



AMATEUR RADIO

# The ORC News -

Official publication of the Ozaukee Radio Club, Inc. Mail all contributions to the editor, Tom Ruhlmann, W9IPR, 465 Beechwood Dr., Cedarburg WI 53012 (phone 262 377-6945). Permission to reprint articles published in any issue is granted provided the author and the Ozaukee Radio Club Newsletter are credited.



**ORC Repeaters on 146.97, 224.18 and 443.750 MHz**  
**Call sign W9CQO**

**Web site:** <http://www.qsl.net/orc/>

Volume XXIII

February 2004

Number 2

## The Prez Sez

By Vic Shier (KB9UKE)

Elections have passed and the new board is the same as the old board. Yes, each current officer ran for their respective position and was re-elected. I want to thank the board members for serving this past year and I look forward to working with them again this year.

If you haven't renewed your membership as of yet, you are in a grace period so get your check and application to Tom, AA9XK before your membership expires.

The first half of the year is always an active time for the ORC. The Post Everything Party is on March 6<sup>th</sup>. Then we run a booth at Superfest on April 2<sup>nd</sup> and April 3<sup>rd</sup>. Four weeks later is our Swapfest. Then comes the trip to Dayton and Field Day is just around the corner from there.

Of these events, the Post Everything Party has an approaching deadline. Reservations must be made by February 27<sup>th</sup>. Julia, KB9WBQ is chairing the program and it is important that she receives your reservations by that time. Applications can be found in this newsletter. This dinner gives us an opportunity to thank our spouses and friends for putting up with that extra wire hanging from the tree or that additional box hauled into the basement. Don't miss it; it's a fun evening!

Our annual swapfest is our major fund-raiser for the year and as such it is quite important. Gene, KB9VJP is the chairman again this year and he can always use some extra help. Placing signs and posters throughout the area is good advertising. Pick up a few at the next meeting and post them at your favorite stores. Another help is to buy a table. Dig through the boxes and shelves in the basement and sell some of your extra stuff so you have some

walking around money for Dayton. Finally, you can help by supporting the vendors who do come to our Fest. Make a shopping list of things you may need for your shack and take advantage of the great deals you can get at the ORC swapfest.

73's and remember...It's a hobby!

## ORC Officers for 2004



**Our board of directors was re-elected at the January 14<sup>th</sup> meeting. From L to R they are Nels Harvey (WA9JOB) as the Repeater VP, Leon Rediske (K9GCF) as VP, Carol Ann Szudrowitz (KC9CBC) as Secretary, Tom Nawrot (AA9XK) as Treasurer and Vic Shier (KB9UKE) as President.**

## THE OTHER FIELD DAY

De Bob Truscott (W9LO)

Bet you didn't know there were two Field Days, did you? Well, listen up! This one is a dandy. It's called The FYBO (Freeze Your But Off) Winter QRP Field Day. It's CW only, and as you might guess, it is sponsored by a bunch of guys in Arizona who probably wouldn't recognize snow if they fell into a pile of it. (Mountaintops don't count.) The temperature multipliers at the operating positions are:

1 for 65+ degrees

2 for 50-64

3 for 40-49

4 for 30-39

5 for 20-29

6 for under 20 ( They obviously don't understand winter, or they would have additional mults going down below zero.)

Other mults are X4 for a field operation, X2 for alternate power and X2 for QRP. The only bonus points (10,000) are for working NQ7RP, apparently the sponsors club station.

We'll have to get going in a hurry to be set up by the contest day—Feb. 8. Presumably Jim & Gary will handle the details, arrange for appropriate “warming” type refreshments, contact Lazy Days, etc. It's rather short notice, but I'm sure that Stan, being the good fellow that he is, will come up with his usual FD turkey. I'll bring a rig and a 40 meter dipole, but we probably should use one of the newer tents because the 40 meter tent has too many holes in it. We can get along without the cook tent if someone can figure out where to hold the sheepshead game. Jeananne—bring the cards, please. Is the big generator available, Ed? This might violate the spirit of the contest, but it would be nice if someone would bring a heated camper trailer that we could use as a field hospital to treat frost bite, etc. And finally, we will need more operators than we usually have because the operating shifts will only be about 10 minutes unless we can come up with some heated gloves that are not too bulky to operate the keyboard and paddle. Come one, come all—lets have some winter fun. Please call Jim or Gary and tell them what function you would like to perform.

We should be a cinch to win this one if we can persuade the sponsor to add an appropriate temperature multiplier of about 12 for zero degrees.

#### Reported scores:

##### North American QSO Party:

N9FH 896 Qs, 226 Mults.

W9LO 584 Ws, Mults.

##### CQWW 160 Meter Contest:

W9LO 334 Qs, 46 Mults.

W19M 101 Qs, 28 Mults.

W9XT 100 Qs, (?)Mults.

K9LO 86 Qs, 34 Mults.

W9KHH Participated, but no report.

KA9RPR Participated but no report.

Apologies to anyone I may have overlooked. My records got all fouled up this month.

Coming up in Feb.:

**Feb. 7-8** CQ WorldWide RTTY WPX Contest. Rules on Feb. QST, page 103.

**Feb. 7-8** XE international RTTY Contest. Rules in Feb. QST, page 103.

**Feb. 8** FYBO (Freeze Your Butt Off) Winter QRP Field Day. Rules in Feb. QST, page 103.

**Feb. 8** North American Sprint—SSB Rules in Feb. QST, page 103.

**Feb 14** FISTS CW Winter Sprint—CW. Rules in Feb. QST, page 103.

See you at FD

Bob, W9LO

## Wanted - Your Dues ASAP

If you have not yet paid your dues you will find the form at the end of last months newsletter. Also, you can simply send a check for \$ to the Ozaukee Radio Club c/o Tom Nawrot @ 262-242-1029

## Interesting Programs



**WA9JOB** (Nels Harvey) and **W9DHI** (Gregg Lingling) brought their analyzers to the December meeting and provided free “state of health” status reports on the HT's of the concerned members.



At the January meeting **KA4UPW** (Jim Hillins) displayed his new VHF-UHF antenna designed as a TV antenna look alike for use in restricted areas.

## Club Static

De Tom Ruhlmann (W9IPR)

If you have cable and occasionally view the public service channel 14 announcements you will note the ORC meetings are now listed. In March we will try to have a couple of ARRL videos played prior to an announcement for a license training class. Perhaps this will help boost the interest of young persons. We will also try to have the program accepted as an evening course in the fall semester at the High School.

## No. 113 - The Virtues of Speed Disk

De Stan Kaplan (WB9RQR)

You have probably read before in my column that I consider the Norton Utilities (Symantec Corporation) as the single most important piece of third party software a Windows user can buy. That opinion still holds, whether you are using Windows 3.1, 95, 98, ME, 2000, XP, or whatever. It finds problems and fixes them, taming the unruly, bloated, complicated Windows environment into something that most users can work with. Enough said about Windows. Anyway, the Norton Utilities are included in their suite, Norton Systemworks. Version 2004 is the latest release as of this writing (Oct 2003).

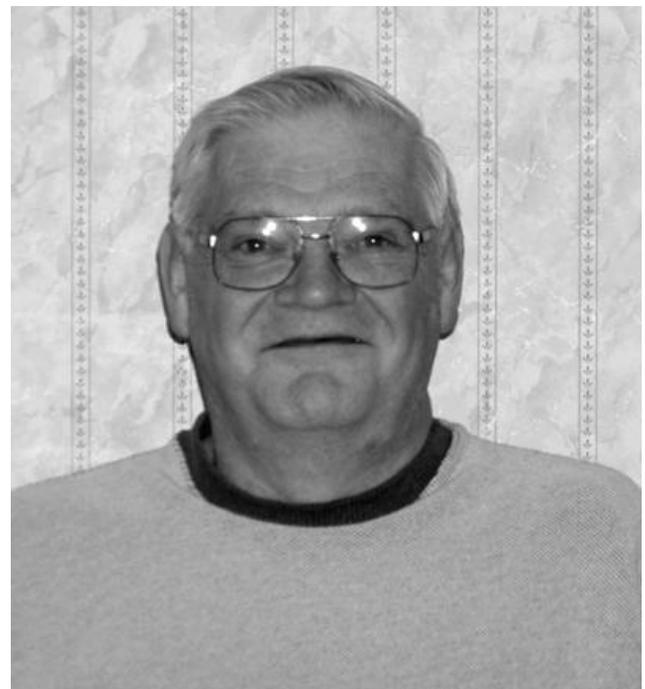
One of the Norton Utilities is Speed Disk, which takes the place of the Defrag program that comes with Windows. As an aside, Norton programmers (presumably under contract to Micro-

soft) wrote the Defrag program itself, but Defrag is much smaller and less capable than Speed Disk. I proved the origin of the Defrag program by examining its code in Windows 98se, which indeed contains the signature of the Norton Utilities group. Actually, Peter Norton himself made his reputation (and started his company) with his invention of Speed Disk, way back in the early years of computing.

Speed Disk does indeed defragment your drive, putting pieces of a file together in contiguous blocks of data. That makes your computer work faster and more efficiently, as I have written about before. But it does something else; too, that insures the integrity of your data. Something that is really not documented anywhere. At least, I have not been able to discover any documentation in the "white papers" and other documents on the Symantec web site. Before I tell you exactly what else Speed Disk does, let me give you a bit of background.

As you are aware, data is written to a hard drive's platters by a tiny electromagnetic "head", which flies over the platter's surface. Electrical pulses, sent to the head, creates a magnetic field, which in turn, can alter the magnetic properties of a tiny section -----**extracted from and continued at** [www.bsss.org](http://www.bsss.org)

## New ORC Members



**KC9DKQ, a new member from Jackson**

**KC9DKQ** has his Extra Class license and joined the ORC in 2003. He had a Novice license in the '70's but due to time constraints really could not pursue the "Ham" radio interest. Then upon his retirement after 30 years with Ameritech as a central office technician he found the time. In March of 2003 he got his Technician and General class license and then completed his Extra class in January of 2004. He spends most of his time on 20 meters and has already earned his WAS (worked all states). Curious about his name? Introduce yourself at the meeting and find out.



**AA9WP, a new member from Grafton**

**AA9WP** is also a (re)new(ed) member and he enjoys CW and QRP. He had a Novice ticket back in the '70's but allowed it to lapse. He then got his General license in 1984 and his Extra in 1998. Currently he works at Rockwell Automation in Technical Support. He just finished his MS in operations management and now has time to enjoy the amateur radio hobby and after a very long absence, has renewed his membership in the ORC. His name? Again, introduce yourself at the February 10<sup>th</sup> meeting and find out.

**KC9CPC** is also one of our new members. He has always been an avid short wave listener so it was a natural progression to being a "Ham". He was at AES buying some parts when he

asked Ray "how do you become a Ham?". Ray indicated Gary and Nels were giving tests that morning and he should go talk to them.



**KC9CPC, a new member from Thiensville**

Nels convinced him to take the test, and he passed. He received his Technician license in Oct. 2002. Naturally, then he was invited by Nels to join the ORC. He is an independent defense contractor and lives in Thiensville. Currently he is operating with his Kenwood HT but he is now planning to go for his General – this time however, he intends to buy the book. His name? Again, introduce yourself at the upcoming meeting and find out.

## Upcoming Events

**March 6** – Post Everything Party @ American Legion Clubhouse - \$20 per person – contact Tom & Julie Nawrot @ 262-242-1029

**March 28** – Hamfest at Lake County Fairgrounds in Grayslake, IL (1.3 hours drive and this side of Chicago – good Hamfest – I'm going)

**April 2 & 3** – AES Superfest and ORC table

**May 1** – ORC Swapfest – Contact Gene @ 262-377-6792

## Recycling

De Tom Ruhlmann (W9IPR)

When Nels said he was cleaning the basement I was there within the hour. The prize? A two channel Midland desktop transceiver in the 40 MHz range. What to do with it? Well, it had a good case, speaker and 12-volt power supply. With a little work it could be a perfect docking station for a mobil transceiver.

First checkout the power supply and make sure it has voltage regulation and current capability sufficient to power the intended radio. I found the voltage to be a bit low at 13.2 and dropping 0.1 VDC on transmit. I then located the adjustment pot and reset it to 13.8 VDC. This was to allow for connecting a lead acid battery in parallel with the supply output. This would not only provide filtering and standby power but should a higher-powered transceiver be connected, the battery would provide the transmit power preventing overload of the power supply.

Being satisfied that the power supply was adequate I then removed the original transceiver electronics from the unit and added a support shelf using previously hoarded scraps of metal.



**The “docking station” ready to receive the old Kenwood 2-meter mobil**

Then to cut out a section of the original plastic panel to allow insertion of the radio. Now add the binding posts for battery connection and the “power pole” connections at the power supply output to connect the radio. Finally connect the console speaker to a audio cable with a 3.5-mm plug and the docking station is ready to accept its new resident.



**The Kenwood is installed and powered by the retained power supply and connected to the cabinets speaker**



**Docking station completed and with capability of accepting a variety of mobil radios.**

The moral of this article? – almost every item has a second useful service life given a little ingenuity and effort – and it’s fun doing it.

## **Lightning Protection for your “Ham” Station** (Part 1 of 6)

De Gregg Lingling (W9DHI)

Proper lightning protection of a ham radio station can involve more variables than any other

type of radio site. The location of the antennae will establish grounding requirements, while the location of the station will define the protection requirements.

The primary rule for surviving a lightning strike is the same as for any other installation: All equipment must be connected to a single, low impedance ground system. That includes the antennas, support structure (tower, tripod, pole ect, etc.) and all of the stations input/output protectors (antenna, AC power, telephone, rotor etc.).

So let's get with it and examine what it takes. First let's choose the antenna location. The location and type of antenna will dictate the size and location of the grounding system you will need to disperse the energy of a lightning strike. The sooner the energy is transferred to your ground system, the less likely any energy will be transferred to your equipment thus mitigating damage. Almost 90% of lightning strikes will be electrons that, due to like charge, repel and spread out. The antenna system creates a great interface to the earth.

Also fundamental to a good protection scheme is the creation of a SINGLE POINT GROUND within the ham shack. The single point ground is used to mount all protectors and to provide a ground point for all equipment chassis. This single point ground system is connected to an external ground system with low impedance copper strapping. The tower ground system and the single point ground system must be interconnected. This interconnection should be below grade with a bare low inductance conductor (unless you create a HALO system, which will be discussed in a future article). The coax shield must not be the only interconnection between your ground systems.

Techniques:

Every conductor has measurable inductance. As such, ground conductors exhibit normal inductance before they go to grade. Once they are in the earth, the inductance of a bare conductor is shunted to the ground. If the soil at your site is not very conductive there are 3 things that can be done to help the situation.

1. Increase the surface area of the conductor, decreasing its inductance.
2. "Dope" the soil to increase conductivity.

3. Install additional bare radial lines with ground rods, which will effectively parallel the inductance and reduce the overall system inductance.

In some locations it may be necessary to do all 3 of the above.

The most effective material for a ground system is copper (we will discuss oxidation and metals in another article). Since lightning has a large portion of its energy in the LF range it will behave like a RF signal. Meaning the energy will mainly conduct on the skin surface of the conductor (skin effect), so this means the energy will travel on the outside of the conductor. A round conductor will be wasted as much of the cross-sectional area will not be used; using strap is much more effective offering lower inductance at a much lower cost.

Points to be covered in future articles of series (I don't want to put too much on you at once, lightning protection is not a small subject, but can save you from catastrophic damage and failures).

Conductor Surface Area and Metallurgy (March 2004)

Soil Doping (April 2004)

Ground Radials and Ground System Materials (April 2004)

Ground Measurement (April 2004)

Tower Considerations and Antenna supports (May 2004)

Magnetic Energy (May 2004)

Antenna Location (May 2004)

Coax Grounding (May 2004)

Control and Coax line protection and protectors and Entrance Systems (June 2004)

Power and Telco entrance (June 2004)

Single Point ground design (July 2004)

Now that I've whetted your appetite get ready

73, Gregg W9DHI

# Minutes

De Carol Szudrowitz (KC9CBC)

ORC Meeting January 14, 2004

Meeting was called to order at 7:35 by Vic KB9UKE.

## Announcements:

Vic reminded he has the YASME Contesting Magazine available for those who want to read it. It is helpful for contesting tips.

## Program:

Jim KA4UPW gave a short program on Stealth antennas for the home. Some subdivisions frown on radio antennas in the yards and he demonstrated one that mimics a large TV antenna which works with many bands. (UHF, 6 meters, 10 meters, 4 elements)

## Auction:

Stan WB9RQR held the usual auction. Ed AA9W mentioned that more donations came in.

## Elections:

Gary WI9M and Stan WB9RQR opened the elections. They asked for nominations from the floor and explained the ballot. None were given so nominations were closed. Ron W9BCK noted that next year this process should start earlier so that it can be published in the newsletter. The elections were held and ballots counted. The incumbents were re-elected.

President - Vic KB9UKE  
Vice President - Leon K9GCF  
Repeater V P - Nels WA9JOB  
Treasurer - Tom AA9XK  
Secretary - Carol KC9CBC  
Repeater Trustee - Ed AA9W

## Business Meeting:

Minutes were approved as published in the newsletter.

## Treasurer's Report:

The Audit Committee (Kent N9WH headed it) reported that everything balanced. Gabe WI9GC and Tom AA9XT are to be commended for a job well done as well as Ed AA9W for all the paper work he has to complete, to comply with government regulations.

An interesting note, the mailing of the newsletter cost \$530 at its height. Now with electronic distribution it is down to \$229 so cost is cut in half. Also cost for the repeater is approximately \$1300 per year so \$8 from club dues is about \$500 shy of amount needed. That and some other costs (parties, field day, telephone etc) are supplemented by the Swap Fest proceeds.

The Treasurer's report was approved as given.

## Repeater Report:

Nels WA9JOB reported that everything is OK. The 220 is running at his home on limited antennas. It runs on the 7K controller. The 10-meter link is working. Please note the beeps when entering the system

1 beep 224.18 repeater only  
2 beeps 224.18 repeater plus 10 Meter receive only  
3 beeps 224.18 repeater activity is sent out on 10 Meters as well. It usually is on 29.60 MHz.

The 220 will eventually be interfaced with the 146.97 repeater so we will be able to check in on NET with either one. Tues. Night is NET check in. It is good practice for emergencies. Eventually the goal is a link for the 220 at the Germantown site. We need to use the antenna there or take it out. Operating the 224.18 repeater when it is connected to the 10-Meter link requires a control operator that is a General Class or higher, is available when signals will go out on 10 Meters (three beeps). If properly monitored, it is perfectly legal for Technician Class license holders to communicate to someone on 10 Meters through the 224.18 repeater.

## OZARES:

Weather Training Class had been changed from Feb to April 12, 6:30 PM to 8:30 PM at the Justice Center. Any ham is welcome even non-members for this vital information.

## Scholarship Fund:

Ed AA9W reported that the 501C3 report has been submitted to the government so we are OK. It is a huge undertaking so many thanks to Ed for continuing this worthwhile activity.

## Swap Fest:

Important need is advertising according to Gene KB9VJP. (Land phone 377-7692) Please ask for and take flyers to any meet you are attending.

**Post Everything Party** – Date: March 6 Cost: \$20.00 per person

Julia KB9WBQ and Tom AA9XK reminded everyone to talk up the party and come for the fun and sharing. Spouses (usually the ladies) are asked to bring a "white elephant ladies gift" to exchange with others. These gifts are usually something that is nice enough to share with someone. It does not have to be something new, but please, no junk. It just needs a new home. Gary WI9M has graciously accepted the role as MC. We are also looking for some favorite CD's for background music. Hams are asked to remember to bring their "white elephant radio exchange" gifts too.

## Old Business:

Leon K9GCF needs help for programs that may interest hams at meetings in Feb and March. Give him a call with your suggestions. If you have a question about some aspect of the hobby it usually is of

interest to others as well and would make a good program.

**New Business:**

Tom W9IPR is working with Carl Harms to put club information on Channel 14 the Public Cable Television Station. He is looking for your club memories on VHS tapes from the last 3 or 4 years. Tom is hoping to put together a video to show club activities.

Reminder: From Jim KA4UPW, only 5 more monthly meetings until Field Days! Next month think about volunteering to be a field captain.

Ron W9BCK encouraged hams to join QCWA. It is the Quarter Century Wireless Assoc. for long-term hams (licensed for 25 years or more). Join the new Auxiliary membership if licensed for fewer years. It is a great way to learn about the past history and

events of hams. There is a NET Sunday mornings on 3.985. Join us. A national magazine is also available.

**Attendance:**

Ed AA9W, Gregg W9DHI, Joe AA9HR, John W9FAD, Don W9VSC, Bernie AA9CI, Bill AA9OS, Kent N9WH, Stan WB9RQR, Jeff KB9QQE, Jane KB9SYI, Joe KB9URC, Leon K9GCF, Tom AA9XT, Tom W9LNL, Tom W9IPR, Mark AB9CD, Bob N9NRK, Terry KA9RFM, Herb WA9UVK, Ron W9BCK, Bob W9LO, Ray W9KHH, Gene KB9VJP, Gary W9XT, Mark N0OKS, Brian N9LOO, Ron KC9DKQ, Paul KB9WCC, Don AA9WP, Sky N9XRU, Gay KB9OBR, Julia KB9WBQ, Gary WI9M, Ed AA9WW, Jake KB9ZOR, Michael WJ9O, Carol KC9CBC, Nels WA9JOB.

Post Everything Party

March 6, 2004

American Legion Clubhouse  
Peter Wollner Post 228  
W57 N481 Hilbert Ave.  
Cedarburg

Cocktails 6:00  
Dinner 7:00

*hors d'oeuvres before complete buffet dinner*

*recognition for spouses*

*entertainment after dinner*

*presentation of annual awards*

(\$20.00 per person)

**Don't forget to bring your usual gag gift  
from your ham radio junque box**

**!!!!!! Reservations needed by February 27<sup>th</sup> !!!!!**

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**2004 ORC Post Everything Party Reservation Form**

Callsign \_\_\_\_\_ Number attending \_\_\_\_ X \$20.00 = \_\_\_\_\_

Names of those attending \_\_\_\_\_

Make your check out to **Ozaukee Radio Club** . . . . . and send to -  
Julia Nawrot KB9WBQ 10335 N. Grasslyn Road Mequon, WI 53092

## **AGENDA**

*Feb. 10th, 2004*

1. Call to order.
2. Introductions.
3. Announcements, Upcoming events, Etc.,
4. Program:
5. Fellowship Break
6. Auction.
7. Acceptance of Minutes as printed.
8. Treasurer's report – Tom (AA9XK).
9. Repeater report – Nels (WA9JOB)
10. OZARES report – Jon (KB9RHZ).
11. Committee reports.
12. OLD BUSINESS
13. NEW BUSINESS.
14. Adjournment to ?

Return undeliverable copies to

### **The ORC Newsletter**

465 Beechwood Drive  
Cedarburg WI\* 53012

### **First Class**

## **Next ORC Meeting**

**Grafton Senior Citizens Center**

**1665 7<sup>th</sup> Avenue, Grafton**

**Wednesday, Feb. 10<sup>th</sup>**

**7:30 PM**