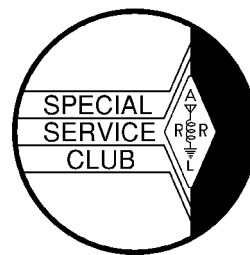




# The ORC News -

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

September 2004

Number 9

## The Prez Sez

By Vic Shier (KB9UKE)

Although the corn roast started on a wet and dreary day, it turned out to be a fine picnic. Tom (W9IPR) and Ed (AA9WW) set up under the shelter at Waubedonia Park. The shelter is rather impressive and we received numerous recommendations to reserve it from this point forward thereby eliminating the need to re-schedule due to poor weather. Besides good food and good company, we also got some radio time in. Several QRP (low power) radios were set up for operation and some of us got a chance to participate in our first foxhunt. Leon (K9GCF) hid a 2-meter transmitter in the woods and then gave us instructions on how to find it using our HT's. Mike (KC9GDV) found it first. Nice job Mike!

A new location has been found for the storage of the club equipment and we can probably still call it "The Barn" or maybe "The Shed" would be better. The site is northwest of the current location, which is closer to our Field Day site. Once the new building is ready, we will pick a Saturday as moving day and we will need a number of volunteers. The next step will be to finalize the selection and then move the repeaters to a new location.

Amber Erickson, KC9FVW from Chippewa Falls, WI was chosen as this year's winner of the Ozaukee Radio Club's annual \$1,000.00 scholarship. Amber was selected by The Foundation for Amateur Radio (FAR). FAR is responsible for the administration of over 55 amateur radio-related scholarships, which range from \$500 to \$2,500. Amber will be attending UW-Eau Claire where she is studying Education and Social Studies. She holds a Technician

class license and is active with the Chippewa Valley VHF contesters. Congratulations Amber!

It will soon be time to appoint the nominating committee. Each January the club holds elections for officers. The positions are; president, vice president, repeater vice president, secretary and treasurer. Give some thought as to how you can help the club by serving as an officer.

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

## Contesting

De Bob Truscott (W9LO)

If you like short and snappy contests, this is the time. The fall sprints are here— 3 separate 4-hour contests—CW, SSB, & RTTY. They are a good warm-up for the November Sweepstakes contests, and an opportunity for casual contesters to sharpen their skills for the 05 Field Day.

North American Sprint-CW      **Sept. 12** Rules in Feb. QST, page 103 or [www.ncjweb.com](http://www.ncjweb.com).

North American Sprint-SSB      **Sept. 19**

North American Sprint RTTY      **Oct. 10**

ARRL September VHF QSO Party      **Sept.11** Rules in Aug. QST, page 107

QCWA Fall QSO Party—Phone/CW/ Digital. **Sept. 18/19**. Rules in Sept. QST, page 97.  
*(This one is for all the "old geezers" in the club.)*

CQ Worldwide RTTY DX Contest      **Sept. 25/26** Rules in Sept QST, page98.

## Reported Scores:

North American QSO Party–CW

N9FH 683 Qs, 192 Mults., Score 131,136

W9LO 403 Qs 130 Mults., Score 52,390

North American QSO Party–SSB

W9LO 72 Qs 40 Mults., Score 2,880

(Where were all you phone guys?)

First Annual ORC Corn Roast Competition

W9LO 4 ears & 1 brat. A dismal showing, but I win anyway---You have to report your scores if you expect to win. For honorable mention in the next newsletter, send your claims to [tbsi@hnet.net](mailto:tbsi@hnet.net). Exceptional claims will be considered for duplicate medals. Proof of performance may be required.

Have fun contesting.

## New Members

One of our new members is Barbara Musgrave of Cedarburg. She just recently completed her Technician exams and was awarded the call sign of KC9GDZ. Actually this is the third time



**Barbara Musgrave (KC9GDZ), a new member of the Ozaukee Radio Club**

Barbara has obtained her FCC license. Initially she earned her Novice license in about 1976 while a student at MSOE and that was followed

by a Technician+ license, which she allowed to expire. She works as an accountant at the University of Wisconsin and her interest in “Ham” radio was rekindled through her car pooling with Jane, KB9SYI. Barbara also has a new dog, Fritz and between Fritz and an advanced accounting course she is taking her “hamming” may be somewhat limited for the moment.

Another new member is Mike Yuhas of Saukville. Mike is in advertising sales for the publisher of the “Model Railroad” magazine. He also has a serious interest in photographing trains and that is what brought him into “Ham” radio.



**New member Mike Yuhas (KC9GDV) is shown here with his “Elmer” Gary Sutcliffe (W9XT)**

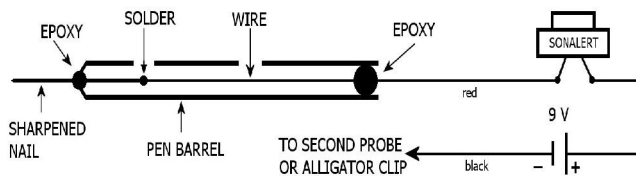
It seems that in some states such as Minnesota, you must have a license to have a scanner in your car. Since Mike has a scanner to listen to the train crews, he decided to earn a Technician license to make himself “legal”. He takes to “hamming” pretty fast and was the first to locate the hidden transmitter (fox) at the corn roast. He is also quite familiar with a microphone. Ask him about his previous activities as a disc jockey.

## A Simple Continuity Tester

De Stan Kaplan, WB9RQR

Over the years, I have needed to check continuity thousands of times. This includes tracing wire harnesses in cars, radios and computers,

testing coax after soldering connectors in place, checking wires in household lamps to insure that the hot lead really does go to the center tab in the socket (and that the neutral lead really does go to the threaded part of the socket), making sure that there are no shorts to the metal body of household lamps, and so on. Of course, it is easy enough to use a multimeter for such tasks, but that requires looking at the meter for a visual indication after making connection with the test leads, unless, of course, you have a multimeter that provides an audio signal when there is continuity. Even if you do have a versatile multimeter with aural indicator, the stand-alone tester described here is often just more convenient to use, especially if your meter is across the room, connected to another project. The tester described here can be built easily, and for next to no cost, or no cost at all if you can scrounge the only active element – a sounding device or beeper such as the Mallory SonAlert. You can find the SonAlert at all the on-line vendors such as Mouser or DigiKey for under \$5, but you may well come across one at a swapfest, perhaps soldered onto a board. Half a dozen are in my junk box from swapfest scrounging sessions. Here is the very simple schematic:



Make the probe(s) first. Find a plastic ballpoint pen and pull out the innards. Find a steel nail with a diameter that fits into the plastic barrel at the pen point end with a nearly snug fit. Cut the head off the nail and solder an insulated wire test lead to the nail (red would be nice). Now slip the nail down into the plastic barrel until the tip projects at least a half-inch. Put a drop of epoxy glue at the point where the nail projects from the plastic. When the glue has set, run some more epoxy down the other end of the plastic barrel to anchor the test lead inside the barrel. A nice touch: grind the nail end down to a sharp point before assembly. An alternate approach: make only one probe as described

above; use an alligator clip for the other test lead.

Find a plastic box to hold the 9-volt battery inside, with room enough for the battery, battery connector and a couple of wires. Mount the beeper on the outside of the box, using glue or small machine screws and nuts. Be sure to drill a hole in the box matching the beeper's two terminals; they should project inside the box. Solder short leads to those terminals before mounting the device on the box. Now, wire a 9-volt battery connector inside the box, with the red lead connected to the beeper's positive terminal (the beeper is always marked or has its own set of colored leads). Wire the black lead of the battery connector to the other (black) test probe (or alligator clip).

Connect a battery to the battery connector and test the device by touching the two probes. If it beeps, the device is ready to use. A partially spent 9-volt battery, no longer useful for its original purpose, will do nicely to power this tester for several months or longer. A new battery will likely last for several years.

Another nice touch: attach a little strap to one side of the box so you can hang the gadget from a peg over your workbench. This little tester is so handy that I built one for my local hardware store, where it has been in use for over five years to test incandescent light bulbs. Besides the one permanently over my workbench, another resides in my tool belt.

### Parts List

- Insulated wire
- (1) or possibly (2) ballpoint "stick" pens
- Possibly (1) alligator clip
- (1) 9-volt battery, used is OK
- (1) 9-volt battery snap terminal set with leads
- (1) Beeper - Mallory SonAlert or equivalent sounding device that makes a continuously audible sound when powered by 9 volts)

**Wanted** - Complete HF station. All solid-state. Reasonable. Contact Steve Stevens (KC9DXT) @ 262-284-2657

# Install Programs Correctly

De Stan Kaplan, WB9RQR

Number 115 told you how to uninstall a program correctly. Now it is time to consider a few factors in program installation. Today, that usually goes pretty smoothly, because software companies bundle an installation wizard with their product, typically invoked with SETUP.EXE, a file commonly found on installation diskettes or CD-ROMs. The executable program SETUP.EXE is usually invoked when you put a new program CD in your drive. All versions of Windows since 95 look at CDs that are inserted in the drive, and if there is a file on it named AUTORUN.INF, Windows gets the information in it and starts based on that information. For example, here are the main contents of an actual AUTORUN.INF file from a CD:

```
[autorun]
open          =          setup.exe
```

The comment in brackets [autorun] is ignored. The next line says, "open setup.exe". There are a couple of other lines, not shown here, that give temporary control of the system to the installation wizard inside setup.exe, and another line that tells where the icon file is located. .

If you have the autorun features of Windows shut off, the automatic start based on the contents of AUTORUN.INF will not occur. To manually start installation, just find SETUP.EXE on the CD and double-click it.

During the installation procedure, you may be asked if you want an icon on the desktop, an entry in the START, PROGRAMS menu and other choices that are fairly self-evident. Just select your preference and continue. There is one choice screen, however, that is not quite so self-evident, and almost all installation wizards make a default choice for you that you may want to alter. That choice is where the program folder resides.

Let me take up a side issue, for a moment. In the past, I have extolled the virtues of having at least three partitions on a hard drive, a C:, D:, and E: (see #76 in the series, or search the First 100 CD-ROM for the word: partition). C: is for Windows, and perhaps tightly integrated suites such as Microsoft Office (Word, Power-

Point, Access, Excel, etc.). D: is for programs - other application programs such as graphics and drawing programs, multimedia programs that play music or show videos, CD-ROM burner programs, scanning files, utility programs of all sorts, and so on. E: is just for stuff you create. Letters, photos, scanned files, database data files - anything that you create or modify in the course of the work you do on your machine. That way, when you do a backup, you only need to backup the contents of drive E:, which often will fit on less than a quarter of the space available on a single CD. Thus, backups are quick and painless, which means you can do them more often. Once a month is not out of the question.

Now back to the main issue. If your programs are to be installed on drive D:, you must override the default (C:) that the installation wizard usually sets up. One of the wizard screens will show, for example, that it intends to put the program files in C:\Program Files\DeLorme\Streets and Trips. Edit that screen (you CAN do it!) to read D:\DeLorme\Streets and Trips. Forget the \Program Files part of it - that is not necessary. There is no need to make more subfolders than are necessary. Indeed, if you think of the program as DeLorme rather than Streets and Trips, you can do away with the \Streets and Trips subfolder, too. Just edit it to read: D:\DeLorme. Most installations will now go smoothly, and the program will work fine. But what if it does not? What if you spend a week trying to get it to work, and you cannot. What if you have called the company, and their help desk geeks tell you to uninstall the program and try installation again?

Now it is time to re-read the last column on uninstalling programs. Do it correctly, using the Control Panel's Add/Remove Programs feature. When you have done that, do not fail to take one more step: reboot! Rebooting gives Windows a chance to update the Registry, a critical step when either installing or uninstalling programs. I have had reinstallation's fail because I did not first reboot after uninstalling a program, and later succeed when I did reboot the machine. Rebooting can make a really big difference! Happy computing!

*This article was reprinted from the Badger Smoke Signals web site.*

## **Lightning Protection**

(Part 6 of 6)

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

De Gregg Lengling, W9DHI

#### **Single Point Ground Design:**

The next step in a good protection scheme is to provide a single point ground, a plate where all your equipment I/O protectors can be located. This panel is best located near the ground to keep the inductance of the ground conductor low. However, if this requires the plate to be far from your equipment and if the magnetic fields of a nearby tower can easily couple into the interconnection wires and cables, then the panel should be located close to your equipment.

An alternative to the single point ground plate is to use a rack panel. This is recommended only if all of the I/O protectors are mounted on the panel and the ground connection is directly to the panel and not to any other piece of equipment.

The grounding of the plate or panel is very important. A low impedance path to ground is a necessity and only copper strap should be considered. Since the strap is flat, its susceptibility to magnetic fields is only towards its edges. To prevent coupling, the strap should be oriented with the flat side parallel to the tower (the most likely strike point and magnetic field source). The single point ground plate should also be oriented with its flat side parallel to the tower for the same reason.

In the equipment room (shack), each piece of equipment must be bonded to the single point ground panel with low inductance strap. This will maintain all chassis at the same potential during the strike and minimize chassis-to-chassis current flow. The power, telephone and coax line protectors on each of the I/O's must

be mounted on the single point plate. This will minimize I/O to I/O current flow.

Additional protectors may be used to protect the opposite side entrance locations for the power and telephone lines. They will provide added protection for jointly used equipment such as appliances and other electronics. Ideally they should also be grounded and connected by buried bare conductor to the ground system.

Remember that surge energy can enter your shack in either of two ways: from a strike down the road coming in on the power/telephone/cable lines or from a strike to your tower or antennas. In either case, high quality protectors (I recommend PolyPhaser) will dump the energy into the ground system. Because of varying propagation times, if the protectors are electrically spread out from each other, they cannot work in unison to keep the voltage levels between the equipment I/O's within a tolerable range for equipment survival.

Also remember, no sharp bends. Route all ground straps and grounding conductors so they have a gentle-bending radius. Bends sharper than an 8-inch radius will add unwanted inductance to the desired ground path. Even for conductors buried in the ground, try to avoid sharp bends.

Well that's it; I hope you learned something and will plan out your ham shack with safety and protection in mind. I've used these techniques on my Ham Shack and also in the past on many commercial installations, including the towers I used to own. A case in point: In 1990 I built a 160 foot free standing tower in Germantown without following these guidelines. In the first 12 months I had lightning damage 3 times, one of the times was catastrophic as I lost 2 antennas, 1 feedline and 1 repeater. Total loss was over \$10K. I then spent a few days and maybe 1500 dollars to properly ground and protect everything. Since that day in 1991 there has been no lightning damage at the tower other than 1 antenna. In that case it was a 22-foot long fiberglass collinear on the top of the tower that took a direct hit. That was the only

loss from that direct hit, all feedlines and equipment survived that massive hit. This is the biggest testimony to all this information I learned over the years, including 3 classes I attended that PolyPhaser Corporation put on. Use this information wisely and good hamming!

End of Series.

## Upcoming Events

**Sept. 8<sup>th</sup> – ORC meeting**

**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.

## September 8<sup>th</sup> Meeting

The program is titled “Loops, Squares, Rectangles and Other Antenna Curiosities” and will be presented by Ed Rate (AA9W)

## Annual Corn Roast

It was a really great event this year and well attended by young and seniors as well. Although it threatened rain we were under cover with plenty of tables, water, bathrooms etc. and even a kids play area.



**Stan again acted as the ORC chief chef as the line formed for the turkey brat's.**



**Brian Skrentny (N9LOO) acted as our official fireman assuring that the corn pot boiled.**



**Cassidy (Mike Yuhas's daughter) and Becka (Dave Barrow's grand daughter) were having a great time on the tire swing and bars in the kid's play area next to the shelter.**

We had not only a great meal and much visiting but a foxhunt training session and examples of operating QRP stations and portable antenna as well. The club supplied the meat, corn and refreshments and with each member bringing a dish to pass there was plenty of food and a great time was had by all.



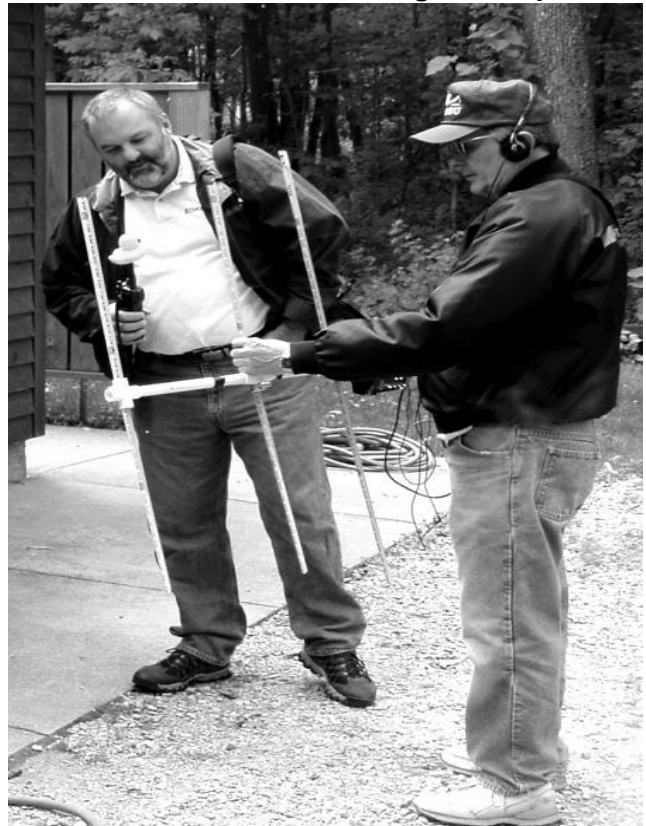
The meat was tender, corn was sweet and food and camaraderie were great. Even though there was the threat of rain it turned out to be a great day.



There was much discussion by Greg (W9DHI), Tom (AA9XK) and Ed Frac (AA9WW) while Ed Rate (AA9W) continued eating, about the relative merits of one QRP station and portable antenna Vs another. However, the solar panel power supply tends to negate the small size of the QRP stations.



Leon Rediske (K9GCF) provided a tutorial on the fine art of “fox hunting” using several different antenna and tracking techniques.



Mike Yuhas (KC9GDV) looks on in disbelief as he compared his new “rubber duck” antenna with Leon’s (K9GCF) 2 meter Yagi for fox hunting.

# Minutes—August 12th, 2004

De Carol Szudrowitz, KC9CBC

**Announcements:** Leon K9GCF presided as Vic KB9UKE was out of town.

Corn Roast is August 28 at Waubedonia Park. Grays Lake Swapfest is the 18th and 19th of September. Gary N9UUR mentioned that another satellite is up.

**Auction** was held by Stan WB9RQR while Gary W9XT set up the program on Feed Lines.

**Program:** Feed Line information by Gary W9XT. He explained some of the theory, and pointed out some of the misconceptions of feed lines. Maximum power is transferred when the load impedance is matched to the source impedance. Various feed lines include coaxial, and open wire, or ladder line. A Smith Chart can show impedance and admittance coordinates. For more information ask Gary W9XT for a copy of his excellent handout.

## Business Meeting

**Secretary minutes** were accepted as printed in last newsletter.

**Treasurer's Report** was accepted as presented. A donation was accepted from Port Washington Fish Day Committee and deposited in the treasury.

**Repeater Report:** The crackling noise was corrected in the repeater. The 220 is working at the barn. The 440 Net is doing well. Chris is continuing his code lessons on it. The repeater location, "The Barn" is for sale. We thank Sandy W9BTN for allowing the club to be there all these years. If no one else has a better idea, I (Nels WA9JOB), propose moving the repeater. KK&LL will become a transmit site only. We have the opportunity to make the central control site at the Grafton Fire Department. An antenna system can be placed at the Grafton Police Department as a part of the arrangement, for use by OZARES participants. I propose not using a control phone link as we do not need it any longer to be legal and "auto-patch" is not used as frequently as in the past. This will be a savings to the Club.

**OZARES:** no report

## Committee Reports:

**Ham Radio Class:** Tom W9IPR said that the Radio Class is being offered through the Continuing Education Night School in Cedarburg on Tuesday evenings September 14 to December 14. Information is sent to all homes in the district and it is also publicized in the News Graphic. Anyone in the area can sign up

for it and for further information call Karen Herre at the school. Her number is 262-376-6141.

**Field Day Recap:** This was held at Leon's K9GCF. We want to introduce new folks to our Field Day effort.

**Old Business:** Corn Roast plans were discussed and hams volunteered for jobs. Food is to be served by 11 AM. Bring a dish to pass and enjoy friends. Check re-mailer for info.

**New Business:** Nels WA9JOB, said that a 125 watt continuous solid state amplifier is available for \$175.00 for the 220 and it is necessary with the upcoming move. Nels made a motion to buy it and Jim KA4UPW seconded it. With the club voting by saying aye, the motion carried.

Regarding the "stuff" in the barn, Nels made a motion to move it to a barn on Hawthorne Drive, about 1.5 miles west of Cth. 1, and about 2 miles north of Hwy. 33. For a nominal amount per year (\$200) and a 501C3 letter for deduction (this states the fair market value), the club can store everything there. There is a secure area for tents and barn space for tower trailers. It is convenient to Lazy Days Camp Grounds. Jim K9QLP seconded the motion to move the equipment there. Discussion ensued and agreed with the motion. Suggestion was made to move things this fall before it got cold.

Club also needs a rack cabinet for the Grafton Fire House location. A couple of the members thought they might have one that was suitable.

Stan WB9RQR made a motion to close meeting and Ed AA9W seconded it.

**Attendance:** Jim KA4UPW, Stan WB9RQR, Ed AA9W, Gabe W19GC, Dave N9UNR, Tom W9LNL, Nels WA9JOB, Barb KC9GDZ, Herb WA9UVK, Bernie AA9CI, Jim K9QLP, Don W9VSC, Dick K9CAN, Gary N9UUR, Jeananne N9VSV, Carol KC9CBC, Terry KA9RFM, Jane KB9SYI, Tom W9IPR, Ed AA9WW, Mike KC9GDV, Ray W9KHH, Bob W9LO, Paul KB9WCC, Nancy KC9FZK, Chris N9VKC, Walter WA9KFR, Tom AA9XK, Ron KC9DKQ, Mark AB9CD, Roger W9UVV, John KC9FJX, Gary W9XT, and Leon K9GCF.



## **AGENDA**

*September 8th, 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 ?

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### **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, Oct. 8<sup>th</sup>**

**7:30 PM**