HAMATEUR CHATTER

The Milwaukee Radio Amateurs Club

May 2011, Volume 19, Issue 5

One of the World's Oldest Continuously Active Radio Amateur Clubs—since 1917

Presidents Letter

The April meeting was the second go at a Show and Tell night. Besides myself, there were 4 people who had something to show and tell about. We even had prizes for the 2 judged "Best Show and Tell". It was close, but Hans AE9G was first and Joe N9UX was second. We had prizes because we happened to have some items to give away. No guarantees for the future but who knows. I think we prove the projects do not have to something big and purchased things do not have to be some big expensive radio. If it interested you, it just may interest others. It doesn't even have to be just one meeting per year. Recently finish some project? Make a recent purchase? Don't be afraid to tell us about it. That's one of the reasons for having a club and club meetings (and to do stuff).

The May meeting is the annual auction. MRAC had auctions dating back to the 1920's. I think the club even got kicked out of the Milwaukee Museum or Central Library for doing "business" on their premises (probably because they didn't get a cut). From sometime around the (at least) mid 1960's until about 1990, Travis Baird W9VQD was the auctioneer. We took a few years off and then I informally started auctioning things off at regular meetings (for some reason people started cleaning out their houses and donating stuff to the club). We restarted the formal annual auction around 2000 and I'm still doing it. The club does not take a cut on any sales. If you want to donate any item to the club to auction off, great. If you need the money (and today, who doesn't) that's OK too. If you make some good sales, maybe throw a couple of dollars our way. We will try to keep track of who donates the most and definitely recognize them.

The club has a Life Member category. To become a Life Member, one has to be a paying regular member for 20 years and be age 60 or older. The age 60 thing was added about 1980 when the club had about 50% Life Members. Since Life Members are not required to pay dues, if that number kept growing it could have been a real problem. For about the last 15 years, we have been sloppy about keeping up with people eligible for life membership. The responsibility could be with the Treasurer, whoever keeps the membership list, all sorts of people. We have been talking about how to clean it up, but we are tired about talking about it. There are a number of people who I believe should be eligible for Life Membership, so we will just do it and get it straightened up that way. Let this be notice that future boards should stay on top of the situation (and of course I will let the board know when I hit 60). We are making up some certificates and at the May meeting (the Auction, remember) they will be presented. If you think you are eligible for Life membership, let the board know and we will check it out as best we can. As of right now the following people will be getting Life Member certificates - Jerome Dolezal W9NSC, Jack Hughes W9ULA, Jerry Reidel K9FI, Hans Schroeder AE9G and Ted Stiller WA9RDI.

Field Day is rapidly approaching. June 25 and 26 happen before the June club meeting. Do you want to help out in the planning (there are a lot of details to be worked out)? Things should be interesting this year with the participation of the Greenfield Fire Dept. Field Day will be at Konkel Park in Greenfield, at 52nd and Layton Ave (no excuses it's too far). Contact Dave KA9WXN or Al KC9IJJ to help out. Remember, we do radio.

Since we met at Wauwatosa Bank in the 1980's we have had refreshments at meetings. Over the years a number of people, some still with us, have handled the refreshments. For all but the last few years we even made a couple of bucks off the refreshments. A couple of years ago Michael, KC9CMT (you know him, he is the Secretary, newsletter editor, takes care of mailing and emailing the newsletter, holds the key to the Church - which means he has to be there early every month, tried to do 2 nominating committees, and pushed the club to have a hamfest and was on that committee) said he would do it on a temporary basis. Well temporary is not a couple of years, so he wants to pass on continuing that one job (and

MRAC Officers:

Terms Expiring in 2012

- President – Dave,WB9BWP
- V-President– Vacant
- Secretary – Mike, KC9CMT
- Treasurer – Vacant
- Director – Mark, AB9CD
- Director – Dave,KA9WXN

Terms Expiring in 2011

- Director – Al, KC9IJJ
- Director – Hal ,WB9OZN
- Director – Vacant

The Club Phone Number is: (414) 332-MRAC or

(414) 332- 6 7 2 2

Visit our website at:

www.w9rh.org

Mail correspondence to:

M. R. A. C.

P.O. Box 240545

Milwaukee, WI 53223

Presidents Letter concluded.

maybe he will keep on with the others). Do you like having refreshments at meetings? How about helping handling them. If we got 2 or 3 people, everyone would not have to do it all or even every month. Now, for me, since Michael has been making up the difference in costs and contributions, that means we are loosing money. I could care less if we continue it. If you think meetings are more than just a place to come and see a show once a month, why not step up. If all you care about is the show…well...

Board of Director's Meeting Minutes

Meeting called to order at 7:02 PM by President Dave DeFebo, WB9BWP.

Present: Dave, KA9WXN Mark, AB9CD, Dave DeFebo, WB9BWP Michael, KC9CMT, Al, KC9IJJ, Hal, KB9OZN.

Absent: None

Dave, WB9BWP made a motion to accept the minutes of the last meeting as published in the HamChatter, seconded by Michael KC9CMT. Accepted by a vote of 6-0

Treasurer report not read. Club has no treasurer.

PRELIMINARY DISCUSSIONS:

The board needs to decide what to do with the stored radio equipment at Pioneer Village if we will not be using that site for Field Day. There is a new president of the Ozaukee Historical Society to deal with on such matters.

The club's financial records have not been audited in over two years. There is no Treasurer in our Club, the position remains open.

Urgent need to solidify a date for next years swapfest so that flyers can be printed and advertizing can commence.

Old Business:

Mark, AB9CD printed out a copy of the clubs' general ledger accounts for the Boards consideration. Our records of financial activity mirror the banks statements.

With the coming of April, club dues have risen to $20. The price will remain the same until the end of December. Anyone joining in September through December will be covered for the 2012 year.

The Board still needs to generate a list of those who have paid to date.

Those that have not paid will be dropped from the Yahoo Group & Email list.

SuperFest resulted in some renewals and a New Member.

No interest at all has been shown in this years election of Directors.

New Business:

SwapFest: Dave, KA9WXN will coordinate this with his employer. He states that he should have a date solidified by April 29th. MRAC wants to have a ARRL sponsored event next year.

Field Day: Still in need of Field day committee. Dave, KA9WXN has taken charge of this activity that will be held jointly with the MAARS group at Konkel Park in Greenfield. Club banners will be put up. The clubs call sign of W9RH will be used as a 2A. Field day will be powered mostly by batteries this year. Lighting at the park was discussed along with the fact that Konkel park has bathroom facilities and a shelter when the weather turns bad.

Club Anniversary: MRAC will be Celebrating our 95th anniversary in the year 2012. AES will let us have a special event station during their 2012 SuperFest to mark our 95th anniversary.

Net Committee: John KB9SXH and Poncho KA9OFA, have been running the 2 meter and 10 meter nets that the club offers. A committee is still needed for this important club function.

Repeater: The QCWA group net has not been taking place on our repeater as they requested. Mark, AB9CD will look into this.

Life Memberships: The club needs to print certificates for presentation to our life members in recognitions of their service. Dave, WB9BWP has produced a certificate to present to life members.

PA System: Al, KC9IJJ provided the sound system for our March meeting with Gordon West. Our club does need a updated PA system. Mark, AB9CD made a request that profit from the MARC/MAARS swapfest be used to acquire a new sound system. The Board will take this under advisement.

Meeting Site**:** Mark, AB9CD will ask the Church if they can provide a locker for storage of club meeting gear.

History Achieving: Dave, WB9BWP has updated the clubs' history books for this year. They will continue to be on display at each meeting.

Programs:

May: The annual Auction. Hosted by Dave DeFebo.

June: Open

July & August: No Meetings.

September: A representative from the ARRL will be giving a presentation.

October through December: Open

Motion to adjourn at 8:45 PM . Motion made by Mark AB9CD, Second by Hal KB9OZN. Passed by a voice vote of 6-0.

Room returned to condition as found upon arrival.

Respectfully submitted,
Michael, KC9CMT

Membership Meeting Minutes

General Membership assembly called to order at 7:06 pm by president Dave DeFebo, WB9BWP.

The Mic was sent around the room for introduction of memberships and guests. A sign-in sheet was passed around. Dave announced that prizes will be given out for the best Show & Tell presentation.

May will be the annual club Auction.

C-Crane from the March meeting left catalogs that were distrusted to the membership.

May 7th is the annual Ozaukee swapfest.

Our meeting facility, the church, is having their annual spring cleanup on May 14th, and members were encouraged to come and take part.

Membership Meeting Minutes Continued

On May 21st there will be a WX spotter training class at the Milwaukee County Sheriffs facility in Oak Creek.

Sunday May 1st is the MS walk here in Milwaukee.

W9QF will be running the ten meter net on our repeater on Fridays.

Membership will voice vote on Show & Tell presentations at the end of the meeting to decide who will be awarded a prize for best in show.

Election polling produced no candidates this year, so Al Maahs, KC9IJJ and Hal Newton, KA9OZN agreed to run for another two year term.

Lets all please thank Al & Hal for their commitment to the club.

Show & Tell Presentations:

Dave WB9BWP showed the group a power conditioning box with outlets that he put together some time ago. Well Done.

Joe N9UX, brought in a Kindle for discussion of its functions and the examination of the group. The Kindle is available on Amazon.com and has 4gb of memory and a very good battery that will last a month under normal usage between charges. Joe also had a Ipad Tablet computer to show. Joe states that he does not like the tablet computer that much more that the standard laptop.

Hans Schroeder, AE9G brought in a presentation on Lithium batteries. These batteries hold a charge long term, but are dangerous to work with. He has been experimenting with this type of battery in constructing a battery pack for his radio.

Steve, N9FSE presented a program on APRS using the program uiviewer32. APRS IS has a yahoo group.

Everett, K9PSX presented a VFO unit he had built in 1960. He passed it around for the group to examine.

Break called at 8:18 Pm.

Business Meeting called to order at 8:33 pm. By president Dave DeFebo, WB9BWP.

Upcoming programs: May-club auction, June-Field Day Report by Dave, KA9WXN. A New club book & a copy of the by-laws have been posted to the club Yahoo group. Field Day will be June 25 & 26 this year. The clubs involved still need volunteers to staff positions.

Steve, N9FSE talked briefly about the AES SuperFest fox hunt were he found one of the hidden transmitters.

A motion was made to adjourn our meeting by Mark AB9CD and Seconded by Hans, AE9G. Passed by a voice vote, and the meeting was adjourned at 8:56pm.

Our next club meeting will be May 26th, when we will be having the annual club auction.

Respectfully Submitted,

Michael, KC9CMT

Next Regular Meeting

The next meeting will be May 26th at 7:00PM. We meet in the Fellowship Hall of Redemption Lutheran Church, 4057 N Mayfair Road. Use the south entrance.

Please do not call the church for information!

Club Nets

Please check in to our nets on Friday evenings.

Our ten meter SSB net is at **8:30 p.m.** at **28.490 MHz USB.**

Our two meter FM net follows at 9:00 p.m. on our repeater at **145.390 MHz** with a minus offset and a **PL of 127.3 Hz.**

Visit our website at: **www.w9rh.org**

Or phone (414) 332-MRAC or 332 - 6722

Chatter Deadline

The **DEADLINE** for items to be published in the **Chatter** is the 15th of each month. If you have anything (announcements, stories, articles, photos, projects) for the 'Chatter, please get it to me before then.

You may contact me or Submit articles and materials by e-mail at: **Kc9cmt@earthlink.net**

or by Post at:

Michael B. Harris

807 Nicholson RD

South Milwaukee, WI 53172-1447

Cloud Charge Monitor

Charles Wenzel

Did you ever wonder how the charges were changing in the clouds directly overhead during a thunderstorm? Does an early-warning voltage exist right before a strike or do the charges jump from cloud-to-cloud too quickly? Is the polarity of the charge always the same? Build the Cloud Charge

Monitor and watch the charges ebb and flow for yourself!

The Cloud Charge Monitor is an extremely sensitive device capable of detecting subtle (and not-so subtle) changes in the accumulated charge overhead. The device consists of a charge-sensing antenna, a 60 Hz notch filter, a self-zeroing integrator, a signal limiter, and a leakage zero adjustment. The monitor is a fairly sophisticated device with a few special construction requirements and beginners may wish to solicit some help with construction and testing. For the more advanced experimenter each circuit function is described along with possible variations and performance enhancement ideas.

ANTENNA

The overhead charge is sensed by an antenna fashioned from a large aluminum-foil pizza pan or similarly large metal sheet. An insulated wire is connected to the pan in any convenient way including the following technique:

1) Strip back several inches of the wire's insulation.

2) Unroll a few inches of the pan's rim.

3) Roll the rim back wrapping the bare wire inside.

4) Crimp the rim in a few places with pliers to insure a good connection.

5)Cut a hole in the center of the pan just large enough for 1/2" PVC.

The pan is mounted at the end of a short piece of 1/2" electrical conduit PVC pipe. It may be secured by cutting small washers about 1/4" tall from a 1/2" PVC coupling. Glue one washer about 1/3" from the end of the pipe, slip on the pan (with a hole punched in the center just large enough for the pipe), then glue on another washer on top. Press the two washers together as the glue sets to firmly secure the pan. The insulated wire is now threaded down through the pipe. The pan may now be insulated by gluing two round pieces of trash bag plastic cut to be slightly larger in diameter than the pan. The bottom piece will need a hole for the conduit. (Satisfactory operation is possible without insulation.)

The other end of the pipe may be secured to a metal box in a similar manner. An ordinary electrical outlet box is a good choice since there is a center punch-out just the correct size for the conduit, there are mounting ears that may be used to nail or fasten the box to a board, and there is plenty of room for the amplifier. A bottom cover is not necessary.

CIRCUIT CONSTRUCTION

The circuit is built on a piece of copper-clad circuit board using the "dead bug" technique. The amplifier IC is mounted upside-down (leads pointing up) and will look a bit like a dead cockroach. Bend the ground pin (pin 4) back to the board and solder it directly to the foil. The other leads may be air-wired or little "islands" may be made be cutting small pieces of copper-clad board. The "bites" that come out of a typical nibbling tool are about the correct size! They may be soldered in place if the board has copper on both sides or they may be glued. Make sure to inspect the edges to insure that no metal sliver is shorting the island to the ground plane. Other construction techniques are also fine but there are a couple of points in the circuit that should be wired in a special way. R6, R7 and pin 2 should be air wired and should not be allowed to touch anything. The base of the IC must be clean and free of solder flux. Use alcohol or lacquer thinner to clean the package if necessary. (The "dead bug" technique makes inspection easy!) The input filter is built on a separate piece of board which may be mounted on the main board but the foil is biased to 6 volts instead of ground. R4 and R5 connect directly to the foil which is indicated by a dotted-line in the schematic.

This bias helps to reduce leakage current from the input circuit to ground. If the builder has access to Teflon-insulated terminals then the input circuit may be air wired between terminals without concern for leakage. The insulated wire from the antenna should not rest against the metal box so cut it short enough that it is stretched from the conduit to the circuit board. It is a good idea to solder a ground-wire from the circuit ground foil to the metal box and to strain-relieve the power and signal cable.

OPTIONS

The output of the circuit may be connected to a variety of readouts including a simple 1 mA current meter with a 5.6k series resistor or a multimeter. The output voltage will read about 6 volts when no-charge is present. R14 is adjusted to zero any offset due to leakage and it may be remotely located with the meter and power supply, if desired. Leave R13 in the metal box, however. Remember, this circuit has a VERY long time constant on the autozero circuit so the effect of any adjustment will take several minutes. R7 may be a single resistor or several lower value resistors connected in series. The purpose of R7 is to automatically drive the output toward zero charge indication (6 volts out) so that the user isn't required to constantly adjust an offset control. The rate of autozero is determined by the value of R7, the integrating capacitor, C5, and the antenna capacity. The effective value of R7 is much higher than 220 mega ohms thanks to the bootstrapping circuit formed by R8 and R10. If R10 is decreased, the amount of bootstrapping will increase and the feedback resistor will seem even larger. A lower limit of 10k is recommended unless the experimenter is quite experienced! The effect of a larger feedback resistor is to increase the autozero time constant. A similar effect is realized by increasing C5 but there will be a proportional loss in sensitivity. Lowering C5 will increase the sensitivity, if desired, but the sensitivity is sufficiently high for storm monitoring as shown.

The bootstrapping technique also amplifies the op-amp's offset voltage and drift but the chopper stabilized ICL7650 has virtually no offset. Other CMOS op-amps may be used and might be more desirable

since they have better overload recovery behavior. If the experimenter has extremely high value resistors in the junk box, R10 could be increased or even removed and the diodes eliminated giving a circuit with less sensitivity to op-amp drift and excellent overload recovery properties. Try a CA3160 op-amp or one of the numerous new CMOS amplifiers.

TIPS

It can be maddening for the beginner to work with circuits that have several minute time constants and extremely high impedance but the experience can be quite educational. To slew the circuit back to the-center point after an overload, simply touch the ground or the +12 volts with one finger (depending on which way the circuit must slew) and touch Pin 2 with the end of a 10 megohm resistor held in the other hand. To verify that the circuit is working, rub a CD or other piece of plastic on your hair and bring it close to the antenna. The meter should move up or down and then slowly drift back toward center.

Use a voltage regulator for the 12 volt supply. An LM7812 or similar regulator is adequate. Each homeowner will have different antenna possibilities. Don't mount the antenna outside! It isn't necessary and it could invite disaster if lightning strikes! Place the device near a large window or hang it from the ceiling of a porch away from the rain. A different antenna could be made by taping aluminum foil to a clean window and covering it with plastic wrap. The edge of the foil should be several inches away from the window frame at all points to avoid leakage. Ordinary roofs are usually too conductive for an attic installation but a plastic or glass greenhouse roof or large skylight might work well. Those experimenters who are experts at handling the threat of lightning strikes might wish to build a Plexiglas "umbrella" for an outside antenna but make sure that there is not a discharge path to ground when the Plexiglas becomes wet. The outdoor antenna should be mounted at ground level.

Cloud Charge Monitor

R1, R2, R6, R8: 10 megohm, carbon film or equiv. resistors

R3: 5 megohm, may be two 10 megohm resistors in parallel.

R4, R5, R11, R12: 100,000 ohms, carbon film or equiv. resistors

R7: 220 megohm, may be 10, 22 megohm resistors in series

R9, R13: 1 megohm, carbon film or equiv. resistors

R10: 47,000 ohm, carbon film or equiv. resistor

R14: 100,000 ohm potentiometer - any value above 5k is fine

R15: 470 ohm, carbon film or equiv. resistor

R15: 470

C1, C2: 250 pF made from 220 pF in parallel with 33 pF. Use low leakage types such as mica, glass, or ceramic capacitors.

C3: 500 pF made from 470 pF in parallel with 33 pF. (low leakage)

C4: 10nF (0.01uF) low leakage film or ceramic capacitor

C5: 1000 pF low leakage film, mica, or ceramic capacitor

C6, C7: 220 nF (0.22 uF) ceramic capacitor

C8: 100 nF or larger ceramic capacitor

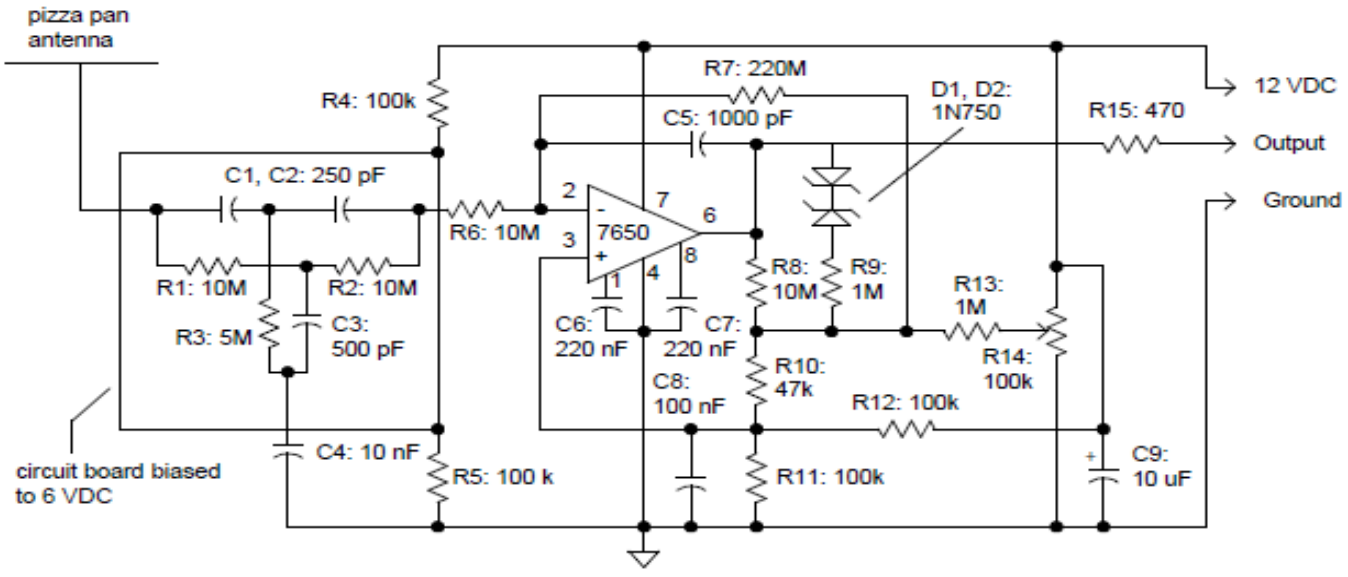
C9: 10 uF or larger electrolytic capacitor

D1, D2: 1N750, 5 volt zener diodes

IC1: ICL7650 chopper-stabilized op-amp. Other CMOS op-amps maybe used with some loss in temperature stability. Simply leave out C6and C7 to use a CA3160 or a similar amplifier.

Antenna: a large pizza pan insulated with trash bag plastic or any well-insulated sheet of metal of similar size. A larger size will give increased sensitivity.

Power: Well-regulated 12VDC power supply



Early Radio: The Vietnam War

Radio Memories of Ltc Bob Paterson

(USMC, USA Ret) by Bob Patterson K5DZE

I am a retired LTC from the Army and before that was a radio operator for several years in the Marines in the late 50's and early 60's. I was a CW op in a Force Recon unit and I remember we used some very small gear that we borrowed from the Special Forces in about '63 or '64 that was supposedly very classified at the time. It was two units (rcvr / xmtr) about 5" to 6" square and had a small CW key that swiveled out of the side of the xmtr. The rig ran about 10-15 watts and worked pretty well! Largest part of the system was the hand crank generator! (I recall that I thought the whole thing would be a nice little rig for Ham Radio Hi!) You might know something about this gear... Boy that was a long time ago!!
I just can not remember much about the little CW rig that I mentioned, as I only got to use it for a few days. The SF had only 2 or 3 of these little rigs and we got one to try out. I got to work it and made a contact from a NC field site to another Marine Recon team we had training along a Florida coast line. As I remember I set the freq from a chart that was attached...dialed in one or two controls according to the chart and then it was ready. We used a short pre made dipole and it worked pretty good. I also used the old ANGRC 9 on CW a lot. Clunky but good an reliable.

First FM gear I used was an AN/VRQ series rig. At that time the Artillery used one (AN/VRQ-2) on set of freqs...the Infantry used another (VRQ3?)on the freqs a little higher (I think it was)...and armor used the (AN/VRQ4) which was higher still in freq. Artillery and Armor overlapped into the Infantry freqs..This allowed the infantry to talk to everyone, but armor and artillery could not interfere with each other. Or so was the plan. It caused a lot of foul ups by not being able to talk across the board.

Another special rig I ran across was an English RACAL (Special Air Service) SAS rig used by commando and special ops units. I was a commo officer in Europe in a security unit that provided security for US Pershing Nuc Missiles. Once we had a two week field problem working against Belgian and US Special Forces type units. We had all the new 'toys' to use against them and NADIC LABS gave us lots to play with. (New night vision gear, ground radar, seismic devices that looked like a string of tent pegs connected to a 2 meter HT!) Anyway, we "captured" most of a Belgian SF unit that mistakenly parachuted right into our base camp (shades of the Longest Day!!) and I got all their commo gear to look over. Of special interest to me was a small RACAL rig for CW that had a special unit with a "wind up" device to plug into the transmitter. To use it, you recorded your message off-the-air using a one-time code/cipher and this device recorded it at a regular speed. Then you wound this thing up like a clock and plugged it into the xmtr. At the exact pre-programmed time, you came up on freq..gave one short call and turned this device known as a "Burster" on. It sent a CW message that sounded like a high pitched "zip". You could send a minute or two of CW in just seconds! It was recorded on the other end at the fast speed, and when played back at a slow speed it could be copied and then deciphered. Rather neat idea for special ops units who did not want to be DF'd and caught sending long transmissions!

We made lots of homebrew directional antennas and regularly got 40+ Km range from rigs (PRC25's). Used tin cans, dirt and motor oil to make a 600 ohm resistor to terminate the antenna..Left these things all over Germany up in the trees! Ha! Also made 3 el yagis from wood stock and welding rods and lots more. The range was important, but just as important was the directivity that helped avoid direction finders (DF) and getting caught on patrols.

In Europe for 3 years and then later in the US (I was Army Aviation Advisor to ARK Army Guard for a 3 years in 78-80) I taught Electronic Warfare training for tactical units. Used to have some neat jamming tapes around that I used. If I can find them. We had lots of good training (and a quite a few laughs) fouling up the units training in Europe when they tried to talk like they were on 2 meters!! They really learned quickly how to work thru and around this stuff as I chased them all over the air. (Incidentally, I noted in the paper today that the Serbs are doing a good job of monitoring NATO aircraft and reacting to the message traffic just as I did!! Seems some more training might be in order?)

MARINES
THE FEW. THE PROUD.

Testing & Local Swapfests

VE Testing

Saturday, May 28th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, July 30th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, September 24th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, October 29th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, November 26th, 2011 - AES - 9:30 AM-11:15 AM

ALL testing takes place at: Amateur Electronic Supply 5720 W. Good Hope Rd. Milwaukee, WI 53223

Area Swapfests:

June 5th, 2011 Starved Rock Radio Club's 2011 Hamfest (W9MKS) , Princeton, IL
Sponsor: Starved Rock Radio Club (W9MKS)
Website: http://www.qsl.net/w9mks/hamfest.htm

June 11th, 2011 | South Bend Hamfest ,South Bend, IN
Sponsor: Michiana Amateur Radio Club
Website: http://w9ab.org

July 9th, 2011 | SMARC Swapfest '11 , Oak Creek, WI
Sponsor: South Milwaukee ARC
Website: http://www.qsl.net/WA9TXE

Working Committees

Field Day

- Open

FM Simplex Contest

- Joe – N9UX
- Jeff – K9VS
- Brian— K9LCQ

Ticket drum and drawing

- Tom – N9UFJ
- Jackie – No Call

Newsletter Editor

- Michael-KC9CMT

Webmaster

- Joe Schwartz—N9UX

Refreshments

- Michael – KC9CMT

Membership Information

The Hamateur Chatter is the newsletter of MRAC (Milwaukee Radio Amateurs' Club), a not for profit organization for the advancement of amateur radio and the maintenance of fraternalism and a high standard of conduct. MRAC Membership dues are $17.00 per year and run on a calendar year starting January 1st. MRAC general membership meetings are normally held at 7:00PM the last Thursday of the month except for November when Thanksgiving falls on the last Thursday when the meeting moves forward 1 week to the 3rd Thursday and December, when the Christmas dinner takes the place of a regular meeting. Club Contact Information Our website address **http://www.w9rh.org**

Telephone (414) 332-MRAC (6722)

Address correspondence to:

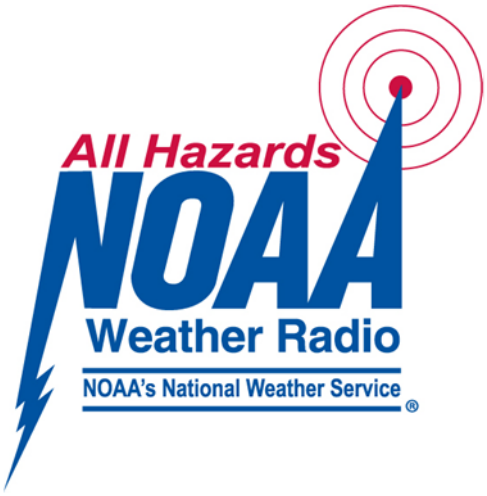
MRAC, Box 240545, Milwaukee, WI 53223

Email may be sent to

w9rh@arrl.net

Our YAHOO newsgroup:

http://groups.yahoo.com/group/MRAC-W9RH/



CLUB NETS:

- Our Six Meter SSB net is Thursday at 8:00PM on 50.160 MHz USB
- Our Ten Meter SSB net is Friday at 8:00PM on 28.490 MHz ± 5 KHz USB.
- Our Two Meter FM net follows the Ten meter net at 9:00PM on our repeater at 145.390MHz - offset (PL 127.3)

Milwaukee Area Nets

Mon.8:00 PM 3.994 Tech Net

Mon.8:00 PM 146.865- ARES Walworth ARRL News Line

Mon.8:00 PM 146.445 Emergency Net

Mon.8:00 PM 146.865- ARES Net Walworth

Mon.8:45 PM 147.165- ARRL Audio News

Mon. 9:15 PM 444.125+ Waukesha ARES Net

Mon.9:00 PM 147.165- Milwaukee County ARES Net

Tue.9:00 AM 50.160 6 . Mtr 2nd Shifter's Net

Tue. 7:00 PM 145.130 MAARS Trivia Net

Tue. 8:00 PM 7.035 A.F.A.R. (CW)

Wed. 8:00 PM 145.130 MAARS Amateur Radio Newsline

Wed. 9:00 PM 145.130 MAARS IRLP SwapNet d FM-38 Repeaters (IRLP 9624)

Thur. 8:00 PM 50.160, 6 Mtr SSB Net

Thur. 9:00 PM 146.910 Computer Net

Fri. 8:30 PM 28.490 MRAC W9RH 10 Mtr Net SSB

Fri. 9:00 PM 145.390 W9RH 2 Mtr. FM Net

Sat. 9:00 PM 146.910 Saturday Night Fun Net

Sun 8:30 AM 3.985 QCWA (Chapter. 55) SSB Net

Sun 9:00 AM 145.565 X-Country Simplex Group

Sun 8:00 PM 146.91 Information Net

Sun 8:00 PM 28.365 10/10 International Net (SSB)

Sun 9:00 PM 146.91 Swap Net

2 meter repeaters are offset by 600KHz - - 70 centimeter repeaters are offset by 5 MHz

SSB frequencies below 20 meters are LSB and for 20 Mtr and above are USB.

NOAA Weather Radio Now Numbers 1000 Transmitters!

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NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

Working with the Federal Communication Commission's (FCC) Emergency Alert System , NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with Federal, State, and Local Emergency Managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes 1000 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the VHF public service band at these seven frequencies (MHz): 162.400 162.425 162.450 162.475 162.500 162.525 162.550