

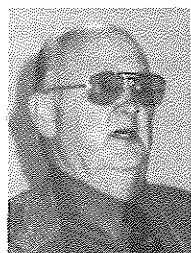


# The MINUTEMAN

Official Newsletter of the Minuteman Repeater Association

Volume 16, Number 3

May 1988



## President's Report

With this issue of *The Minuteman* the 1987-88 year for the MMRA draws to a close. That makes the MMRA about 17 years old and needless to say those 17 years have made a big difference in FM Ham radio.

No longer do we use the old GE and Motorola converted commercial tube radios which dissipated more in filament heat than in RF radiation. Now you can walk around with something the size of a cigarette package that will run circles around those old boat anchors.

But something has been lost in those 17 years. No one builds their own equipment or rebuilds those old commercial mobile rigs. Instead you drop into your favorite Ham radio store and walk out with a two-band wristwatch transceiver with Packet capability, which you can plug into your lap computer in your car.

Not that it isn't great to have the new equipment with all the bells and whistles, but how many of us have an idea of what goes on inside these black boxes? Because we didn't build them or rebuild them, our technical ability diminishes to the point where replacing a knob becomes a significant technical exercise.

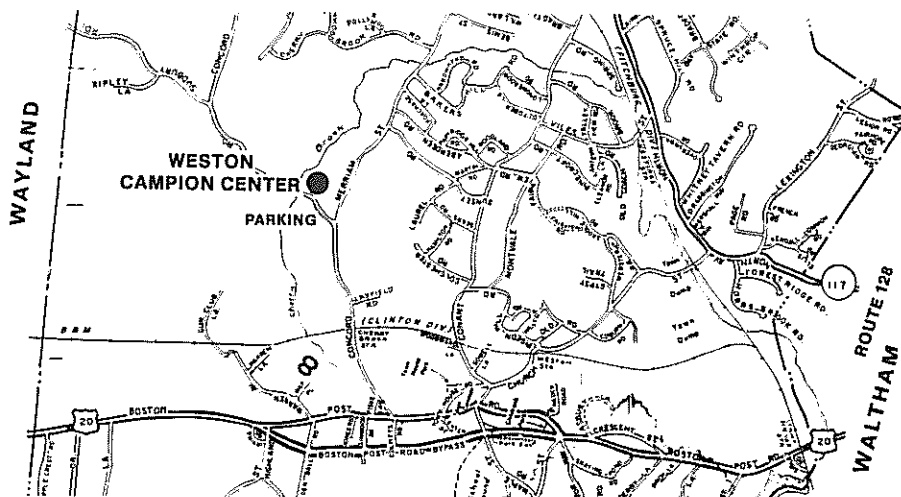
With the present state of ham radio, what has been left behind is that period when one had to research textbooks to learn how to build equipment before one could get on the air. Even if it were an old MOPA, after you built it, adjusted it, made a few contacts, rebuilt it, repaired it again at least then after all that, you had a good idea of how it worked. The situation doesn't exist today where QSOs are devoted to comparisons of gear built and the technical consideration involved with the circuitry used.

May Meeting to be held at the Campion Center in Weston

— Wednesday, May 18, 1988 —

## "New England Electricity: a Question of Balance"

*Harry Jones, Massachusetts Electric Company*



Harry Jones is a Commercial and Industrial Service Representative for the Massachusetts Electric Company. Harry is responsible for meeting the service needs of commercial and industrial customers in the South Shore area. During his 22 years with the company, he has also worked as a lineman and draftsman. A U.S. Marine for 12 years, Harry also served with the U.S. Army Special Forces for 14 years. He holds an associate degree in engineering from Massasoit College and is currently attending Northeastern University. A member of the American Institute of Plant Engineers, Kiwanis Club of Quincy and the Masons, Harry is also a Red Cross CPR instructor. A Weymouth resident, Harry is married and has three children.

Certainly there are many reasons why ham radio has reached its present phase. You could not afford to build the equipment you can buy today; in fact, you couldn't buy the components that go into this equipment. Also the sophistication in design and manufacturing requires so much more than the home workshop can provide that production and testing become technically impossible.

Thus one of the cohesive forces of ham radio is disappearing and clubs such as the

MMRA are losing the ability to draw and hold membership. The future of the MMRA then is going to be the ability of the leaders and the membership to come up with ideas that incite participation in club meetings and projects to draw new members and inspire old ones.

Good luck to us!

## General Membership Meeting

March 21, 1988

The meeting was called to order by president K1IAO at 7:49 PM with 38 persons in attendance. Salty announced that the nominating committee still needs a candidate for president. According to the by-laws the list of candidates must be mailed by April 15, 1988. The ARRL club liability insurance has the potential to save the club some significant money if the formal quote based on our submitted application follows the unofficial indications.

Treasurer K1PBL reported \$4241.00 in the treasury with all bills paid except the \$1500 plus insurance bill due May 1, 1988 (if the ARRL insurance does not come in lower).

Secretary KB1FZ reported 369 members paid through September 1988.

KB1PA asked for volunteers to work with the Red Cross for the Boston Marathon on April 18, 1988. Hams will be providing coverage from Newton to Boston.

WA1GXN asked if the Minuteman newsletter was available on audio cassette tapes for visually impaired members. KA1CLX and N1BHI volunteered to read the issues onto tape. Paul indicated that the Massachusetts Association for the Blind has cardboard reversable cassette mailers designed for mailing tapes. They can be contacted at 738 5110 for more information.

Bob Solow WA1IDA is compiling a list of hams professionally involved in the health care industry for an international project to help deliver health care to many areas of the world. If you are such a person please contact Bob. He will provide full details.

KB1FZ answered a question from a prospective new member about billing for partial years membership. The new member was told to pay a pro rata share of the \$20.00 annual dues based on the number of months remaining until September. He would then be billed for a full years dues for the Next club fiscal year.

K1IAO and N1BHI introduced our speaker Roger Perkins, W1OJ, who operates extensively in the ham bands and is involved in a key manner in the New England repeater network. Roger has worked in the Federal Emergency Management Agency (FEMA) for over ten years. Old timers may remember the organization as the Defense Civil Preparedness Agency. Roger is responsible for managing all communications for FEMA in New England.

The FEMA mission is to mitigate disaster situations and to help people work together to accomplish disaster recovery tasks. The FEMA facility is located off route 117 in Maynard, Massachusetts. It is designed to withstand twice atmospheric pressure with life support systems to protect the key personnel assigned to the FEMA location during a severe emergency such as nuclear war. Two 325 KW generators, chemical and biological air filters, and food for up to 300 people for 90 days allow the facility to house state government and even Department of Defense officials in the event of war.

Communications equipment supports frequencies ranging from HF through Satellite links. Seven separate HF stations are available including two 25 kilowatt transmitters, portable 1 KW stations and several 100 watt stations. These stations use frequencies from 2 through 21 MHz and almost always use encrypted teletype for their traffic. Antennas include two survivable 120 foot high telescoping six section verticals which are 1/4 wave when erect and work very well on 160 meters and rotatable log periodics with 70 foot long elements designed to work anywhere between 6 and 62 MHz. A newly available Harris HF rig with computer control designed to poll other stations in its net every 10 to 15 minutes using a packet burst can compute and update the optimum transmission frequency for the link.

Meteor burst communications can be used out to a range of 1500 miles with prototype equipment working similar to packet in an automatic burst mode. The terminal tries a link repeatedly until it connects, then bursts the data through in the few seconds to a minute that the ionization trail remains usable. It then tries until the next usable meteor trail allows a connect to occur. Experience has shown that it is very unlikely that time between usable meteor trails will exceed five minutes. This system is of special interest since it will work immediately after a nuclear explosion when the ionosphere is severely disturbed disrupting HF communications.

Satellite communications uses the DCS geostationary satellite on 240 to 350 MHz. Satellite teleconferencing can be supported with current usage being 10 to 15 links per year.

Landline telephone service is provided with underground lines running off in many directions to minimize vulnerability to damage. Included are 50 or more commercial trunks, 10 federal trunks, Autovon trunks including some full duplex (no hybrid) lines and the NAWARS

National Warning System. Facsimile is provided as well as secure telephone capability using either the new desk set STU3 or the older STU2 or KY71 cabinet sized equipment.

Amateur radio is encouraged by FEMA. The RACES program is supported along with the ARES. RACES is managed by FEMA subject to some local control. For instance Massachusetts requires amateurs to register with a Civil Defense agency in their own community to qualify for membership. The MMRA members as trained communicators and its repeaters would be important to FEMA in an emergency disrupting local communications.

Roger discussed the two repeaters he personally owns on Mount Wachusett, one operating on 448.625 with a 10 watt Icom repeater and super stationmaster antenna providing 50 mile mobile range covering Boston, Providence, and Mount Snow. Even more unusual is his 1.2 GHz band 40 watt repeater which provides 25 mile range for 5 watt mobiles, and gives solid coverage to Logan airport. If you think our repeaters are crowded, Roger assures you a warm welcome on 1200 MHz. He also mentioned that two more repeaters will be joining the New England network shortly.

After a lively discussion, coffee and donuts were served while final raffle tickets were sold. WA1GXN was asked to draw the winning ticket for the 3AT Handitalkie. When Paul finally grasped a winner, Frank Morrison KB1FZ acquired 220 MHz capability. Congratulations Frank! After all raffle prizes were drawn the meeting adjourned.

B. L. Brozenske, K3BUZ, Clerk

## MMRA Officers and Staff

President ..... Hazen J. Saltmarsh, K1IAO  
617-326-6179  
Vice President ... Matthew J. Valteau, KA9CRG  
Secretary ..... Frank P. Morrison, KB1FZ  
Treasurer ..... Robert M. Fraser, K1PBL  
Clerk ..... Barrie Brozenske, K3BUZ  
Directors (1 yr. terms) ... Alan E. Kunian, KA1AL  
Scott R. Bullock, KA1CLX  
Directors (2 yr. terms) ... Ralph McNall, WB2DCL  
Andrew L. Morrison, N1BHI  
Minuteman Publisher ... Dave Crocker, W1TMO  
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Minuteman Editor ..... Peter Costa, WA1VVF  
617-237-4175

Please send editorial contributions to:

MMRA Minuteman

Peter Costa, WA1VVF

95 Overbrook Drive, Wellesley, MA 02181

## Minutes of Board Meeting

April 11, 1988

K1IAO called the meeting to order at 7:49 PM. Present were K1IAO, K1PBL, WB2DCL, KA1CLX, KA1AL, K3BUZ, N1BHI, and Joe Reinhardt AF2J. Absent were KA9CRG and KB1FZ. The Board acting as nominating committee approved the slate of candidates dated 12 April, 1988 and authorized immediate mailing to the membership in keeping with the bylaw requirement.

KA1CLX reported a forced entry at the 440 repeater shelter at the Marlboro water tank. No MMRA equipment was stolen or damaged. Other equipment sharing the shelter was stolen and later the same evening recovered by police when two juveniles were apprehended.

Newsletter inputs must be in to Peter Costa, WA1VVF by May 1, 1988.

Insurance coverage is still not settled. The company providing the ARRL insurance still needs more information from us and KA1AL would like more information about the coverage. KA1AL agreed to call the company tomorrow.

N1BHI and AF2J as a technical committee will explore and define options to modify our controllers to handle the new area code. The old code will stop working in October 1988.

KA1CLX mentioned that mention should be made in the newsletter of the courtesy extended by Rivendell Electronics in providing MMRA with a 10 percent discount on prizes purchased for our raffle.

Programs for the Wednesday, May 18, 1988 meeting in the Campion Center, Weston Massachusetts were discussed. KA1CLX agreed to approach Tom Lynch for a talk on cellular telephones.

There being no other business, the meeting was adjourned.

B. L. Brozenske, K3BUZ, *Clerk*

## Minutes of Board Meeting

May 3, 1988

K1IAO called the meeting to order at 7:47 PM. Present were K1IAO, K1PBL, WB2DCL, KB1FZ, KA1AL, AF2J, WA1ZID, K3BUZ, KA1CLX, N1BHI, W1TMO, Gary Johnson WA1QMI, and Roger Coulson WAINVC. KA9CRG was absent.

KA1AL reported that we had sent a check for \$708.00 as the annual premium

for ARRL club liability insurance. This policy gives us one million dollars of liability coverage effective May 1, 1988. For less than half the cost of renewing the policy we had last year we have ten times the coverage.

K1IAO reported that Massachusetts Electric Company will provide a speaker for the Wednesday May 18, 1988 meeting at the Cambion Center in Weston, Massachusetts. The presentation will cover our electric power generation and distribution system. This meeting is also the annual election meeting.

KA1CLX reported that the Marlboro 440 band repeater was relocated back at the Marlboro water tower and that a new bandpass cavity filter had alleviated harmonic interference problems from the colocated 147.24 MHz repeater. Installation of intrusion detection devices had been accomplished at the shelter to discourage further forced entries.

KA1CLX offered to donate a remote base link radio system to MMRA for use in linking the 440 Marlboro repeater to the 146.61 MHz Marlboro repeater after software changes are made to the K1BC controllers to accept linking.

N1BHI and AF2J reported that it was practical to modify the Z80 code in the K1BC controllers to permit use with the upcoming new area code as well adding link capability and the missing exchanges in the valid metropolitan area calling table. Adequate room exists to more than double the number of lines of code now used. New member WA1YDL has agreed to assist in the effort, and his software development system along with Z80 knowledge will greatly assure the success of the project.

WA1ZID reported that the Quincy 146.67 controller would not accept a 10 or 11 digit phone number, thus was not usable with area code dialing. Tom agreed to contact the controller manufacturer and find out if an upgrade or new software is available to solve the problem, and at what cost.

The possibility of building more K1BC controllers was discussed. While documentation was considered adequate to reproduce the controllers, KA1AL indicated that \$700.00 in material plus more than a year of many members time had gone into each unit previously built. When compared to the \$850.00 S-COM industries was charging for their new higher performance, more flexible 7K controller it seemed that alot of people would be working too hard for little savings.

WA1QMI reported he was moving to California in a few days and was going to sell his 220 band repeater which has been operating for years under MMRA sponsorship in Holliston, Massachusetts. The site, which is leased to MMRA at no cost by the gas company using it for company communications below 50 MHz, has a tower which we share use of for the antenna, a shared shelter, and free electricity even including an emergency generator. Gary offered to sell the repeater to MMRA for \$300 and the duplexer with 150 feet of 7/8 inch heliax feedline for \$200. He agreed to provide documentation and leave all equipment in operating order at the site. K1PBL reported over \$3000.00 in the treasury with all bills paid. N1BHI agreed to assume trusteeship of the repeater. After considerable discussion KB1FZ moved that the Board authorize the two expenditures on an emergency basis to keep the Holliston repeater on the air, as all Board members agreed the price was very reasonable. K3BUZ seconded the motion and unanimous approval of the Board followed. KA1AL immediately drew up a formal bill of sale, and checks were written in payment. Gary introduced Roger Coulson, WAINVC who expressed interest in the Holliston site should MMRA have decided not to continue operating the repeater there.

WB2DCL announced that he had been able to arrange a tour of the Harvard radiotelescope facility for Wednesday May 25, 1988 at 7:00 PM. All Hams are invited. Ralph has a newsletter notice with map for the May issue, and requested that a signup sheet be circulated at the May meeting to provide an indication of interest from MMRA members.

KB1FZ reported 389 members paid through August 1988. Congratulations to Ned Kroeker, N1EWB for being the first to pay dues through August 1989.

The Board approved a dues prorating plan proposed by KB1FZ whereby new members (not existing members) joining in September, October, and November pay \$20.00; December, January and February pay 15.00; March, April, and May pay 10.00; and June, July, and August pay 5.00. N1BHI, WB2DCL, KB1FZ, KA1CLX, K1IAO and K3BUZ voted in favor. The remaining members had departed.

The meeting was adjourned at 9:30 PM.

B. L. Brozenske, K3BUZ, *Clerk*

## Nominating Committee Report

To all MMRA members: In accordance with Article II, par. A2 of the MINUTEMAN REPEATER ASSOCIATION, INC. By-Laws, the following list of candidates for office for the year 1988-89 is hereby submitted to the general membership.

The list, recommended by the Nominating Committee, is to be voted upon at the annual membership meeting of 18 May 1988 to be held at the Campion Center, Weston, MA.

President ..... Ralph McNall, WB2DCL  
VicePresident Andrew L. Morrison, N1BHI  
Secretary..... Frank P. Morrison, KB1FZ  
Treasurer..... Robert M. Fraser, K1PBL  
Clerk ..... Barrie Brozenske, K3BUZ  
Director (2 years)... Alan E. Kunian, KA1AL  
Director (2 years) Joseph M. Reinhart, AF2J  
Director (1 year)\*\* Thomas J. Holmes, WA1ZID

Respectfully submitted  
Hazen J. Saltmarsh, *President*

\*\*Filling the remaining one-year term of Andrew Morrison.

### MRA Tour 84'

# Radiotelescope

Oak Ridge Observatory  
Pinnacle Road, Harvard, MA

**Wednesday**

**May 25, 1988 - 7 P.M.**

**RSVP**

Ralph McNall, WB2DCL  
617 366-2404

Professor Horowitz of Harvard University has graciously offered to conduct a tour of the 84-foot radiotelescope at Harvard University's Oak Ridge Observatory. Professor Horowitz has developed a multichannel receiver that is being used to search for extraterrestrial signals.

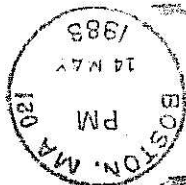
*This tour is open to all Amateurs.*

## Wanted.....Used 2 meter Radio for MMRA Digipeater

Scott, KA1CLX, is planning to put an MMRA sponsored 2 meter digipeater at the Sligo hill site in Marlboro. Located there it will be among the widest coverage digi's in the area. He has one small problem...No radio. Scott is soliciting the MMRA membership for the donation, loan or low-price sale of a 2 meter rig to make the digi play. If anyone out there has an old 2 meter rig — it doesn't even have to work, just be fixable (Scott can fix anything) — get in touch with him on '61, 449.925 or at 799-6902. He and the rest of the membership who are into packet radio will surely appreciate your help.

# MMRA

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## First Class