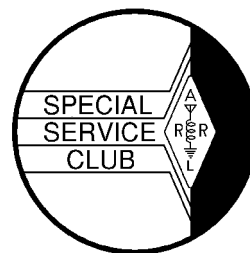




# The ORC News -

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.



AMATEUR RADIO

**ORC Repeaters on 146.97, 224.18 and 443.750 MHz -  
Callsign W9CQO      Web site: <http://www.qsl.net/orc/>**

Volume XXIII

August 2004

Number 8

## The Prez Sez

De Vic Shier (KB9UKE)

The ORC needs a new location for all of the club equipment and the 146.97 and 224.18 repeaters. These issues will be discussed at the August Meeting on Wednesday the 11<sup>th</sup>.

The property referred to as "The Barn" is for sale. The ORC currently stores most of the club equipment there and it is also the location of two of the clubs repeaters. The ORC Board had a meeting on July 19, 2004 to discuss the implications of the sale and decided that it would be prudent to plan for the likely loss of the use of the property once it is sold. It is particularly important to transfer the club equipment to a new location before winter.

Nels, WA9JOB has investigated a few options for relocating the 2-meter repeater site and he will have more information on that issue in the future. However, we need suggestions for a place to store the club equipment and a new site for the 220 repeater.

On behalf of the Ozaukee Radio Club I wish to thank Sandy Wirth, W9BTN, for the use of his property over the years. He has made a significant contribution to the ORC by allowing us to use "The Barn." Thank you Sandy!

The ORC annual corn roast will be on Saturday August 28. We will meet at Waubedonia Park starting at 10:30 A.M. The park, located in the town of Fredonia just north of Hwy. 33, is on the Milwaukee River. It is a beautiful site and a good place for the kids to fish. Bring the family and enjoy the day.

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

## Silent Key

De Nels, WA9JOB

I'm sad to inform you that a former member who moved away last year, Ken Klotz, N9DKM, has passed away, July 13, 2004. He had idiopathic pulmonary fibrosis, which was progressing over the last 3 to 4 months. He then got a Staph pneumonia, which went into septic shock resulting in his death. Ken had sold his Port Washington home after he retired, and moved to Florida. He had been wintering there for a while in a motor home. Leon and I met with him for lunch in Ft. Myers a couple of years ago. Ken was a very quiet person, but was always willing to help where he could. He will be missed.

## Contesting

De Bob Truscott (W9LO)

Most humble apologies to the CW people in the group for failing to mention the North American QSO Party in last month's column. It was scheduled for Aug. 7, and will be history by the time you read this. Too bad—it's a very popular contest, and one of my favorites.

The big phone event of the month will be the North American QSO Party, starting at 1:00 PM (local time) on Aug. 21 and ending at 1:00 AM on Aug. 22. 160M through 10M (except the WARC bands). Work 10 of the 12 hours—work any station once on each band. Rules in Jan., 2004 QST, page 98, or at [www.ncjweb.com](http://www.ncjweb.com). This is a great contest----give it a shot.

Have fun contesting.

Bob, W9LO

## Next Meeting – Aug. 11<sup>th</sup>

– presentation by Gary, W9XT, on feedlines.

## Project of the Month

Jim Hilins, KB4UPS, just completed another antique radio. This time it is a 1929 Grundig-Majestic and majestic it is. Jim didn't mention how many hours were invested in this project but I am sure it kept him off the streets at night.



## Technician Class

The Cedarburg School District Adult Continuing Education department is posting Course #17 titled "Amateur Radio Technician Class/"Ham" license Preparation. It consists of 12 Tuesday evening sessions (6:30 to 8:30) starting September 14<sup>th</sup>.

Instructors are Tom Ruhlmann, Ed Rate and Stan Kaplan.

Interested parties should contact Karen Herre, Registrar at 262-376-6141.

## Tips, Tails & Tools

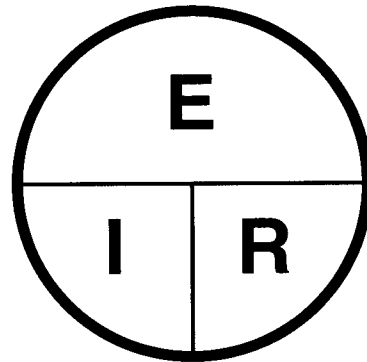
Save those plastic zip lock bags from the meat market. They make great bags in which to save parts and hardware of a type.

Remember the Ohm's law circle?

$$E = I \times R$$

$$I = E / R$$

$$R = E / I$$



Just place your thumb on the unknown item symbol and the other two symbols are in the position defining the required equation.

## Wanted

Variable Capacitor (air gap or vacuum) with a range of up to 300 pf or greater and capable of 5 kilo-volts.

Contact Fred, N9FH

10-foot section of Rohn 25 tower.

Contact Gabe, WI9GC

Looking for information on control of a 10 position 12 VDC motor driven switch used in a CU-110 antenna coupler or similar application. Contact Tom, W9IPR.

The editor is looking for a "Community Service" column editor. This person would write up the various requests for assistance in the community and prepare newsletter articles on the ORC community involvement. Contact Tom, W9IPR.

## South Milwaukee Swapfest

De Tom Ruhlmann, W9IPR

Again we all had a great time at the South Milwaukee Swapfest. Ed Rate, AA9W, was there at the request of his wife and he was successful at clearing out some of the "Scholarship Fund" equipment donations so they can now again use the pool table.



**Gary Sutcliffe, W9XT, abandoned his display of surplus equipment to inspect Ed's stuff while Tom Oehler, W9LNL, looks things over to determine if there is something he really needs yet.**

There was quite a gang there from the ORC and Jim Albrinck, K9QLP even parted with a few bucks for another 220 rig. I figured the day was a success as well in that I bought an incomplete variable temperature soldering iron for the price of a beer and pizza.

## Lightning Protection

(Part 5 of 6)

### Towers, Supports, Locations, Magnetic Energy and Coax Grounding

De Gregg Lengling, W9DHI

#### Coaxial Grounding/Protection:

Any input or output line can carry surge current that can harm equipment; this includes coaxial cables, rotor control cables, telephone and power lines. The coax lines from the tower can carry and bring in more surge current to your equipment than any other source. The large surface area of the shield and low inductance of the coax along with proximity to the tower give a fast rise time lightning current pulse an ideal path towards your equipment. If the bottom coaxial cable ground kit at the point where the coax leaves the tower is at any elevation above the earth, there is sufficient cause to create a voltage drop. The resulting voltage on the coax will drive current on the coax line to the equipment where the electrical safety ground provides a discharge path. Once this surge is inside the building/shack, it is almost too late to try to protect the equipment.

The best way to prevent these currents from reaching your equipment is to keep them from entering the shack. This can be accomplished by creating an entrance bulkhead on the outside of the building with a panel connected to the ground system with large surface copper straps. The large surface area strap is necessary to provide a low inductance path to ground for the surge energy as well as to provide for the high frequency component of the strike. Each coaxial line as it enters the building is attached to the panel with a ground kit and then fed to a coaxial protector.

#### Protectors:

Coax protectors should be units that have DC blocking on the center pin. This serves as a high pass filtering that prevents the lightning's low frequency energy from continuing to your equipment. The strike energy is picked off and

diverted into the ground system in a controlled way. The DC blocking ensures the operation of the protector regardless of the input circuitry.

Did you know that spark gap protectors with DC continuity will not work on receivers with shunt fed duplexers? The shunt to the ground inside a receiver prevents the low frequency lightning energy from turning on the DC continuity protector. The coil shunts the energy to ground, but it is at the wrong place. Also if the coil can't handle the energy, half the surge energy is on the center pin, the coil will open up and the current will translate to a large open voltage source capable of arcing anywhere within the radio. Rotor control lines should be protected using a protector at both the top of the tower where the lines go to the control motor and at the single point ground panel where they enter the shack.

If it is not practical to protect the lines at a single point ground panel, they may be protected at the bottom of the tower. The protected lines should then be placed within EMT conduit that is grounded only at the tower-base end. The EMT will act as a Faraday Shield from the tower's magnetic fields and will minimize the amount of induced energy.

### **Power/Telco Protection:**

Full protection for a ham shack must cover not only strikes to your tower, but also hits from down the road to utility lines. By using single point grounding, your ham equipment will survive the hit to your tower. If the outside ground has a low impedance at lightning frequencies, most of the strike energy will be dispersed into the ground and little energy will enter the shack. This is fine, but what if your ground has deteriorated over time or was never very good because of yard size?

The ground system can absorb only so much energy before it becomes saturated. In 9 out of 10 strikes, a huge surge will come down your tower. If they cannot spread this surge out in a reasonable time frame, the back up pressure (voltage) will find or create another path. If the ground system is too small in area it will cause more energy to traverse the cables and other lines to the shack. The protectors can keep the

voltage levels between the single point ground and the signal lines at survivable limits, but the energy is only diverted elsewhere. This usually ends up on the household phone and power lines.

Other household items may be at risk. When the ground system is saturated, the energy is actually coming from the utility ground system and can go through your TV in an effort to leave the area via the cable TV drop. Satellite dishes also have the same problem. The best way to protect the rest of the house is to provide protection at a single point. The easiest will be at the power and Telco entrance. The utility ground rod (which you should have already interconnected to your ground system) is used both by the power neutral and the telephone protector installed by the phone company. By placing a power mains protector and a secondary phone line protector at this location the entire house will be protected. The cable TV, outside antenna coax or satellite antenna coax should be rerouted and a good coaxial protector installed at this point also. The cable company installed protector is usually nothing more than a grounding block for the shield and does nothing for the center conductor energy. As the ground system potential rises in a lightning strike, the protectors will take the ground system energy and place it on the power, telephone, and cable TV lines while keeping the voltages between earth and the active lines within the limits of equipment survival.

The utility ground rod for the house should have already been interconnected to your ground system. If this is not done, the energy from the tower strike will traverse the house safety ground wires to this rod, causing problems. The reason to interconnect them in the ground using bare conductors is to reduce the inductance of the interconnecting path.

The power and telephone feeds to your house can be either aerial or underground. Most people think underground is better from a lightning standpoint. Buried underground, it will not be hit directly, but if a nearby tree or structure is hit, the amount of energy coupled through the ground can almost equal a direct hit. Overhead

or buried you are at just as much risk for a strike surge through the power/teleco lines.

Lightning protection can be summed up thusly:  
**YOU HAVE CONTROL OF THE LIGHTNING STRIKE ENERGY AND NOT MOTHER NATURE, HOWEVER ONCE CONTROL IS LOST, ALL CAN BE LOST!**

Next month the final chapter: Single Point ground design

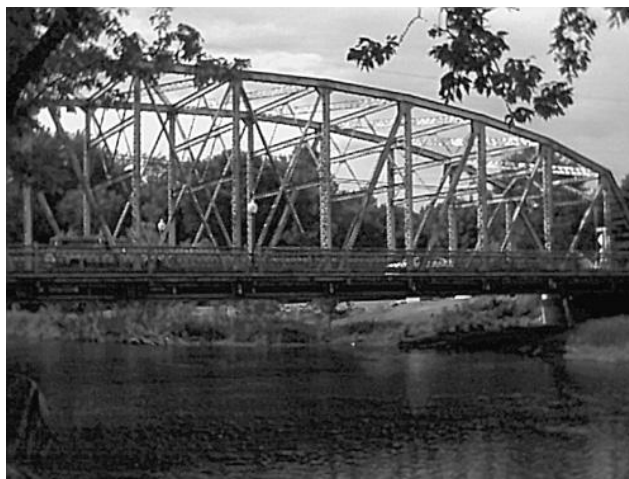
## **ORC at Saukville River Fest**

De Mike Yuhas, KC9GDV & Bernie Chelene, AA9CI

For the past several years, the Village of Saukville has mobilized volunteers to help clean up the Milwaukee River in early June. This year, owing to the strong storms of late May, the event was postponed until Saturday, July 31. In addition to dozens of members of the community at large, three ORC members participated in the clean-up activities.

Cindy (KA9PZG) organized the ORC group, which consisted of Don (W9VSC), Bernie (AA9CI), and Mike (KC9GD9). The three used handhelds on two meter simplex. Bernie primarily served as liaison to the River Fest organizers, while Mike went into the field (muck, actually) with one of the crews. Don finally found a steel body part on the school bus on which to apply his magnetic mount antenna; he kept the bus driver informed of the ever-changing agenda.

It may be the last year it gets cleaned under this bridge. A new one will replace it before the next Riverfest. A great lunch was served after the cleanup. Next years' date has not been set at this time.



**This landmark Saukville Bridge will be replaced with a "modern" bridge in 2005.**

All in all, a good public service performed by Ozaukee Radio Club!

## **Fish Day @ Port**

De Ted Heilmann (N9LLT)

The Ozaukee Radio Club's help was very much appreciated again this year by the Port Washington Fish Day Parade Committee. It was very enjoyable this year with the weather being the shining star of the event. There were no health and welfare issues this year and the event ran like

clockwork.



**John Laske, KC9FJX, is here on his way to help communicate co-ordination of the Fish Days parade.**

There were some new members, some seasoned veterans and some members that have done a couple of events. Parades are a great way to sharpen your skills that could be essential in a more critical event. It's a great way to see the event.

It's also a great way to do something that is out of the ordinary when you can't think of something that you would like to do to have a change of pace. This year we had AA9W (Ed) who was our Net Control person. Also in attendance this year were KC9FJX (John), AB9CD (Mark), K9QLP (Jim), AA9XK (Tom), KB9WBQ (Julia), KB9VJP (Gene), KC9CBC (Carol), along with yours truly N9LLT (Ted). I also had the privilege of representing the club as a unit in the parade. I had information displayed on the side of my truck telling of our meeting time and place, our web site address, our club logo and our Special Service Club affiliation to the ARRL. It sure appeared that everyone had a good time. I know I did. Thank You to all who took the time to help and have a good time.

## Upcoming Events

**August 7<sup>th</sup>** - ICOM open house at AES – 9 AM to 3 PM – all invited – door prizes

**August 14<sup>th</sup>** – Picnic on a Deer Farm – South Eden Game Preserve near Fond du Lac – open invitation – contact KD9ZP @ 920-923-0130 – talk in on 145.43 MHz w/ 107.2Hz tone.

**August 28<sup>th</sup>** – ORC Corn Roast

**Sept. 18<sup>th</sup>** – W9DXCC convention/conference at the Elk Grove Village motel. It is a good time if you are at all interested in DX. Details can be provided by Gary, W9XT.

**Sept. 18<sup>th</sup> & 19<sup>th</sup>** - Hamfest at Grayslake. This one is usually full of bargains.

## Club Static

**Assistance needed with the ARRL Audio News.**

Brian, N9LOO has been playing the ARRL Audio News on Tuesday evenings for nearly 2 years. Now he is returning to school to get his bachelors degree and will be spending his evenings in class and study. Good luck to Brian

with his new challenge and thanks for doing a great job on the audio news these many months.

We need a replacement. A computer and a 2-meter radio is all you need, we will show you how to do the rest. Contact Vic KB9UKE if you can help.

**Congratulations to John Laske, KC9FJX.** This past week he passed his 5-wpm code test and his General Class exam.

## Bicycles and Megacycles

by Richard Regent, K9GDF

Our energetic ARRL Section Manager, Don Michalski, **W9IXG**, will be taking a bicycle tour to retrace the journey on the trail that explorers Meriwether Lewis and William Clark discovered of the unmapped lands of North Dakota. CANDISC 2004: Cycling Around North Dakota in Sakakawea Country, will cover 414 miles in 7 days, an average of 59 miles of peddling per day. The bicycling tour is not a race. Riders will cycle past unspoiled striking vistas and seemingly endless fields storing large rolls of hay, scenery having very few barns, and over roads in slightly rolling terrain. The tour will go on in any weather -- in hot sun or cool rain; while watching for potholes, gravel or crossing animals; and riding through swarms of insects. Riders will rest overnight camping in their individual tents.

Don's Section Manager administrative and communications duties will be set aside and be delegated for from July 31 through August 7, 2004. while he enthusiastically enjoys bicycling, his favorite sport, and operating Amateur Radio QRP (communicating with a low power transmitter).

Since Don was first licensed in 1957, he has built lots of kits including many Heathkits, and particularly enjoys operating QRP. So recently Don ordered his new Elecraft KX1 kit, the ultra-portable CW transceiver. He said it can be build in few evenings, maybe in 25 hours of putting parts in the right places. This miniature transceiver operates 4 watts CW on 40 and 20 me-

ters. Don is adding a plug-in module to allow for 30-meter operation. Battery power is from six AA cells which last 20 to 30 hours under constant operating. The receiver only draws 34 ma of current. Don might buy some fresh cells along way if necessary. The KX1 has a built in keyer and an attachable sending paddle.

Around 8:00 p.m. each evening, Don plans to throw the 24-foot antenna wire over a tree and then place the 16-foot counterpoise wire on the ground. This is the radio connection for contacting his friend's back in Wisconsin on 7.040, 10.106 or 14.060 MHz QRP frequencies. A bicycle tour like this goes through the rarest of North Dakota counties, so there will also be many contacts for County Hunters. Other tour riders, besides discovering the Trail, will certainly be enlightened to learn about Amateur Radio from Wisconsin's expert.

## Airventure 2004

The Fox Cities Amateur Radio Club operated a special event station on 3 different bands at the Pioneer airport during the 2004 Airventure in Oshkosh this year. While I was impressed with the activity I was somewhat disappointed that they were operating current technology equipment.



**Special Events station K9ZL was operating from a main exhibit hanger at Pioneer airport during the EAA Airventure in Oshkosh.**

Since the Pioneer airport is a museum of operations and aircraft from the 20's through the early 40's I had expected to see a vintage "ham" shack. Perhaps that could be a project for some of the ORC members – assemble a "vintage" station for use at the Pioneer Airport.

## Minutes – July 14th, 2004

De Carol Szudrowitz, KC9CBC

**Announcements:** Cathy Pohl signed up 4-6 hams to help with the Fish Day Parade on June 17. Time commitment was from 8:30 to approximately 1:00 PM

Gary WI9M has a rough draft ready for Field Day. We did approximately 20% better than last year. He said he needed pictures for report including campgrounds, information booth, radio stations and more.

Reminder: Annual River Clean Up Day is July 31 in Saukville. Report to Grady Park for 7:30 AM Breakfast and Assignments at 8:15 AM. Call Cindy KA9PZG for more information.

**Program:** USS Des Moines Naval Ship Project was a fascinating program presented by Eric Sunstron. The goal of the program is to have the USS Des Moines anchored in Milwaukee near the War Memorial permanently for tours. It would be a reminder that "Freedom is Never Free". She is currently mothballed in the Naval Shipyard in Philadelphia and was a peacekeeper ship that never fired a shot in 13 years of service. She would be the largest Naval ship on the Great Lakes. The goal of having this memorial here would be a tourist attraction and historical education for young Americans. There will be a working radio station on the ship as there are 5 radio rooms. Contributions are needed to make this happen. To get more information check out the website [www.ussdesmoines.org](http://www.ussdesmoines.org)

**Break and then Auction** by Stan WB9RQR.

**Meeting:** Secretary and Treasurer's reports were accepted as printed.

**Repeater Report:** Nels WA9JOB reported that the repeater amplifier failed. The repeater was placed on the backup amplifier until Dick K9CAN fixed it. The repeater operated on the backup amplifier all through Field Day, and nobody had a complaint. 440 is working well. 220 is up and ready and ready and the amplifier is in the box that Terry KA9RFM made. Access to the Germantown site is through the techni-

cian for General Communications. Nels also encouraged members to contact him to learn about the repeater so he could have help.

**OZARES:** Jon KB9RHZ stated that OZARES is now incorporated. That is first step toward gaining the 501C3.

**Scholarship Fund:** Ed AA9W raised another \$81.00.

**New Business:**

Corn Roast will be August 28, 2004. We could use a volunteer to help organize it.

Elmer's Group: Tom W9IPR encouraged members who are Generals to volunteer to Elmer a new ham. It provides a consistent relationship to help the new ham and promote the hobby. He also stated that New Ham Radio Classes would be listed in the Cedarburg Community Night School Catalogue. Interest and sign-ups determine whether or not it runs.

CW Class – Chris N9VKC is doing well with code class on the net. He has handouts available and a practice disc.

Field Day Recap - Check re-mailer for date. Leon K9GCF will list it. Send him an e-mail if you want to share something and can't make the recap meeting. All members are invited. Leon also asked for any members to make suggestions about programs that would interest them. In Sept Ed AA9W will present a meeting about antenna design.

Board meeting is scheduled for July 19.

Astro Wings Fly-in - Terry KA9RFM has tickets available for the model airplane fly-in on August 7. The proceeds go to Special Olympics of Wisconsin. Each is \$1.00 or 7 tickets for \$5.00.

Terry made a motion to end the meeting. Gregg W9DHI seconded it.

**Attendance:** Dave N9UNR, Ed AA9W, Gabe WI9GC, Muhammad KC9CPC, Jon KB9RHZ, Herb WA9UVK, Jane KB9SYI, Leon K9GCF, Cathy-FISH, Carol KC9CBC, Matt, Jeff KB9QQE, John KC9FJX, Mark AB9CD, Steve K9DXT, Tom W9IPR, Terry KA9RFM, Roger W9UVK, Tom AA9XK, Ed AA9WW, Chris N9VKC, Barb KC9GDZ, Ray W9BUJ, Gary W9XT, Ray W9KHH, Paul KB9WCC, Jeananne N9VSV, Gary N9UUR, Gregg W9DHI, Mike KC9GDV, Stan WBRQR, Jim K9QLP, Mike WJ9O, Dale N9NNE, WA9JOB, Ben K9UZ, Nancy KC9FZK, Gene KB9VJP, Julia KB9WBQ, Paul KD9FM.



## **AGENDA**

*Aug. 11th, 2004*

1. Call to order – Vic (KB9UKE)
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, Aug. 11<sup>th</sup>**

**7:30 PM**