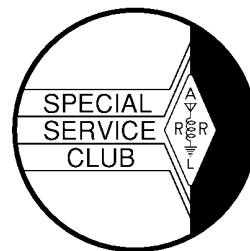


The *ORC* Newsletter

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: www.ozaukeeradioclub.org

Volume XXVI

August 2007

Number 8

The Prez Sez

By Tom Ruhlmann (W9IPR))

July started a great month for hamming with the annual South Milwaukee Swapfest on July 7th. I didn't seem to find any treasurers this year but we (Gabe, WI9GC; Ray, W9BUJ and I) did distribute a couple hundred flyers for our September 15th swapfest. They estimated over 1000 attended the SMRC event. If we can draw just a third of that we will have a big success.



The SMRC outdoor swapfest was a great success with plenty of sunshine, vendors and buyers.

Other than the SMRC event it became a month of planning including the September Swapfest committee meeting and a Board meeting at the end of the month.

I have been consulting with a CPA and active volunteer in the community and the Board is currently considering several proposals for fiscal guide lines to be used by the Board in the future.

Pat and I spent a week at the Oshkosh EAA Airventure volunteering in the AirMart. Unfortunately, I didn't have a chance to get over to the

Pioneer airport where the Fox Valley ARC operated a special event station.

We did receive a letter of congratulations from the President of the Fond du Lac ARC (Gene Olig, KD9ZP) related to our winning first place in the WI QSO Party contest. I will read it at our membership meeting. They have won the contest these past four years and now it sounds like we are rivals – it couldn't be with a better club. Gene claims they plan to redouble their efforts next year in that they had planned to win 5 in a row and now must start over.

I was also pleased to receive notice from the ARRL Scholarship Foundation that Natalie Harding of Burlington WI was awarded the ORC \$1000 scholarship. More on that next month.

The main ORC event for August? Naturally it's the ORC Lighthouse Activation at Port Washington August 4th and 5th. See you there.

WISCONSIN QSO PARTY

The official results are out, and ORC took the lion's share of the honors. First place in the Club Competition, first place in the Single Operator Fixed category (plus 2 others in the top 10), and 9th in the Single Operator Mobile category. N9FH took the first place plaque in the single operator category, while W9XT and W9LO were 5th and 7th, respectively. WI9M scored in the top 10 in the Single Operator Mobile category, and KD9FM won the Most Improved Club Member award by increasing his score by 15,516 points over his 2006 score.

MULTS CW SSB SCORE

N9FH	102	347	136	126,990
W9XT	98	269	122	97,020

W9LO	85	295	0	75,225
K3GGN	66	214	0	42,872
W9VBQ	66	248	34	32,670
K9GCF	61	68	112	22,692
WI9M	46	98	0	16,524M
KD9FM	66	2	161	16,355
KC9DKQ	62	0	139	12,927
W9IPR	52	0	135	10,530
W9KHH	35	51	0	5,355
KA9WRL	43	0	80	5,160
AA9WW	20	0	55	3,650 M
AA9CI	43	0	55	3,547.5
WQ9N	34	0	63	3,213
WB9RQR	25	0	41	1,537.5
AA9W	31	0	31	1,441.5
W9NRG	9	0	13	743 M
AA9PW	6	0	10	240
N9WH	12	0	13	234

It was a great club effort. Congratulations to everyone who participated. ORC submitted 20 logs this year—let’s try for 30 next year.

MORE FIELD DAY STUFF

De Bob Truscott, W9LO

Some of you know that I have been operating a second career business as a consultant for low power (LPTV) stations since I retired about 17 years ago. What this means is that I do the engineering work necessary to support FCC applications for new LPTV stations or changes in existing facilities, planning and installing or supervising installation of their RF systems (I don’t climb towers), and helping out with other technical problems that LPTV people might have. I mention these things because it was through this activity that I was able to instigate a little Field Day mischief this year.

I was rushing to finish up a job for a new station in Mississippi just prior to Field Day. The problem was that the antenna and transmitter had to be installed, after which I must file the application for the station license no later than June 24, the expiration date of the construction permit. We hired Harold, a local guy who climbs towers and knows how to make transmitters push pictures through the air, to take care of the installation. He called me when he arrived at the tower site on Wednesday afternoon, at which time I

explained the urgency of the timetable, and added that he must finish the installation by the following afternoon because I would be out of town (That meant the Lazy Days Field Day site, but I didn’t tell him that.) on Friday. He said “don’t worry about that because I have urgent business at another site on Friday myself, and have to leave here late Thursday afternoon to make it.” He promised to call me the minute he got the rig on the air.

And true to his word, Harold called me about 1:00 PM on Thursday to report that the job was successfully completed, and the station was on the air. I was then able to file the FCC license application later that day. But first, Harold & I took time to chat for about an hour, and get acquainted. He was a “Good Ole Boy” who liked to talk, and I like to listen, so we did those things. Harold turned out to be K5GVR, and his urgent business on Friday was to set up his club’s Field Day station. That opened the floodgates, so to speak, and we exchanged Field Day lies for about 30 minutes, after which I began to feel like we were old buddies. It was then that I saw an opportunity for a little Field Day fun. I told him I had bet six packs with the phone guys that our 40-meter CW station would outscore them. I asked him to look for W9LO on the 20 & 40 phone bands, and to engage the operators in as long a conversation as possible, so as to slow them down and help me win the bets. He thought that was a great idea, and agreed to have a little fun with it. It made for good conversation, but I had little confidence that it would ever happen.

Sometime on Sunday morning I went over to the 40-phone area and joined the bunch of BS’ers who had gathered there. That’s where the BS’ers always gather to tell lies about how well their stations are doing. You’d think from the way they talked that I had already lost about 10 cases of beer. Then Tom, W9IPR, addressed the group—he said something like “a guy in Mississippi called me a while ago and said Bob Truscott asked him to work you guys and make small talk for as long as you would listen because Bob had bet a six pack that his team would beat the phone guys, and he wanted me to slow you down.” The guys in the group thought Tom was just telling one of his usual

stories, and I'm not sure they believed me when I told them everything he said was true.

I guess I owe Harold a beer because his stalling tactics apparently worked—we did beat Tom's crew. But I learned something from this episode—DON'T MESS WITH TOM! I now understand why he turned his dog loose to attack me in the CW tent. I hope he doesn't bring his pit bull to Field Day next year because I have a long-term agreement with Harold, and will be actively recruiting volunteers from around the country to aid him in his good work.

New Members

One of our newest members is Doug Burghardt of Erin Wisconsin. Doug first got interested in "radio" as a result of receiving a crystal set from his older brother as a kid while growing up in Wauwatosa.



Then he built a Heathkit AR-3 when he was about 15. Although he got a degree in economics from Purdue University his career in computers started in 1962 when he received IBM mainframe maintenance training while in the Army. Currently Doug operates his own company providing custom software for pharmacies.

He got his first HAM license in 1967 with the help of Lloyd, WA9JKD. Over the years he has held the call signs of WA9WWC, WB8YBQ, KB9KBA, W9DMB and now N9KG. Currently

Doug holds an Extra class license and operates out of his "shack" in Erin WI.

For rigs he is running a Yeasu FT2000 driving an Ameritron ALS-600 amplifier as well as an ICOM 706 MkIIIG with an MFJ 994 auto-tuner and a Kenwood TS580. He just put up a new 50 ft. Tower and for antenna is using a Tennadyne T8 and T28 for beams and a 266-ft. Doublet for HF.

Doug and his son in-law spent much time at field day in Leon's 20-meter phone tent and as a result of a discussion with Bob Truscott (W9LO) he has written some special logging software. Hay, we have another computer guru in the gang.

To learn more about this new member you can go to his home page at www.N9KG.com. He has a great series of photo's related to building his tower base.

Another Antenna Tuner

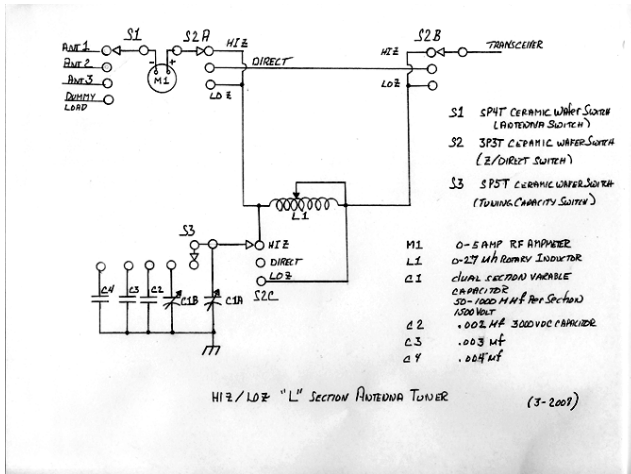
De Tom Ruhlmann (W9IPR)

I have built a couple of tuners following the "T" type circuits and "Ultimate" "T" type tuner designs in the ARRL Handbook and they have performed well. However, I read a couple of articles in QST related to "T", "Pi" and "L" section tuners and related losses etc. and I was influenced to build an "L" type tuner due to its lower losses and ease of tuning. Then I bought the ARRL Antenna handbook with the "Tuner Analysis" software and it confirmed the lower losses when using the "L" type circuit and that by placing the single shunt variable capacitor either at the input or output side of the tuner a wide range of impedance's can be matched successfully. One disadvantage of the "L" type tuner is that it may require a large shunt capacity – more than can be supplied with a typical high power variable capacitor. Therefore, it presents an opportunity to use some of the switches and transmitting capacitors in my junk box.

The need for another tuner arose from the desire to run my Heathkit SB-201 600-watt HF amplifier as driven by the FT-847. The tuner to

be built must be possible using parts available from my reserve stock (junk box).

and 0.004 microfarads and 2500 VDC or better ratings.



The "L" designation relates to the orientation of the inductor (L) and capacitor (C) in the circuit. Notice that the capacitor can be switched (S2C) from the input of the circuit to facilitate matching low impedance loads to the output where it accommodates matching high impedance loads.

The design was to provide routing the power directly through the tuner for minimal losses when the antenna was resonate at the frequency and when not resonate, for switching in additional transmitting type capacitors in parallel with the variable capacitor to extend the impedance matching range. In addition, I wanted to switch between several antennas.

Since I had a surplus variable inductor from WWII equipment (29 microhenry's) that would be the series element.

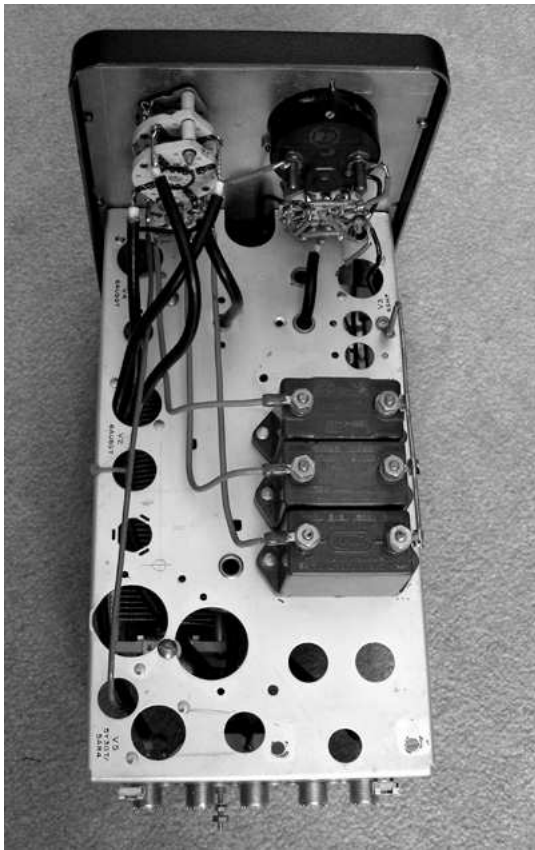
The variable was dual gang, 40 to 1000 microfarid per gang unit that came from I can't remember where. The plate spacing was approximately 0.015" so I figured it should be good for about 1000 volts without arcing. This means that I will need to tune to a match using very low power prior to application of full drive.

The transmitting capacitors to be switched into parallel with the variable capacitor were also of WWII vintage and had ratings of 0.002, 0.003

The case? It was that from an old HP audio generator with a new panel cut from a salvaged 19" rack aluminum panel. The HP Audio Oscillator deep cabinet was perfect to accommodate the longer variable inductor and variable capacitor components.

The meter is a surplus RF Ammeter rated at 5 amps because that is what I had. It is a bit large for running 100 watts (only indicates 1.4 amperes) but should be just fine at higher power ($I^2 R$ or $3^2 \times 50 \text{ ohms} = 450 \text{ watts}$ at 3 amps indicated). In any event, tuning for maximum power is indicated by maximum current and that will also be minimum SWR.

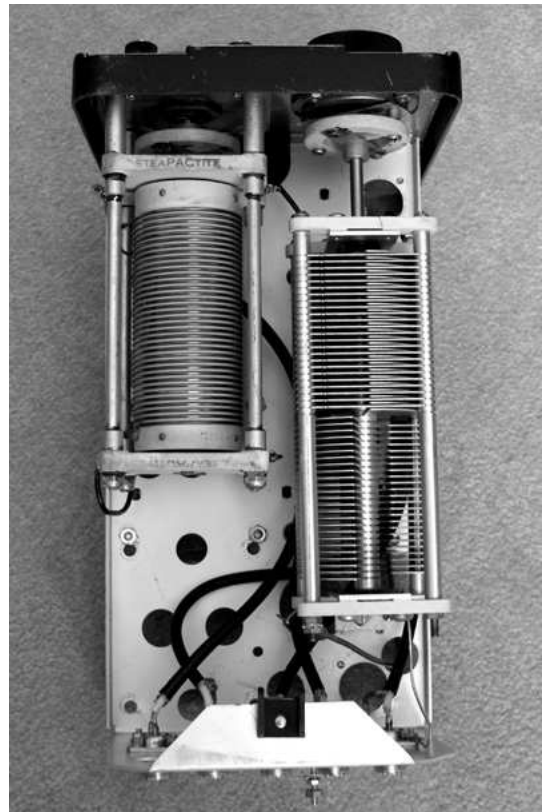
This inside top view shows the original chassis with all the component and tube sockets removed and replaced by the three transmitting capacitors and wiring. The dual wafer ceramic switch in the upper right is for antenna switching. The contacts on the wafers are connected in parallel to handle the antenna RF current safely.



The assembled unit appears as shown in the photos but how would I know it works with my antennas?

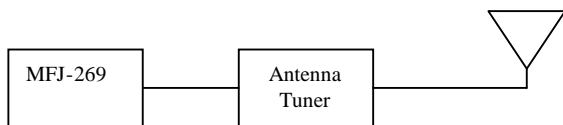
To assure it would match my various antennas and obtain the initial "L" and "C" settings I used an MFJ-269 I borrowed from Dave Barrows (N9UNR).

This bottom inside view shows the surplus variable inductor and the dual gang variable capacitor. The forward gang is in the circuit at all times and the second gang or one of the fixed transmitting capacitors are switched in when more capacity is required.



I used the "269" because it provides not only the SWR of the antenna but also the resistive and reactive values and allows more accurate setting of the antenna tuner to match the antenna.

The process was simply to set the MFJ to the frequency of interest using the desired antenna without the tuner in the circuit. If the SWR is above 1.2:1, switch the tuner into the circuit and adjust the Antenna Tuner for the optimum match (lowest SWR and reactance). I repeated this process with each of several antenna and frequencies so that in operation, I can make initial adjustments to assure an approximate match prior to application of power. That minimizes the probability of voltage arcing in the variable capacitor.



Test setup to obtain initial tuner settings per antenna configuration.

It was a lot of fun to design this tuner using my available parts and it will serve a purpose. Am I using it? It has replaced the Kenwood tuner I was using but I have not yet connected the amplifier. It is more than adequate for my various antennas but once I figure out how to fully utilize the software in my ARRL Antenna Handbook I will know it's full capability.

For Sale, Trade or ?

Ray, W9BUJ, is looking for a Collins 30L1 and a Drake L4B. If you have or know the whereabouts of either item please call 262-377-5777.

If you have some stuff to sell bring it to the ORC Sept. 15th outdoor swapfest at Fireman's Park. The ORC will also have a consignment table for members.



Uniform Chairman, Ed Frac (AA9WW) and Tom Ruhlmann (W9IPR) display one of the new ORC club jackets, with members name & call and with the ORC logo, which are available to the members for \$52.80. Also available are matching ball caps with the members name & call plus the ORC logo for \$15. Contact Ed to place orders.

Upcoming Events

August

4th-5th ARRL UHF Contest

4th – 5th **ORC Lighthouse Activation at Pt. Washington**

5th Bolingbrook Swapfest @ Bolingbrook IL

8th **Membership Meeting**

11th Circus City Swapfest – Baraboo WI

18th **ORC Cornroast**

North American QSO Part



This is the Lighthouse to be activated by ORC members Tom Nawrot (AA9XK) and Paul Schumacher (KD9FM) at Port Washington Aug. 4th & 5th. Everyone is invited.

September

8th-9th ARRL VHF QSO Party

5th **Membership Meeting**

9th North American Sprint – CW Contest

15th W9DXCC conv. at Elk Grove Village IL

15th **ORC Outdoor Swapfest @ Fireman's Park**

16th North American Sprint – SSB Contest

16th OZARES Bike Ride

15th & 16th Peoria Superfest @ Peoria IL

29th – 30th Chicago FM Club Swapfest @ Belvidere @ Boone County Fairgrounds

October

11th **Membership Meeting**

14th CQ WW RTTY Contest

20th – 21st **JOTA Boy Scout "on the air" Weekend @ Pioneer Village**

TBD ARRL International EME Contest

Repeater Committee Report

The following report has been submitted to the Board by our Repeater Vice President, John Schrader (W9NRG) on behalf of the appointed repeater committee.

The club currently owns and maintains 3 FM repeater systems, 2mtr/440 MHz/220 MHz.

The committee assigned to assess a 5-year outlook plan came to the following conclusions:

2 Mtr. FM Analog System

Purchase 4 UHF GM300 radios for future replacement for links.

Purchase 3 VHF GM300 radios for future replacements.

Purchase SCOM 7370 repeater controller for main site (retain old 7K's for spares)

Notes: While there are still some small adjustments needed at some of the sites of this system, the repeater is functioning well and has excellent coverage and continues to serve the club members and its needs. Estimated replacement cost of all equipment currently in the ORC possession is approx. \$8000.00

UHF (440 MHz) Repeater

No change recommended – keep active at same location.

220 Repeater

Need to purchase and replace the phasing harness and return the existing harness to the club member. Keep site active at current location.

Digital Radio Repeater

The committee recognizes the advancements being made in the area of D-Star and P-25 digital radio. After assessing the costs for making a move toward digital for club members and infrastructure, we are recommending no action at this time but feel an annual review of this technology be in order for future possibilities.

Alternate repeater Technologies and Options

APCO P-25 digital voice, EchoLink, IRLP and Winlink PBO/Telnet.

There was no interest in adding these features to any of our current or future sites.

The



Column

By Stan Kaplan (WB9RQR), Column Editor

JULY MEETING: A very successful training session, headed up by Skip (KA9DDN) in the ECC and Ray (N9PBY) in the MCT. The members were split up into teams of two. One team sat in the ECC; the other in the MCT. Each team had to turn on their rigs and dial in the appropriate frequency. Each person in the ECC got to send two pre-prepared messages, with the aim at the other end to receive the messages verbatim. Each person in the ECC then received two messages from the MCT. When all four persons had both sent and received, the rigs were powered down and another pair of teams took over. It did not take long to have everyone present practice, and all agreed it was a very valuable exercise. More are planned for future meetings.

Ninth Annual Wisconsin ARES/RACES Conference will be held Sat/Sun, 27/28 October in Neenah at the Kimberly-Clark Corporation. Your column editor started this conference back when I was Section (state) Emergency Coordinator, after Dave Barrow (N9UNR) suggested it. This year will be the first time the conference spans two days. It is open to all those interested in ARES/RACES, and it promises to be well worthwhile. Nancy and I are planning to attend. Pre-registration is required. See wirespaces.org for details and the registration form.

NET CONTROL SCHEDULE: OZARES nets are held each Thursday at 8:00 p.m., except on meeting nights (4th Thursdays). Both a net script and check-in list can be obtained on the OZARES web site, www.ozares.org. If you are scheduled for NCO duty and cannot make it, it is your responsibility to find a substitute. Check the complete schedule on the web site for possible hams to trade dates with. Guests are welcome after the OZARES check-ins are complete, most especially ORC members!

02 Aug N9UNR
09 Aug KB9URH
16 Aug N9VBJ
23 Aug Meeting
30 Aug W9VBQ

06 Sep K9VIN
13 Sep KB9VJP
20 Sep AA9W
27 Sep Meeting

04 Oct KB9WBQ
11 Oct N9WIU
18 Oct AA9XK
25 Oct Meeting

ORC Regular Meeting

July 11, 2007- De Nancy Stecker (KC9FZK)

Mark (AB9CD) presented an Elmering session titled Transistors 101 before the regularly scheduled meeting.

President Tom Ruhlmann (W9IPR) called the July 2007 meeting of the Ozaukee Radio Club to order at 7:32 p.m. Members and guests introduced themselves.

Announcements etc: Mike (AB9ON) introduced Carol Steck, representing Port Washington Fish Day, who asked for 4 or 5 volunteers to assist at the parade beginning at 8:00 a.m. on July 21. Six members of the club responded. Kent (N9WH) proudly announced that his daughter Enid (KB9TDC) gave birth to a baby girl. Ed (AA9WW) displayed a solar panel. Upcoming events noted include: July 21-Fish Day, July 31-Board Meeting, August 4 & 5-Lighthouse Activation, August 18-Cornroast and September 15-ORC Outdoor Swapfest.

Program: Lighthouse Activation: Tom (AA9XK) introduced Linda Nenn, a volunteer and activist with the Port Washington 1860 Light Station. She spoke of the history of the lighthouses in Port Washington and the work involved in re-creating the building back to the 1860's. A sign-up sheet was on hand for volunteers who wanted to take part in the lighthouse activation at Rotary Park in Port Washington on August 4th and 5th. A QSL card that was photographed and designed by Mike (WJ9O) for the event was passed around.

Fellowship Break: Members enjoyed a short break.

Auction: Stan (WB9RQR) held the monthly auction of donated material. Jim (K9QLP) won the 50/50 drawing.

Business Meeting:

The chair entertained a motion to approve the minutes as printed in the July newsletter. Nels (WA9JOB) made a correction to those minutes to read that Mike (AB9ON) has upgraded to Extra not General as printed. Hearing no objections, the minutes were amended. The minutes were approved as amended.

Treasurer's Report: Nels (WA9JOB) placed copies of the budget on tables for members to examine. He explained some line items and reported on late field day expenses. Dave (N9UNR) made a motion to accept the report; Kent (N9WH) seconded the motion, the motion passed. The president thanked the treasurer for the informative budget.

Repeater Report: In the absence of the Repeater Vice-President John (W9NRG), Jim (K9QLP) stated that the 220MHz repeater is up and working although not used very often,

Committee Reports:

Corn Roast Committee: Ed (AA9WW) will chair this event and would like some help. He suggested having a door prize and a FoxHunt prize. It was also suggested having games for the younger children.

Swapfest Committee: Tom (W9IPR) sent out an organizational chart for the event with spaces showing where additional help is needed. He will host a meeting on July 17 to get things underway. Members were asked to take and distribute flyers advertising the Swapfest.

Field Day Committee: Leon (K9GCF) listed the number of contacts made during field day and noted the numbers were down from last year. He is looking for suggestions for next year, especially dealing with the dismantling of the site. Ed (AA9W) praised the towers that Mark (KC9GST) fabricated for their utility, looks and safety.

Uniform Committee: Ed (AA9WW) stated the first batch of jackets came and look good. He will order again when he has 6 or more orders. Send him a check for \$52.80 with size, name and call sign. Caps are next to be ordered at the cost of \$15.00. Two color schemes were offered for vote to the membership with the blue with gold lettering winning over yellow with blue lettering. The club will order 24 blank caps and members can have their name, call sign and logo placed on one.

Old Business: None

New Business: None.

Good of the Order:

For informational purposes, Mark (AB9CD) announced that the General License question pool has changed and the next testing will be July 28 at the AES. Mark is the training coordinator for the club and if anyone wants a class, please contact him. Also, Bill (KA9WRL) reminded people about Jamboree On the Air, contact him for further information.

Attendance: 37 members and 3 guests attended the meeting: Gary N9UUR, Jeananne N9VSV, Stan WB9RQR, Mike WJ9O, Ed AA9W, Gabe W19GC, Dave N9UNR, James K9QLP, Kent N9WH, Nels WA9JOB, Jerry W9GGR, Mike N9JIY, Ron W9BCK, Ray W9BUJ, Bob W9LO, Doug N9KG, Don W9VSC, Ray W9KHH, Bill KA9WRL, Tom W9VBQ, Ed AA9WW, Dick AB0VF, Kate KB0SIO, Cindy KA9PZG, Mark AB9CD, Mike AB9ON, Roger W9UVV, Julia KB9WBQ, Tom AA9XK, Mark KC9GST, Naomi KC9GSS, Nancy KC9FZK, Gary W9XT, Bob N9NRK, Terry KA9RFM, Herb WA9UVK, Tom W9IPR and guests Linda Nenn, Carol Steck and Brad, grandson of AB0VF and KB0SIO.

Adjournment: Kent (N9WH) made the motion to adjourn the meeting: Stan (WB9RQR) seconded the motion, the motion passed at 9:45 p.m.

ORC Board Meeting 7/31/2007

De Nancy Stecker KC9FZK

The July 2007 board meeting of the Ozaukee Radio Club, held at the residence of President Tom Ruhlmann, was called to order at 7:15 p.m. Attending were Tom Ruhlmann W9IPR, 2nd Vice President Bill Howe KA9WRL, Trustee Ed Rate AA9W, 1st Vice President Mike Yuhas AB9ON and Secretary Nancy Stecker KC9FZK. The president declared a quorum was present.

Approval of Minutes: A motion was made by Mike AB9ON to approve the minutes of the January 2007 board meeting. Motion carried.

Project Reports:

Uniform Committee: Ed AA9WW sent a report stating he needs 6 orders each time to order jackets at \$52.80 each. Currently he has 5 requests for a jacket. Twenty-four caps have been ordered. To order make out a check for \$15 payable to the ORC.

Corn Roast Picnic Report: The picnic will be August 18 at the Waubedonia Park Pavilion. Prize money will be allocated for a foxhunt, door prize and children's activity.

September Swapfest Report: At the suggestion of Gabe W19GC, project Co-chairman Tom W9IPR has created a guideline document for future chairmen of this committee, for use in planning a future September Swapfest at the current location.

Fish Day Activity: Mike AB9ON reported that 8 hams assisted with the parade and there were no glitches.

Field Day Final Report and Field Day/Membership: The board talked about ways to make Field Day more inviting for visitors and families. One suggestion was a chairman for social activities.

Wisconsin QSO Party Report: Tom W9IPR read a letter from the Fond du Lac Radio Club congratulating the ORC on winning the Wisconsin QSO Party in 2007.

Repeater Committee Report: An e-mail report came from John W9NRG, Repeater Vice-President. His committee made recommendations of possible replacement parts and assessed the repeater performance as part of a 5-year outlook plan.

Scholarship Winner: Natalie Harding of Burlington Wisconsin is the 2007 ORC scholarship winner according to Tom W9IPR.

Lighthouse Activation Committee: \$150 is allocated in the budget for the Lighthouse Activation project, August 4 and 5, 2007

Old Business: none

New Business:

Discussion of future Fiscal Policies: The board discussed a variety of fiscal guidelines to be considered for incorporation into a fiscal policy for use by future Boards and Treasurers.

Motions:

The chair entertained a motion to authorize payment not to exceed \$150 for diesel fuel used at field day. Following discussion, Mike AB9ON made the motion. The motion carried.

The chair entertained a motion to authorize spending \$100 for prizes at the corn roast. Mike AB9ON made the motion. The motion carried.

Adjournment: The meeting was adjourned at 9:45 p.m.

AGENDA

August 8th, 2007

1. Call to order – Tom (W9IPR)
2. Introductions.
3. Announcements, Bragging Rights, Show & Tell, Upcoming events, Etc.,
4. Program:
5. Fellowship Break
6. Auction.
7. Acceptance of Minutes as printed.
8. Treasurer's report – Nels (WA9JOB)
9. Repeater report – John (W9NRG)
10. Committee reports.
Lighthouse Activation – Tom Nawrot
Cornroast – Ed Frac
Youth Program – JOTA etc.
Sept. 15th Swapfest – Tom Ruhlmann & Gabe
Field Day Results – Gary Bargholz (N9UNR)
11. OLD BUSINESS
12. NEW BUSINESS
13. 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 7th Avenue, Grafton

Wednesday, Aug. 8th

7:30 PM