



# 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

September 2002

Number 9

## The Prez Sez

By Leon Rediske K9GCF

The '02 Corn Roast is now history and it was a grand gathering. The weatherman skunked us on Saturday, and we gained some folks and lost some folks due to our moving to Sunday. Our notification system missed one person, and he ate his beans at the Park, all alone, on Saturday. Sorry about that!! Maybe it is just as well that he ate his beans alone.....hah!

Anyway, in the future, I'll leave a message on my answering machine if the event has been called off. In that way, if I'm about town purchasing food, or getting equipment out of the barn, all that are interested in coming, can find out if the weather may be canceling the event. No cancellation message means the event is "on" as scheduled. Of course checking in on 146.97 may get you your answer as well, if you are capable on 2 meters.

It has been suggested we build 2 meter beams as a club project, buying the materials in quantity, and over the course of several meetings...or at several Saturday construction sessions, build our own personal antennas. Other folks added we should make it a 144/440 beam that would be Satellite capable. At a later meeting perhaps, we could coerce Gary N9UUR, to show us how to make a contact through the satellites using our new antennas. What do you folks think of the idea? Bring your ideas (& Gary) to our next meeting.

73's for now, and see you all at the September 11 ORC meeting, 7:30 PM, Grafton Senior Center Building, 1665 7<sup>th</sup> Ave., Grafton, WI.

## ORC New "Hams"



Two of our most recent new members are Carol Ann Szudrowitz (KC9CBC), wife of Gene, KB9VJP and Todd Sprinkmann (KC9BQA).

## Contesting

I noted that Bob Truscott, W9LO, scored again. This time he is listed as 2<sup>nd</sup> in the state for low power CW in the 2001 ARRL 10 meter contest. Congratulations Bob.

DXCC reminder: The ARRL DXCC Desk reminds all DXCC program participants that the September 30, 2002, deadline to submit items for the next DXCC Annual List is rapidly approaching. The DXCC Annual List will include all stations submitting an application to DXCC between October 1, 2001, and September 30, 2002. To appear in the Annual List, you must submit an application between those dates or be current on

the DXCC Honor Roll. No submission is necessary if you are now on the DXCC Honor Roll, but only those modes that are Honor Roll will be shown. Applications must be postmarked by September 30, 2002. For more information, contact the ARRL DXCC Desk <dxcc@arrl.org>; 860-594-0234.

Sept. 7 & 8 – All Asian DX Contest – Phone  
Sept. 14 & 15 – ARRL VHF QSO Party  
Sept. 28 & 29 – Worldwide RTTY DX Contest – 10 through 80 meters.

## Just Another Shack?

Who earned his Technician+ ticket only 2 weeks after being asked the question “why don’t you get your “Ham” license”? That would be none other than Vic Shier, KB9UKE, of West Bend. Vic had learned a little of the code as a kid and continued to enjoy listening to the short wave and “Ham” bands. While at AES to buy a new Sony 2010 SW radio in 1999, Gary @ AES, (KA9YTB), asked Vic the critical question. Then Gary led him to the book section and prepared him with a study guide and the encouragement to give it a try. Two weeks later Vic had earned his Technician+ license and within the following year had earned his General, Advanced and Extra tickets. Currently Vic also serves as our ORC Vice President. Quite an accomplishment and all due to Gary, only 3 years ago, asking Vic “why don’t you get your Ham ticket?” and getting him a copy of “Look Whose Talking”. Have you “Elmered” anybody this year?



Here Vic is shown using his FT920 operating in his favorite mode, CW, while admiring his vintage HALlicrafters S53 receiver. On the wall behind Vic is the control head for his ICOM IC2800 that he uses to work cross band and to conduct the Tuesday night net. As a frequent check-in to the Morning Mobilers Vic has another IC2800 in the car.



Outside Vic is running a GAP Titan DX with the tuned counterpoise on HF and a Comet dual bander on VHF. He also enjoys going to their cabin near Crivitz where he uses an ICOM 706 to a G5RV on HF and his ICOM W32A HT to work their repeater.

So what does Vic like most about “hamming”? Learning new things, meeting new people on the air and new experiences – like being a part of the circus train “ham” crew.

## Was Professor Ed's class a success?

Ed Rate again conducted an entry-level program to guide the "interested" into "ham" radio as a hobby. The program presents everything you need to know to be a "ham". Was it a success? The following six new "hams" thought so. Our congratulations to Ed and the following students of the 2002 ORC Hamclass that recently received their Technician Class Licenses.

KC9CBE Tim O'Connor  
N50W6448 Western Road, Cedarburg WI 262-376-0729

KC9BTF Angie Skrentny  
515 River View Place, West Bend 262-338-8586

KC9CBC Carol Szudrowitz  
W55N865 Cedar Ridge Drive, Cedarburg 262-377-6792

KC9CBF Barb Patrick  
N143W6175 Pioneer #1, Cedarburg 262-375-5527

KC9CBD Will Krainz  
214 Roger Street, Port Washington 53074

KC9BQA Todd Sprinkmann  
5188 Boettcher Drive, West Bend 53095 262-644-6094

## No. 102. 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 ----- (Extracted from and continued in the July issue of the Badger State Smoke Signals or at [www.bsbs.org](http://www.bsbs.org))

## Upcoming Events

09/13,14 & 15 – Peoria Superfest– ARRL Central Division Convention and Flea Market @ Peoria IL. - <http://www.w9uvi.org>

09/21-22/02 – FM Club Swapfest-Grayslake IL

10/9/02 – South Milwaukee auction - American Legion Post (same as swapfest).

11/02/02-MRC Swapfest – Waukesha Expo

01/04/03 – WARAC Swapfest–Waukesha Expo

## Cedarburg to Texas on 2?



At our June meeting, Jack Hughes (W9JAC) of Hubertus explained how to "work the world" on 2 meters via his node #755 and the Internet. Monitor his repeater on 146.85 and you too can witness the fun – better yet, get the \$130 dialup board with cables etc. and be a part of the action. To learn more, go to [www.85Rprr.com](http://www.85Rprr.com)

## For Sale, Trade or ?

**ICOM 736** – Great HF rig with electronic keyer, mike, manual and original box - \$480 – Contact Harry Frank, AA9SF at (262) 675-6056.

WB2MSV is now a silent key and his son is settling his estate. This includes an **FT657GX**,

**ICOM EC-251A and an Ameritron ALS-500M.**  
These and other items may be seen at  
[www.mattmilw.com](http://www.mattmilw.com).

Contact Matt Phillips at 414-352-6087

**Kenwood TS520** station – Don Belstner  
(W9VSC) @ 262-377-0426

**ICOM 745** transceiver – Ben (K9UZ) @ 262-242-6000

**HT202X** – 2 Mtr. HT – \$75 - Leon (K9GCF) @ 262-377-1080

## Web Sites of Interest

| Site                                                                                                                                | Comments                  |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <a href="http://dmoz.org/Recreation/Radio/Amateur/Boatanchors/Heath">http://dmoz.org/Recreation/Radio/Amateur/Boatanchors/Heath</a> | Listing of Heathkit sites |
| <a href="http://www.robotics.com/cha-ir/">http://www.robotics.com/cha-ir/</a>                                                       | Robotics                  |
| <a href="http://wi-aresraces.org">http://wi-aresraces.org</a>                                                                       | OZARES                    |

## Wanted

Three associate editors – one each for the “Contesting”, “Projects” and “Just Another Shack” columns. Another area of interest would be an associate editor for an “equipment and software review” column.

## Logging Software Review

By Tom Ruhlmann, W9IPR

When we moved from South Milwaukee in 1986, I sold all my old HF equipment (which I still regret) and tended to business rather than pleasure. It wasn't until in 1997 that I borrowed my mothers old Heathkit HW100 and started to get back on the air with dipole and a manual log. It wasn't long until I replaced the HW-100 with a Kenwood FS930 and started working DX and wishing the logging activity was more convenient. Then came the old Compaq 486 laptop and the FT1000MP. Now enters the need for computer logging software that interfaces with the transceiver to record frequency, mode, date and time.

After reading several ad's and a couple of reviews I downloaded a sample of “Log – EQF” logging software. Did I eventually buy the full-blown copy? You bet and here's why.

While it is capable of controlling the rig, TNC and PacketCluster operation and antenna switching and rotor control – I don't use those more sophisticated functions. What I like is that when I key in a call sign, it directly interfaces with the database on the SAM, HAMCALL, AMSOFT or QRZ CD's. It then gives me an immediate indication of who is the other operator and their license class, birth date, location, distance, direction to point the beam for short and long path and if we have had a previous QSO. It's really great. As you tune the band the frequency is continuously displayed on the PC screen and it notifies you if you tune out of the band.

If you are into awards, like DXCC, you can do a sort on that award and it can provide a print out of the contacts/countries etc. made vs. those countries remaining and then provide a print out of the status.

If you are into contesting, you can create a log per contest and have it automatically calculate the multipliers etc. to develop your score. It will then upon request provide an ASCII disk file for submitting of the contest log.

And when all the dust settles, this software can be used to print out labels with the confirmation of the contact by time, frequency, mode etc. and the QSL card labels for all the selected contacts. It even records that the QSL cards sent and which have been received and uses this information in the awards portion of the software.

I think it's great and well worth the \$59. So what does it take in terms of equipment? Make sure your rig has a data port to interface with the serial port of the PC. The computer needs to be PC compatible (needs a 286 processor or higher). The operating system needs to be DOS 3.0 or higher, Windows 3.1, 95 or 98 or OS/2. One floppy drive, hard drive and CD drive if you are going to use the “HamCall” or other database.

Go to [www.eqf-software.com](http://www.eqf-software.com) and download a freeware copy – give it a try – I am sure you will find it to be as truly excellent as I did.

## Tips and Tails

Need an insulated ¼" shaft coupling? I just tried some ¼" plastic tubing and it works great. I didn't even need clamps.

Can't remember which cables go where when you go to reconnect? I just purchased 5 different colors of plastic tape in a single package for \$1. Color-coding works every time.

## An Excellent Corn Roast!

by Jane Rediske KB9SYI

For those of you who did not make the Sunday corn roast, postponed from Saturday, we are sorry and apologize if you did not hear us announce the change on .97 early in the day. In the future we will work out a postponement process so we don't miss anyone.



Thanks to all who helped make the Sunday corn roast fun, delicious and safe, on one of our summer's most perfect weather day. Stan, WB9RQR staked out the picnic area at 6:30 am both days. Ed AA9WW and grandson Jake KB9ZOR met Jane KB9SYI at the barn to haul the ORC sup-

plies to the site, Cindy KA9PZG and Skip KA9DDN came to relieve Stan and set up the cooker, grills, tables and amenities...they've got this down to a science! Herb, WA9UVK, brought a whole trunk full of kindling even though he could not stay for the food and fun. What a guy! Ed AA9W worked wonders to get several bushels of good corn, and Skip waved his magic wand over the cooker to make it absolutely delicious! Dave N9UNR once again came through with a car full of soda, beer and ice....we can always count on him! Stan manned the grills for the hamburgers, brats and chicken, with assistance from Gary WI9M. Each family and/or individual is to be thanked for coming and bringing a dish to pass as well. Lots of relaxed visiting took place before the much appreciated clean up crew went into action, consisting of Cindy, Skip, Karen K9GOV, Gary WI9M, Leon, K9GCF, and Ed AA9W. They secured the area and tied the ribbons on a beautiful afternoon.

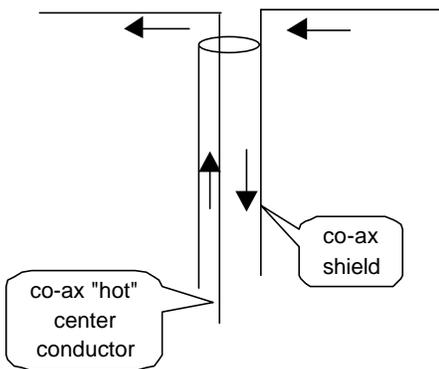
## Baluns – Who needs them?

You may if:

1. you can detect RF on the shield of your co-ax feeding the antenna.
2. you measure different SWR's when using different lengths of co-axial feedline.
3. your co-ax feedline does not form a 90-degree angle with the antenna elements.
4. listeners note RF distortion of your audio
5. you get little shocks if you touch the transmitter case while transmitting
6. you just can't reduce the SWR to a reasonable level when loading the antenna.
7. Or you want to avoid stringing open wire or ladder line feeders from your Zepp or G5RV antenna through the house.

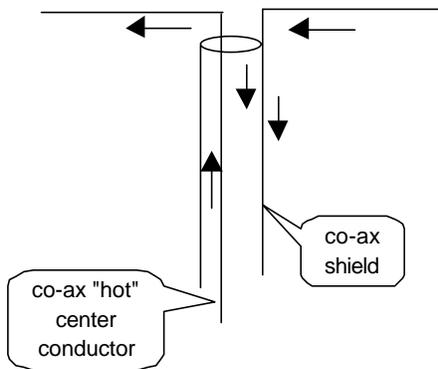
Most of today's transmitters have an "unbalanced" output. That is, there is the center "hot" conductor and it carries an RF voltage relative to ground and a grounded shield. When using co-ax to feed a "balanced" (electrical symmetrical) load like a dipole antenna, the RF current will flow up the center conductor to one side of the dipole. The return current, which is 180 degrees out of

phase, will flow from the other side of the dipole down the inside of the co-ax shield to ground.



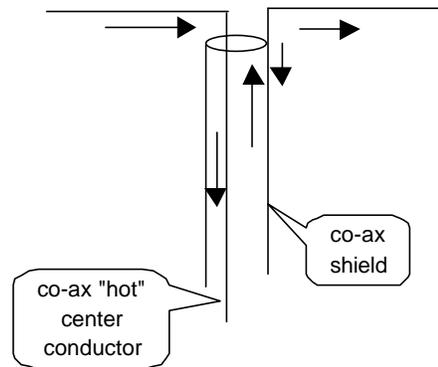
Under these perfect conditions the RF field created about the center conductor will be 180 degrees out of phase with that created by the return current along the inside of the shield and the two fields will cancel resulting in zero net radiation from the co-ax feedline.

However, in the real world, some of the return current will also flow down the outside of the coax shield and this will result in an RF field being radiated from the outside of the co-ax feedline.



The problem is further illustrated below where the RF current down the center conductor from the left-hand element is equal to the RF current flowing upward on the inside of the coax shield. However, where the coax shield ties to the right hand element of the dipole the current on the inside of the coax shield goes partially to the right hand element and partially to the outside of the shield back to ground. Others have measured the current in the right hand element to be as little as

60% of that which was flowing in the left-hand element. The other 40% of course is flowing down the outside of the shield resulting in a lesser vertically polarized radiated pattern.



If the co-ax feedline is perpendicular to the antenna elements, the shield will act as the vertical part of an inverted "L" and as you can see, the antenna is obviously unbalanced. That is, the two halves are not symmetrical with respect to ground. Although this radiation from the vertical shield may distort the actual net radiated pattern of the antenna, it may still load with an acceptable SWR when using a tuner. Let's face it, there are thousands of dipoles fed in this manner and while they may not be optimum, they seem to have been "getting out" just fine.

However, when the co-ax feedline forms an angle with the horizontal portion of the antenna elements it may receive and re-radiate some of the transmitted signal. While this would cause additional distortion of the antenna total radiation pattern, it can also create a high SWR and serious difficulties in loading the antenna. Additionally it can introduce RF into the shack, which can result in audio distortion problems and hot spots (burns) when touching the equipment during transmissions. This is further exacerbated in the presence of poor RF ground at the shack.

This problem does not exist with a balanced transmitter output, where both output lines are referenced to ground, and a "balanced" open wire (e.g. ladder line) feeder is utilized. In this case each of the parallel feed wires carries an RF current that is 180 degrees out of phase with the

other and the field about one wire is then canceled by the opposing field about the other wire.

A “balun” is a transmission line transformer that allows a balanced load, such as a dipole antenna or an inverted V, to be fed by an unbalanced source, such as the coax from the unbalanced output of most modern transceivers. The “balun” will present a high impedance and will “choke off” any RF current attempting to flow on the outside of the shield of the co-ax feed.

There are several forms of “balun’s.” For mono-band antenna, these range from a  $\frac{1}{4}$  wavelength metal sleeve (bazooka) around the co-ax feed line to a  $\frac{1}{4}$  wavelength section of co-ax in parallel with the feedline at the antenna. A  $\frac{1}{2}$  wavelength section could also be used to perform the “balun” function and “phase” the two halves of the antenna. However, these techniques are seldom used because most HF enthusiasts use a multi-band antenna.

A multi-band antenna requires a “broadband” balun. This could be a set of air core coils as used to be sold by Heathkit. The model shown also provided a 4:1 impedance transformation. For example, it would transform the 300 ohm input impedance of a folded dipole to 75 ohms as seen by the transceiver output. However, this technology has been essentially replaced

by the smaller balun’s wound on ferrite cores or the use of ferrite beads (donuts) placed around the co-ax at the antenna. Again, the essential function of these balun’s is to present a high impedance to RF currents that might appear on the outside of the co-ax shield and choke them off before they enter the shack.



**Heathkit Aircore 4:1 Balun**

Perhaps the simplest of the broad band balun’s is just a several turn coil of co-ax in the feedline. We will discuss these simple 1:1 balun’s next month – stay tuned.

## **Next Meeting – Sept. 11**

**By Leon Rediske K9GCF**

**PROGRAM:** Hear YE, HEAR YE.....All folks need to bring in their HT’s, Mobile rigs, IC-706’s, FT-100’s etc. For a frequency check, deviation check, PL deviation assessment, Power Output, etc. Nels, WA9JOB has volunteered to check everyone’s rig at our September Radio Clinic. So here is your golden opportunity to have your favorite rig checked.....for free...One rig per customer until everyone is served once.

Please have adapters to adapt your output to a BNC connector, if your rig uses a threaded, or odd connector. If your rig is not battery operated, bring your 12-Volt cable with ends to connect with a power supply. Bring your mike also.

Nels will also speak about what needs to be checked, and just what is a deviation check, PL deviation assessment, etc. So if you’re not knowledgeable about these parameters, come and learn to sling around these terms with the best of the hams! Did I mention it’s FREE?

## Upgrade to General?

The following questions are extracted from the ARRL General Q&A handbook.

G9A02 Approximately how long is the driven element of a Yagi antenna for 14.0 MHz?

- A. 17 feet
- B. 33 feet
- C. 35 feet
- D. 66 feet

B. The driven element of the Yagi antenna should be  $\frac{1}{2}$ wavelength. To find this length in feet, use the formula:

$$L \text{ ft.} = 468/f(\text{in MHz}) = 468 / 14.0 \text{ MHz} = 33.4 \text{ ft.}$$

G9D09 What standing wave ratio will result from the connection of a 50-ohm feedline to a resonant antenna having a 200 ohm feedpoint impedance?

- A. 4:1
- B. 1:4
- C. 2:1
- D. 1:2

A. If a load on a feed line is purely resistive, the SWR can be calculated by dividing the line characteristic impedance by the load resistance or vice versa, whichever gives a value greater than one. E.g.  $200 / 50 = 4:1$  SWR

## Club Static

By Leon Rediske K9GCF

Gregg Lengling, W9DHI, is recovering after back surgery. As of this writing, he's not yet allowed to drive, so his bride Deborah has been driving Gregg to work. Here's to wishing you relief of your pain, and a speedy and complete recovery, Gregg. (K9GCF)

The ARRL announced the time/date of our clubs broadcast of the ARRL audio news on its national distribution. Hey, gang, everyone in the nation knows of the Ozaukee Radio Club! Nice touch, ARRL!

(K9GCF)

Chub Osthelder "Chub", KG9MS, recently graduated as an Electrical Engineer and had a Pig Roast as a celebration. It was a well attended event; just "everyone" was there! Congratulations Chub!!

## Aug. 14th Meeting Minutes

By Nels Harvey, WA9JOB, Secretary

Call to order and introductions:

The meeting was called to order at 7:36 PM at the Grafton Senior Center by President Leon Rediske, K9GCF. Introduction of members and guests was made.

Events and Announcements:

The Fish Day Committee donated \$150.00 to the Club in appreciation of our assistance at the event. .

The ARRL has renewed the Ozaukee Radio Club as a Special Service Club for another two years.

Marty, WD9BCV, is looking for help for the Boy Scouts Jamboree On The Air (JOTA), September 14, 2002. Bob, W9RNA has volunteered to help. Leon, K9GCF, requested suggestions on how to repair a fiberglass antenna surface. Dave, N9QA, recommended marine epoxy paint.

Leon appointed the Corn Roast assignments. Cindy, KA9PZG, was to get the meat, Ed, AA9W, corn, Dave, N9UNR, beverages, Stan, WB9RQR, secure the site early, Herb, WA9UVK, firewood, and Ed, AA9WW, help with hauling equipment. The Corn Roast is scheduled for Saturday, August 17, with the rain date Sunday, August 18.

### Program:

Stan, WB9RQR, and Tom, W9IPR, gave a program on antenna tuners. Tom demonstrated a project he had built last winter, and the project was very neatly contained in a salvaged metal box. Stan distributed a paper with different tuner circuits, and a brief explanation of how they worked. He showed some tuners that he had built, and some used by other members of the club.

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

**Minutes:** The minutes of the last meeting were accepted.

**Treasurer's report:** Dave, N9UNR, moved to accept, subject to audit, and Cindy, KA9PZG, seconded. The report passed by voice vote.

**Repeater Report:** The Hwy. KK & LL link has been placed back on the air. The signal from the link frequency was heard in the Green Bay WI area, and the Frequency Coordinator questioned the operation. It was determined that the operation was as coordinated, and that the signal didn't pose interference. The proposed Ch. 10 tower link site is finally moving ahead, and a link can possibly be set up there this year yet. (Secretary's note: The 146.97 repeater has new final tubes installed. This wasn't mentioned at the meeting).

**OZARES Report:** None. Jon, KB9RHZ, announced a mission change in the organization. He wants to establish an exclusive response team to be involved at St. Mary's Hospital, Ozaukee (SMO). Team members will be trained specifically for that task. If desired, they will be separate from other OZARES preparedness measures. There will be a disaster drill at SMO on September 28.

**Scholarship Report:** Dave, N9QA, announced the latest recipient of the ORC Scholarship Award, through the Foundation of Amateur Radio (FAR). The winner is Andrew A. Knitt, KB9JOZ, of Rhinelander, WI. Congratulations, Andrew.

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

**New Business:**

Cindy, KA9PZG, moved, and Jane, KB9SYI, seconded a motion to give the Fish Day Committee donation to the Scholarship fund each year. Tom, W9IPR, moved, and Ernie, K9LO, seconded an amendment to be for this year only. The amendment passed by voice vote, as did the original motion as amended.

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

**Next Meeting:** The next meeting will be held on September 11, 2002, at the Grafton Senior Center.

**Attendance:** Nels, WA9JOB, Dave, N9UNR, Bernie, AA9CI, Tom, W9IPR, Gene, KB9VJP, Bob, W9LO, Terry, KA9RFM, Ray, W9KHH, Don, W9VSC, Dave, N9QA, Herb, WA9UVK, Paul, KB9WCC, Ed, AA9WW, Gabe, WI9GC, Ted, KB9RLI, Ed, AA9W, Ted, KA9UCD, Jane, KB9SYI, Stan, WB9RQR, Leon, K9GCF, Cindy, KA9PZG, Jim, N9WIU, Carol, KC9CBC, Ed, AA9GT, Todd, KC9BQA, Keith, KY9P, Ernie, K9LO, Jake, KB9ZOR, Kent, N9WH, Jon, KB9RHZ, Peter, KB9URH, Joe, AA9HR, Vic, KB9UKE, Bob, W9RNA, Joe, KB9URC, James, KA4UPW, his wife, Pam, and son, Andrew.

## **AGENDA**

*September 11, 2002*

1. Call to order.
2. Introductions.
3. Announcements, Upcoming events, Etc.,
4. Program: Nels' Radio Clinic by WA9JOB
5. Fellowship Break
6. Auction.
7. Acceptance of Minutes as printed.
8. Treasurer's report – Gabe (WI9GC).
9. Repeater report – Dave (N9QA)
10. OZARES report – Jon (KB9RHZ).
11. Committee reports.
12. OLD BUSINESS
13. NEW BUSINESS.
14. 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, Sept. 11th**

**7:30 PM**