The Minuteman

Volume 28 Issue 5 May 1999

President's Corner

Andy Morrison, N1BHI

Well, guess what...there is a new emerging threat to a major part of ham radio operations. The computer industry has been a source of resource drain in that it has attracted young people, making it less likely that they will be interested in amateur radio. Now, in the area of home computer and telephone networking, the basis of a real war is forming.

Companies are now marketing communications products that allow you to have a home data network that connects all your computers and telephones *on the same unshielded, copper wire.* These networks use RF as the medium for voice and data, and some of the frequencies involved sit smack in the middle of the amateur bands. One of them straddles 40 meters.

According to Ed Mitchel, KF7VY, in an article in Ham Radio Online, "*To provide higher speeds, the technology will expand its spectrum usage to the entire bandwidth of 2 to 30 MHz. Because this technology is operating over unshielded copper wiring, and based on my tests conducted in 1998, it appears likely that Amateur transmissions will greatly interfere with home phone networking, possibly over a very wide area due to susceptibility to signals on the same frequencies.*"

Just think...the encounters with neighbors over RFI in the past will have been mere skirmishes compared to the outright warfare that will rage as our 1.5 KW PEP transmitters take down nearby home networks. This looks like another case of manufacturers designing home electronics "on the cheap." To maximize their profit, they will deploy systems that will go belly-up in the presence of any significant RF field made by a ham station. On analog voice wiring, our signals may couple in and make it hard to hear...with these systems, they will simply fail altogether.

We had better start working really hard to make our legislators, the FCC and anyone of influence who will listen understand what is coming. It's time that makers of home electronics products are held to the same engineering principles and standards that we are.

Speaking of data stuff...come to the meeting – Bryan Cerqua is going to make an interesting presentation of some of the incredible magic behind disk drive design. He's a design engineer for Quantum, one of the major players in the drive business. It should be interesting.

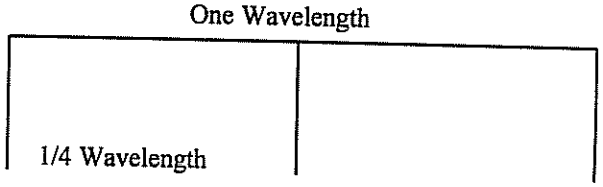
Also, Ian MacLennan, AF1R, runs communications every year for the Mount Washington Hill Climb, one of the more interesting and harrowing auto racing events around. If you would be interested in a really fun weekend, send me email and I'll put you in touch – alm@mmra.org. It's on field day weekend...bad timing, I know...but worth it.

Another Good Wire Antenna

Andy Morrison, N1BHI

Last year I described the dual overlaid rhombic...but that is not a very practical antenna. You gotta do a lot of work to get that 27 dB of gain. Here's one that is a lot easier to build; you only need two supports. It's called the "Bobtail Curtain."

This antenna is what they call a phased array. It's made with four pieces of wire such that it looks like a big E rotated 90 degrees clockwise...see the figure below.



The piece of wire that is horizontal is in essence a "delay line" that feeds RF to the vertical elements at the right phasing to produce gain in two directions. The antenna is fed at the bottom of the center vertical element – a voltage, high impedance feedpoint. This requires a matching component that we'll talk about later.

This antenna is a very good low-angle radiator, and can be used on any HF band. It has been most popular on 40 and 80 meters, but you can make one for the higher frequency bands as well. It gives about 5.8 dB of gain over a single element, and has a pattern that looks like this:

(Continued on page 2)

MAY MEMBERSHIP MEETING

WEDNESDAY, MAY 26, 1999 - 1930 HRS

CAMPION CENTER, WESTON MA

PROGRAM:

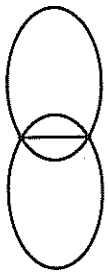
WHAT MAKES DISK DRIVES TICK

Bryan Cerqua, W1BRI

Elections

Raffle

Other Stuff



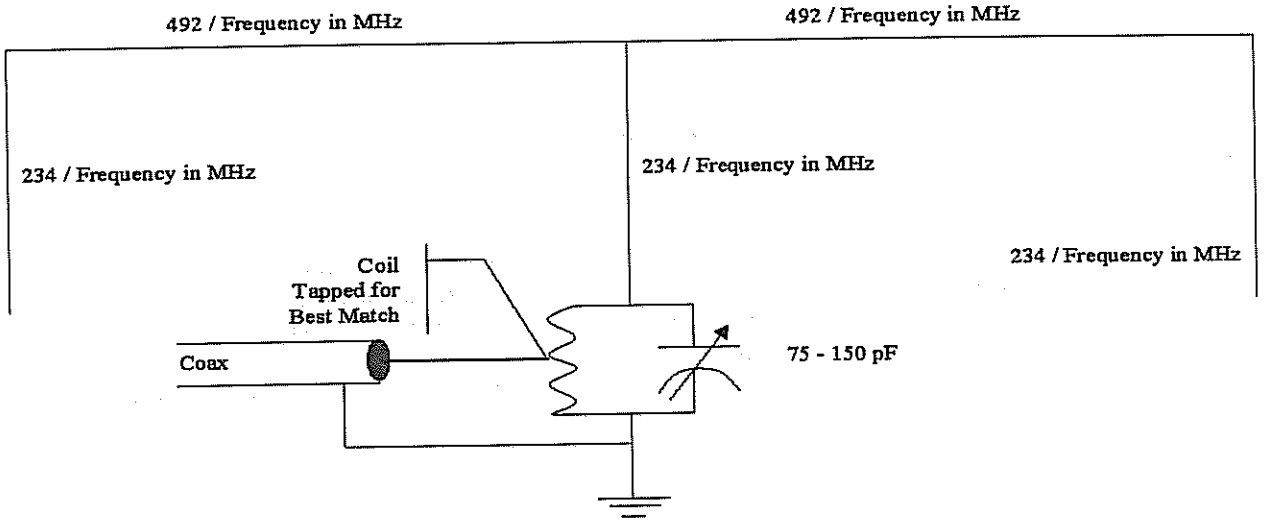
The antenna is the straight line...radiation is at right angles to the horizontal wire that suspends the two vertical elements. Take a look at a little more detail about construction in the figure below.

Note that the equations for the two halves of the top wire use the free space numerator – 492, and that the vertical elements use the numerator 234 – adjusted for diameter to length ratios.

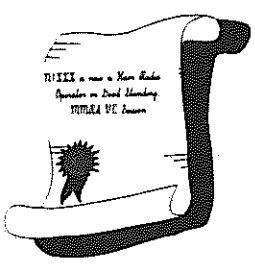
The height of the horizontal wire should be slightly greater than the length of the vertical elements, making the feedpoint just above the ground.

The tuning network should be designed for resonance at the operating frequency; the value of the inductor is determined by the value of the capacitor and the frequency. Once the network is tuned to resonance, the tap is moved to achieve the best match. Slight adjustment of the capacitor will bring the SWR down to acceptable levels.

If you really want some gain...hang two of these antennas parallel to each other, spaced 1/4 wave apart. Feed one 1/4 wave delayed (90 degrees out of phase from the other) and you get a unidirectional antenna with 12+ dB of gain and a front to back ratio of 35 dB. You can arrange switching of the delay line so that you get a bi-directional antenna. If you want to work both Europe and the South Pacific on 40, the dual bobtail antenna will outperform any aluminum monster beam by a whole lot.



Bobtail Curtain



MMRA VE Sessions

2nd Saturday of Each Month
Marlboro Public Library, 9AM
Contact: Bill Wade, K1IJ
617-891-9079 Evenings 6 to 10 PM,
Weekends 8 AM to 10 PM.
Accredited - ARRL VE Program

Items of Interest
From the ARRL Letter

ARRL TO CELEBRATE 85TH ANNIVERSARY ON THE AIR

The ARRL celebrates its 85th anniversary May 18, 1999. To mark the event, Maxim Memorial Station W1AW will operate as special event station W1AW/85 during the week of May 17-23. Some W1AW/85 operation will include PSK31. The American Radio Relay League was founded in 1914 by Hiram Percy Maxim, later 1AW, and Clarence Tuska, later 1AY.

It was Maxim's desire to send an inquiry about a hard-to-get receiving tube--a deForest audion--from Hartford, Connecticut, to Springfield, Massachusetts, that served as the catalyst for the League's birth in 1914. After conditions prevented him from working Springfield directly, he arranged with a station between the two cities to relay his message. Initially working with Tuska through the Radio Club of Hartford--which had voted to take over development of a national "relay" organization--Maxim's vision for the League became reality in May of that year. Initial dues were free. By late summer, more than 200 "relay stations" had been appointed across the US, although the first edition of *QST*--16 pages in all--did not appear until December 1915.

"Our celebration of the League's 85th anniversary would please our founders in two ways," said ARRL Executive Vice President David Sumner, K1ZZ. "First, we are celebrating with on-the-air activity--the organization, promotion, and protection of which was why they went to the trouble of creating the League in the first place. Second, just as they did in the exciting early years, we are looking forward by emphasizing new methods of radio communication."

By coincidence, the League's anniversary celebration begins on World Telecommunication Day, May 17 (see below).

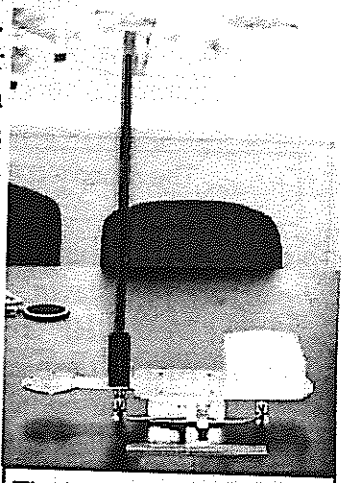
ARRL President Rod Stafford, W6ROD, encouraged participation from all segments of the Amateur Radio community. "We hope everyone, member and nonmember alike, will join in celebrating the League's first 85 years and the beginning of the next 85," he said.

Volunteer staff members will handle on-the-air duties at W1AW/85, which will take place before and after regular daily W1AW transmissions. Plans call for W1AW/85 to operate 160-10 meters plus 6 and 2 meters and 70 cm, 25 kHz inside subbands on CW, plus SSB, RTTY, PSK31, SSTV, satellite, Novice bands, etc. Additionally, W1AW/85 will transmit bulletins using PSK31 as a secondary digital mode (time permitting) for the last digital bulletin of each day that week.

A special QSL will be available. Make ARRL's 85th anniversary special by working W1AW/85!--*thanks to Joe Carcia, NJ1Q*

ARISS READIES HAM ANTENNAS FOR SPACE

There's been recent forward progress in activities to establish a permanent Amateur Radio presence in space aboard the International Space Station. Training models--or "mockups"--have been prepared of the antennas that eventually will be deployed for Amateur Radio on the International Space Station, and pattern testing is under way on some antenna systems. Four flight antenna systems are being developed to support Amateur Radio operation from the ISS on 20, 15, 10, and 2 meters, plus 70 cm, L-band and S-band.



The VHF/UHF antenna (left) and the microwave antenna (right) mockup on the mounting plate. The diplexer is beneath the plate. An antenna similar to the VHF/UHF antenna, but longer, will be used for HF operation.

"The ARISS international team has made tremendous progress on the design, development and flight qualification of an antenna system," ARISS Administrative Chairman Frank Bauer, KA3HDO, said this week.

The antenna system being developed for ISS includes a dualband VHF/UHF antenna, a multiband microwave antenna, and a diplexer mounted on a

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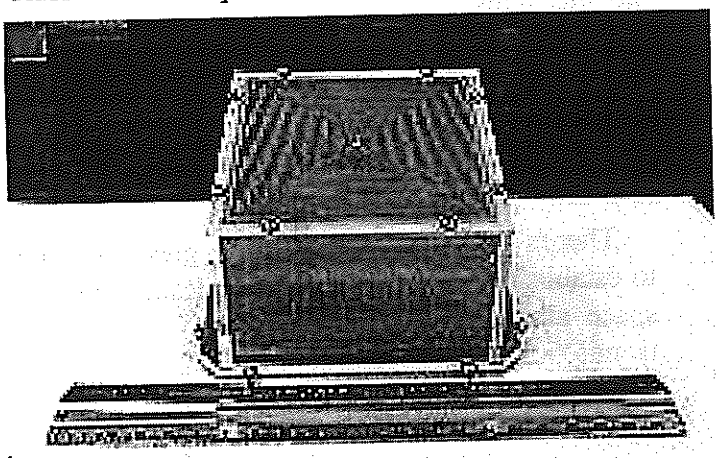
Items of Interest....From the ARRL Letter

(Continued from page 3)

plate that attaches to an extra vehicular activity handrail clamping device. These four antenna systems will attach to four bulkhead Service Module feedthroughs, made available to the ARISS international team through the efforts of Sergej Sambourov, RV3DR. Russian space officials said this week that Russia will not pull out of its ISS commitments because of that country's opposition to the NATO campaign in Yugoslavia.



The proposed ARISS microwave antenna

The VHF/UHF and HF antennas were developed by the ARISS team members in the US. They use a flexible measuring tape covered with yellow Kapton as the driven element. A large circular piece of Delrin provides a solid mounting interface and houses the connector and attachment hardware. The design is very robust and has no sharp edges. The microwave antenna system, developed by the Italian ARISS team, will support L-band and S-band operation.

The microwave antenna design chosen by the ARISS team is a flat spiral antenna. This dual-use antenna--intended for ham operations as well as NASA/Energia use--also enables the ISS crew to transmit and receive local video during space walks. A diplexer, designed and developed by the Italian team, provides an efficient split in radio signals between the lower frequency (HF/VHF/UHF) antenna and the microwave antenna. The antennas, diplexer, EVA "clothespin-type" handrail clamp, and the various coaxial cable connections will be integrated in the US on an antenna system plate developed by the US team, Bauer said.

The four antenna systems being developed for flight will be installed around the perimeter of the Russian developed Service Module, which will serve as an orbiting outpost for the ISS crew. A "high fidelity" EVA mockup developed by the AMSAT-NA/ Goddard Amateur Radio Club team in Washington, DC, has been delivered to Matt Bordelon, KC5BTL, in Houston for evaluation by the NASA Johnson Space Center EVA engineers.

The microwave antenna system is currently undergoing a series of antenna pattern measurements at the NASA Goddard Space Flight Center in Greenbelt, Maryland. Former US astronaut and AMSAT member Ron Parise, WA4SIR, is leading a team of hams from Goddard's Microwave Branch in the test activity. Once antenna testing is completed, the Italian team, led by Fabrizio Bernadini, I0QIT, will move ahead with the final flight antenna fabrication. All Amateur Radio initial station hardware is slated for launch on the STS-101 mission.

OKLAHOMA, KANSAS TORNADOES: HAM RADIO IS THERE--BEFORE, DURING, AND AFTER

Hams in Oklahoma and Kansas were ready and waiting in the hours before severe tornadoes devas-

(Continued on page 7)

Give the MMRA World Wide Web Home Page a try..... let us know what you think.... any ideas are welcome. We are looking into things like an MMRA list server. We now have our own domain name - mmra.org. The Web Page keeps getting better.....

WWW Address:

http://www.mmra.org/~mmra/mmrainfo.html

Minuteman Repeater Association, Inc.
P. O. Box 2282
Lexington, MA 02420-0004
Voice Mailbox: (508) 489-2282

A Non-Profit Communications Organization Serving the Public in Time of Emergency.

-Application for Membership-

☐ *New* or ☐ *Renewal*
☐ *Individual Membership (Dues $25 per year)* ☐ *Family Membership (Dues: $35 per year)*
☐ *Novice Membership (1st year dues: $10)*

I hereby apply for Membership in the MINUTEMAN REPEATER ASSOCIATION, INC. I agree to abide by the rules and regulations of the Association as stated in the by-laws, and understand that acceptance of this application entitles me to all rights and privileges of membership as provided under the by-laws.

Signature: ___ Date:

Name: __ Callsign:_ Class of License:

Home Address:

E-Mail Address:
Occupation: _ Employer:
Work Phone#: _ Home Phone:

Member of: ARRL?_Other Clubs?

Equipment Available for Your Use:
Type No. Mobile Port. Fixed DTMF FM SSB Packet CW Patch Rtty
HF ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
VHF ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
UHF ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

I can and am willing to assist/serve the Association and/or help maintain the Repeaters in the following ways (check all appropriate boxes)

☐ Antennas
☐ Flea Market
☐ Receiver
☐ Publicity
☐ Transmitters
☐ Newsletter
☐ Logic
☐ Public Service
☐ Telephone
☐ Legal Aid
☐ Education:
☐ Technical Documentation
☐ Shelters
☐ Medical Aid
☐ Equipment Construction
☐ Meeting Set-up
☐ Equipment Transportation
☐ Social Events
☐ Technical Documentation
☐ Refreshment
☐ Schematic Drawing
☐ Technical Library
☐ Teach Code
☐ Teach Theory
☐ Repeater Tech Committee
☐ Special Projects
☐ Repeater Control Operator
☐ Association Officer
☐ Board of Directors
☐ Field Day
☐ Emergency Communications
☐ CW Operation
Other-Specify:

Send this form with your Dues to:
MMRA, P.O. Box 2282, Lexington, MA 02420-0004

Items of Interest.....

(Continued from page 4)

tated entire communities south of Oklahoma City and in the Wichita, Kansas, area. The storm system developed in southwestern Oklahoma and moved to the northeast, spawning numerous tornadoes. The storms have left at least 46 people dead, hundreds injured, and thousands homeless.

Peter Laws, N5UWY, at the National Severe Storms Lab in Norman, Oklahoma, reports that the National Weather Service office there was in contact--mostly via 2 meters--with various weather-spotting nets to the south and west of the Oklahoma City metropolitan area. "SKYWARN is a regular, everyday occurrence here, and hams are a vital part of the warning process," Laws said.

The storms wiped out thousands of houses. Meteorologists said the worst tornadoes appeared to be F5 storms packing winds of 260 mph.

Oklahoma Public Information Coordinator Thomas Webb, WA9AFM, reports he's monitored health-and-welfare traffic on both 2 meters and 75 meters coordinating Salvation Army canteen support. "Based on the excellent warning, most of the victims appear to have left the disaster area prior to the strike and were in contact with friends or family or were in shelters with adequate communications," he said. Oklahoma Section Emergency Coordinator Bennett Basore, W5ZTN, has been running emergency nets and radio amateurs have been handling "tons of health and welfare traffic."

The Salvation Army Team Emergency Radio Network (SATERN) has established an Amateur Radio link with Oklahoma City. SATERN is accepting requests via the Internet for information about the health and welfare of loved ones in the Oklahoma City area. Visit http://www.angelfire.com/il/satern411/emailfrm.html for more information. (A "Family Finder" site also is being operated by Unibuilt Technology at http://www.unibuilt.com/okcsupport/.)

On May 6, both the Salvation Army and the American Red Cross put out calls for additional Amateur Radio assistance. Oklahoma Section Manager Charlie Calhoun, K5TTT, reports the Salvation Army requested additional amateur operators starting May 7 and probably for the rest of the week. "They need hams to act as shadows and transport units in addition to manning the canteens," he said.

No vehicles were being allowed in the field, and officials were shuttling hams in and out. Calhoun said it appeared that Amateur Radio communication would be required at least through May 8. Hams from the Tulsa area were planning to head for the Oklahoma City area to assist. The Red Cross has requested at least 50 hams to begin damage assessment May 7.

Amateurs in the affected communities used operating VHF and UHF repeaters plus HF to coordinate health-and-welfare traffic inquiries, mobile canteens, shelters, and other emergency response activities. At Calhoun's request, the FCC on May 4 declared a communications emergency in the Oklahoma area. The FCC declared 3900 kHz and 7285 kHz (plus or minus 3 kHz) off limits until 5 PM Central Time on May 7.

Jim Leist, KB5W, who chairs the Central Area Staff of the National Traffic System, said the storms hit telephone services hard, and officials were asking that cellular telephone usage be restricted to emergency services personnel. "Amateur radio resources in the area are heavily involved with support to those agencies," Leist said. "On-site support is the first priority for hams in the affected areas."

Leist said the only real backlog was in the area of health-and-welfare requests coming from outside. He said it's likely that health-and-welfare traffic will remain backed up for several days, due to a lack of outlets to handle the messages on the receiving end. "Anyone accepting H&W messages should inform the senders of this unavoidable delay and the reasons for it," he said.

For more Oklahoma tornado information and photos, visit http://www.hamsnet.net/kc5trr/oklahoma_disaster.htm.

In the Wichita, Kansas, area, ARES District 5 EC Bob Harder, W0BH, reports his ARES group was called

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Items of Interest.....

(Continued from page 7)

up by the Red Cross shortly after the storm. "ARES members and other area hams worked all night and all next day providing communication for the Red Cross headquarters and later between three shelters set up in the south Wichita area," he said. Harder cited Red Cross Coordinator, John Sullivan, KG0MZ, and Assistant Red Cross Coordinator, Greg Mitchell, N0WHC, for helping to make operations run smoothly.

The Salvation Army has established a shelter in an elementary school in the Wichita area, and four mobile canteens are serving food and beverages for residents and emergency workers.

Kansas Section Manager Orlan Cook, W0OYH, in Shawnee, reported that Kansas nets were operating on their normal schedules.

Somebody left half a glass of milk next to the keyboard. The Reaction?

From Ham Radio On-Line

Optimist: The glass is half full.
Pessimist: The glass is half empty.
Futurist: The milk's in the wrong half of the glass.
Pascal programmers: Well, what type of milk is it?
C Programmers: No thanks; I drink straight from the jug.
Assembly programmers: No thanks; I drink straight from the cow.
Basic programmers: No thanks; I'm still nursing.
MIS: I'LL DRINK IT IF YOU CAN GIVE ME UNTIL NEXT YEAR.
Fuzzy logic guys: I may or may not have drunk some part of that milk.
Prolog programmers: I know I drank it -- just don't ask me how.
Non-procedural language programmers: I drank it when nobody was looking.
UI designers: What's that crap in my glass?
Pentium users: I drank Glass * .49999999 . . . but don't hold me to that.
Windows users: Where's my straw?
Mac users: Where's my pump?
UNIX users: Nahh . . . too easy.
Shareware game author: That glass is free; the next one you have to pay for.
Security consultant: Where'd the rest of the milk go?
CIA: What makes you think that's milk?
NSA: We know what it really is.
Copy protection crazies: Somebody drank half my milk and didn't pay for it!
Free Software Foundation: That milk is the cow's contribution to all mankind!
Schroedinger: That damned cat got into the milk again!
Bill Gates: Not enough market share to be Microsoft Milk.
Apple Computer: You guys really oughta be drinking Perrier.
IBM: Rent the glass from us and we'll fill it with something we know is good for you.
IRS: Thanks for getting your milk withholding correct this year.

Flea Market List – W1GSL

(Continued from page 5)

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14 Aug	St Albans ME	PARC @ Snow Mobile Club $4@8	Howard WA1SBI 207 876 3702 +
15 Aug		Flea at MIT	Nick 617 253 3776 F
22 Aug	Yonkers NY	YARC	John WB2AUL 914 969 6548 A
28 Aug	Gardner MA	MARC @Drive In @7AM	Paul W1SEX 978 632 9432 +
29 Aug	Enfield CT	East V-UHF Conf	map@map.com Mark K1MAP 413 566 2445
29 Aug	Yonkers NY	WECA	Tom WB2NHC 914 741 6606 +
11 Sept	BallstonSpa NY	SCRACES fri6P $5+5/T+15cmp	Darlene N2XQG 518 587 2385
11 Sept	Windsor ME	AARA @Fairground $5@8 s@6:30	Frank N1ITR 207 623 9217 +
12 Sept	S Dartmouth MA SE	MassARA @club $2@9 $10/S@7	Bill K1IBR 508 996 2969 F
18 Sept	Forestdale RI	RIFMRS @VFW rt146 8A flea+auct	Rick K1KYI 401 725 7507
18 Sept	E Hartford	VintageR Museum@1231 Main $12/Tg@7 $1@8	John 860 675 9916 F
18 Sep	Marshfield MA	GenesisARS @FG Rt3A $20FriPM$5@9	Lou N1WNT 781 837 6651 +
18 Sept	Lincoln ME Bagley	ARC @BurrSch $3/S@7:30	Sylvia N1JNR 207 732 5185 +
19 Sept		Flea at MIT	Nick 617 253 3776 F
		Third Sunday -- April thru October	
19 Sept	Bethpage NY	LIMARC	Rich N2WJL 516 520 9311 A
19 Sept	Newtown CT	CandlewoodARA	Jeff WB3DLG 203 798 6860 A
25,26 Sept	Lancaster NH	MooseSwappers @FG	Russ N1YZE 603 922 5514 F
26 Sept	Yonkers NY	Metro70 @LincolnHS $6@9 $25/T@7	Otto WB2SLQ 914 969 1053 F
26 Sept	Framingham MA	FARA @HS $14/T@7:30 $3@9	Bev N1LOO 508 626 2012 F+
3 Oct	Queens NYC @	HallofScience 47-01 111st	Steve WB2KDG 718 898 5599 A
8,9 Oct	Rochester NH Hoss	Traders @FG x13 rt16	Joe K1RQG 207 469 3492 T
10 Oct	Wallingford CT	NUTMEG CT Conv $6@9 $15/tg@6	Gordon K1BIY 860 342 3258 F
17 Oct		Flea at MIT	Nick 617 253 3776 F
23 Oct	Nashua NH NE	Antique RC $5@8 $1@9 @ Res Ctr Church	617 923 2665 F+
23,24 Oct	Waltham MA	Photographica @HS $5@10 ~photo~ bef 9PM	Ed 617 965 0807 F+
24 Oct	Lindenhurst NY	GSBARC ka2d@li.net	Tom KA2D 516 422 9594 A
6 Nov	Manchester NH	IRS @StJohnCh $10@6$3@8	Paul K1LLX@juno.com 603 432 1538
20 Nov	Newton MA	WARA/1200RC Auction @Masonic $2@11	Eliot W1MJ 617 484 1089 T
28 Nov	Patchoque NY	MidIARC	Mike N2OX 516 736 9126 A

Additions/ Corrections via Internet w1gsl@mit.edu
US Mail W1GSL POB 397082 MIT Br Cambridge MA 02139
 http://flealist.senie.com/ SASE for updated copy as issued.

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http://www.connix.com/~wz1v/ne-fleas.html
http://www.k1dwu.net/flealist.html
http://www.mmra.org/~mmra/flealist.htm
http://www.qsl.net/vhfnews/ne-fleas.html
http://uhavax.hartford.edu/~newsvhf/ne-fleas.html

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The Minuteman

Volume 28 Issue 5 May 1999

In this issue.....

- **Another Good Antenna**
- **Items of Interest**
- **Flea Market Listing**
- **Somebody Left Half a Glass of Milk – Reactions...**

Election Slate - May, 1998

President: Andy Morrison, N1BHI
Incumbent

Vice-Pres. Clark Conti, N1NVK Incumbent

Secretary: Dave Croll ,KT1X and Lynne Ausman, KA1NLD
Incumbents

Treasurer: Ian MacLennan, AF1R
Incumbent

Clerk: Ed Mulhern, N1NOM
Incumbent

Board: Wayne Foley, N1XXI
Replacing Tom Qualtieri, WB1GMA

Board: Bryan Cerqua, W1BRI
Replacing Bob Feltmate, WA1ZJE

THE MAY MEETING IS ON THE LAST WEDNESDAY – MAY 26.

Return Address:
MMRA
P.O. Box 2282
Lexington, MA 02420-0004