



## The *ORC* Newsletter

Official publication of the Ozaukee Radio Club, Inc. Email all contributions to the editor, Bill Shadid, W9MXQ (newsletter@ozaukeeradioclub.org). Permission to reprint articles published in any issue is granted provided the Author (as shown in the article) and the Ozaukee Radio Club Newsletter are fully credited in any publication.



ORC Repeaters on 146.97 (-127.3PL), 224.18 (-127.3PL), 443.75 MHz (+127.3PL) - Callsign W9CQO  
Web site: [www.ozaukeeradioclub.org](http://www.ozaukeeradioclub.org) Facebook: [facebook.com/orcwi](https://facebook.com/orcwi)

Volume XLI

December 2023

Number 12

## From the President

de: Bill Greaves, K9GN



Holiday Best Wishes! Merry Christmas! Season's Greetings! We have entered the winter holiday period and I trust all of your holiday preparations are proceeding nicely, and your family has your ham radio Wish List in hand. You might even help them out with a trip to the Ham Radio Outlet on Good Hope Road. It's good to be helpful!

The Annual Meeting of the club will be January 10<sup>th</sup>. Elections will occur at that time. Two items for you to accomplish by then are: (1) payment of dues - \$20 (still only \$20) payable by credit card online at [www.ozaukeeradioclub.org](http://www.ozaukeeradioclub.org) or by check via mail to Gary Bargholz, Treasurer, and (2) consider volunteering to stand for election as the Candidate List is due December 27<sup>th</sup>, 14 days before the election. Contact Pat Volkman W9JI who is Chair, Nominating Committee. Contact info for all club members is available in the club roster on the ORC www page. There is lots of good information on those pages; it's changing and being expanded all the time – Thank you to Gregg Lengling W9DHI.

A thank you also to the Audit Committee who are preparing to finalize their work throughout the year immediately after January 1st. Jim Albrinck K9QLP, Fred Schwierske W9KEY, and Nancy Stecker KC9FZK – we thank you for your efforts.

You have heard me note our need for a volunteer to assist with the audio equipment to allow the Zoom portion of the monthly club meetings to occur. A big thank you to Tony Schneider AD9BR who has been working with Tom Trethewey KC9ONY on this activity. The zoom participants, especially, thank you, Tony.

Again, please note the date for the Spring Swapfest: Saturday, April 27, 2024. Please add the date to your calendars.

The club membership will gather on Wednesday, December 13th, both in-person and on Zoom, at 7:30pm, with meet-n-greet at 7:00pm, at the Grafton Senior Center or on Zoom. The program for the meeting will be by Gregg W9DHI presenting on the ORC's "Club 220 Repeater System History and Upgrades," 1988 to Present." As always, I look forward to seeing you at the meeting.

73,

Bill K9GN

---



# A Message from the Editor

## Newsletter Table of Contents

de: Bill Shadid, W9MXQ, Newsletter Editor

Please note Club President, Bill Greaves, K9GN, on Page 1 for his monthly message.

I draw your attention to Page 5 of the Newsletter for the report from the Nominating Committee with the slate of officers for the ORC Board of Directors. This is a very important part of operating an organization – and is certainly so for us. Check what is presented and consider what you may called to do.

Again, this month, Tom Ruhlmann, W9IPR, presents us with a continuation of his Projects, Tools, and Tips article series. Take a look at Page 6 where Tom talks about The Phoenix Antenna.

Don Zank, AA9WP, in his Ozaukee County ARES column this month talks about AUXCOM or Auxiliary Communicator Program. Want to know more about ARES? Contact Don at: [AA9WP@ARRL.net](mailto:AA9WP@ARRL.net)

Stan Kaplan, WB9RQR, shares some history on Linux Mint in his 309<sup>th</sup> Computer Corner article. Take a look!

Check the Cover Art installment on Page 13 – back after a long absence – showing some Christmas History. Not about Ham Radio? Well, let's just say it is about us!!

Gary Sutcliffe, W9XT, is back with his On the Air Activities column – starting on Page 14 showing us the schedule of many upcoming operating events as we enter the winter activity months. Don't forget Gary's convenient "Pull-Out" Page of activity specifics.

Your Editor, Bill Shadid, W9MXQ, has his regular Vintage Amateur Radio column discussing the increasingly popular, annual, Hammarlund Hullabaloo – this year celebrating the 162<sup>nd</sup> birthday, of Hammarlund founder, Oscar Hammarlund. And it involves using Vintage Amateur Radio equipment – as you might guess.

Classifieds appear on page 29, followed by Tom Trethewey with his Upcoming Events.

Check the minutes of the November Ozaukee Radio Club meeting as provided are outlined in the Minutes of that meeting provided by our Secretary, Ken Boston, W9GA. See Page 32.

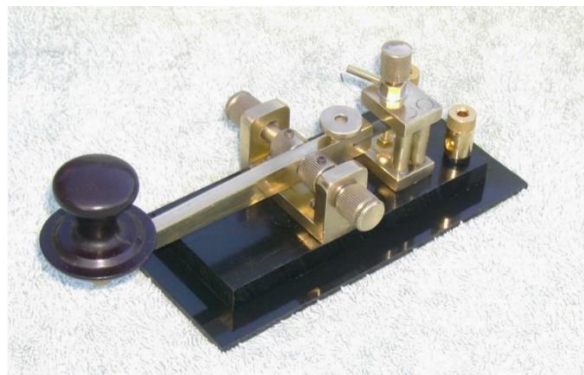
Jeananne Bargholz, N9VSV, our Program Committee Chair, appears on Page 33 with info on this month's program. Check the Last Page for Next Month's program.

Need help to get your thoughts on paper for an article? That is what the Editor does!! Let me know how I can help you. [newsletter@ozaukeeradioclub.org](mailto:newsletter@ozaukeeradioclub.org)



**Ozaukee Radio Club Newsletter  
December 2023 – Table of Contents**

PAGE	DESCRIPTION
1	<b>Bill Greaves, K9GN: From the President</b> Monthly Update
3	<b>Bill Shadid, W9MXQ: A Message from the Editor</b> This Month's Table of Contents & Comments
5	<b>Nominations for the ORC Board of Directors</b> Election of Board Members – January 2024 Meeting
6	<b>Tom Ruhlmann, W9IPR: Projects, Tools, and Tips</b> A Phoenix Antenna
8	<b>Don Zank, AA9WP: OZARES – Ozaukee County ARES</b> AUXCOM or Auxiliary Communicator Program
11	<b>Stan Kaplan, WB9RQR: Computer Corner</b> No. 309: Linux Mint
13	<b>Bill Shadid, W9MXQ: Cover Art</b> Christmas – Who is the present really for???
14	<b>Gary Sutcliffe, W9XT: On the Air Activities!</b> November Review, VHF, WARC, DXpeditions, Contests
22	<b>Bill Shadid, W9MXQ: Vintage Amateur Radio</b> The Hammarlund Hullabaloo – An Operating Event
29	<b>Bill Shadid, W9MXQ</b> Classified Advertisements
30	<b>Tom Trethewey, KC9ONY</b> Upcoming Events
31	<b>Ken Boston, W9GA</b> Secretary's Report – 8 November 2023 Meeting
33	<b>Jeananne Bargholz, N9VSV: Upcoming Monthly Meeting Programs</b> This Month's Program, Making a Presentation, & Meeting Agenda
35	<b>The Back Page – Quick Notes about Meeting Night and Next Month</b>



**Homebrew Morse Straight Key – G3YUH**

**Onward To the Newsletter**

# Nomination of Ozaukee Radio Club Members for the ORC Board of Directors for 2024

Please review the slate of candidates as presented below. This is an important part of running a club focused on the needs and desires of the membership. Your chance to share your talents for leadership and/or support those volunteering here is at hand!!

## The Nominating Committee Members:

- Pat Volkmann W9JI Chair
- Jim Albrinck - K9QLP
- Bill Shadid – W9MXQ

## The Nominees:

- President: Bill Greaves - K9GN (incumbent)
- First VP: Jeananne Bargholz – N9VSV (incumbent)
- Second VP: No nominee
- Repeater VP: Tom Trethewey – KC9ONY (incumbent)
- Secretary: Ken Boston - W9GA (incumbent)
- Treasurer: Gary Bargholz - N9UUR (incumbent)

## More Information:

Note: The Repeater Trustee is appointed by the Board of Directors and is currently Mike Harrington (KD9GCN).

Should any member wish to also be included in the election for a specific office or have questions concerning the elections they should contact Pat Volkmann, W9JI.

The elections will be held at the January 2024 ORC meeting.

Nominations from the floor will be entertained however the nominee must be present at the meeting and accept the nomination or have provided written consent if not in attendance.

Detailed information on the expectations for each office can be found on the ORC website under Bylaws and Officers Handbook.

Candidates and voters must have paid their dues for 2024.

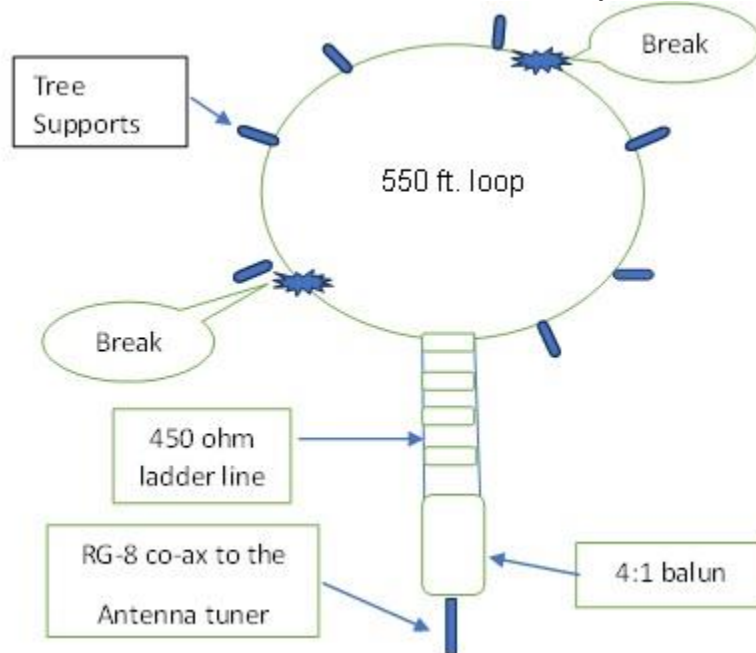
# Projects, Tools, and Tip's

## A Phoenix Antenna

de: Tom Ruhlmann, W9IPR

A few years back I got very interested in 160 meters SSB and thought it would be neat to get WAS (work all states) recognition on 160. While I have a HT-18 tower vertical for the low bands (75, 80 & 40 meters I did not have a horizontal wire antenna for those bands. However, I do have a 38 ft. tower next to the house and a forest of trees out back. I decided to erect a 550 ft. loop antenna through the woods to be fed with 450-ohm ladder line. In the woods there were 7 trees from which the loop was supported.

The antenna center at the tower was supported by a rope and pulley arrangement allowing the center to be lowered and raised for adjustments and maintenance. All of the tree



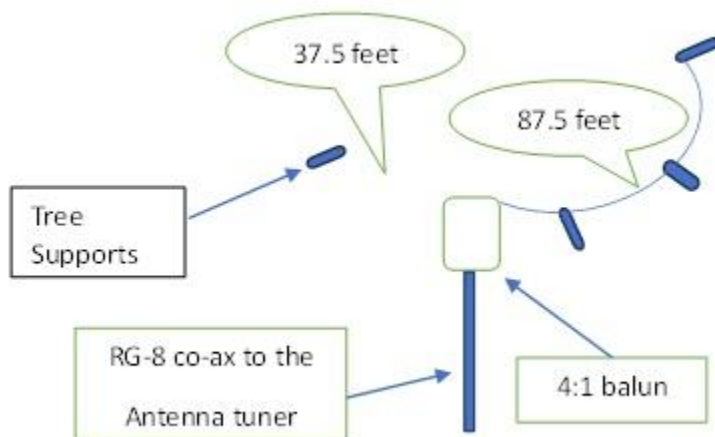
supports allowed for the #12 antenna wire freedom with tree movement etc. via an arrangement of passing through large porcelain power insulators at 4 trees and the alternate trees having supporting ropes through pulleys to “window sash weights”. The 30 ft. ladder line feed to the loop would terminate with a 4:1 balun which provides a transition from the balanced ladder line to the unbalanced 52-ohm co-ax which passes through the basement window to the antenna tuner and trans-

mitter. I felt this should allow me to load 160 through 40 meters, and it did. It worked great for several years but last winter a large limb fell from one of the trees and the stress on the wire caused it to break at two points. Due to the antenna height; a short ladder and the wife watching it was not practical for me climb the trees to repair it. So now what? I decided on a 160-meter OCF (off center fed) dipole with a 4:1 balun at the feed point.

For 160 meters the total length of the antenna would need to be 246 ft. ( $468/1.9 \text{ MHz} = 246 \text{ ft.}$ ). With the feed point being off center (25 to 30 % from one end) the feed point should be about 200 ohms. Not a perfect match but it is designed for multiband use with a tuner. Therefore I lowered the original feed point and installed a 4:1 balun with its output to a 52-ohm co-ax feed line. The resulting antenna would be in the shape of an arc since 3 of the original trees in the loop would be used for support. Then to measure or estimate the length of antenna wire each side of the 38 ft. tower which is where the balun and feed

point would be. As luck would have it there was an estimated 302 ft on the North side (plenty long) and a measured 62 ft. on the south side or about 25% of the 246 ft. required total. Using my Comet antenna analyzer (indicates the impedance and resonate frequency) I continued to trim the North long end until I had resonance at 1.9 MHz (estimated 195 ft.). Unfortunately, while it appeared OK at 160 meters the antenna would not resonate within the 80, 75 or 40 meter bands. As I read a few articles on the OCFD antenna I noted the advice that “for 160 meters, don’t even think about it: it won’t work”. So much for that idea as a 160-meter multiband antenna. So, I decided to make it into a typical 80-meter OCFD multiband antenna.

For 80 meters the total antenna should be approximately 125 feet long ( $468 / 3.75 = 124.8$  feet). For the feed point to be approximately 200 ohms on all bands it should be about 30% from one end or about 37.5 feet. So, I trimmed the short South end, which I could



measure to 37.5 feet. Since the South end measured 62 feet, I cut it to 38 feet and installed an insulator at 37.5 feet. The North end was approximately 195 feet, so I cut off about 100 feet and then used the Comet antenna analyzer to check for resonance at 3.75 MHz. I progressively trimmed the North end to about 87.5 feet as determined by achieving the 3.75 MHz

resonance point. Then with the end insulator installed the end was raised to about 35 feet and the multiband resonance points were checked. The 40 meter and higher frequency bands were also all within reason and using my MFJ model 986 antenna tuner I can tune it for an SWR less than 2:1 and use it on 80, 75, 40,30,20,17,15,12 and 10 meters.

Like Pheonix, the broken wire loop multiband antenna rose from the dust to relive as OCFD multiband (with the exception of 160 meters) wire antenna. It was a fun project with a useful result. However, I failed to consider or test if there may have been RF on the RG-8 co-ax exterior which impacted the resonance points and which could be corrected with a simple RF choke in the co-ax following the 4:1 balun. I think I may wait for warmer weather and make another attempt at a 160-meter OCFD.



**OZARES: Ozaukee Amateur Radio Emergency Services**  
**de: Don Zank AA9WP, OZARES Emergency Coordinator, [aa9wp@arri.net](mailto:aa9wp@arri.net)**

**AUXCOM or Auxiliary Communicator Program**



This past October Dave, KD9JYL, and I attended the Auxiliary Communications or AUXCOM course. The class was held at the Winnebago County Sheriff's office and was an intense weekend of ten hour days learning new procedures, planning, and solving tabletop exercises.

As stated in the National Emergency Communications Plan (NECP) 2014:

"...volunteer organizations such as community emergency response teams and auxiliary communications volunteers (e.g., amateur radio operators; also called Hams) play key roles...Today, nearly all the States and territories have incorporated

some level of participation by amateur radio auxiliary communication operators into their TICPs\* and SCIPs\*\*; this allows them to quickly integrate the operators into response efforts, which can strengthen communications and operations during incidents of any scale."

\*TICP: Tactical Interoperable Communications Plan

\*\*SCIP: Statewide Communication Interoperability Plan

The course provided 20-hours of education to about 22 other hams from throughout Wisconsin, all volunteers for the AUXCOMM program. The focus of the training is to prepare the volunteers for effective interoperable communications and strong working relationships with public safety/service communicators. The AUXCOM volunteers are Technical Specialists with individual and organizational skills and are available to support the National Incident Management System (NIMS).

The Auxiliary Communicators potentially provide assistance help with several scenarios:

- If local communication systems are unavailable, the AUXCOM volunteers can help establish alternatives
- Support public safety officials and staff during emergency situations, planned events and/or training exercises
- Operate "within the emergency management structure." This would include Emergency Operation Centers or EOCs
- Provide other groups, such as the Red Cross or Salvation Army, with communication support



The training also instructs the Auxiliary Communicators on how to work under the supervision of the Communications Unit Leader or COML within the NIMS/ICS structure.

The course objectives included how to organize and plan with all involved agencies, sections, and other communication personnel to meet the objectives established by the Incident Commander. As well, auxiliary comm systems must be properly designed, installed, and maintained during any incident. The AUXCOM communicator may also be responsible for maintaining control of any communication equipment assigned to other groups or personnel.

A rather important but sometimes ignored function is to properly demobilize. Included is the gathering of all hardware, and tracking any equipment that requires repair.

And, of course, the job is not done until the paperwork is done. And there is a good deal of paperwork.

Another major goal for the AUXCOM training is to establish standardized procedures for the state and between states. Two states have been very active in establishing AUXCOM programs. They are:

Michigan:

<https://mi-arpssc.org/auxcommwg/>

North Carolina:

<https://www.ncarrl.org/ares/>

The State of Colorado has created a program in 2020 and is very active. More information can be found at:

<https://dhsem.colorado.gov/emergency-management/field-operations/auxiliary-communications>

At the end of the class all of the AUXCOM volunteers received a Position Task Book. This book is basically a list of skills, abilities, and knowledge of working as an Auxiliary Communicator. By demonstrating the skill and knowledge for any particular task, a Communication Leader will sign off that task off. There is a three year window to complete the task book.

Stay tuned for more information on the Auxiliary Communicator role.

73, Don, AA9WP



---

### **OZARES Repeaters:**

- **147.330 MHz (+ Shift) (127.3 PL)**
- **443.525 MHz (+ Shift) (114.8 PL)**

---

### **ORC Repeaters are On the Air Awaiting Your Call:**

- **146.97 MHz (- Shift) (127.3 PL)**
  - **224.18 MHz (- Shift) (127.3 PL)**
  - **443.75 MHz (+ Shift) (127.3 PL)**
-

# THE COMPUTER CORNER

## No. 309: Linux Mint

de: Stan Kaplan, WB9RQR, 715 N. Dries Street, Saukville, WI 53080-1664  
[wb9rqr@gmail.com](mailto:wb9rqr@gmail.com)



Linux Mint is one of the many versions or distributions of Linux and is one of the most popular today. It is bundled with free and open-source applications. For example, so long as you choose to include proprietary (but free) multimedia codecs when you install it, you get full out-of-the-box multimedia support when your installation is completed. Another big plus is that the inclusion of the bundled Libre Office suite makes it largely compatible with Microsoft Office and even exceeds the capabilities of the Office suite in several aspects. But Mint was started long after Linux

itself.

Linux itself began in 1991 when a computer science student at the University of Helsinki (Finland) began a personal project to write an operating system that was free and available to anyone who wanted to use it, thus bypassing almost all systems available then which were expensive and proprietary. Linus Torvalds was the guy, and what he wrote was named (with help by friends) as a combination of his first name and Unix, an existing operating system that inspired his project. Today, about 90% of the top supercomputers, and nearly 3% of all desktop computers use Linux. Even more impressive, nearly 72% of all mobile devices run on Linux. This includes smart phones—most run on Android (a Linux-based operating system).

Mint first began as a distribution or version of Linux at the end of August 2006, nearly 18 years ago and about 15 years after Torvalds began Linux itself. The mint project was created by C. Lefebvre and is actively maintained by a Linux Mint Team. Version 1.0 of Mint was code named “Ada.” Based on Kubuntu Linux, it was not very popular at all. Version 2.0, “Barbara, surfaced in November of the same year and used Ubuntu Linux as its base. It morphed into Version 2.1, “Bea,” in December and Version 3, “Cassandra” in early 2007.

Every version of Linux Mint since the first has been given a version number and a code name. The code names are always feminine first names ending in the letter ‘a’ (one exception, noted in the next sentence) and beginning with a letter of the alphabet that increased with every major revision. The except is Version 18, Sarah, which sounds the same as all the rest but ends in a silent letter ‘h’. Too bad they didn’t just drop the ‘h,’ and name it Sara, for consistency!

The table which follows (markedly abridged from Wikipedia) lists all 38 versions and code names since the start of Mint. Also noted is the cutoff date (END in the table), at which no more updates to a particular version are released. In other words, this is the date at which a particular version's support ends. Examination of the table will show you that only Version 20 ("Ulyana") and newer releases are currently supported.

This end to support by releases prior to Version 20 causes a significant "hit" for owners of older, 32-bit machines. Specifically, you cannot install versions 20 or newer of Linux Mint Cinnamon on an i386 (32-bit) machine. However, the Debian edition of Linux (**Linux Mint Debian Edition**) continues to work with 32-bit critters, so if you have a really old laptop that you just cannot part with using, there is a solution. Start with looking up **LMDE** on the web. For all more modern laptops and desktops, stick with Linux Mint Cinnamon 21.2 ("Victoria"), supported until April 2027, or newer. Minimum hardware requirements for Victoria: 2GB RAM (4GB recommended), 20GB of hard drive or other storage space (100GB recommended), 1024×768 screen resolution, either a CD/DVD drive or a 2.5GB flash drive for installation, and Internet access is also really helpful.

**TABLE 1 LINUX MINT RELEASES**

*VER	NAME	RELEASED	*END	*VER	NAME	RELEASE	*END
1.0	Ada	Aug 2006	Unknown	17	Qiana	May 2014	Apr 2019
2.0	Barbara	Nov 2006	Apr 2008	17.1	Rebecca	Nov 2014	Apr 2019
2.1	Bea	Dec 2006	Apr 2008	17.2	Rafaela	Jun 2015	Apr 2019
2.2	Bianca	Mar 2007	Apr 2008	17.3	Rosa	Dec 2015	Apr 2019
3.0	Cassandra	May 2007	Oct 2008	18	Sarah	Jun 2016	Apr 2021
3.1	Celena	Sep 2007	Oct 2008	18.1	Serena	Dec 2016	Apr 2021
4.0	Daryna	Oct 2007	Apr 2009	18.2	Sonya	Jul 2017	Apr 2021
5	Elyssa	Jun 2008	Apr 2011	18.3	Sylvia	Nov 2017	Apr 2021
6	Felicia	Dec 2008	Apr 2010	19	Tara	Jun 2018	Apr 2023
7	Gloria	May 2009	Oct 2010	19.1	Tessa	Dec 2018	Apr 2023
8	Helena	Nov 2009	Apr 2011	19.2	Tina	Aug 2019	Apr 2023
9	Isadora	May 2010	Apr 2013	19.3	Tricia	Dec 2019	Apr 2023
10	Julia	Nov 2010	Apr 2012	20	Ulyana	Jun 2020	Apr 2025
11	Katya	May 2011	Oct 2012	20.1	Ulyssa	Jan 2021	Apr 2025
12	Lisa	Nov 2011	Apr 2013	20.2	Uma	Jul 2021	Apr 2025
13	Maya	May 2012	Apr 2017	20.3	Una	Jan 2022	Apr 2025
14	Nadia	Nov 2012	May 2014	21	Vanessa	Jul 2022	Apr 2027
15	Olivia	May 2013	Jan 2014	21.1	Vera	Dec 2022	Apr 2027
16	Petra	Nov 2013	Jul 2014	21.2	Victoria	Jul 2023	Apr 2027

\*Ver = version. \*End = end of support for this version. Prior to version 20, Linux Mint could be booted from either i386 (32-bit) or amd64 (64-bit) machines. Since version 20, only 64-bit architecture is supported.

Keep an eye out for Ver. 21.3, which should be out very soon. Happy Computing!





**Cover Art – Toy Trains Magazine  
December 1951**

***“Christmas 1949 saw my first Lionel Electric Train” – W9MXQ  
“Did you ever notice how many hams are also into Model Railroading?”***

## On The Air Activities!

de Gary Sutcliffe, W9XT



If you are a DXer, November was an incredible month. In 50+ years of DXing, I don't remember a month with so many DXpeditions. I needed so many on so many bands that I made up a chart with each DXpedition and the bands and modes I needed that country on. There were 23 separate DXpeditions on my chart. I used a highlighter to mark the ones I worked.

I ended up with about a dozen new band grids, and three new digital countries worked. Band countries are countries that you have worked before but not on a given band. The ARRL DX Challenge is an award for working band countries. The basic award requires 1000 band countries with endorsements as you work more. These are for contacts on 160-6 meters, except

for 60 meters.

I was not the only one working some good stuff in November. Gary, N9UUR, got a few ATNOs, including ZL7A on Chatham Island. ATNOs or All Time New Ones are the first time you work a country for the very first time. ATNOs are very special for DXers as they work their way to the top.

Currently, there are 340 "entities" in the DXCC program. That number changes over time as new countries gain independence or when countries merge, such as when East and West Germany reunited.

Other factors can create new DXCC entities due to distance or other reasons. For example, Alaska, Hawaii, and Puerto Rico are separate DXCC entities from the United States.

Another ORC member named Gary also had a good month. K9DJT sent in the following report:

Most recently, I worked ZL1RS, V51WW, and HC2FG, on 6m FT8. I filled two CW band-slots on 20m by working 3W9A and A25R. The Timor-Leste DXpedition, 4W8X, provided me with 10m SSB and FT8, 12m CW, 15m CW and SSB, and 30m CW. Israel, 4Z1DZ, filled a 30m FT8 slot. The Yemen team, 7O73T and 7O8AD, took care of my empty 10, 17, 30, and 40m FT8 slots.

Then came Sierra Leone, 9L5M, filling my open slots of 12, 15, and 20 FT8. The H44WA group handed me 10m SSB, then 15 and 30m FT8. TJ9MD, operating from Cameroon, managed to get on a few lower bands, which gave me 20 CW, 30 FT8, 40 FT8, and 80 CW. And I'm still not done. There was VK9CY, Cocos Islands, on 30 and 40m FT8, and also VK9XY, Christmas Island, 10, 15, 17, and

20m FT8. Oh, I almost forgot about Laos, XW4DX. I worked them on 12 and 40m FT8.

In total, I made 78 DX Q's since the last newsletter. In the Greater Milwaukee DX Association, some might refer to me as a "DX Hog." I really don't mind, "oink, oink."

Gary, K9DJT

## VHF

While most of the excitement was on the HF bands there was some excitement on VHF in November. Gary, K9DJT, mentioned some of his luck on 6M DX.

We had a few days when 6 meters was open to Africa. I worked St. Helena Island and South Africa for countries 99 and 100 on the band. DXCC on 6 meters! Later, I worked Namibia in South West Africa for 101.

DXCC on 6 meters is very difficult from Wisconsin. We just don't get the propagation they get further east and south of us. Did you know Ken, W9GA, an ORC member, was the first Wisconsin ham to get DXCC on 6M? Ken was also just the second W9 to get it.

Unfortunately, I have been waiting for QSLs from a few countries, some going back over 20 years. I have pretty much given up hope of getting confirmation for them, so I need to work a few new ones to get the required 100 confirmations.

The ARRL 160 Meter Contest was the first weekend of December. We had a near X-class solar flare a few days earlier. The cloud of charged particles from the flare, a CME (Coronal Mass Ejection), showed up Friday night, soon after the 160 meter contest started.

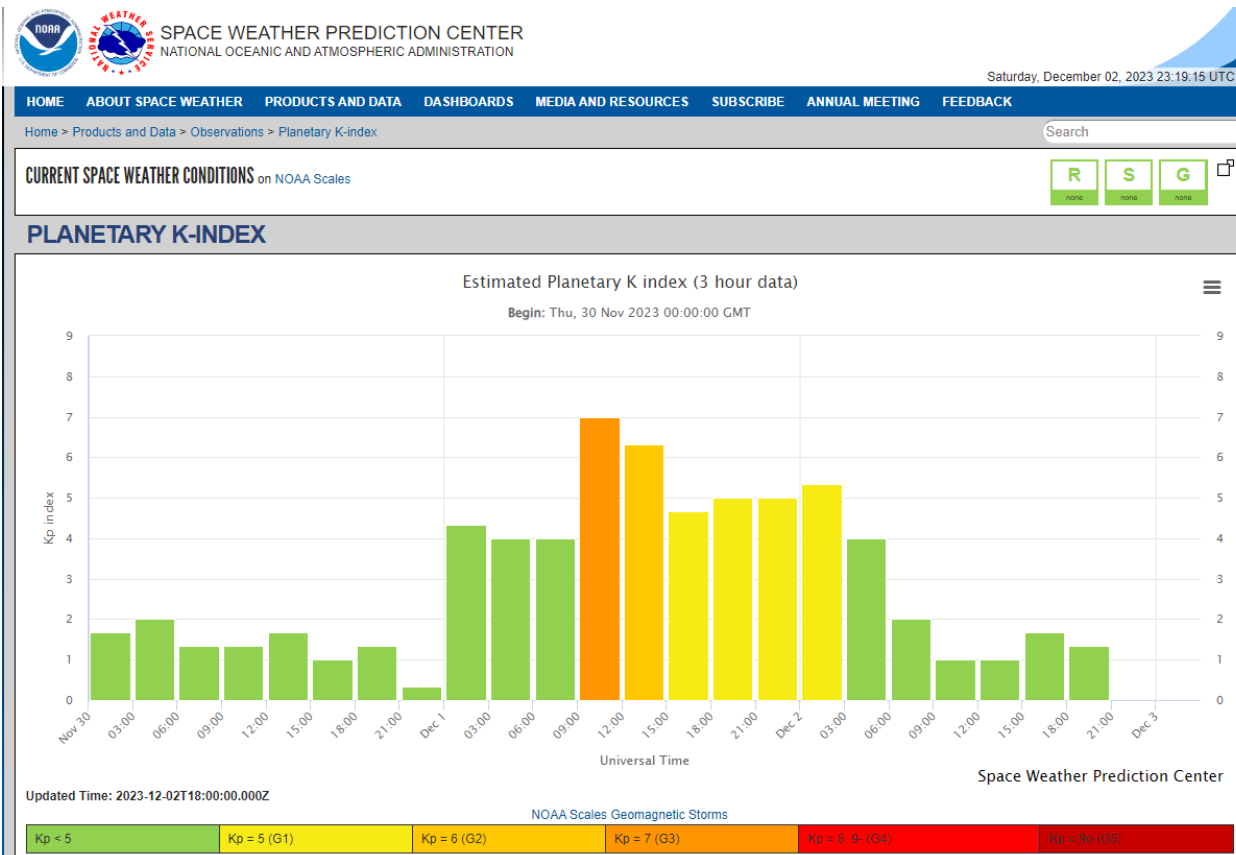
The K-index shot up to seven, and 160 signals were very weak. Northern stations had the worst conditions. DX, except to the south, was non-existent. I was expecting this and watching for it. When the K index reaches four or five, there is a good chance of an aurora. We can bounce VHF signals off the aurora. I forgot about the 160 meter contest and moved up to VHF. I worked about a dozen stations on 6 and 2 meters, including a new grid on each band.

Aurora contacts are interesting. You point your beam north to work stations. CW signals have a raspy sound. SSB signals sound like Donald Duck. Often, it is impossible to understand SSB signals. FT8 and other digital modes do not work with Aurora. Slow speed CW is usually the best mode on aurora.

Solar flares are more common during high solar activity, where we are now. Keep an eye on the K index and check for Aurora if it gets up to four or five. If the sky is clear and you are in an area without a lot of city lights, you might be treated to a nice light show.



Carl, K9LA, is an expert on propagation, as well as being our ARRL Central Division Director. You may recall Carl gave us the program on the threat to our ham bands by the high frequency traders at the October ORC meeting.



### K index centering on the geomagnetic storm and aurora on Friday, December 2 (local). Solarham.net

If you are interested in where we are in the current solar cycle, Carl, K9LA, gave a talk to the Madison DX Club. The talk was recorded, and you can view it on line. <https://www.youtube.com/watch?v=AG4qUuW1XdY>

Sporadic E (Es) is a major part of 6M propagation. It gets us to about 1400 miles, but sometimes we get multi-hop to extend that. The main Es season is from about May through July. But there is a second, more minor season in December. December Es openings could be especially interesting this year.

We are hoping the sunspot count gets high enough to provide F layer propagation on 6 meters. The F layer is much higher than the E layer of the ionosphere and gives longer skip ranges. The F layer has made it so much fun on 12 and 10 meters recently. But it has not been quite high enough for it to work for us much on 6M here in the Black Hole.



Stations to the east and south have been getting a lot of great F2 propagation we are missing. But, if we can get an Es hop into an area of F2 propagation, it would extend our range.

It is likely that the openings that K9DJT and I used to work Africa used Es for the first hop into an area with F2 propagation. Gary mentioned he worked New Zealand on 6 meters in November. I also worked one last month. That one seemed to be straight F2.

I have two beams for 6M, one high and one low. The low one has a more elevated take-off angle than the high one. Es tends to have higher arrival angles that favor the lower beam. Comparing the relative signal strengths between the two antennas gives a clue about the propagation mode for that first hop.

## **WARC/WRC**

We call the 30, 17, and 12 meter bands the WARC bands. Do you know why? The International Telecommunications Union (ITU) has an international conference every four years. These were formerly known as the World Administrative Radio Conference or WARC. These conferences aim to agree on frequency assignments that allow harmony across the radio spectrum. You don't want one country using a frequency for some purpose that will cause havoc to other users in another country. It also helps to standardize things. It is much better if Wi-Fi works on the same frequencies worldwide. Manufacturers don't want to have to make different models for every country.

The 1979 WARC approved frequencies for the 30, 17, and 12 meter bands for amateur radio use worldwide. Later, the FCC approved the use of the bands for us. They got the name WARC bands from the convention where they were authorized.

Somewhere along the way, they changed the name of the conferences to World Radio Conference, and WRC-23 is currently going on in Dubai. From what I have read, the main focus will be satellites and maritime communications.

One topic is of concern to hams. In the United States, the GPS system tells us where we are. These are generically known as Global Navigation Satellite Systems or GNSS. Other countries have their own systems. Russia has GLONASS, China has its BeiDou system, and the European Union has Galileo.

The problem is that Galileo uses frequencies in our 1296 band. Some European leaders feel that hams using the 1296 band will interfere with the Galileo system. They want to ban or limit amateur use of the 1296 band.

Being a frequency in the UHF range, amateur use has been limited. As technology has progressed, producing reasonably priced equipment for this band has become possible. The IC-9700, for example, supports 1296. Repeaters for these frequencies are becoming more popular. Currently, 1296 is the fastest growing band for moon bounce communications.

The very active European EME community is concerned they will lose the band. Some of the proposals at WRC-23 include spitting the band into slices that amateurs will be allowed to operate. Some would be only at very low power levels. The segment used for weak signal work would have restrictions that would pretty much kill EME on the band for Europe.

In the US, we probably won't be affected too much. GNSS is not authorized on the Galileo frequencies here, and they have to turn off their transmitters when over North America.

But, if 1296 is curtailed in Europe, it will affect the availability of new equipment. Manufacturers don't want to develop and manufacture equipment with a limited market. You don't see many radios supporting 222 MHz because those frequencies are only authorized in Region 2, which is North and South America. Without the Asian and European markets, developing products is not cost effective.

Nothing is cast in stone, and it is hard to know what will finally be decided. We will know more when WRC-23 ends on December 15.

## **DX**

Last month will be a hard act to follow with all the DXpeditions that occurred. Activity is down, but there is still plenty of DX to chase.

A group of Germans will put Micronesia on the air until December 16. Look for V6EU on 160-10 meters

A really tough one is from Lakshadweep. This is an island off the coast of India. It is a challenging path from Wisconsin and is on the need list of many hams from around here. This is a single op effort by W4VKU, but he has been pretty active. I have tried to work them a few times. He has not been very strong, and there is a lot of competition trying to work them, so no joy as of this writing.

After Lakshadweep, he will be heading to the Andaman Islands, another group off the coast of India. The call sign will change to VU4N, December 16-26.

Rodrigues Island in the Indian Ocean will be activated by a group of Italian hams from December 29 through January 6.

The Rebel DX Group is out again, this time from East Kiribati in the Pacific. Look for them to be mostly operating FT8 until December 28. I heard them on 30 meters with good signals. They always do a great job.

If you remember, the big DX hope in 2023 was the DXpedition to Bouvet Island near Antarctica. Bouvet is a challenging island to land on. It is also very difficult and expensive

to reach because it is so isolated. They had great difficulty getting on shore, and the operation was severely limited. It cost them close to \$750,000.

The previous attempt was also a failure. That group circled the island for several days, waiting for the weather to improve so their helicopter could take them to the island. Then, one of the two engines on the ship failed, forcing them to abort the operation. Due to prevailing winds and only one engine, they had to make the much longer trip to South Africa rather than Argentina, where they started from. It took them weeks to reach civilization.

Some said there would never be another DXpedition to Bouvet due to difficulty and expense. Well, never say never.

A new group announced they will be attempting an operation in January of 2025. They have a boat and permits in hand. Their boat supports two helicopters, eliminating the difficult task of using boats to land on the island.

They also announced they were planning on a follow up trip to Peter Island in 2026. Peter Island is another difficult to reach Antarctic island. This may seem like a long time out, but remember, it is almost 2024. And, as a DXer, you must learn to be patient.

## **Contests**

There are few contests during December due to the holiday season. The ARRL 10 Meter Contest will be starting shortly after this newsletter comes out. It is one of my favorites, and this year, it should be especially good with the high sunspot count.

It starts on Friday, December 9, at 6:00 PM local time. It runs for 48 hours, but you can only work 36 hours. We send a signal report and state. DX sends a report and serial number. Multipliers are states and DXCC countries.

You can work CW only, phone only, or mixed mode working both. Stations can be worked once per mode. Power levels are high power, low power (100 watts max), and QRP (5 watts).

Remember, technician class ops can operate phone on 10 meters from 28.300-28.500 MHz, so this is a great chance to experience some fun HF operating.

The Stew Perry Top Band Distance Challenge is a fun contest between Christmas and New Year's. Named after an early 160 meter enthusiast, Stew Perry, W1BB, the TBDC is different from other contests. First of all, there are no multipliers. Your score is strictly QSO points. More distant QSOs are worth more points.

The exchange is your grid square. Your logging program will calculate the distance based on the grid squares. The distance points are multiplied by two if you are running low power (less than 100 watts) and by four if you are running QRP.

Many contests give more points if you are low or QRP power. Indeed, making lower power QSOs is more difficult, but in reality, a lot of the heavy lifting is done by the other station in pulling out the weak signal.

In the TBDC, the other station gets extra points for working low and QRP power stations. Of course, you don't know the other station's power level when you work them. Your logging program will assume the other station is high power. When you send in your logs, the log checking software will compare your QSOs with the other stations' entries and assign the extra points.

You can check the website and see your score go up as other stations send in their logs. Of course, you hope your score goes up faster than your competition's. Because working low power and QRP stations are worth more points, other stations put in extra effort to work the weak ones.

That wraps up December and 2023!

---

**Check the following page for Operating Tips on a Separate Sheet**

---



**AI Created, 12/7/2023**



## W9XT's Contest, Operating, DXpedition, and Special Event Picks for December and Early January 2024

W9XT's DXpedition picks for December 2023 and early January 2024					
QTH	Dates	Call	Bands	Mode	Link/notes
Micronesia	To Dec 16	V6EU	160-10	CSD	
Lakshadweep	To Dec 10	VU7A	160-10	SD	
East Kiribati	Dec 6-28	T32TT	160-6	CSD	Mostly FT8
Andaman & Nicobar	Dec 16-26	VU4N	160-10	SD	
Rodrigues Island	Dec 29- Jan 16	3B9AT	40-10	CSD	

Modes: C = CW, S = SSB, D = Digital (may include RTTY)

W9XT's contest picks for December 2023 and early January 2024					
Name	Start	Length	Bands	Mode	Link
ARRL 10 Meter	00:00Z Dec 9	48, work 36 max	10M only	CW, SSB, mixed	<a href="https://contests.arrl.org/ContestRules/10M-Rules.pdf">https://contests.arrl.org/ContestRules/10M-Rules.pdf</a>
Stew Perry TBDX	15:00Z Dec 30	24, work 14 max	160M only	CW	<a href="https://www.kkn.net/stew/stew_rules.html">https://www.kkn.net/stew/stew_rules.html</a>

Dates/Times in UTC. Subtract 6 hours from UTC to get local (CST). HF = 80, 40, 20, 15, 10 Meters

# Vintage Amateur Radio

de: Bill Shadid, W9MXQ



As in the last three articles, this one continues with “using” Vintage Amateur Radio equipment as much as it is about the “specifics” of a particular model. This month we continue with a special event dating from at least 2020<sup>1</sup> when the High Appalachian Mountain Amateur Radio Society (HAMARS) began an annual Special Event to commemorate The Hammarlund Radio Company. They conduct a three-day “Hammarlund Hullabaloo” to encourage ham radio operators to use their Hammarlund ham radio equipment. It is held every year to commemorate the date of 19 November 1861, the birth date of Oscar Hammarlund. That original company morphed into the Hammarlund Manufacturing Company in 1931 with the introduction of the

Hammarlund Comet Pro Receiver. The Comet Pro was the first commercially produced superheterodyne receiver<sup>2</sup>.



## **The Hammarlund Hullabaloo 2021 Station at W9MXQ Collins KWM-2 Transceiver with 312B-5 Console (used as a Speaker) with a Hammarlund HQ-170AC-VHF Receiver HF/VHF Receiver**

**W9MXQ Photo**

At the time of the picture above, in 2021, there was no proper 312B-3 Speaker Console at W9MXQ. The KWM-2 and KWM-2A in early form lacked a dedicated CW carrier oscillator crystal. So, hams interested in CW needed to provide for offset tuning in the form of a second VFO – in this case the 312B-5 Remote VFO, Phone Patch, Wattmeter, and Speaker Console. Here, the Hammarlund HQ-170AC-VHF Receiver acted as the second receiver, providing offset tuning for CW. In this arrangement, the Collins KWM-2 was acting as a transmitter only in this station setup. When working the Hammarlund Hullabaloo, all signals were received with the Hammarlund.

For the 2023 event, I had three stations set up to try and connect with W4H that was operating at the former Hammarlund Radio Company manufacturing facility in Mars Hill, North Carolina. W4H was the guest of the current owners of the facility, once at the address known to the ham radio world, 73-88 Hammarlund Drive, Mars Hill, NC 28754. From what I can tell that the same location is now 73 Fern Hill Drive, Mars Hill, NC 28754. At least the “73” survived!<sup>3</sup> At the same time, there was one of the sponsoring club stations operating in the event under the call of KE4MH. That is the assigned call of the High Appalachian Mountain Amateur Radio Society.



**Hammarlund Hullabaloo Station #1 in 2023**  
**Drake TR7A Transceiver with a Drake MS7 Speaker Console**  
**running with a Hammarlund HQ-215 Solid State HF Receiver**  
**See Also Icom SP-3 Speaker for HQ-215,**  
**Electronic Keyer, Drake 7077 Microphone, & Bencher BY-1 Paddle.**  
**W9MXQ Photo**

These kinds of stations are rare these days as hams are more accustomed to plug-and-play setups with a single brand of equipment. The Drake TR7 (TR7A used here) easily adapts to any receiver to be used as an adjunct to the receiver in the transceiver. This feature is also available today. My Yaesu FTdx-101MP can be easily setup to feed signal lines and allow receiving from a separate receiver. Your modern receiver may do that as well. The challenge is to feed audio to a single audio amplifier. The Drake TR7 is rather unique in this respect and can be set up to pass audio from a separate receiver to the same speaker used by the transceiver. I did not take the time to setup the cables for that in this installation. Instead, I used the Icom SP-3 (that is the matching speaker for my Icom IC-751A Transceiver.<sup>4</sup> In the above example, the radio is tuned on the TR7A and the HQ-215 to 7.258 MHz and had just been used to check into MidCARS.<sup>5</sup>



Here is a closeup of the Hammarlund HQ-215 as set up with the Drake TR7A.



### Hammarlund HQ-215 HF Receiver

**There is something in this picture even rarer than the HQ-215.  
Do you see what it is?**

**W9MXQ Photo**

When contacting W4H in the 2023 Hammarlund Hullabaloo, I worked Jerry, whose home call is N4KJ. This is his picture, using a Hammarlund SP-600 series receiver in his shack. Guests of the present owners of the Hammarlund factory in Mars Hill, NC, W4H had their station set up inside the facility. Jerry told me that he was a mere “25 feet away from where my HQ-215 came off the assembly line.”



High Appalachian Mountain Amateur Radio Society (HAMARS) member, Jerry Robinson, N4KJ, works with a Hammarlund SP-600 Receiver in his shack. During the Special Event at the former Hammarlund plant in Mars Hill, NC, I worked Jerry with Hammarlund Hullabaloo Station #1.

**HAMARS<sup>6</sup>**



Continuing with the theme of using the Hammarlund HQ-215, I decided that it would be appropriate to run the receiver with components of the Collins S-Line equipment.

This setup actually played on the goal of the Hammarlund HQ-215 Receiver to be a solid-state radio that was a direct functional copy of the Collins 75S-3B Receiver. It even used the same Collins Mechanical Filters. I ran the Collins 32S-3 Transmitter with the Hammarlund HQ-215 in this configuration connected as a separate Receiver and Transmitter. In theory, because of the identical conversion scheme in the HQ-215, compared to the Collins 75S-3B, there is every reason to believe that they should transceive together. The control points and signal taps are available on the HQ-215 as they are on the Collins 75S-3B. I have tried the transceive setup several times with marginal success. Given that I could not be sure of unintended output on odd mixer frequencies, I did not feel comfortable putting the transceiver mode on the air.



**Hammarlund Hullabaloo Station #2 in 2023**  
**Collins 32S-3 Transmitter with 312B-4 Console (used as a Speaker)**  
**with a Hammarlund HQ-215 Solid State HF Receiver**  
**Note Striking Similarity of HQ-215 to Collins S-Line Design!**

W9MXQ Photo

Hammarlund Hullabaloo Station #2 was successful in working a lot of Parks On The Air (POTA) and Volunteers On The Air (VOTA) stations in the several days it ran. But unfortunately, I was unable to work W4H or KE4MH on either SSB or CW with this setup.

Finally, I wanted to try a setup using my Hammarlund HQ-170AC-VHF. Back when I was first a ham radio operator as a newly hatched General, I used the pre-VHF version of this radio, the HQ-170AC. (The VHF version added 2-meters to the originally included 160 through 6-meter coverage.) I had used the HQ-170AC-VHF in the 2021 Hammarlund Hullabaloo and wanted to have the chance again. The 2021 setup is shown in the first picture in this article. This time, however, I wanted to use a different transmitter. Since had run my first HQ-170AC with a separate transmitter, I wanted to do that again. So, I even found one from the same time period as when I was first licensed – in 1964. What I finally used was second place after thinking I would run that HQ-170AC-VHF with a Johnson Viking Valiant that is here – that would duplicate my station in the mid-1960's. But I decided I did not want to lift that 73-pound monster off its display shelf.

Here is the third and final setup for this 2023 event . . .



**Hammarlund Hullabaloo Station #3 in 2023**  
**Hammarlund HQ-170AC-VHF Receiver with Hammarlund S-200**  
**Speaker Console with a Hallicrafters HT-44 Transmitter.<sup>7</sup>**  
**With Astatic D-104 Microphone, Bencher BY-1 Paddle,**  
**and Hammarlund HK-1B Electronic Keyer.**

W9MXQ Photo

A few small details before more information . . .



**Another look at the very rare – Hammarlund HK-1B Solid-State Electronic Keyer**  
**from 1962. This one works, remarkable in itself, but gets suddenly erratic!!**

W9MXQ Photo

I used this setup to try and connect with W4H, or KE4WH, on CW but was not successful in finding them or breaking through the QRM when I did hear them. I did look for them on SSB with this setup, but they were not on the air when I was available.

I was successful getting on SSB with Station #3 with some one-on-one conversations plus more POTA stations on both SSB and CW. I did not use the Hammarlund HK-1B Electronic Keyer at that time because it only arrived here right after the event. For CW at that time, I used the same mystery Keyer, as I identified it, as with Station #1.

One more thing about the Hammarlund HQ-170AC-VHF and its front panel:



Have you ever seen one of these clock faces? This is a General Electric Telechron™ Clock at the upper left-hand corner of the Hammarlund HQ-170AC-VHF Receiver's front panel. It is showing 20:51:57 on its 24-hour clock face.<sup>8</sup> More common in Europe, these are rarely seen here except in a radio-related setup. This clock can be set to turn on the radio at a predetermined time. An example back at the time these were new was to turn on the radio ahead of a schedule so it would be warmed up and frequency stabilized. Criticizing older radios because they drift shows a lack of understanding of the technology of the day.

**W9MXQ Photo**

This article would come under the heading that my proofreader, Bob, W9DYQ, coined, "old time radio at work." More of that to come in future articles.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, [W9MXQ@TWC.com](mailto:W9MXQ@TWC.com).

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a lot more than a proofreader as he nearly always adds commentary that makes it into the article. Bob and I both have "Big Iron" Hammarlund Receivers – and enjoy listening to them and making them part of a QSO, in today's ham radio world.

### **Credits and Comments:**

<sup>1</sup> This event may have predated 2020 – that is merely the earliest reference that I can find.

<sup>2</sup> The information on Hammarlund history comes from: <https://en.wikipedia.org/wiki/Hammarlund>.

<sup>3</sup> This address requires more research. Do you know more? If so, contact me at: [W9MXQ@TWC.com](mailto:W9MXQ@TWC.com).

<sup>4</sup> Icom is a bit unique in that "matching speaker" does not mean a particular radio. Icom has had only a few exceptions over the years that varied from separate three radio sizes



for their fixed station radios. This vintage SP-3 looks great with my IC-751A but would look as well placed with a current Icom IC-7610.

<sup>5</sup> MidCARS is the Midwest Amateur Radio Service on 7.258 MHz SSB. They are available in the midwestern United States primarily to coordinate mobile station operators in contacting friends. They also offer help in testing radios and antennas. I used them all the time when working on a vintage radio – to confirm if it is putting out pure audio or if it sounds like “heck!!”

<sup>6</sup> This picture appeared in the *News Record and Sentinel – The Citizen Times*, of Marshall, TN, concerning the Hammarlund Hullabaloo.

<sup>7</sup> The Hallicrafters PS-150-120 Power Supply for the HT-44 Transmitter is placed just behind the transmitter, almost hidden (but partially visible if you look carefully).

<sup>8</sup> The outer circle with the red numbers are minutes, in common with regular analog=, 12-hour face clocks. The inner ring shows 24 hours instead of the 12 hours we are used to seeing.

© W9MXQ



HAMARS



**Hammarlund Factory in Mars Hill, NC, in the 1950's.  
Location of W4H for the 2023 Hammarlund Hullabaloo.**

HAMARS

# Classified Advertising For Sale & Wanted Items Ozaukee Radio Club Members

de: Bill Shadid, W9MXQ

---

**For Sale:** Glen Martin roof top tower, model RT936. This is a 9-foot HEAVY DUTY anodized aluminum 4 legged roof tower! Included is a Yaesu TB25 thrust bearing, mounted on the top. It will take [I believe] a 1-3/4 inch mast, and tower has a rotor shelf just below the top. It is rated for a larger antenna, at 16 sq ft wind load. It is in very good condition. It has been stored outdoors but out of the wind. Looking for \$500, contact W9GA on the ORC reflector, please!

---

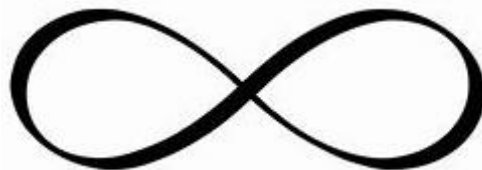
Classified Advertising for Ozaukee Radio Club Members is a members only feature. (Members may post for non-member friends, however.) Contact advertiser for details. The Newsletter Editor has no knowledge of any sale items (unless he is the seller!)..

Ozaukee Radio Club is not responsible for any purchases and cannot be involved in any buyer/seller agreements or disagreements – all sales are final other than what you work out between the buyer or seller.

Advertisements will be accepted up to the 10<sup>th</sup> of the month before Newsletter publication.

Advertising is for one month, only. Ads must be submitted each month by the deadline to be published.

---



# Upcoming Events

de: Tom Trethewey, KC9ONY

1/14/2024 – St. Charles, IL – Wheaton Community Radio Amateurs  
Mid-Winter Hamfest  
<https://www.w9ccu.org/wordpressLimitless/hamfest/>

1/27-28/2024 – Winter Field Day 2024  
<https://winterfieldday.org/>

3/17/2024 – Jefferson, WI – Tri-County Amateur Radio Club Hamfest  
<https://www.w9mqb.org/>

4/27/2024 – Cedarburg, WI – Ozaukee Radio Club Spring Swapfest  
<https://www.ozaukeeradioclub.org/>





## Ozaukee Radio Club minutes of membership meeting. 11/8/2023

de: Ken Boston, W9GA, Secretary

The monthly ORC meeting occurred at the senior center as we have returned to live in-person meetings, along with a streaming version held via Zoom. ORC President Bill K9GN began the meeting at 7:30 PM, with actual members attending, a go-around was conducted. Zoom attendees were also in attendance and were also introduced. New member, Dragi Trifunovich has received his new ham license; KD9ZCS.

### Program:

K9LA, Carl Luetzelschwab was introduced as our speaker; and laid out a new threat to HF Amateur operation, called HFT for High Frequency Trading. This radio service is utilizing HF frequencies and various digital modes to manage high speed trading of stocks and bonds, in order to shave milliseconds off the trading of these financial entities. Licensed in the FCC part 90 as a 'fixed' service, the portals use high power, somewhat wide band digital modes and high gain antenna systems to effect these trades. Many possible problems were discussed, with test sites already operating adjacent to the 14 MHz ham band.

**50/50 Raffle:** This was won by Nancy KC9FZK; winning an award of \$14.00.

**Scholarship Auction:** W9XT auctioned off a desktop computer; it went for \$20 !!

**Committee reports:** [there were no RPT-VP, Tech, and STEM reports.]

1ST VP: JeanAnn N9VSV promoted the ORC swag: cups, hats, badges. See also reviewed upcoming programs for our meetings

Treasurer: Gary N9UUR mentioned that our bank issues are all resolved. The Grafton Sr center rent is renewed for 2024, and dues of \$20/year are now due. Motion to accept made by K9QLP, 2<sup>nd</sup> by WB9RQR, and carried.

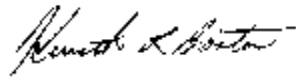
Secretary: W9GA reported that the October 2023 minutes have been posted, a motion to accept was made by N9VSV; 2<sup>nd</sup> by KC9FZK and carried.

**OLD business:** ORC has received inquiries for licensing classes, for the technician class. As there have been no classes for the last 3 years, this issue will be monitored to see what demand there is for a repeat.

**NEW business:** Our dues are now set to \$20/year; and no further increase is under consideration at this time. [N9UUR]. Our officer nominating committee is chaired by W9JI and includes K9QLP and W9MXQ as members.

**Adjournment:** WB9RQR moved to adjourn, K9QLP 2<sup>nd</sup>, motion carried; time end was 9:15 PM. There were 18 in-person attendees, one guest [Jim KF0HGR] 16 zoom attendees.

Respectfully submitted;



Kenneth Boston W9GA, Secretary

---



**This Month's Meeting: December 13, 2023 - 7:30 PM**  
**Program: Club 220 Repeater System,  
History and Upgrades 1988 to Present**  
De: Jeananne Bargholz, N9VSV



Everything you might want to know about the club's 220 Repeater System ... and more! This month's presentation is from Gregg Lengling, W9DHI. A retired Engineer specializing in two-way radio, Gregg says "experimenting and building is my main focus of ham radio and has been since Boy Scout Troop 61 W9BSO back in the 1960's."

---

## **Upcoming Meeting Programs:**

**January 10, 2024, 7:30 PM**

Annual Meeting/Election of Officers

**February 14, 2024, 7:30 PM**

Jeananne Bargholz, N9VSV

Amateur Radio-Related Philately (Stamp Collecting)

---

### **Creating a Presentation**

We are fortunate to have a number of very talented people in our club, many of whom have shared their knowledge through a presentation. Share your expertise and experience with the club. Programs can be on any topic that is ham radio related.

Not sure how to approach talking about a subject? Never used PowerPoint? No problem, I would be happy to help you get your talk ready for the club.

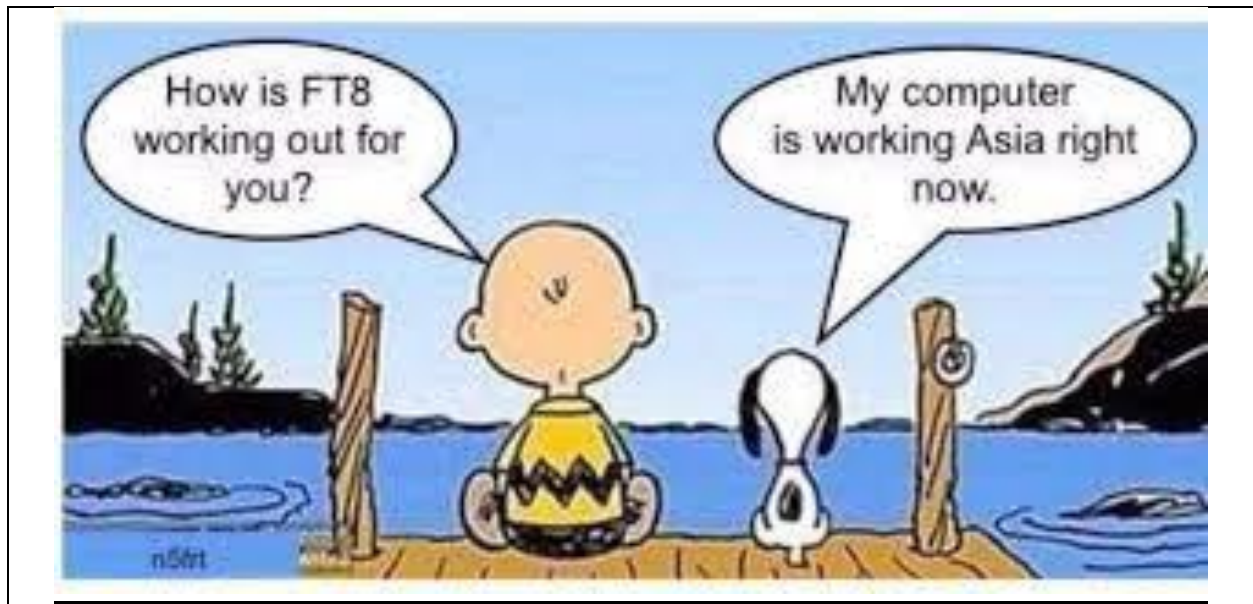
Please consider sharing some of your experiences with the rest of us. If you have an idea and would like some help putting a program together, contact Jeananne at [iamn9vsv@wi.rr.com](mailto:iamn9vsv@wi.rr.com).

---

## ORC Meeting Agenda

13 December 2023

1. 7:15 – 7:30 PM  
Check-In and Introductions
  2. 7:30 PM Call to Order:  
President Bill Greaves (K9GN)
  3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc.
  4. Greg Lengling, W9DHI  
Club 220 Repeater System
  5. President's Update:  
Bill Greaves (K9GN)
  6. 1<sup>st</sup> VP Report:  
Jeananne Bargholz (N9VSV)
  7. Repeater VP Report:  
Tom Trethewey (KC9ONY)
  8. Secretary's Report:  
Ken Boston (W9GA)
  9. Treasurer's Report:  
Gary Bargholz (N9UUR)
  10. Committee Reports
  11. OLD BUSINESS
  12. NEW BUSINESS
  13. Adjournment
- 



# **The Back Page**

**This Month's ORC Meeting  
Hybrid In-Person/Zoom Meeting  
13 December 2023**

**Program:  
Gregg Lengling, W9DHI  
Club 220 Repeater System  
History and Upgrades, 1988 to Present**

**7:00 PM – Doors Open  
7:15-7:30 PM – Zoom Check-In  
7:30 PM – Meeting Begins**

-----

**NEXT MONTH  
Hybrid In-Person/Zoom Meeting  
10 January 2024**

**Program:  
Annual Meeting  
Election of Officers**

---