



# 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 XXI

October 2002

Number 10

## The Prez Sez

By Leon Rediske K9GCF

Joyce Harvey (WB9IMA) is recovering from open-heart surgery; for that we are all grateful! The whole ORC wishes you a speedy recovery!

Thanks to Nels (WA9JOB) for the technical session and the Handie Talkie clinic at the last meeting. Great job, Nels.

Dave (N9UNR) and Marion Barrow have been doctoring at the Mayo Clinic, and we hope they find solutions to their problems. All of the ORC send our best wishes to you both.

Sure is great to have Kyle in town, all the way from Florida. Nice fella, that Kyle. (WA9USD).

Now is the time to erect those giant antennas that blow down in the winter storms. You know the saying about antennas....."If it stayed up last winter, it was too small."

73's for now, and see you all at the October 9th ORC meeting, 7:30 PM,

## Upcoming Events

- 10/09/02 - ORC Meeting
- 11/02/02-MRC Swapfest - Waukesha Expo
- 01/04/03 - WARAC Swapfest-Waukesha Expo
- 03/16/-3 - Tricounty Hamfest - Jefferson County Fairgrounds

## IMPORTANT NOTICE:

### MOTION TO AMEND THE ORC BYLAWS

The Audit committee will present a motion to amend the by-laws of Ozaukee Radio Club, Inc.

at the next regular meeting on Oct. 9, 2002. The 7:30 P.M. meeting will be held at the Grafton Senior Center. The purpose of the amendment is to assure that the treasurer is responsible for the accounting of all club funds and thereby reducing the potential for abuse.

Amendments to the by-laws require a two-thirds majority of the membership at the meeting providing that 25% of the membership is in attendance. The copies of the by-laws are available on the club web site.

The audit committee recommends amending Section 3 of Article III by deleting the underscored wording:

The Repeater Vice President shall be responsible for all aspects of the care, maintenance, design and proper operation of any repeater project and in the regard to such a project, perform the functions of chief executive officer, secretary and treasurer, with duties analogous to those herein set forth for the corporation President, Secretary and Treasurer. The Repeater Vice President shall be responsible to the President of the corporation, and through the President of the corporation, to the members generally. The Repeater Vice President may appoint such assistants from Regular Members as he or she deems appropriate. The Repeater Vice President shall render periodic activity and financial reports at regular meetings, and upon completion of the term of office or resignation or removal, shall furnish a written account for any corporation money or other corporation property which may have come into his or her possession or control during the term.

The audit committee consists of: Vic KB9UKE, Ed AA9W, Gabe WI9GC, Tom W9IPR, Kent N9WH and Gary N9UUR.

# Contesting

De W9LO – Bob Truscott

Hi! I'm your new contest editor. Not because I'm particularly qualified to do that job, but because Tom, W9IPR, is a very persuasive fellow. And when he explained the many benefits that I'd enjoy by doing it, how could I refuse? (Actually, he threatened me with great bodily harm if I did refuse, but immediately granted me a few more years on the planet if I accepted. I'm not sure by whose authority he made the grant, but I'm not going to take any chances just in case he knows something that I don't.) So, here we go.

Contesting is fun. You don't have to be a hotshot operator or have a super station. You don't have to work 24 hours in a row. You don't have to be a big scorer. You don't have to jeopardize your marriage by spending too much time at the key or mike. (The best way to handle that one is to buy a license manual for your spouse, and have a talk with Professor Rate.) The only things you do need are a modest rig, a simple antenna, and a desire to have a little fun. You'd be surprised how much satisfaction you can get out of just making a few contacts, particularly on CW if you are a phone op, and vice-versa. You'll also be surprised at how quickly your skills will increase if you spend a couple hours contesting each month. Don't wait till Field Day—give it a try now.

There are usually 10-20 contests each month, some of interest, and some not. They will include CW, SSB, QRP, VHF, RTTY, PSK-31, various state QSO Parties, etc. I'll list those that I think will be of interest to our particular group, but will surely miss the one contest that "you" especially like. So send me your "likes" via e-mail at [tbsi@hnet.net](mailto:tbsi@hnet.net), or by landline at 262-629-9685, along with your claimed score after each contest. We'll list the scores in the next newsletter, and again when the official results come out in QST or CQ a few months later. Those of us who file electronically will usually be embarrassed by the number of contacts that ARRL will delete because of various types of errors. More on that another day.

For contest rules, see QST, Oct. 2002, page 89, except as noted:

Oct. 5-TARA PSK-31 Rumble See QST, April. 2002 page 93.

Oct. 5-Oceania DX Contest-Phone.

Oct. 5- QCWA QSO Party-CW/Phone

Oct. 6-California QSO Party-CW/SSB.

Oct. 6-RSGB 21/28 MHz Contest-SSB

Oct. 9-YLRL Anniversary Party-CW

Oct. 12-Pennsylvania QSO Party CW/Phone

Oct. 12-Fists Fall Sprint-CW See QST, Feb 2002, page 109.

Oct. 13-North American Sprint-RTTY See QST, March 2002, page 114.

Oct. 16-YLRL Anniversary Party-SSB

Oct. 26-CQ World Wide DX Contest-SSB

Oct. 26-ARRL International EME Contest See QST, Sept 2002, page 103.

Nov. 2-3--ARRL November Sweepstakes-CW See QST, Oct. 2002, page 100. This is the granddaddy of all contests, second only to Field Day. (One man's opinion-mine) Let's have a big turnout for this one.

Have fun contesting.

## Interesting Web Sites

<http://www.robotics.com/chair/>

<http://dmoz.org/Recreation/Radio/Amateur/Boatanchors/Heath/>

## New Associate Editors

We now have two new associate editors. Bob Truscott, W9LO, an avid contester and charter member of the ORC will be the editor of our "Contesting" column. He can tell us not only what's happening but how you can also make it happen.

One of our newest members, Todd Sprinkmann, KC9BQA, will be heading up the "Just Another Shack" column. As a new graduate from Professor Ed's class he has an avid interest in "operating" and the various equipment used by our many members. You can expect a call from Todd with a request for an interview and a photo of the shack.

# Field Day Logging Software

By Jeff Kane KB9QQE

I was asked, "why did I choose to write the field day logging software?"

I have to begin by saying mixing radios and computers is why I got my license. Even though that has not panned out, I still like to put them together whenever I can.

The first time I went to field day, I realized the efficiency of making contacts was directly related to the logging program. Many a pile up was brought to a halt because the person logging couldn't keep up. I have been looking ever since for a simple easy to use program that is intuitive and can be figured out by anyone within just a couple of minutes.

There are as many logging programs as there are usable frequencies. That's a lot! Some are much better than others. Like everything else, once you learn one, it will become your favorite above all others.

In a Field Day situation, familiarity with the program is most important. If you can't figure out how to use it, you won't be able to make quick contacts with it. With that in mind, I decided to ignore the CW tents because they have something that works for them. But the Phone tents are always trying something different. Each year people complain about some program or another.

Against the better judgment of everyone, I decided to take a stab at writing something new. Mostly, it was out of curiosity. I wanted to learn a new programming language, and figured this would be a good experiment. If it failed, I still had the experience.

I set up some requirements. First and foremost, it had to be easy to use. I wanted someone who never used a logging program before to be able to sit down and go without training. Second, I wanted it to just work. People are scared of installing stuff, so no install is a good thing. Third,

a central storage of the data would make end of day reporting easier. Fourth I wanted automatic backups of data in case of power failures. Finally, the ability to customize it to meet our clubs needs would make it better than any other tool.

With these in mind, I decided to do something different! I chose to make this a browser-based program. It would be just like connecting to the Internet and using a web page. That met the second requirement because computers come with IE or Netscape preinstalled. Second, the point and click graphics allow things to be formatted any way someone wants. This leads to solving the first requirement also. The very nature of using a browser connected to an Internet server allows for central storage of data. And once I have the data on a server, I can back it up by copying it every 15 minutes or whenever I want to.

So along comes field day. How do you get the Internet to the field? That was actually the easy part. I simply took an old computer and installed a web server on it. (It's easier than you think.) The hard part was finding 3 other computers that had Internet Explorer on them and a version of Windows that supported networking. Once we got past that point, the logging was so easy, even Gabe was able to figure it out. ;-)

The central server added a feature I had not thought about. It allowed the 2 phone tents to compete on an hour by hour basis. They could see what each other were doing, and work all that harder to beat the other tent.

There have been a couple of customization requests for next year. First is the ability to check a duplicate before entering all the data. I did not make this feature intuitive. Next year's version will just do it as soon as you hit tab or click outside the call entry block. I do not know how to do this yet, but that is part of the challenge. The second new feature will be a running total of the contacts made so far. I will add a little ticker on the screen to show how many you have made in that tent.

How about the CW tents? I don't want to ruin a good thing. Although the competition feature would be nice to have, it may not increase efficiency enough to make it worth it. The biggest problem is my requirement that no software be installed to make this work. Since they send via a keyboard, that makes this almost impossible. I am not that good at writing programs. So don't expect a version that supports keyboard CW send any time soon. They are welcome to log using it, but they will need a second program to send the code out the serial ports.

If you want to try the web page out, go to <http://www.kane1.com/ham>. I have a sample version of it available on the Internet. Test it out, and make any suggestions you would like to see for next year.

## Tips and Tails

Need a dashboard hanger for that ICOM microphone? Try a plastic hanger with the adhesive backing for non-destructive mounting on the dash. Cost is only \$2.79 for 6 hooks.

Another approach is to use the "high temperature" hook & loop tape available at Radio Shack

## The System File Checker

- by Stan Kaplan, WB9RQR

Did you know that Windows 98 has a built-in System File Checker? This handy tool will check all your critical operating system files for any that are corrupt. If any are found, it will give you a chance to restore fresh copies from the installation disk. Moreover, if set up correctly, it will also check for missing and updated files, and will keep its findings in its own little database so that it knows, next time, what it found this time. Not bad. A good way to make sure your system is tuned up and working to peak efficiency.

Before you start, make sure you have your Win98 installation CD-ROM handy, if needed to restore a file. It is also a good idea to close Norton System Doctor if you use it (don't just minimize it; close it), and to temporarily disable any virus scanner. If you use Norton Antivirus (You should! It's the best.), temporarily disable-----

(Extracted from and continued at [Http://www.bsss.org](http://www.bsss.org))

## Club Static

Best wishes to Joyce Harvey (WB9IMA) on a speedy recovery from her bypass surgery.

Dave (N9UNR) and Marian Barrow both just had checkups at the Mayo Clinic and all's well that ends well.

Ed Rate (AA9W), Ed Frac (AA9WW), Leon Rediske (K9GCF) and Tom Ruhlmann (W9IPR) had a great time at the Grayslake Hamfest on Sept 22 but nobody returned with any broken stuff to fix – oh well. Grayslake is really quite close – only 67 miles – a short ride with good company and new stories.

My apology in that we simply ran out of space in this issue for the "Just Another Shack", "For Sale & Wanted" and the "Interesting Nets" columns and a couple of interesting articles. I try to hold the issue to 10 pages for mailing purposes and just ran out of space this issue - sorry.

## Basic Repeater, 101:

By Nels Harvey WA9JOB

It has come to my attention that many of the members have questions regarding the three repeaters that the club operates. Things like what, how and why the repeaters operate like they do, seldom are answered in an easily understood manner. I am going to try to clear up some of these questions.

The basic parts to a repeater are a receiver, a transmitter, a controller to maintain the FCC requirements, and an antenna, or two.

It is possible to use a separate antenna for the receiver and the transmitter however; they should be separated by as much as possible to reduce receiver blocking due to the transmitter output.



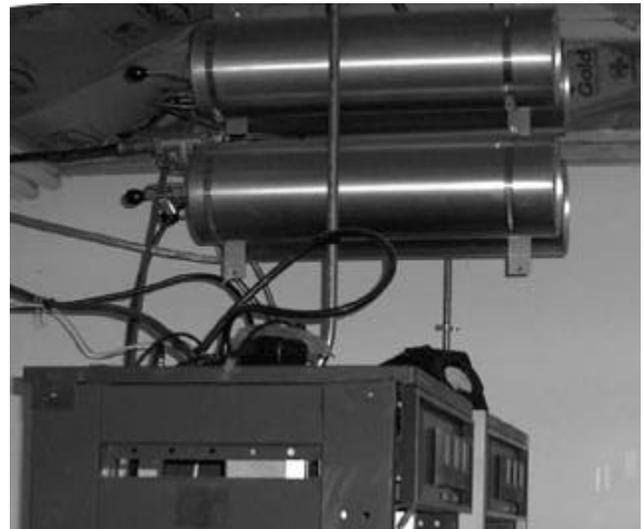
**The ORC Link Repeater Receiver (right), Transmitter (left), Controller (middle) and power supply (top)**

Stronger signals will generally get through, but weaker, more distant, signals will need to overcome the blocking the transmitter does on the receiver.

An assembly that's called a duplexer is usually used to enable a repeater to use one antenna, and keep the receive signal separate from the transmitted signal. This permits higher power to be used, and increases the receive capabilities by letting weaker signals be heard.

A controller is used to satisfy the many FCC requirements. Without a controller, a control operator, with the ability to shut off the repeater, is expected to be on duty whenever the repeater is operational. The controller passes the received audio through to the transmitter, provides proper repeater identification, and turns off the repeater after three minutes in case something, or someone, holds the repeater open longer.

The controllers on the 224.18 MHz. and 443.75 MHz. Repeaters do little more than that. They were relatively inexpensive, but certainly do their job well. The Controller on the 146.97 MHz. Repeater is a full function unit, with telephone interface and autopatch capability.



**The duplexer (4 pipes in upper part of picture) allows one antenna to receive on one frequency while it transmits simultaneously on a different frequency**



**The controller routes audio from the receiver to the transmitter for rebroadcast and adds the station identification.**

Functionally, a repeater receiver picks up your signal, from which it develops a logic level change that is detected by the controller to cause the transmitter to transmit. The controller carries the audio from the receiver, along with any CW, or voice messages generated internally to the controller, and passes them along to the transmitter. The signal then goes to the transmitter's antenna, repeating the input signal on the output frequency with gusto.

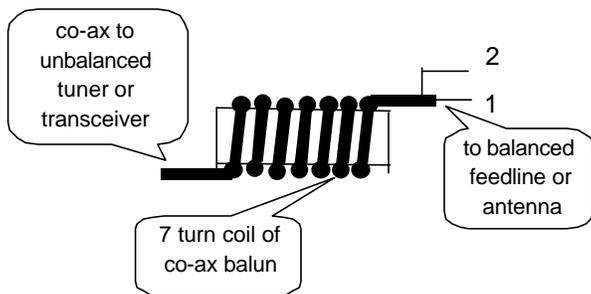
Next time, I will cover how a receive link works. If you have any questions regarding Basic Repeater 101, I certainly am willing to answer them as best I can.

# A Simple, Cheap Balun

By: Tom Ruhlmann W9IPR

Perhaps the simplest of the broad band balun's is just a several turn coil of co-ax in the feedline.

For reasons of economics, reliability and simplicity, I prefer the coil of coax for a balun which provides a 1:1 impedance transformation. You can read about the others types of balun's using ferrite cores in the **ARRL Handbook** chapter on transmission lines or **"Building and Using Balun's and Unun's"** by Jerry Sevick (W2FMI).



The co-ax balun can be simply a several turn coil of co-ax at the antenna feed point or it can be uniform coil of coax as wound on a PVC pipe. My preference is the uniform coils of co-ax wound on or within a PVC pipe as shown below.

Below is pictured a 5 turn co-ax balun wound on a 4" diameter section of PVC pipe and secured to the mast of this 6 meter beam. The coil of the co-ax creates a high impedance on the outside of the shield and this will prevent RF current from flowing down the exterior of the co-ax. However, the coil has no affect on the interior of the co-ax and this simple coil allows the balance driven element of the beam to be driven by the RF currents carried by an unbalanced co-ax feed line.

This type of co-ax balun can also be used as a remote balun. That is, it can allow co-ax to be routed through the shack to the outside where the co-ax balun can be inserted in the line to convert to a balanced feedline as used with a multi-band center fed Zepp.



**Balun of Coax Feeding a 6 Meter Beam Driven Element**

Below is shown a ten-turn co-ax balun wound inside a 4" diameter PVC pipe and feeding the 450-ohm ladder line to the G5RV at the shack of W9IPR.



**A ten-turn balun wound inside a length of PVC drainpipe.**

Note that the less expensive PVC drain pipe with the holes was used for the housing. The holes allow for air circulation and draining of collected moisture. This is not to mention that the end caps

are also less expensive and are flat rather than domed.

So now that we know when and why we may need a co-ax balun, how many turns are required to attain the high impedance necessary on the outside of the shield.

Table 19.4 of the 1996 **ARRL Handbook** provides guidance on the length of co-ax and number of turns to be used to create effective single band and multi-band balun's and the following is based on that information.

MHz	Length	Turns	Diameter
3.5	22'	8	10"
7	22'	10	8"
10	12'	10	4.5"
14	10'	4	10"
21	8'	6	5"
28	6'	6	4"

MHz	Length	Turns	Diameter
3.5-30	10'	7	5"
3.5-10	18'	10	7"
14-30	8'	7	4"

So, if you are now feeding a balanced antenna with the unbalanced output of your transmitter, why not optimize the system? Build a simple, inexpensive, multi turn coaxial cable balun and avoid the potential RF and loading problems associated with the lack of symmetry – put some balance in your line.

## Next Meeting – Oct. 9<sup>th</sup>

This is going to be a different kind of program. We will have a presentation by a ham couple that are from the Milwaukee area, and I (K9GCF) have fox hunted with them over several decades. Paul KB9ODQ, and Rebecca Gruettner KB9LFW, are both hams & electrical engineers. What is so worthy of our time is that Rebecca ("Becky").....as I have called her for many years) has written a novel about a murder that involves ham radio and fox hunting. She bases her book on real characters that are in the Milwaukee & California areas that Paul and Becky have lived

in. I haven't finished my copy of THE FOX, but from the people that have, they say it is fast paced and interesting. Look for 73 or CQ (I can't remember which) magazine to review the book for October. I trust Becky will have copies of her book ready for autographing..... Paul's pix appeared in 73 magazine this year in the HOMING IN column. Come and meet this super couple at our next meeting. Leon.

THE FOX: After her friend, Ted O'Neil, is brutally murdered for his multimillion dollar transmitter design, young QA executive Libby Lopez is determined to make the guilty pay. Armed with a forewarning from an old psychic, she embarks on an uncertain journey in search of the killers. Through a combination of shrewdness, persistence, and an uncommon sixth sense, Libby exposes the cold-blooded murderers. But can she stop them before Ted's design ends up in the hands of the foreign buyers?

## Minutes - September 11, 2002 Meeting

By Nels Harvey, WA9JOB, Secretary.

### Call to order and introductions:

The meeting was called to order at 7:30 PM at the Grafton Senior Center by President Leon Rediske, K9GCF. Introduction of members and guests was made.

### Events and Announcements:

Leon asked for someone to update the computer-generated nametags that are placed on the counter at every meeting. Stan, WB9RQR, offered to print new nametags if someone provided him with a list of names that were needed.

Stan announced that Dave Barrow, N9UNR, was being tested for a heart irregularity at St. Mary's Hospital, adjacent to the Mayo Clinic in Rochester, MN. Dave had taken his wife, Marian, to the Clinic in an effort to diagnose a problem she has been experiencing for several months. (Update: Dave has been released with an adjustment in his medications a day later.)

Upcoming swapfests included a distant Minneapolis event this coming weekend, Gray's Lake September 21 & 22, and the MRC Friendly Fest, on November 2, 2002.

**Program:**

Nels Harvey, WA9JOB, discussed some repeater fundamentals, including a verbal description of the signal paths as they made their way from the user, to the repeater transmitter. Equipment was brought in for testing, and Nels invited anyone to bring their radios over to the test bench after the meeting was adjourned. Deviation and frequency tests were conducted on several radios at that time.

**After the break, Stan** held his usual auction, and then the business meeting was held.

**Minutes:** No mention of accepting the previous meeting's minutes was made.

**Treasurer's report:** Ed, AA9W, moved to accept, and Stan, WB9RQR, seconded. The report passed by voice vote.

**Repeater Report:** Dave, N9QA, reported the new finals had been installed in the 146.97 MHz. Repeater. The 224.18 MHz. Repeater is still without an amplifier, but it receives sparse use anyhow. The 146.97 MHz. remote receiver equipment has been installed in the 224.18 MHz. Rack panel.

**OZARES Report:** Jon, KB9RHZ, announced a disaster drill to be held at St. Mary's Hospital, Ozaukee (SMO) on Saturday, September 28. He reminded the group of the regular OZARES meeting Thursday, September 26.

**Audit Committee:** Vic, KB9UKE reported on the Audit Committee's meeting, held just before the regular meeting. It is the desire of the Audit Committee to request a change in part of Section 3 of the Club's Bylaws.

Section 3. The Repeater Vice President shall be responsible for all aspects of the care, maintenance, design and proper operation of any repeater project, and in regard to such a project, perform the functions of chief executive officer, secretary and treasurer, with duties analogous to those herein set forth for the corporation President, Secretary and Treasurer. The Repeater Vice President shall be responsible to the President of the corporation, and through the President of the corporation, to the members generally. The Repeater Vice President may appoint such assis-

tants from Regular Members as he or she deems appropriate. The Repeater Vice President shall render periodic activity and financial reports at regular meetings, and upon completion of the term of office or resignation or removal, shall furnish a written account for any corporation money or other corporation property which may have come into his or her possession or control during the term.

The Bylaw changes were not presented at this meeting in writing, as stated in the Bylaws, but the intent is to remand the responsibility of the repeater funds to the Club Treasurer.

**Old Business:** There was no old business.

**New Business:** There was no new business.

A general discussion then ensued, with Tom, W9IPR, suggesting the Club undergo a project. He suggested possibly building Two-Meter beams. Over mild objections from Gabe, WI9GC, Leon, K9GCF, appointed him as Committee Chairman, along with Ed, AA9W and Tom, W9IPR, to coordinate the Two-Meter beam project.

Stan, WB9RQR, offered to sponsor a construction project for a TV twin lead J-pole antenna project at a future meeting.

**Adjournment:** The business meeting was adjourned at 9:16 P.M.

**Next Meeting:** The next meeting will be held on October 9, 2002, at the Grafton Senior Center.

**Attendance:** Nels, WA9JOB, Bernie, AA9CI, Tom, W9IPR, Gene, KB9VJP, Bob, W9LO, Terry, KA9RFM, Ray, W9KHH, Don, W9VSC, Dave, N9QA, Herb, WA9UVK, Paul, KB9WCC, Ed, AA9WW, Gabe, WI9GC, Ed, AA9W, Jane, KB9SYI, Stan, WB9RQR, Leon, K9GCF, Jim, N9WIU, Carol, KC9CBC, Ed, AA9GT, Todd, KC9BQA, Ernie, K9LO, Jake, KB9ZOR, Kent, N9WH, Jon, KB9RHZ, Vic, KB9UKE, Bob, W9RNA, Joe, KB9URC, Ben, K9UZ, Ray, WD9HOD, Jim, K9QLP, Ron, WB7OFC, Jeff, KB9QQE, Bob, W5CFB, Jeananne, N9VSV, Gary, N9UUR, Ron, W9BCK, Brian, N9LOO, Gary, W9XT, Julia, KB9WBQ, Tom, AA9XK, Sky, N9XRU, Ted, KB9PQZ, Mike, WJ9O and former ORC President, Kyle, Jeske, WA9USD, visiting from Florida.

November 2002

## **“ORC BUILD IT CONTEST” – cash Prizes!**

**Know the difference between a hammer and a screwdriver? If so, you qualify to enter this contest! (If not, see W9IPR & he will commiserate with you!).**

- 1. Build a HT (handitalkie) stand, either table Or mobile version (a stand to keep the HT from falling over on a table, or in place when mobiling).**
- 2. Fabricate your idea, however sophisticated (or crude!).**
- 3. Bring it to the (“show & tell”) November 13, 2002 ORC meeting!**

**Entries will be judged on originality & usefulness – not necessarily on craftsmanship!**

**At least Seven cash prizes to be awarded, not to mention all the honor & glory!!!  
(cash prizes are donated & not from orc funds)**

### **Rules!!!**

- 1. cannot cost over \$5.00 American (materials & labor whether you make or buy all or part – this is what junk boxes are for!)**
- 2. keep it simple stupid!**

**Judges decisions are final! (K9GCF, W9IPR, KY9P)**

## **AGENDA**

*Oct. 9th, 2002*

1. Call to order.
2. Introductions.
3. Announcements, Upcoming events, Etc.,
4. Program: Paul, KB9ODQ, and Rebecca Gruettner, KB9LFW, Fox Hunters
5. Auction.
6. Acceptance of Minutes as printed.
7. Treasurer's report – Gabe (WI9GC).
8. Repeater report – Dave (N9QA)
9. OZARES report – Jon (KB9RHZ).
10. Committee reports.
11. OLD BUSINESS.
12. NEW BUSINESS.
13. Adjournment.

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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, Aug. 14<sup>th</sup>**

**7:30 PM**