



The Minuteman Repeater Association



The Minuteman

Volume 40, Number 5

May 2011

Membership Meeting ~ Wednesday, 18 May 2011 @ 7:30 PM

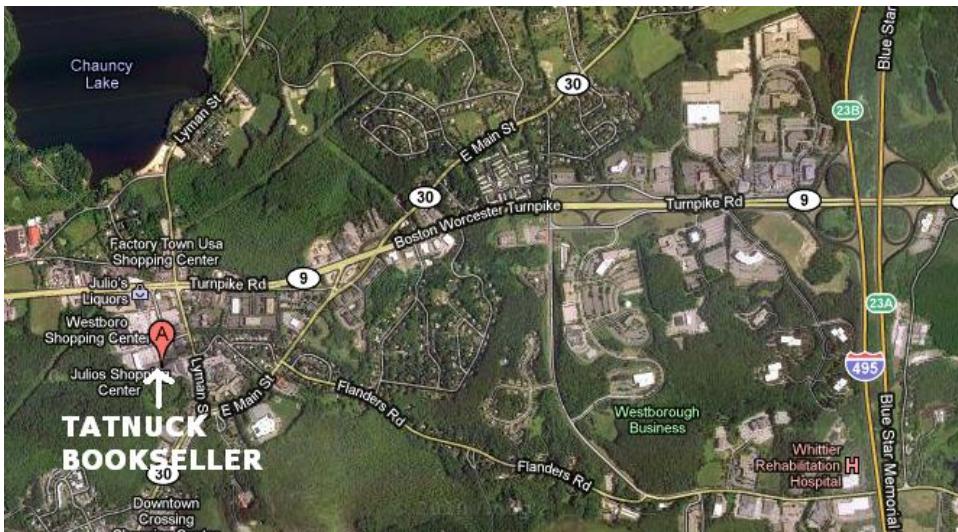
Phil Temples on the Courage HandiHam system

Tatnuck Bookseller, 18 Lyman St. (at Route 9), Westborough

Talk in — 147.27

Phil is an instructor for the Courage HandiHam system, a program which provides tools to people with disabilities to learn amateur radio and technical skills. Phil will show an informational video about the system, and will speak about his experiences with this program.

We will also be holding our annual elections at this meeting. If you would like to nominate someone to be an officer, please contact us at contact@mmra.org.



Directions:

From the North/South/East Take I-495 to the route 9 interchange in Westborough. Head West on route 9 to the Lyman street traffic light. Take a left onto Lyman street. Tatnuck Bookseller will be about 1/2 mile down Lyman on your right.

From the West Take route 9 east to the Lyman street traffic light in Westborough. Turn right onto Lyman Street. Tatnuck Bookseller will be about 1/2 mile down Lyman on your right.

Nominating Committee Report

| | | |
|-----------------------|-----------------------|---------------|
| President | Bob DeMattia | K1IW |
| Vice President | Steve Telsey | N1BDA |
| Secretary | John McGovern | W1JMC |
| Treasurer | Kevin Paetzold | K1KWP |
| Clerk | Bob Evans | N1BE |
| Tech. Officer | Bryan Cerqua | W1BRI |
| Director »2013 | Steve Schwarm | W3EVE |
| Director »2013 | Roger Coulson | WA1NVC |

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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 (usually) 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 Emailed 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". 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" is at: www.yahoogroups.com/

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

MMRA QRM Policy

MMRA members and all other operators are strongly encouraged to report repeater activity that does not abide by Part 97 rules or accepted amateur radio practice to the board of directors at contact@mmra.org or via other means.

The most effective way (and probably the only effective way) to deal with an individual causing QRM is to NOT engage that individual on the air. Please include the time and date of any incident. Measures are being taken to make audio recordings of repeater activity.

Repeater and Frequency Information

Up-to-date information about both MMRA repeaters and affiliate repeaters can be found at
<http://www.mmra.org/repeaters/index.html>

| Band | Location | Freq | PL | Call | Linking | |
|-----------------------------|--|----------|-------|--------|--|----------------|
| | | | | | To Hub 1 | To Hub 2 |
| MMRA Voice Repeaters | | | | | | |
| 10m | Marlboro | 29.680 | 131.8 | W1MRA | PTL | — |
| 6m | Marlboro | 53.810 | 71.9 | W1BRI | PTL | — |
| 2m | Belmont | 145.430 | 146.2 | WA1RTT | — | — |
| | Mendon | 146.610 | | AE1C | FTL | PTL |
| | Quincy | 146.670 | | W1BRI | PTL | PTL |
| | Burlington | 146.715 | | KC1US | PTL | PTL |
| | Weston | 146.790 | | N1BE | PTL | FTL Hub 2 10-4 |
| | Brookline | 146.820 | | K5TEC | FTL | PTL |
| | Marlboro | 147.270 | | W1MRA | PTL | PTL |
| 1 1/4m | Hopkinton | 223.940 | 103.5 | K1KWP | FTL | — |
| | Weston | 224.700 | | N1NOM | FTL | PTL |
| | Marlboro | 224.880 | | W1MRA | PTL | FTL |
| 70cm | Lowell | 442.250 | 88.5 | K1LVF | FTL | — |
| | Weston | 442.700 | | W1MRA | Network Hub 2 (PTL to Hub 1) | |
| | Burlington | 446.775 | | W1DYJ | FTL | PTL |
| | Marlboro * | 449.925 | | W1MRA | Network Hub 1 | |
| 33cm | Boston * | 927.0625 | D244 | K1RJZ | PTL | — |
| | Marlboro * | 927.700 | | W1MRA | PTL | — |
| MMRA "Other" Systems | | | | | | |
| Marlboro | | 144.390 | none | W1MRA | APRS Digipeater | |
| ??? | | 145.630 | 146.2 | W1MRA | Fox Box | |
| * Internet | 449.925: Echolink node 94940; IRLP node 4133 | | | | | |
| | 927.0625: IRLP node 4977 | | | | Normally linked to the NEAR-900 Reflector, 9125. Linked to MMRA via IRLP for the TIOS net. Normally linked together. | |
| | 927.700: IRLP node 4978 | | | | | |

| | |
|-------------------|---|
| Notes: | FTL = Full Time Linked (or default state) PTL = Part Time Linked (on schedule or demand) Note — a repeater can be linked to only one Hub at a time. |
| PL: | PL is required to prevent interference. The code 750 will temporarily disable the MMRA PL on the 2M repeaters. |
| Autopatch: | Only the Hub 1 has a telephone line. Link to Hub 1 if necessary, then bring up the autopatch using the 449.925 autopatch codes. |

Control codes are sent to members upon receipt of dues.

President's Corner

Bob DeMattia (K1IW)

Welcome to the MMRA!

Each year, many people opt to join MMRA during our 'discount period'. For new members, dues are partially prorated during the months of January through April. For some, this may serve as a trial period - an opportunity to be a member at a reduced price.

Hopefully, you will enjoy our repeaters, our club meetings, activities, and excellent newsletter enough that you'll want to renew your membership for a full year come September. If you're still on the fence, please continue to join us in the fall. Our meetings are open to all!

Although dues are due in September, newsletters are made available to all 'just expired' members through a grace period into January.

Have you been to one of our meetings? We strive hard to offer interesting and varied speakers and topics. This past year, we heard from an RF expert on antennas and feedlines, the president of AMSAT, and the owner of a commercial radio station. Next year's schedule starts coming together during the summer, so stay tuned for details.

Because our club has members from all over Eastern and Central Mass, New Hampshire, and Rhode Island, we try to rotate the meeting locations. No one location will be convenient to all, but hopefully at least one will be convenient to you! If you have an idea for a topic, send it along to contact@mmra.org.

The Amateur's Code

The Radio Amateur is:

CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED...radio is an avocation, never interfering with duties owed to family, job, school or community.

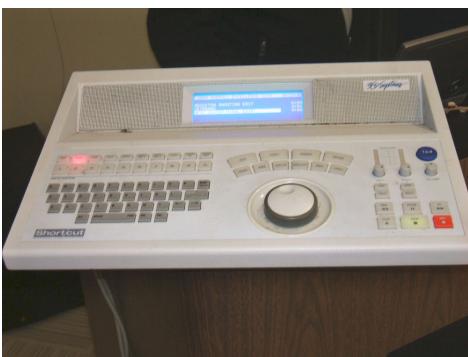
PATRIOTIC...station and skill always ready for service to country and community.

Paul M. Segal, W9EEA, 1928

March Membership Meeting

Ed Perry, Founder and President of 95.9 WATD in Marshfield

WATD is one of only a few locally owned and operated FM broadcast stations in the Boston area. WATD signed on December 6, 1977 and has endured booms and busts in the economy, and a drastically changing broadcast industry. Ed shared his experiences in the broadcast industry. Read Ed's full bio at < <http://www.959watd.com/EdPerry.php> >.



Does anyone know what the consol is that Ed is showing to Bob and Bob?

Updating an old Mastr II for use in a D-Star System

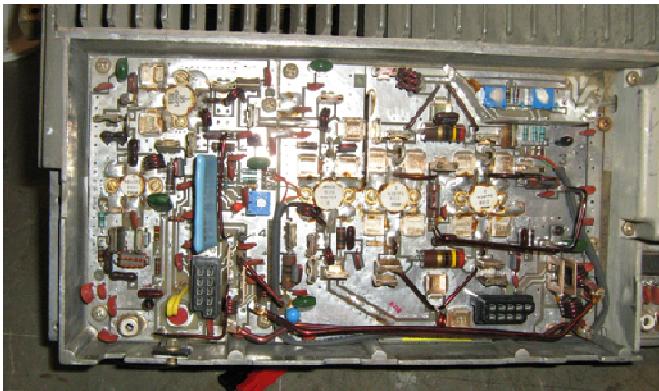
Harold Read, K3FG ~ Part 2

Part 1, in the last edition of the MMRA Newsletter, was about the receiver. With the receiver tasks completed, it was time to start on the transmitter.

The first task was checking the exciter to see if it was working. I connected a dummy load to the exciter output and tested it by keying the unit with the switch on the 19V reg board in the control shelf. This exciter is a PLL model and it has a LED on the board to indicate if the PLL is in sync. The LED lights and the service monitor responded to the signal. After adjusting the ICOM to get the exciter on frequency, I moved on to the PA section. I received a replacement PA section from a mobile unit as a source of spare parts.



It looked pretty clean so I figured the best plan was to simply replace all the boards in the repeater PA with the boards from the mobile PA, since each one was the same part number as its mate. The AP section is comprised of three separate PC boards. You can see the dividing line between the driver and final boards between the two screws near the top of the picture. The other PC board is the output filter and antenna switch under the shield to the right.



The next pictures are of the boards from the repeater PA section. Note the strip of metal that should be connecting the RF

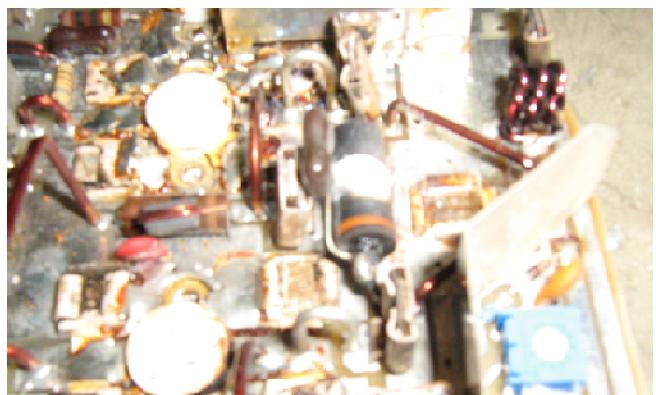
signal from the PA to the output filter. When I removed the boards, this connection just fell apart. You can see the effects of arcing that was going on adjacent to the capacitor on the final amp board.



Same thing happened on the other side of the final amp board. The connections to the driver board just fell apart as I removed the boards.



It's no wonder the resistor fried.

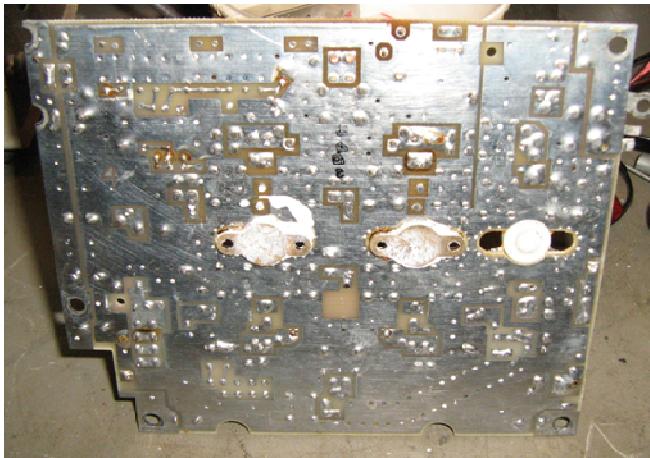


I figured it would be a pretty straight forward process to swap in the boards from the mobile PA but then, when I got the boards removed from the mobile PA I was greeted with this! Note the missing heat sink from the transistor on the

Updating an old Mastr II for use in a D-Star System

Harold Read, K3FG ~ Part 2 continued

right. It remained attached to the mobile PA chassis heat sink.



So I removed the matching transistor from the defective board...



...and then installed the transistor on the new board, hoping it would work OK. A simple resistance test had indicated no shorted sections on the part.



The operation was a success and the patient lives! So now the PA is working as expected and putting out 100W into a dummy load with no further adjustments needed.

Here's a picture of the broken transistor.



A review of the exciter components showed that the exciter and audio processor boards are low band split boards, but the band pass filter was a high band split part. I reviewed the component differences and acquired the parts to modify the band pass filter to low band split.

The before view



The after view



That completes the modifications to the transmitter section for repair, frequency change and low band split operation.

Next, if you'll remember I mentioned GE provided the ability to insert an input into this exciter for digital modulation in the next revision of the board layout. The revision provided jumper locations with thru holes so the audio path could be split and brought out to the external connectors.

Well, that's it for now. I am in the process of putting the exciter board back in the repeater chassis and wiring up the connector on the back for signals from the S-Con and the NQSMHS.

73, Harold K3FG

Ham Radio Volunteer Opportunity in New Hampshire

Robert Freed, W1RJF

The Museum of Science is looking to recruit trained Ham radio operators to volunteer for the annual Washburn Climb of Mount Washington on Monday, July 11, 2011. In addition to their radio skills, volunteers for this event are required to have mountain first-aid training, solid hiking experience, and leadership skills, as they will need to hike to designated spots along the trail and may be responsible for guiding and assisting other climbers.

Ham radio volunteers will be strategically placed at various check-in points on the mountain including but not limited to: Ammonoosuc Ravine trailhead, Lake of the Clouds Hut, Mt Washington summit, Tuckerman's Junction, Hermit Lake Hut, and Pinkham Notch Visitors Center. Radio operators will be responsible for checking in each climber and relaying all information to both the Climb Organizer and the next check point volunteer via Net Control. All volunteers must attend a pre-climb brief-

ing on Wednesday, July 6, 2011. The "hiking hams" are supported by the AMC Boston Chapter and the White Mountain Amateur Radio Club.

Volunteers will receive a free Washburn Climb t-shirt, lodging in NH for July 10 and July 11, and are invited to the post-climb celebration dinner on July 11.

Interested in volunteering?

Go to www.mos.org/washburnclimb to learn more and to print out the registration form. All applicants are required to fill out the registration form and mail or fax it using the information provided. A Museum of Science staff member will be in contact upon receipt. All applications will be carefully vetted. Questions: 617-589-4208.

Membership Statistics

The MMRA has now reached membership parity (this year) with last year.

| | <u>Individual</u> | <u>Family</u> | <u>Total</u> |
|-----------|-------------------|---------------|--------------|
| 2005-2006 | 138 | 14 | 152 |
| 2006-2007 | 151 | 16 | 167 |
| 2007-2008 | 147 | 13 | 160 |
| 2008-2009 | 173 | 9 | 182 |
| 2009-2010 | 163 | 12 | 175 |
| 2010-2011 | 162 | 13 | 175 |
| 2011-2012 | 56 | 5 | 61 |

A Ham Family

Congratulations to Julia DeMatta (age 12) who recently passed her tech exam. That makes a 100% ham family!

Bob, K1IW
Joyce, N1QPH
David, K1DVD
Julia, K1JLA

All four participated as ham operators in the *Walk for Hunger* on 1 May.

2010—2011 Membership Meetings

15 September Meeting

Lexington Public Library ~ 7:30 PM

Dave Allred, N1VU

Antenna Myths: Transmission Line Tall Tales

17 November Meeting

Northborough Public Library ~ 7:30 PM

Barry Baines, President of AMSAT

19 January Meeting

Pizzeria Uno, Newton MA ~ 7:30 PM

MMRA Mid-Winter Pizza Gathering

16 March Meeting

Milton Public Library ~ 7:00 PM

Ed Perry, WATD 95.9 Radio

18 May Meeting

Tatnuck Bookseller, Westborough, MA

Phil Temples, K9HI, on the Courage Handiham System

MMRA General Elections

Board of Directors Meetings

| | |
|-------------|-----------------------------|
| Wed, Oct 20 | Southborough House of Pizza |
| Wed, Dec 15 | Stratus, Maynard |
| Wed, Feb 16 | Conexant, Waltham |
| Wed, Apr 20 | No meeting in April |
| Wed, Jun 15 | Kennedy's Pub, Marlboro |

Don't Forget!

Every Tuesday @ 8 PM

Technical, Informational and Other Stuff Net

The MMRA's repeaters are linked Tuesday nights for the TIAOS Net. Join us! This is a good way to keep up with what is happening in the MMRA and ask your ham related questions.

If you would like to try your hand at Net Control contact me at W1DYJ@mmra.org – we have a script you can use.

Current Net Control Operators:

| | | |
|--------|--------|----------------|
| Week 1 | WA1JIM | Jimmy Devaire |
| Week 2 | W1DYJ | Larry Banks |
| Week 3 | KQ1Y | Tim Wortley |
| Week 4 | K1KWP | Kevin Paetzold |
| Week 5 | W1DYJ | Larry Banks |

To connect using the digital modes during the Net, use the New England Reflector:

For IRLP use node 9127

For Echolink, connect via *NEW-ENG*. You can find this under "Node Types" >> "Conferences"

MMRA Leaders

Officers

| | | |
|-------------------|----------------|-------|
| President | Bob DeMatta | K1IW |
| Vice President | Steve Telsey | N1BDA |
| Secretary | John McGovern | W1JMC |
| Treasurer | Kevin Paetzold | K1KWP |
| Clerk | Bob Evans | N1BE |
| Technical Officer | Bryan Cerqua | W1BRI |

Board of Directors

| | | |
|----------------|---------------|--------|
| Director »2011 | Steve Schwarm | W3EVE |
| Director »2011 | Roger Coulson | WA1NVC |
| Director »2012 | Clark Conti | N1NVK |
| Director »2012 | Mike Neilson | W1MPN |

Repeater Trustees, Appointed

| | | |
|---|------------------|--------|
| Belmont 145.430 | Larry Arone | WA1RTT |
| Boston 927.0625 | Rick Zach | K1RJZ |
| Brookline 146.820 | Bob Phinney | K5TEC |
| Burlington 146.715 | Bruce Pigott | KC1US |
| Burlington 446.775 | Larry Banks | W1DYJ |
| Hopkinton 223.940 | Kevin Paetzold | K1KWP |
| Lowell 442.250 | Vince De La Flor | K1LVF |
| Marlboro 53.810, Quincy 146.670, | Bryan Cerqua | W1BRI |
| Marlboro 144.390, 47.270, 224.880, 449.925, | | |
| Weston 442.700, 927.700 — all as W1MRA | | |
| | Bill Northup | N1QPR |
| Mendon 146.610 | Jim Podsiadlo | AE1C |
| Weston 146.790 | Bob Evans | N1BE |
| Weston 224.700 | Eddie Mulhern | N1NOM |

Appointed, non-Voting

| | | |
|-----------------------|----------------|-------|
| Newsletter Editor | Larry Banks | W1DYJ |
| Emergency Coord. | Kevin Paetzold | K1KWP |
| Public Service Coord. | Bruce Pigott | KC1US |
| VEC Liaison | Bill Wade | K1IJ |
| Net Manager | Larry Banks | W1DYJ |
| Web Page Editor | Bob DeMatta | K1IW |

MMRA VE Sessions

3rd Saturday of each Month

9 AM at the

Marlboro Public Library

Contact: Bill Wade, K1IJ

781-891-9079

Evenings 6 - 10 PM

Weekends 8 AM to 10 PM.

Accredited by the ARRL VEC

Membership Meeting ~ Wednesday, 18 May 2011 @ 7:30 PM

Phil Temples on the Courage HandiHam system

Tatnuck Bookseller, 18 Lyman St. (at Route 9), Westborough

Talk in — 147.27

Calendar of Ham Radio Events

New England Area Ham - Electronic Flea Markets

See this web site for contact information

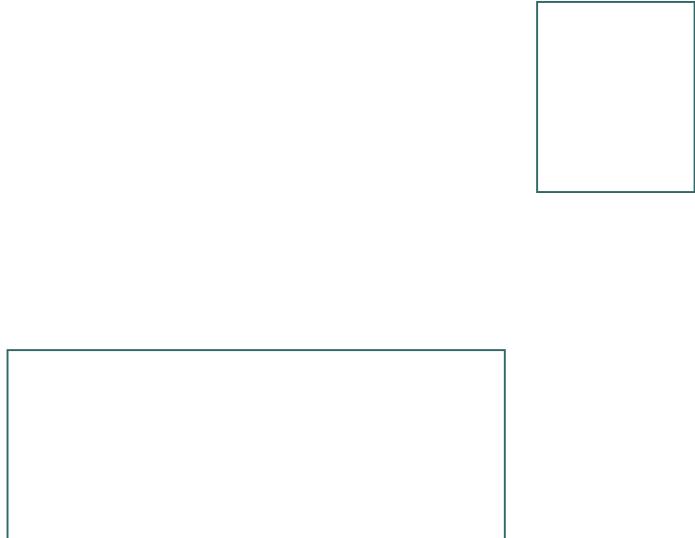
<http://mit.edu/w1qsl/Public/ne-fleas>

| | | | | | |
|---------|------------------|-------------------------|---------|------------------|-------------------|
| 14 May | Gloucester MA | CAARA @LanesvilleCC | 23 July | N Haven CT | YankeePeddler @HI |
| 14 May | Halifax NS | HARC @Forum | 13 Aug | Milo ME | PARC @HS |
| 15 May | Cambridge MA | FLEA at MIT | 21 Aug | Cambridge MA | |
| 28 May | Vernon CT | NARC @Toland AgCtr | 28 Aug | Adams MA | NoBARC @FG |
| 3 June | Feeding Hills MA | HCRA T@6PM | 10 Sept | Windsor CT | VR+C Mus |
| 4 June | Windsor CT | VR+C Mus 115 Pierson LN | 11 Sept | Newtown CT C | ARS @TownHall |
| 4 June | Goshen CT | SBARC @FG | 17 Sept | Alexander ME | StCVARC @EISch |
| 4 June | Hermon ME | PSARC 8AM @HS | 17 Sept | Forestdale RI | RIFMRS @VFW |
| 11 June | Windsor VT | CVFMA @HS Free | 18 Sept | Cambridge MA | |
| 18 June | Newington CT | NARL | 2 Oct | Queens NY | HoSARC |
| 19 June | Cambridge MA | | 9 Oct | Wallingford CT | Nutmeg Conv |
| 17 July | Cambridge MA | | 14,15 | Oct Deerfield NH | Nearfest X @FG |

THE MINUTEMAN REPEATER ASSOCIATION

MMRA
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Stow, MA. 01775-0669

Email: contact@mmra.org



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