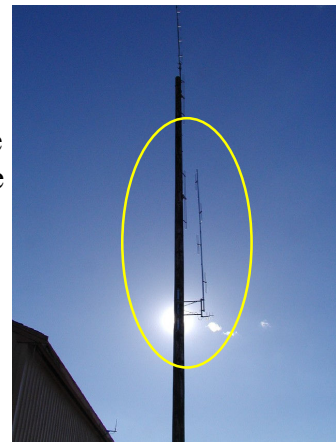
The Cable Pipe

pipe on the day of the antenna install, it was quickly realized that the pipes had frozen up with ice. A week after putting the repeater on the air the weather was warm so **AE1C** and I went back up to the site to dig up the pipe and run the cables through. Too bad it wasn't this warm when we installed the antenna, those present will know what I'm talking about, hi hi.

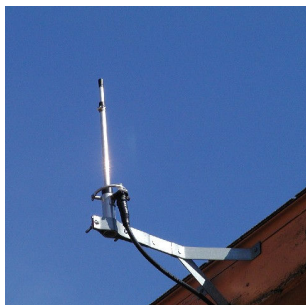
Antennas, Cables and Mount:

A new DB224 folded dipole antenna was purchased for this project. This is the same kind of antenna used for the 146.67, 146.79 & 146.82 repeaters and has proven to be very reliable. A small UHF Ringo antenna that was not being used and was mounted on the roof of the shelter was made available for the 446.825 link radio. For the HUB link radio a small 3-element beam is mounted below the main repeater antenna. The DB224 antenna was mounted using a super heavy-duty side mount fastened to a six-foot galvanized pipe with flange

The DB224

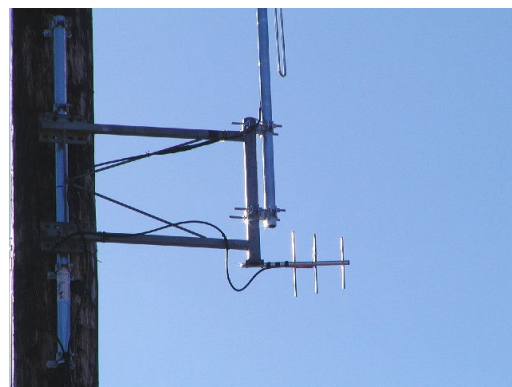


The 446.825 link



system using double shielded RG214 coax.

The Hub link antenna and antenna mount



Repeater Report — 146.61

A factory tuned Wacom duplexer was purchased for the original 61 repeater back many years ago. I figured it would be wise to give it a quick check out, since I had the network analyzer home from work, and no adjustments were required.



**The Wacom Duplexer
and Network Analyzer**



146.61 Inside

Antenna work party:

Many thanks to **James, KB1LOY**; **Wayne, N1XXI**; **Jim, AE1C**; **Keith Wheeler**; **Bill** the bucket truck operator and many others that showed up on a very cold day to help install the antenna. Also thanks go to **Andy N1BHI** for producing a DVD video of the antenna installation.

Many photos taken by **Kevin, K1KWP** of the repeater and antenna installation work party can be found on the MMRA web site at:

<http://www.mmra.org/repeaters/MDN/>

To see a brief video by Andy, visit this URL:

www.auto-teck.org/links.htm and click on:
[View 146.61 Antenna Installation video](#)



Nice Job!

**Thanks
Bryan**

MMRA Leaders

President	Bob DeMattia	K1IW
Vice President	Steve Telsey	N1BDA
Secretary	John McGovern	W1JMC
Treasurer	Kevin Paetzold	K1KWP
Clerk	Bob Evans	N1BE
Technical Officer	Bryan Cerqua	W1BRI
Director 2004-06	Larry Banks	W1DYJ
Director 2004-06	Tom Muise	W1CDA
Director 2005-07	Steve Schwarm	W3EVE
Director 2005-07	Bill Thorpe	WA1NLR
Emergency Coordinator	Bill Northup	N1QPR
Net Manager	Larry Banks	W1DYJ
Newsletter Editor	Larry Banks	W1DYJ
Public Service Coordinator	Kevin Paetzold	K1KWP
VEC Liaison	Bill Wade	K1IJ
Web Page Editor	Bob DeMattia	K1IW

Don't Forget!

Tuesday's @ 8 PM

**Technical, Informational
and Other Stuff Net**
by Larry Banks, W1DYJ

Most of the MMRA's repeaters are linked every Tuesday night for the MMRA TIAOS Net. Join us! Over the last two months we averaged about eight participants with a high of twelve. This is a good way to keep up with what is happening with the MMRA as well as ask your ham related questions.

We are looking for a net control operator for the first Tuesday of each month – contact me at W1DYJ@mmra.org if you would like to try your hand at running a net some evening – we have a script that you can use to start with. This is good practice for a number of ham related operations, from emergency preparedness to contesting.

Current Net Control Operators:

Week 1 ?????	We Need You!
Week 2 W1EUJ	Dave Goncalves
Week 3 KB1KZI	Jimmy Devarie
Week 4 K1KWP	Kevin Paetzold
Week 5 W1DYJ	Larry Banks
(also substitute & Net Manager)	

Newsletter Delivery

If you received this via US Mail, you might want to think about having it sent by eMail. You will receive it earlier, it will be in color, it may have MORE great content, and it will save the MMRA \$\$\$! Send your request to W1JMC@mmra.org.



MMRA VE Sessions

3rd Saturday of each Month
9 AM at the Marlboro Public Library
Contact: Bill Wade, K1IJ
781-891-9079 Evenings 6 to 10 PM,
Weekends 8 AM to 10 PM.
Accredited by the ARRL VEC

May (Annual) Meeting — 17 May 2006

The meeting is at the **Campion Center** in Weston.
Terry Stader, KA8SCP, will be discussing Seabrook Emergency Procedures.
Elections will also be held. (See Page 1.)

Calendar of Ham Radio Events

Public Service Events

See this web site for contact information

<http://purl.org/hamradio/publicservice/nediv>

May 21	Devens MA	Parker Classic Road Race
May 21	Wellesley MA	Veterans Parade
Jun 4	Boston MA	AIDS Walk Boston
Jun 11	Boston MA	Bikes Not Bombs
Jul 1	Princeton MA	Fitchburg Longsjo Classic
Jul 2	Fitchburg MA	Fitchburg Longsjo Classic
Jul 4	Chelmsford MA	4th of July Parade
Sep 3	Boston MA	Boston Triathlon

New England Area Ham - Electronic Flea Markets

See this web site for contact information

<http://mit.edu/w1gsl/Public/ne-fleas>

21 May	Cambridge MA FLEA at MIT (Every 3rd Sunday April thru October)
27 May	Vernon CT NARC @Tolland AG Ctr
2 June	Feeding Hills MA HCRA
11 June	Newington CT NARL
8 July	Union ME PBARC
22 July	Nashua NH NE Antique RC
12 Aug	St Albans ME PARC

New England Division ARRL Convention 25-27 Aug 2006

Boxboro, MA Holiday Inn Boxboro Woods

THE MINUTEMAN REPEATER ASSOCIATION

MMRA
P.O. Box 669
Stow, MA. 01775-0669

Email: contact@mmra.org



WE'RE ON THE WEB!
[HTTP://WWW.MMRA.ORG/](http://www.mmra.org/)