



# January - 2004

## Officers

Operating the 146.91- repeater under the callsign WI9MRC. For best access use 127.3 PL.	President Vice Pres Secretary Treasurer Acivtes Mgr	Napoleon Hardy Bob Albert Maureen Zentner Eileen Albert Janet Wojciechowski	NOXXL AB9FB KB9VLJ KB9ZHV KB9ZAG	ndhardy@aol.com ab9fb@yahoo.com maureenzentner@prodigy.net kb9zhv@yahoo.com kb9zag@hotmail.com
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## Meeting Notice...

**January 17** (Sat) 6:30PM (Election Meeting) Oak Creek location, Wauwatosa Savings Bank 6560 S. 27th St.

## 2004 Club Calendar...

**March 20** (Sat) 6:30PM Meeting (Weather Class) (Location Subject to Change for Weather Training), Oak Creek Location

**May 19** (Wed) 6:30 Meeting (Program), Mayfair Location

**July 28** (Wed) 6:30 Meeting (Program), Mayfair Location

**September 11** (Sat) 6:30 Meeting (Program), Oak Creek Location

**October 23** (Sat), 6:30 Meeting Swapfest Planning, Oak Creek Location

**November 24** (Wed) 6:30 Meeting (Swap Fest Debrief), Mayfair location

**Board Meetings:** Call a board member for date, time and location of the meeting.

### Oak Creek Location

Wauwatosa Savings (Basement)  
6560 S. 27<sup>th</sup> Street, Oak Creek, WI

### Mayfair Location (New)

Mayfair Bank Tower (In Basement), 2300 North Mayfair Road, Wauwatosa, WI

## Nominating Committee Report

The following club members have accepted nomination for the following offices:

**President:** Bob Albert, AB9FB; Dean Hoover, KB7QDI; Mike Jones, K9MDJ; Kate Kedney, KA9MWT.

**Vice President:** (I) Bob Albert, AB9FB; Steve Griffin, KC9AYN; Brian Hechel, K5GBW; Mike Jones, K9MDJ; Kate Kedney, KA9MWT; Matt Moog, KC9COY; Jerry Schroeder, KB9WNT.

**Secretary:** Mike Jones, K9MDJ; Joe Schwarz, N9UX.

**Treasurer:** Bob Albert, AB9FB; Randy Becker, KB9ZTB.

**Activities Manager:** Rich Peters, KB9KYS.

Order of appearance is (I) incumbent (if any) followed by last name sort.

Respectfully submitted  
Warren Schall, K9IZV: Chair.

**Note:** Additional nominations can be made from the floor on Election Night.

Thanks to the nominating committee for a job well done, trying to contact all our club members by phone or E-mail:

Jeananne Bargholz N9VSV; Jason Benjamin, KC9WTH; Lloyd Gorsiski, WB9RGO; Gary Grant, N9MGJ; Brian Hechel, K5GBW; Kate Kedney, KA9MWT; Dean Pearson, KB9RCB; Dave Peters, KB9EWG; Warren Schall, K9IZV; Jerry Schroeder, KB9WNT; Joe Schwarz, N9UX; Mark Zentner, KB9VJQ; Maureen Zentner, KB9VLJ.

A reminder that your 2004 dues (\$20) must be paid to vote or hold office. If you don't mail your dues in by Jan 10, please bring it to the meeting.

Lastly, advice to the candidates: your air-time activity from now until the election meeting may affect your chances, and if you don't show up at the meeting, you probably won't be elected. Good Luck!

Thank You!  
Warren K9IZV

## Awards

The MRC awards for 2003 were handed out at the Christmas Party on November 30th. "The Friendly One" award was handed to Joe N9UX, the 2003 Community Service award went to Gary N9MGJ and the Outstanding Community Service award went to Skip WD9HAS for his continuing service as the MRC "Weather Dude". As the Awards Chairman this year, I want to personally thank Steve KC9AYN and Brad N9KXA for their support as members of the committee. I also want to give thanks to all of you who called or emailed me your recommendations.

73 de Dean KB7QDI

## A Note From The Vice-President

We've reached the end of another year. I can't believe it's been a whole year since I was elected. I've enjoyed the position of vice-president very much. We've had a lot of fun throughout the year. I've learned a lot about the club I didn't know before being elected. It's actually very fascinating to participate in club decisions and direction.

I want to take a minute to thank everyone for their support this year. Remember, this is everyone's club and "we" can make of it what we want. We had a great year. A successful field day, a pleasurable summer picnic (I think I'm still sore from volleyball) and Christmas party, and thanks to my co-chairman Joe (N9UX), a very successful swapfest. Hopefully we can make next year even better with everyone's help. Nothing will happen unless we make it happen.

Again, thanks for giving me the

## Committees

Activities	Janet	KB9ZAG
Awards	Dean	KB7QDI
Computer Net	Gary	N9UUR
Control Operators	Gary	N9UUR
Emer Operations & Training	Gary	N9MGJ
Fun Net	Warren	K9IZV
Historian	Warren	K9IZV
Membership Coord	Kate	KA9MWT
Net Announcements Coord	Deb	KB9ISE

Newsletter	Heidi N9TUY & Bob AA9JW
Public Service	Kate KA9MWT
Station Trustee	Warren Schall K9IZV
Swapfest	Bob AB9FB & Joe N9UX
Swap Net	Leroy WD9HOT
Technical	Mike Borchardt N9NPB
Weather	Skip WD9HAS
Co-Webmaster	Gary N9UUR
Co-Webmaster	Richard K9RWE

opportunity to be your vice-president this year. I've enjoyed working with the other members of this year's board very much. In my opinion, we had a very good mix of people on the board this year. Everyone's hard work helped keep our club going. Following the previous MRC boards' progress was a hard act to follow. We all can only look forward to what next year will bring.

Bob, AB9FB  
Vice President

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### *A Note From Your Treasurer*

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Another year has come and gone. It's been a lot of fun. The best part is, we're still in the black, thanks to everyone's help. It's been fun being on the inside of what's happening. Year end financial along with a proposed 2004 budget will be presented at the election meeting. I hope everyone can make it

I want to thank everyone for giving me the opportunity to be your club treasurer for 2003. It was a learning experience and I really enjoyed it. I hope everyone had a happy holiday and is looking forward to the new year.

Last order of business: if you haven't, please pay your dues for 2004 as soon as possible. In order to vote, your 2004 dues must be paid. Dues can be paid at the election meeting.

73's, Eileen, KB9ZHV  
Treasurer

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### *A Note From The Secretary*

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I would like to thank everyone who voted for me for the position of Secretary. It has been a great year and the Board I worked with was all so wonderful and inspiring. I will not be re-running this coming year. Since I have started back to work, my life has been quite hectic and my hours are quite unusual. This in part has prompted me not to re-run. I would encourage all of you to at one time or another to run for office. It is not glamorous but it does give you an inside look into the repeater. You truly get an opportunity to work with some wonderful amateur operators and to find out how the repeater works behind the scenes. You do not have to be technical to find a place with the 91 repeater. I feel that it is an accepting repeater. Anyone who wants to learn more about Amateur Radio should

join and talk often. This is one of the best repeaters in Southeastern Wisconsin because of the people who use it. So keep talking it up!

Maureen Zentner KB9VLJ  
Club Secretary

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### *From the Technical Committee*

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Time to move along... again.

On June 13, 1995, the MRC started down a path of moving the repeater to a more "Commercial Grade" style of building, and the use of more robust (i.e. heavy duty use) components within the system. One overall design philosophy of "Plug-and-Play" was adopted, and Motorola was selected as the source for new radios.

"Plug-and-Play" means a number of things to us. First, the days of modifying, and hacking into radios to tap off the signals needed for repeater use stopped. Everybody has a better (well at least different) idea, and the wide variety of gear types, and their modifications became impossible to manage as the system grew. Also, the quality of the audio passing through the system could not be matched. ONE radio type used throughout the system solved many problems. All the remote sites could then be "Standardized", so all the people on the committee would be able to help out at any site, gear could also be swapped between sites to keep a more critical site up and running, while something was out for repair. All remote site wiring could be exactly the same, even the color codes of the wires. The benefits are almost too many to list.

The radio selected in 1995 was the Motorola Radius series, it is a small "Mobile Rig" type of radio. The main feature it offered was a 16 pin accessory connector on the back of the radio. This connector gives us access to all of the signals we need to use the radio for repeater operation without opening the case. Just before this time, the commercial 2-way industry had moved from car trunk mounted "guts" with remote control head radios to "all in one" type radios. The ham community was (and still is) using these old "Drawers" (the trunk mounted guts) to build repeaters, after heavy modification. This can still be done, if you know what to do, have the space to mount it all when your done, and can repair it yourself when the radio dies. The new Milwaukee ARES 146.670 machine is built from GE-DELTA

drawers, with very good results. Given the MRC coverage area, heavy use, multiple remote site complexities, and the club members demand for as little down time as possible, "drawers" are not a option for the MRC. In 1995 the Radius radios were "New", and there was great discussion about how, or IF they would stand up to our use in a HAM repeater system. Nobody else around had done it.

Today, the system is running 19 of the Radius radios, "Plug-and-Play is still the rule, and the repeater averages about 8 hours transmit time per day. We would also offer that most club members don't even notice if and when a remote receive site goes down for a few days given the excellent remote site locations we have, and their overlapping coverage areas. Only two of our five remote sites are in the same place as they were in 1995. New, better, higher locations have been found and added since then. We as Club Members have lived through the upgrades and building process, which did not happen overnight, and may not fully realize what has been accomplished, or how far we have really come. You may be interested to know what our "peers" think, other HAM groups around the area and state. Our Technical Committee folk are now looked to as consultants to other systems, and asked for help in actually building other systems. There are now at least four "Clone" 91 systems out there (that we know of), exact copies of our system, same gear (SCom Controllers - Radius Radios), and copies of our wiring diagrams and controller programs in hand. So the MRC is not only a great 13 county coverage machine, it (and our people) is looked to for innovation and quality design in the extended HAM community.

#### **So what's next?**

First off, the radios are now 6 to 8 years old. Motorola has actually stopped making the radios we are using, and they are well out of warranty. A replacement must be found, and it actually turns out to be an easy choice. Motorola has replaced the Radius line with another radio (The CDM750) that has the same 16 pin accessory connector. Two of these radios (one UHF and one VHF) have already been purchased for evaluation. The downtown remote site is using the UHF radio as it's transmitter, and the VHF radio is the 146.910 transmitter at the main site. These radios are more "feature rich" and more complex to program (there is also new Motorola programming software to go with them), so a couple trips and tries were

necessary to work out all the bugs and get them running. The results so far are excellent. Not only do they work fine in our system, but the quality of the transmitted audio by these radios is greatly improved over the old radios. They sound great. Currently, if a user "votes" the downtown site (then both new radios are in use) the signal is noticeably better (more rounded, clean highs and better low end base response) than the other remote sites.

Another issue we have been trying to address and improve for years, is the over all "sound" of the repeater, the quality of the audio through the system, and that effect on the main site voter. As we make small improvements to the remote sites and main site audio paths, the Doug Hall voter at main site needs readjustment to keep the system balanced and making the "correct" voting choices. It's honestly been a very trying and never ending battle. The components age, values drift, pots get dirty, and gremlins attack in the night. At this point, the issue of "quality of audio" is our primary concern. Doug Hall (who make the voter) has been contacted, and we are planning on sending our voter to the factory to be rebuilt, brought into current day specs, and calibrated. A new voter is not needed, as the current model uses 90% of the same design and parts as ours, and still uses the same physical rack and module design. Doug Hall recommends "upgrading" our current hardware over a new purchase as well. (This may well have been accomplished by the time you read this in the newsletter.)

With the voter back in spec, system audio quality can finally be addressed. This has been a learning process for the Technical Committee as well. Recently, a number of its members have taken a very hard look at FM signals, and the components of radios and repeaters, from a research and design standpoint. A much greater understanding of Deviation, Signal to Noise ratio, Sinad, signal Pre-Emphasis and De-Emphasis, DTMF "Tone Twist", and much more has been looked into (we tech guys are in this to learn too, not just build). Based on this, some system changes have already been made, but one thing that we agree on is that as these changes get finer and more detailed, they become harder. Audio quality and level adjustments CANNOT be made "by ear" (Oh... Ya... That sounds about right there, well maybe a little more....). For the voter to do its job well, it must be presented with signals that are matched in level and quality. The remote sites should be the

same, delivering the same "quality" of audio to the main site for the voter.

So we have now progressed to another level. You may have heard the Technical Committee recently "testing" the system, send obnoxious signals and tones through the repeater. Why? We now have access (via a tech member, any time we want!) to a Hewlett Packard Communications Service Monitor (an HP 8920). This is a little magic box that is a calibrated, known signal and audio reference source and receiver. We use it to generate known signals (for example, a 1KHz tone at exactly 1.5 KHz Deviation) and inject that through the system, and at the same time, receive the signal back through the repeater back into the HP to evaluate how the repeater is processing the signal. This allows us to adjust remote sites, system deviation, the voter, and many other things with little guess work, and a high degree of accuracy.

The system is no longer an "amateur" machine, hasn't been since 1995. It's commercial grade, has professional issues, and needs "professional" thought and design. The Technical Committee welcomes anyone interested in further discussing these issues; we welcome new members to the committee. We are open to showing anyone how the system works, is designed, and we're happy for help on many projects. However, when it comes to adjusting system deviation and the voter, it's not the place for opinion, or many fingers "playing" with what they feel "sounds good". It's the time for HP and the two people we have who know how to use it. We hope all understand.

The evaluation of the new Motorola CDM750 radios looks great so far. We would recommend the MRC purchase 3 additional UHF radios ASAP to replace the rest of the current old link site transmitters. Even better would be to purchase 8 radios, to replace all the link transmitters AND their respective receivers at main site, and have a spare on hand. This would enhance the overall sound quality of the repeater, and make adjusting the voter easier as well. At the least, a progression of purchases of CDM750's should be started now to eventually change out all 17 of the old Radius radios currently in the system over the next few years.

So that's where we are. The building will NEVER really be done. We continue to push and fine tune not only the system, but ourselves to better understand, and design a system that is looked to as one of

the best. Actually, we would like to thank the MRC Membership for the funds, and for allowing us to work and learn on the hardware that is the MRC 146.910 Machine!

For the Technical Committee:  
N9NPB N9UUR N9KXA

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### *K9IZV-Responder Group*

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The following is an idea of mine that has been brewing for quite some time. It is a proposal that I am putting forth here in the 91 newsletter for consideration at the next 91 meeting. I call it the 91 RESPONDERS GROUP. It would need volunteers, 21 people to be exact. I am suggesting that these volunteers respond to hams who initiate calls on the 91 repeater. I am suggesting each volunteer serve 2 to 4 hours per week at a time convenient for them. We don't need this during drive time. I am suggesting: 8AM to NOON, NOON to 4PM, and 7PM to 9PM as normal shifts. Volunteers would need a good signal into 91. QSO's should be about 10 minutes or more. Volunteers would not have to talk to anyone they didn't like, but they might need to talk to someone they didn't know. Have you heard me doing this? I've been doing it for years. I can't do it alone. I would organize, monitor, and take a shift. Ideally, this works well for a volunteer who can listen to 91 while doing something interruptible, like watching TV. Could a volunteer assist with help or information? Very likely!

I took some data recently during my waking hours to show a typical week of un-answered calls. This is from 12-8 thru 12-14, 2003.

Q HR of the day  
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1 03AM  
2 05AM  
7 06AM  
8 07AM  
  
8 08AM | 8AM to NOON  
3 09AM | TOTAL CALLS  
3 10AM | = 18  
4 11AM | == 2.6 PER DAY  
  
7 12NN | NOON TO 4PM  
6 13PM | TOTAL CALLS  
7 14PM | = 24  
4 15PM | == 3.4 PER DAY  
  
7 16PM  
5 17PM  
3 18PM  
  
4 19PM | 7PM TO 9PM  
1 20PM | = 5 == 0.7

## PER DAY

2 21PM  
3 22PM  
1 23PM

Would you be willing to help? I would fund a reward dinner for those who do!  
73, Warren K9IZV

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## PREPAREDNESS

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Preparedness is like going into your kitchen and knowing you have everything you need to make a sandwich and have something to drink before you even get hungry.

Preparedness includes plans or preparations made to protect or save lives and to help response and rescue operations. Safety and evacuation plans, storage of food, water, and emergency supplies are examples of preparedness. Remember, preparedness activities take place before an emergency occurs.

Let's focus on two aspects of preparedness. First, before you run out the door to help others, be sure those at home are prepared. Make sure they know where to go and what to do in an emergency. Remember that you won't be there to help. As an example, have a safe area in or near your home to shelter your family during a severe thunderstorm. Stock your shelter with flashlights, extra batteries, battery powered radio, weather radio, water (one gallon per person per day), non perishable foods, high energy snacks, blankets, sleeping bags if you have them, (remember you may be there for a while) a first aid kit, can/bottle opener, tool kit (don't forget the duct tape), also be sure to have any special needs for kids and pets and don't forget any medications you might need. It's also good to know where the gas and water shutoffs are located and how to operate them.

Now for the second aspect. You got the call, they need you, as your hanging up the phone you start grabbing your gear. You've got your pager, cell phone, fourteen h.t.'s to cover everything from dc to daylight. You take a couple of extra radios just in case. You stuff your portable 16 element antenna in your pocket, three pair of headphones and four extra mikes into your fanny pack. As you go out the door you wheel out that 150 pounds of batteries. You think to yourself, ok, that's everything. But is it?

Did you write down where you are going? Do you know what frequency to be on while responding? Did you bother to check the weather? Hot, cold, rain, snow, be sure to dress for the weather. A change of clothes may be a good idea.

What about something to eat and drink, as you may be out for some time. Don't forget some money for phone calls and food and drink if you didn't take anything with you. It's best to take food and drink with you because you may not have a chance to go to get something or any place close to get it.

The point of all this is to be as self-sufficient as possible. Be ready to move from one location to another.

Please...know how to operate all those radios you have with you. Now here is one more very important thing when on the radio. Think of what you're going to say before you transmit, speak slowly, clearly, and make your transmissions short and to the point. Ask yourself, is this transmission really necessary? Am I responding to a request for information or providing needed information, or do I just want to be heard on the radio?

Remember, speak slowly, clearly, short and to the point and please.... Use plain English--no codes or abbreviations that everyone may not understand.

One last thing: Being prepared means being ready *before* something happens, not after it happens.

73' Gary N9MGJ

Emergency Operations & Training

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## MRC Meeting Minutes October 15, 2003

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**Location:** Mayfair Mall in Wauwatosa. Napoleon, NØXXL, Club President, called the meeting to order at 7:18 PM. All who were present introduced themselves.

**Newsletter:** A motion was made by Maureen KB9VLJ and seconded by Dean KB7QDI that the minutes were accepted as published. Motion passed.

**Christmas party** November 30<sup>th</sup> at American Legion Hall 92<sup>nd</sup> and Beloit November 19<sup>th</sup> Swapfest Debrief on November 19 7 PM at Mayfair

**Status of the Repeater by N9NPB -** We have a crackling on the repeater has us stymied. To date the Technical Committee

can't find a solution. The problem is only when people are talking not when the repeater is identifying – therefore an intermittent problem. When we turn the power amplifier off it goes away. The problem is not tied into the receiver. It is like it is backfeeding. We did not have problem before sent Henry Amp back. We cleaned circuit boards a lot of flux on them in the power amp and then 2 days later it was back (crackle). We are going to put back up amp in the system to see if we still have a problem.

The Downtown site was off for a month. Transmitter in the cabinet went dead. The issue of moving Main Site was discussed but at this time we do not have a time frame.

One month ago had tech meeting....look for radios – replacement. Most other repeaters are using Miccore Drawers – Large in size. As well GE Delta – physically wouldn't fit, also using Motorola like what we currently have. Gary N9UUR said it is time to buy a new radio

**Motion by Mark KB9VJQ –** To buy one new CDM750 VHF radio and put in place to test. Ken KB9OBZ seconded the motion. The motion carried with one vote against the motion.

**Motion by Gary N9UUR –** To buy one new CDM750 UHF radio and put in place to test. Jeananne N9VSV seconded the motion. Motion carries. Mike will try to have the radios by the next meeting – November 19<sup>th</sup> If they arrive he will put in them in service.

**Duracom Power Supply 12 volt/battery charger -** Motion by Gary N9UUR - To purchase a Duracom RM2512 power supply/battery charger. Seconded by Gary N9MGJ. Motion carried with one vote against the motion.

**Swapfest – Presentation by Bob AB9FB and Joe N9UX**

November 1<sup>st</sup> doors opened at 8 a.m. Last year the club sold 44 tables this year we sold 68 total. We passed out flyers, were in QST and on ARRL website. As well we were promoted by the Fox Valley club. Their fest was November 2<sup>nd</sup>. Volunteers arrived at 4:30 a.m. to 5:00 a.m

**Adjourn** 9:59 PM KB9RCB and Seconded by KB9OBZ.

Respectfully submitted,  
Maureen Zentner KB9VLJ  
Club Secretary