



# The *ORC* Newsletter

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ORC Repeaters on 146.97 (-127.3PL), 224.18 (-127.3PL), 443.75 MHz (+127.3PL) - Callsign W9CQO

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## From the President

de Pat Volkmann, W9JI



The ORC "Key Up" contest has been running for over two weeks now and has generated much enthusiastic activity. Most of the contacts have been made on the 2 Meter repeater (146.97). When I was on the other day, the repeater was busy for over a half hour with people making contacts. If you haven't given it a try yet, you still have some time. The event runs through March 7<sup>th</sup>, the Sunday before the next meeting. In case you haven't heard, the Key Up contest is about contacting 15 ORC members on one of the club repeaters. Complete details were published in the February newsletter and also in the email reflector on groups.io.

While we are having a good time on the repeater, I can't help but be aware that many of our fellow hams in Texas have not been so fortunate. Extensive, prolonged power outages combined with unusually low temperatures made for a hellish week for millions of people. The Red Cross asked for activation of the regional ARES groups to help with "the effects of the natural disaster, which included a lack of drinking water, power outages, fuel shortages, and frozen plumbing, among others." It's been many years since we have had to deal with a prolonged power outage in Wisconsin, especially in winter. Would we know what to do and be able to respond as effectively as the Texas ARES volunteers?

The Wisconsin QSO Party will be held on March 14, 2021, which is the Sunday following the March ORC meeting. Last year the ORC took first place in the club competition and was awarded a very nice plaque. To help get everyone informed and involved in this year's activity, Michael Johnson, WO9B, will give a brief presentation on the WiQP at the March ORC meeting. We will also have a WiQP breakout room following the Zoom meeting to give everyone a chance to get their questions answered.

At the March meeting this year Ken Boston, W9GA, will once again be the Master of Ceremonies for the presentation of Club awards. There was a nice write up in last month's newsletter describing some of the awards. Be sure to send in your nomination for Ham and Turkey of the Year to Ken, along with your pick for any of the many other honors that we have available to bestow on our fellow hams.

Club Treasurer Gary Bargholz, N9UUR, reports that we have 97 paid and 17 family memberships for a total of 114 ORC members. Many of those are renewals from previous years but we also have a number of new members. Be sure to say hello and welcome our new members. Have you renewed your membership? If you're not sure ask N9UUR and he can let you know if you are up to date.

Just before the really cold weather set in, I managed to get my HF wire antenna back up. It's a design that I came up with to fit the space between several trees in my yard. It looks something like a tripod, with three wires emanating from a central high point. The antenna is fed at the end of one of the wires, similar to an end fed sloper. The antenna covers 160 through 10 meters and is tuned by a Palstar AT5K. I was in the ARRL CW DX contest for a few hours and had a chance to check the antenna out. Fifteen meters was open during the afternoon, which was a real treat. Contacts were made with Europe, South America and Asia on 15, 20 and 40 meters. The most distant station was ZM1A in New Zealand on 40 meters at 11:30 PM. Lots of fun with 100 watts into some wires.

See you at the meeting.—Pat Volkmann, W9JI

## THE COMPUTER CORNER

# No. 276: Reducing the Pain of an OS Upgrade

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*This article was written by Mark Siegesmund, President of West Mountain Radio, and it appeared in their **The Beacon** newsletter, 2020 Quarter 4 issue. Reprinted with permission. It turns out that Mark worked for me when I was running the Department of Anatomy and Cellular Biology at The Medical College of Wisconsin. I hired Mark as a programmer back when he was still in high school. He successfully wrote software and the operating system (similar to CP/M but different from it) that allowed us to put a dumb terminal in every faculty member's office or lab so they could write scientific papers and have their writings saved by a single CPU on a floppy in the departmental office. The secretary could then format an article properly, correct the English and otherwise fix it up and print it. When the*

*faculty member approved it and added the needed illustrations, it would be sent off to the scientific journal for peer review and publishing. My department was the first in the nation that had this kind of facility, back in the era of 8-inch floppy drives and total system memory described in a few kilobytes, not mega or gigabytes!0—Stan, WB9RQR*

A lot of our customers are upgrading their operating systems frequently due to hardware failures. Others are holding on to a OS they know, out of fear of the unknown. This article covers some of the basic concepts of upgrading. Hints and links to utilities are provided to help make the new operating system effective.

A quick history lesson showing the most important releases:

1985	Windows 1	No one really noticed, everyone is using MS-DOS.
1992	Windows 3.1	The first release of Windows that caught on.
1995	Windows 95	Big cleanup of 3.1, now 32 bit, more consumer friendly.
1996	Windows NT 4.0	A lot of hype. New kernel. High security. Big flop.
1998	Windows 98 and ME	Windows 95 with out of the box networking and better graphics.
2000	Windows 2000	A cleaned up version of NT marketed to corporations.
2001	Windows XP	Modernized version of 98. Well received. Also a 64-bit version.
2007	Windows Vista	Took NT/2000 and put in the popular XP features. A flop.
2009	Windows 7	Vista, minus what people didn't like most.
2012	Windows 8 and 8.1	Windows 7 plus a smart-phone-like human interface. A flop.
2015	Windows 10	Took 8 and made the user experience more like XP.
***	***	Microsoft says there will be no more names. They have had several major versions since the initial release, all called Windows 10. Each release seems to be more internet/cloud dependent.

### Compatibility

The primary concern for application programs is if they are 16, 32 or 64 bit programs. Windows only allows running one step down. A 64 bit Windows 10 will not run old 16 bit programs. It can, however, run a 32 bit Windows 10 on a 64 bit machine. A 32 bit OS can only access 4 gig of memory, so be aware. Sometimes the programs themselves will check the OS version and they will not run if it is higher than what they are designed for. Windows has a way around this where users can set it up to lie to the application about what the version is.

Drivers are much harder to use between versions of Windows. Check to see if the drivers needed, like for a printer or other connected device, are available for the new OS version. Using the older drivers on a newer version of Windows frequently will not work.

When upgrading from Win7 or Win8 to Win10, Win10 will keep the programs installed. To upgrade from older systems, upgrader programs like Laplink can help. Either way, Windows keeps a copy of all old documents in a file called c:\windows.old. After installing, the first step is to rename that file. Windows will delete it when it thinks it is unneeded.

### **Virtual Machines**

Virtual machine software allows users to customize an environment that can emulate a specific hardware platform. This allows loading another operating system running under the primary operating system. For example, on a new Windows 10 system, virtual machine software can be installed and then load a full XP operating system on the same machine. In the case of Windows, a license key is still required to install it. When discarding an old XP or other machine, keep the key so it can be used for a virtual machine. Older programs and drivers should be able to run under the virtual machine. XP runs extremely fast on a modern PC. A virtual machine is also a great way to start playing with Linux. Most Linux operating systems are free. 16 bit programs from the Win98 days can still be used on a virtual machine. See the references at the end of this article for help getting started.

### **About Windows 10**

Out of the box, Windows 10 is strongly tied to the Internet. Some users will appreciate the convenience of keeping things up to date behind the scenes and giving hints based on Internet queries. Other would prefer their OS would only access the Internet when specifically requested. When first installing Win10, disconnect from the Internet to bypass creating a Microsoft cloud/email account. After installing, there is a utility that can be used to control privacy settings. See the references for a link. For total control, use an outgoing firewall. This can be used to block any program not specifically authorized from accessing the internet. There is a bit of a learning curve to set this up properly, but it can be very effective. It may bother people that the XBOX software they never use or installed is doing who knows what on the Internet, then this will help. XBOX seems to be one of the software programs Microsoft installs and does not let users uninstall.

### **Win7 to Win10**

It may still be possible to upgrade from Win7 to Win10 for free. You can try using your Win7 license key to activate Win10. There is more information on a link in the references. Win10 can be downloaded from Microsoft, then burn it to a flash drive using Rufus and use the existing key to get a fresh install of Win 10.

### **Hard Drives**

Windows 10 can only be installed on a disk with the newest file system type (NTFS). There will be no problem starting with a clean drive. Otherwise, the older FAT32 file system needs to be converted to NTFS before installing Win10. Note that there are two popular disk formats, MBR and the newer GPT. Windows 10 will work on both but if starting clean it would be best to format the drive for GPT and a NTFS file system. The last time I tried to install Win10 on a FAT32 partition, I got a cryptic error with a giant number. The error messages may have improved since then.

### **Removing Extras**

There is another utility that can be used to uninstall programs users do not plan to use. This is an easy way to get rid of a lot at one time. Be aware there are two type of programs under Windows 10. The traditional type of programs run when double clicked, or they can be set up to run on startup. The newer style programs are called apps and those are usually running in the background. Menu squares (also known as live tiles) on the Win10 start can be seen with programs showing the current weather and news when users click on start. These are the mobile phone style apps that are running.

### **Start Menu**

Many find the new style of start menu hard to use, especially for traditional programs. I have a recommendation for yet another utility that will restore the start menu to something more traditional (and usable). This is the first thing I install on Windows 10 systems. *[The original of this article showed here a snapshot containing a new Win8/10 style start menu next to a more traditional start menu. Majorgeeks has a number of programs that will allow a more traditional style start menu under Windows 10. –Stan]*

### **Web Browser**

Microsoft Edge is the newest web browser. Microsoft works very hard to get people to make that the users default browser. Even if users resist and install another browser like Firefox, Edge keeps coming back. Edge runs as an app and some apps like that do not run when users operate as an administrator, so I never gave it much of a chance. I never was a fan of the Microsoft browser, since the older IE seemed to be a virus magnet and tended to corrupt downloads. The newest version of Edge has a Chrome engine behind it so it works very similar to Chrome. I do not have an opinion as to how good it is. I have not had trouble with Firefox so that is what I use. Many others seem to prefer Chrome.

## **File Security**

File security will take some getting used to if users are coming from XP. There is a way to turn off all file security, but Windows will punish users if they do it. Security is set up as if a lot of people were using the same PC and want to keep some data private from other users. The problem is that the vast majority of people have one user per PC and file security just gets in the way. It is further complicated by special rules and exceptions to try to keep popular older programs running. For example, in the XP days, a lot of programs kept user settings in the program files directory. Windows 10 does not allow writing to that directory, so when a program attempts to do that, it goes somewhere else instead. When a program tries to read the data from program files it goes to the secret directory to get the file. This works until a user tries to delete files or move data on their own. My recommendation to reduce grief is to just put all the files created somewhere under the documents folder. By default Windows makes those files broadly accessible. If users have programs written before 2006, they probably want to install the programs directly under Documents instead of under program files or directly under the root directory (c:\).

## **Administrators**

If there is only one user, then they are probably set up as the PC administrator. In Windows 10, that does not mean what it used to. For programs that require administrator privileges, users will be prompted to confirm they want to run it. For programs that need administrator privileges, but do not know it, or if the programs were written before Windows 7, they need to right click on the icon and select RUN AS ADMINISTRATOR. There are some exceptions to make things less objectionable. For example, if they run a program with setup in the name it will run as an administrator. There is also a hidden administrator account that will give users more privileges if they log into it. Google "hidden administrator" for more details. Some buttons in Windows will have a shield on them, meaning if users click on it, it will do what they want in administrator mode. This replaces the nag that would pop up in older versions.

## **Updates**

Unlike previous versions, Windows 10 makes it very hard to prevent automatic updates. We bring a bunch of laptops to shows to use in demos and we frequently have a laptop or two down for a couple of hours doing an update. Newer versions of Windows allow users to defer updates for some (small) number of days. Frequently the updates begin when users first power on the PC and I have not found a way to stop it. PCs could be in transit for more than a week before being powered up so the deferral feature is less useful. If users get internet over WiFi they can mark the WiFi connection as being metered and then tell the update utility not to update over metered connections. This is the easiest way to stop updates. A reference is provided for more advanced situations. Be aware when it is updated, these tricks likely will change.

## **Searching**

Starting with Win7, searching became a bit difficult in Windows. They now have a search box in the upper right of the file explorer window for searching. When they start typing in there, other search options appear at the top of the window. This only searches the computer drives for the files users are looking for. I frequently have trouble getting this to find all the files and I have not figured out why. It may only look for certain types of files. I use a command line version of grep for local searches but would prefer a good GUI version. In Win10 users can also press the Windows key and S to bring up a search window. That version of search sometimes also looks on the internet. The search Microsoft is pushing in Win10 is called Cortana. It will transfer audio from the Mic or typed in questions to Bing for answers. The easy way to just turn it off is to right click on the taskbar and select SEARCH > HIDDEN. See the references to prevent the audio from being sent to Microsoft.

## **Backup**

We all know backing up is important, or at least we do when a drive crashes. To avoid crashes, users may want to just replace their hard drive after 30,000 hours of use. The cost is low compared to dealing with a crash. The most annoying thing I have found in backup utilities is many companies stop supporting their own backup formats in newer versions of the software. For example, I cannot read my Win98 backups under Win10. For people that do not have a lot of data, just copying everything to a DVD periodically is one solution. I found the Win7 backup program works well. By installing a second backup drive users can set it up to automatically keep an archive of their data on the second drive. Win10 includes the Win7 utility, but it needs to be turned on. I am currently using the EaseUS backup utility and have found it effective, but it does have a learning curve. The Win10 out of the box backup might work for some people, but it does seem to think it is smarter than the user and it does some scary stuff. One more hint, make a copy of the C:\boot directory if a full backup is not done. I have had that directory get corrupted twice during a power failure. When corrupted, the PC will not boot.

## **Conclusion**

It takes some effort to configure Windows 10 to be most effective for users, however, it is quite usable. As for bugs, it is probably about the same as XP. The difference is we have had time to get used to the XP issues. Windows 10 blue-screens maybe once a month, about the same as XP and much better than 98. More and more software is only available for Windows 10 and many companies will not provide support for older OS hosts. It can be valuable to upgrade during free time.

**References:** This list has URL links and a search term to use if the link does not work.

Better Start Menu

**Search:** open shell download

[https://github.com/Open-Shell/Open-Shell-Menu/releases/download/v4.4.152/OpenShellSetup\\_4\\_4\\_152.exe](https://github.com/Open-Shell/Open-Shell-Menu/releases/download/v4.4.152/OpenShellSetup_4_4_152.exe)

Privacy Settings Utility

**Search:** OOSU10

<https://www.oo-software.com/en/shutup10>

Fast Uninstaller Tool

**Search:** Bulk Crap Uninstaller

<https://www.bcuninstaller.com/>

Virtual Machine

**Search:** VirtualBox

<https://www.virtualbox.org/wiki/Downloads>

Free Linux

**Search:** Linux Lite or Ubuntu

<https://www.linuxliteos.com/download.php>

Maybe get a free upgrade from 7 to 10

<https://www.cnet.com/how-to/how-to-download-windows-10-for-free-now-that-windows-7-is-dead/>

Convert drive to GPT or manage drive partitions

**Search:** Mini-Tool partition manager

<https://www.partitionwizard.com/free-partition-manager.html>

Stop auto update

**Search:** stopping windows 10 update

<https://www.windowscentral.com/how-stop-updates-installing-automatically-windows-10>

Really stop voice activated searching

**Search:** getting rid of cortana

<https://gadgets.ndtv.com/laptops/features/how-to-disable-cortana-on-windows-10-1683223>

Find out how many hours the hard drive has run

**Search:** crystal disk info

<https://crystalmark.info/en/software/crystaldiskinfo/>

Outgoing Firewall:

**Search:** WFC firewall

<https://www.binisoft.org/wfc.php>

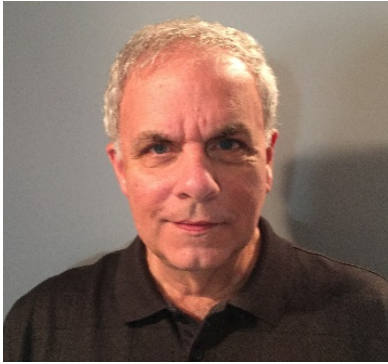
The older style calculator

**Search:** Microsoft Calculator Plus

[http://download.cnet.com/Microsoft-Calculator-Plus/3000-2053\\_4-10628441.html](http://download.cnet.com/Microsoft-Calculator-Plus/3000-2053_4-10628441.html)

# Vintage Amateur Radio

de Bill Shadid, W9MXQ



If you were licensed in the 1950's and 1960's (or even earlier!!) you experienced what we now know was the dawn of the ham radio transceiver concept. At the same time, we unknowingly watched the separate receiver and transmitter in the ham shack fade away.

Licensed in 1964, I was able to see first-hand the early SSB equipment which at that time was brand new, or at least not really at the time what we would have called, "Vintage Amateur Radio," as I pen this article series today.

My first complete ham station was made up of relatively new equipment at the time – it was used but not out of date. It consisted of a Hallicrafters SX-101 Mark III Receiver (introduced in 1958) and an E. F. Johnson Valiant Transmitter (also introduced in about 1958). My SX-101 was soon replaced by a brand-new Hammarlund HQ-170AC in 1965. Today, all three of those radios are considered not only Vintage but the last version of the HQ-170AC (the HQ-170AC/VHF) is hard to find.<sup>1</sup> So, I was born into ham radio when the separate receiver and transmitter were king.

Transceivers date perhaps from the late 1930's and units like the portable RCA ATR-219 Transmitter/Receiver for the 5-meter band. It cost, about \$20.00 then (not including batteries, tubes, or microphone). A similar cost competitor was available at the same time from Allied Radio under the Knight brand<sup>2</sup>. These were AM radios and were separate receivers and transmitters in a single cabinet – not true transceivers.

In 1946, Abbott produced a 2-meter AM receiver/transmitter, called the TR-4B, that sold for about \$20.00 in that year<sup>2</sup>. Abbott and the TR-4B model number have no relationship to the later TR-4, TR-4C, TR-4CW, and TR-4CW/RIT transceivers from R. L. Drake Company.

By 1953, the Gonset introduced the Communicator AM Receiver/Transmitters<sup>2</sup> for the 50, 144, and 220 MHz bands.



**Gonset Communicator**



**Gonset Communicator IV**  
Uncredited Internet pictures

These Gonset "transceivers," as they were called, were like the predecessors mentioned above – not real transceivers, as we know them today. They did not share circuitry between the receiver and transmitter. The Gonset rigs were known to those of us then as "Goonie Birds" or "Gooney Boxes" and were dominant in emergency communications.

There were also similar VHF receiver/transmitter radios from Sonar, Sperti, Polycomm, Clegg, and others in that popular VHF AM market. All of this was before the wide availability of surplus commercial FM equipment that drove the boom in VHF FM communications and repeaters.



The first successful high-frequency receiver/transmitter was marketed by Hallicrafters in late 1950 with their model SR-75 – essentially a Hallicrafters S-38 Receiver that included an internal low power CW transmitter covering the 80-10 meters. As with all the above<sup>4</sup> receiver/transmitters, this radio was crystal controlled on transmit.



**Hallicrafters SR-75 Transceiver from 1950**

**Uncredited Internet picture**

So, there you see it – the Hallicrafters SR-75 that is the grandfather of that modern transceiver that sits in your ham shack. The SR-75 is still not a true transceiver but at least it is a product focused on the high-frequency part of the radio spectrum. In case you were wondering, the tune and load controls for the transmitter are on the rear panel.

But, the true SSB/CW transceiver, was on the horizon even in 1950. Actually, there were two manufacturers in the forefront of this new market – a market perceived in the 1950's that was quite frankly a bit of a risk. Both Collins and Hallicrafters were ready to move forward in mid-1957. It was a complete change in the concept ham radio operators had accepted from the beginning – we thought the receiver and transmitter were two different animals that were impossible to combine. For sure, the “transceivers” thus far introduced were packaging marvels – they took separate devices and conveniently installed them into a single cabinet. The cabinetry was designed to look like a single operating entity. They were so cleverly designed that users thought of them as a single device.

Back in that time frame, Collins introduced their ground-breaking, compact KWM-1 Transceiver. First shipments to dealers took place in August of 1957.<sup>2</sup> But, at the same time, Hallicrafters was announcing the coming of their even more ground-breaking FPM-200 HF Transceiver.<sup>3</sup> There were major differences in the concept of these two radios. Below are pictures of those now famous transceivers. (Well, at least famous if you are a ham radio operator.)



**Collins KWM-1 HF Transceiver with 516F-1 AC Power Supply  
HF Coverage limited to 20, 15, and 10 Meters**

**W9DYQ**



**Hallicrafters FPM-200 HF Transceiver with P-200 AC Power Supply  
HF Coverage of 80-10 Meters**

**W8ZR**

Both radios are in the 100-watt power output category on SSB and CW. The KWM-1 was heavily based on the popular, at the time, Collins 75A-4 Receiver and KWS-1 Transmitter. It was a vacuum tube design which then was very acceptable. Hallicrafters, however, produced a hybrid transceiver in the FPM-200 – it was all solid state (Germanium transistors!) with vacuum tubes for the driver and two final amplifier tubes. There were also two vacuum tube regulators in the power supply. While the KWM-1 used known technology with some significant packaging design, the FPM-200 completely changed the design concept. The FPM-200 included two separate VFO's with separate pointers on the slide rule dial. The KWM-1 lacked any separation of receiver and transmitter frequency.

Only a few months after the 1957 Collins' release and Hallicrafters announcement, Cosmos Industries introduced the Cosmophone 35<sup>3</sup> Dual Receiver SSB/CW Transceiver. It had dual VFO's as you can see in the following picture:





**Cosmos Industries Cosmophone 35 HF Transceiver**

**WA5UEK**

The Cosmophone 35 was produced in small quantities and ultimately was removed from the market. It was a vacuum tube design with a single 6146 final giving an output of 35 watts on SSB and CW. A few later production units used a single 4CX250B final amplifier for a power level of 1,000 watts and was called the Cosmophone 1000. Given the tube and the power level, that had to be input power. The Cosmophone transceivers used Collins mechanical filters and were very robustly made.

Hallicrafters made up for its extremely limited production of the FPM-200 with the popular, vacuum tube SR-150 HF Transceiver in 1961. Two years after the introduction of the Collins KWM-2 HF Transceiver. Both were 80-10 meter transceivers with the Hallicrafters being 150 watts input and the Collins being 180 watts input. Both were SSB and CW only.

The Hallicrafters SR-150 was offered in a complete station setup:



**Hallicrafters SR-150 HF Transceiver  
with PS-150-120 Speaker/AC Power Supply**

**W9MXQ**

Hallicrafters also offered a 3-400z Triode equipped matching HT-45 Linear Amplifier for 1,000 watts SSB and CW Input Power. The SR-150 had Receiver Incremental Tuning.



**Collins KWM-2 HF Transceiver  
with 516F-2 AC Power Supply and 312B-5 Station Console**

**W9MXQ**

Collins also offered a 4x 811A Triode equipped matching 30L-1 Linear Amplifier for 1,000 watts SSB and CW Input Power.

Some other early entries into this market were the National NCX-3, HF (80, 40, and 20 meters) Transceiver from 1962:



**National NCX-3 HF (80, 40, and 20 Meters) HF Transceiver**

**WA6DIJ**

Others came a bit later – some were noteworthy by the fact that they had extremely limited production or never made it beyond the prototype stage. One such radio was the E. F. Johnson Avenger HF Transceiver and another, more popular, SBE SB-34:



**KØMYW**



**W9MXQ**

The left above is the E. F. Johnson Avenger<sup>3</sup> HF Transceiver. Note the dual VFO controls at either side of the dual pointer slide rule dial. It is said that most of the units produced stayed with E. F. Johnson employees.<sup>2</sup>



To the right above is the SBE (Sideband Engineers<sup>3</sup>) SB-33 HF Transceiver. It covered only 80-15 meters. SBE was successful for a time in the market. Their offerings (including the SB-33, SB-34, and exceedingly rare SB-35 models) were essentially SSB radios with little attention paid to CW. Production moved overseas with the SB-35 and SB-36 models and CW became an included mode.

A bit off topic because it was not SSB, an extremely popular transceiver of the day, with separate receiver and transmitter, was the Gonset G-76. It was an 80-10 meter AM/CW Transceiver – with plate modulated AM. It was introduced in 1960 – right as the SSB boom was beginning:



**Gonset G-76 AM/CW HF Transceiver – 80-10 plus 6 Meters**

RigPix

The G-76 closed in a bit on the true transceiver concept with audio-based circuits common between receiver and transmitter.

Gonset did attempt a full SSB Transceiver in the GC-102, but it was not successful. They can occasionally be found on the used market – but are certainly quite rare.



**Gonset GC-102 HF Transceiver – 80-10 Meters**

Uncredited Internet picture

Gonset's separate SSB/CW/AM/FM GSB-100<sup>3</sup> Transmitter and GSB-101 Linear Amplifier were marketed successfully for a time.

In the period between the Gonset G-76 and the GC-102, Gonset founder, Faust Gonsett (note the difference in name spelling) left Gonset to help found Sideband Engineers. It seems that when Gonsett left Sideband Engineers that company also began to drift away from successful product offerings. That is just my opinion from a lot of reading of the history of those companies.

The last player to be mentioned here is Hammarlund Manufacturing Company – one of the earliest manufacturers in radio and one that was nearly dominant in SSB Receivers well into the SSB era. They announced a PRO-200<sup>3</sup> HF Transceiver in 1963 that was never produced. Then in 1964 they released and then quickly withdrew the HXQ-300<sup>3</sup> HF Transceiver.<sup>2</sup>

There were other players in the market as the transceiver came on the scene. But this article deals with transceivers. Other manufacturers were in the single sideband market, some significantly so, but with stand-alone transmitters. Included were Lakeside Electronics, Central Electronics, Hunter, Eldico, Reliant, and others.

Special thanks go to Bob, W9DYQ, for his proof reading. I appreciate that you read my articles. Remember that I am open to questions and comments at my email address, [W9MXQ@TWC.com](mailto:W9MXQ@TWC.com).

**Notes:**

<sup>1</sup> Many thousands of the Hammarlund HQ-170, HQ-170C, HQ-170A, and HQ-170AC were produced, to be sure. However, the last version, the HQ-170AC/VHF, is difficult to find, today.

<sup>2</sup> Reference Mike O'Brien, KØMYW, in some of his writings – publication not identified.

<sup>3</sup> Subject of a future article.

<sup>4</sup> Some of the Communicator models included in integral VFO for the transmitter. Other brands offered external VFO's. Stability could be an issue so a lot of use for emergency communications were handled with crystals to control transmitter frequency. The integral VFO's in at least the Gonset units used a different dial scale so had a separate readout panel on the radio – or simply a calibrated knob.

© **W9MXQ**

# DX'ing & Contesting

*De Gary Sutcliffe (W9XT)*



March. In like a lion, out like a lamb. Or something like that. Maybe. What you can count on is that if it is March, it is Wisconsin QSO Party time. This is the one time the rest of the ham world is looking to contacting us.

Last year a few of us tried to get some activity in the ORC, and we won the club competition for state clubs. Nice job! Now we are at the top, we need to stay there, and we are a target, so we must be even better this year.

The WiQP allows everyone with a license to participate, and we will need more ORC participants than last year. VHF contacts must be made on simplex frequencies. HF contacts can be made on CW, digital, and phone. Note that FT8/FT4 contacts are not valid for the WiQP. Those modes can't support the exchange. I expect RTTY is the best choice for digital, but I don't know if there is any activity there.

Your score is the number of QSO points times the number of multipliers. Multipliers are states and Wisconsin counties. That is multiplied by a power factor. You want a good mix of lots of QSOs and multipliers.

You will send your current county. Other Wisconsin stations will send their counties, and the rest will send state or Canadian province. Signal reports are optional.

I will describe some suggestions for maximizing your score. Follow as many as you can, consistent with your station, license class, and skills.

First, read the rules so you know what you can and can't do. They are online. [https://warac.org/wqp/wiqp\\_rules.htm](https://warac.org/wqp/wiqp_rules.htm)

There are VHF suggested frequencies in the rules. You are not allowed to use repeaters. Having a beam will help to get other counties. Another option is to go mobile. If you go mobile you can work everyone again once you get to a new county. On top of that, if you make 12 or more contacts in a county outside your home county, you get 500 bonus points. Hitting a few counties can rack up some serious bonus points.

If you do go mobile, drive safely. It is best to have someone else drive. Going to a high point and parking will extend your range and lead to even more contacts.

It will be easier to work a lot of counties and states on HF. You will work most WI stations on 40 during the day and on 80 after dark. Note that we have been getting long skip, and many WI station signals will be bouncing over our heads. Get to 80 a little before sunset, and even check it out a couple of times before.

You can work many states on 40 and 80 meters, but a couple of trips to 20 meters will help get some distant states. It is well worth the effort. Keep the trips to 20 short, maybe 20 minutes at a time. You will want to get back to the lower bands to work the mobile stations.

Many of the rarer counties don't have anyone participating in the WiQP. Your only shot is to work a mobile station as they pass through. The strategy for them is to work 12 stations in a county as fast as possible, get their 500 bonus points, and move on.



They will be on 20M at the start for the most part. Mobile antennas on 20 are more efficient than 40 and 80 meter ones. There will be plenty of stations in other states to work early on 20 meters, so it makes sense for them to be on 20 meters. Later they will move to 40 and 80 meters. It is frustrating, but that is a fact of life. Being in the southeast corner of the state helps us somewhat.

If you are familiar with the DX spotting networks, use them. That will help you track the mobiles as they move to the next county, and you can work them again. Also, check the WiQP site on Saturday before the QSO Party. Many mobile stations will post their routes and the expected times to be in the counties they hit. It will give you an idea of when to look for them for the next county. Note that many of them will have 2M with them. They might not be a new county when they get in your area, but they are good for another QSO.

Plan on spending 1/2 to 2/3 of your time on CW if you are proficient with it. CW contacts are worth two points. Digital contacts count as CW contacts. Phone contacts are worth one point. Don't spend all your time on CW at any rate. You can work the same station on each band on CW/digital and again on phone.

Also, there will be some WI stations only on phone. You won't make a contact with them unless you go on phone. Also, some rarer counties will have only phone ops on.

Be sure to call CQ at least part of the time. Probably half the stations never call CQ. Out of state stations will rarely call CQ. You will never work them unless you take the first step and call CQ yourself. Furthermore, you can usually make contacts faster if they come to you.

My general strategy is to bounce around a lot and never spend more than 20-30 minutes before switching bands and/or modes. You want to catch openings to different areas and operators on as many bands and modes as possible.

Finally, double-check that you have Ozaukee Radio Club listed on your submission. Spell out the club name and don't enter ORC. We want your log to count!

Other than the WiQP, March is not a big contest month. One big one in March is the ARRL DX Phone contest, but it will be over by the time you read this.

The WPX Phone contest is March 27-28. You work everyone, everywhere. QSO points depend on distance and band. It is somewhat complicated but explained in the rules, and your logging program will figure it out for you. Multipliers are call prefixes, i.e., W1, W2, N3, K3, WA4, WB5, etc. Having a call like WT9Q is much better than, say, W9XT. Full rules are at <https://cqwp.com/rules.htm>

April is also a quiet month as far as contests go.

After nearly a year, we have an interesting DXpedition happening! Cocos Keeling will be on March 16-23. The group includes ten ops. They will be on 80-6 meters, SSB, CW, and FT8. The call sign will be VK9CE. This is a challenging path from Wisconsin to the island northwest of Australia. I need it on a bunch of bands and on digital, so I hope to fill a few band slots.

One of the few benefits of the COVID lockdown is the expansion of technologies like Zoom that lets us meet virtually. Members who can't attend meetings because of distance or other reasons can now participate. Many clubs have opened their meetings to everyone. Conferences that are in-person events are often now open to all online. There are two big ones this month.

The first one is the QSO Today Expo on March 13-14. They had the first event last August. They had many exhibitors and a ton of excellent presentations on just about every aspect of ham radio you can imagine. Over 16,000 attended last year.

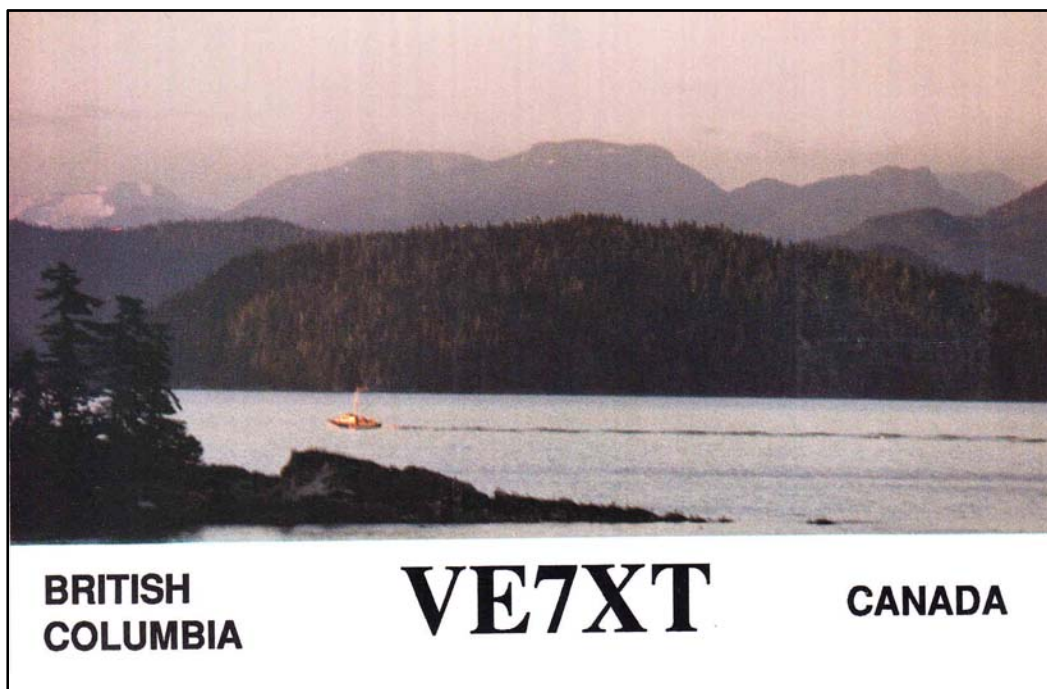
It was free to attend last year. Due to the cost of putting this on, it will cost \$10 to attend. That is not much more than a hamfest ticket, but this runs for two days, and so far, there are over 80 presentations scheduled. By registering, you get 30 days access to the presentations, so if you can't attend some or there are two on at the same time you want to see, you have a chance. More info at [www.qsotodayhamexpo.com](http://www.qsotodayhamexpo.com) They have an early bird price, so if you plan to attend, it is probably a good idea to sign up right away.

Now, those with sharp eyes might have noticed that it is the same weekend as the WiQP. I will be exhibiting with my company Unified Microsystem (Slinger Wisconsin's largest ham radio manufacture!), so I will miss a large part of the WiQP. I am also tentatively scheduled to give a presentation. So, the rest of you will have to pick up for me slacking off.

Another great event is the HamSCI workshop. <https://www.hamsci.org> Normally an in-person event, they made it virtual last year. It was my first Zoom event. They are doing it the same way again this year.

HamSCI is a group of university researchers working with hams and citizen scientists to understand how space weather and radio propagation work. They had a lot of interesting talks last year. This is Friday and Saturday, March 19-20. Details on the event are not finalized on their website. Check again as we get closer to the date.

This month's QSL is from VE7XT. I like to collect QSLs from other stations with the XT suffix.



That wraps up March on the air. Hopefully, it will be warmer, and the snow melted. I have antenna work to do!

# Remote Station Building, Part 4

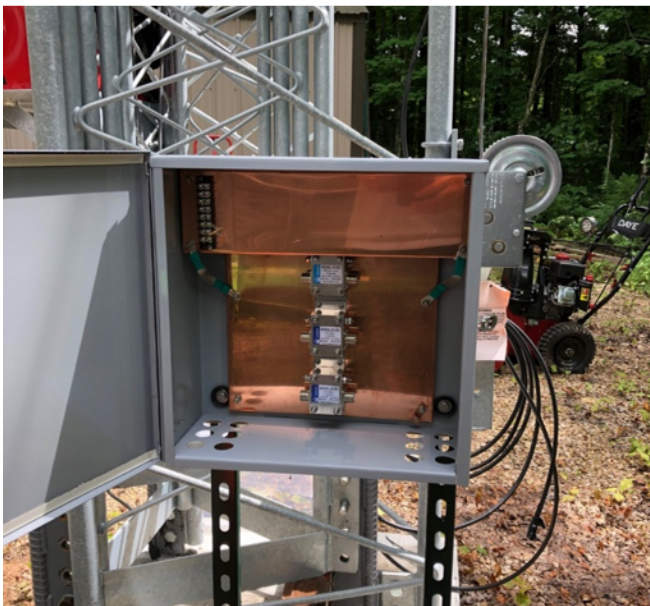
de Jeff Whisler, W9KW

I spent much of Covid summer finishing the hardware details of my project. With the help of some friends, we pulled three runs of low loss coax and a length of rotor cable from the entrance panel at the house to the distribution panel at the tower a distance of about one hundred feet. I bought the entrance panel, distribution panel and lightning arrestors from KF7P. These items are very high quality. Chris even painted the entrance panel to closely match the siding on the house. Here is the entrance panel:



The lightning arrestors are mounted on a solid copper plate. The plate is connected by #6 solid copper wire that is welded to an 8-foot ground rod.

Here is a picture of the distribution panel at the tower:



After working with the tower for a month or so I grew very tired of the of effort required to raise and lower the tower as well as tilt the beast over for tuning and adjustment. I went back to KF7P and Chris sold me an adapter plate that allowed me to install a motorized winch to raise and lower the tower. I installed a Harbor Freight 2000-pound winch and now it takes less than a minute to fully raise or lower the tower. I also got an accessory from the tilt winch manufacturer Dutton-Lainson that allows use of a slow speed high torque mixer to tilt the tower over. Again I bought a mixer from Harbor Freight and it has saved tons of energy, tons....get it? With these two additions I can have the tower lowered and tilted over in less than 15 minutes.



Here is the winch on the adapter plate:



I spent some time referring to the ARRL book on Grounding and Bonding. I also watched a presentation on the subject by the author, H Ward Silver, N0AX. I admit I did not follow his recommendations 100%. I didn't have the money and my body just isn't up to that much pick and shovel work yet. I did place four eight-foot rods around the tower about eight feet from the legs. Each leg was connected to a rod and all the rods were joined together with #6 solid cooper wire. The wire and rods were exothermically welded together, no clamps to loosen or decay. The welding is done using a product from Harger sometimes called a "one shot". There is a ceramic mold that goes over the

rod and the wires also go into that mold. A thermite mixture is placed into the mold and ignited. The resulting combustion welds the parts together securely.

Here is one of the welds:



I spent the last few weeks of September dressing up the cables and making things look pretty both outside and inside. I also began testing my remote software across two LANs. One day we had some high winds and a bit of rain. Outside with the dog, I noticed to my horror that the wind was lifting the beam up on its "Tilt Plate" hinge and slamming it back down. I quickly ran inside and turned the beam to stop that from happening. This is a known problem with this arrangement. The solution is a specific mechanism called a KAR lock. I hoped to avoid the cost but not so. The lock prevents the beam from lifting more than an inch or so in high wind and yet it still tilts for maintenance. The lock is shaped like a big letter J.



Here is a picture of the lock:



Just as we were preparing to move to our new condominium in Lannon we were notified that our internet provider was going out of business. This was a huge blow. Fortunately, T-Mobile began offering a rural cellular remote service at the same time. While it isn't an unlimited plan so far it seems to have enough speed and bandwidth for my needs. There are rumors that a broadband expansion grant will be available in our area this spring. I sure hope so.

As I write this we are moved in and I am trying to set up my new shack. I have plans for some radios here in Lannon but most will be remote operation. As you might guess I have had some teething pain but nothing serious so far. In the end I am using Win4ICOM suite at the radio site to control the IC-7610. I am using AnyDesk to remote into that computer and Skype for audio from Lannon. I hope to eliminate Skype soon. I have several other programs running or available all remotely. I use MS TeamViewer as a backup to AnyDesk. I need to work out logging / contesting.

Here is the finished tower bathed in wintery frost:



I hope you work me during the Wisconsin QSO party from Langlade County!

73, Jeff W9KW



# Vintage Magazine Cover Art

By Pat Volkmann, W9JI

Our cover this month, "His New Enemy", is from the March 1920 issue of Radio Amateur News. The dog appears to get a leg up on the cat, pressing the key with his paw while the cat is a bit too close to the rotary spark gap. The spark gap comes to life and seemingly electrifies the cat. The arcing of the spark and whine of the motor would have been quite loud and, no doubt, very startling to the feline.

A spark gap transmitter produced radio waves from an electric spark. The development of high power transmitting tubes at the end of WW 1 spelled the end of the spark transmitter. The continuous wave oscillator, invented by Edwin Armstrong in 1912, was to replace spark transmitters by the early 1920s. Radio operators were called "Sparky" for many years after the spark gap disappeared.



"His New Enemy" Radio Amateur News March 1920

# Repeater Tones and IDs

By Nels Harvey, WA9JOB



*This is a reprint of the article in the February ORC Newsletter, with a few comments added that probably should have been included in the Newsletter. This email is being sent now because of the 15 ORC member contact challenge on Club repeaters that's now underway.—Nels, WA9JOB*

There has been more attention given to the three Ozaukee Radio Club repeaters recently. The recent survey as well as the Covid “Stay at Home” has brought an “uptick” to the usage. It occurred to me that there are many new members that do listen, and wonder what the various beeps, or tones, represent.

First, if the 224.18 MHz Repeater, or the 146.97 MHz Repeater haven't been used for about ten minutes since it last ID'ed, you will hear it say “W9CQO”. Then after each transmission you will hear the reset beep, or beeps. The tones represent the CW letter T, or if there is a weather event, CW letter W. The 443.75 MHz Repeater does not have this voice feature. Instead it will transmit W9CQO/R with CW tones.

The repeaters all have a three-minute timeout timer. When using the repeaters, wait for the reset beep after someone else's transmission. When you hear the reset beep/s the timer is reset and you have a full three minutes for your transmission. Our repeaters all are operated in "Automatic" mode and three minutes is all the time permitted by the FCC for "Automatic Mode".

The repeater will ID every ten minutes in CW when in use. After your QSO, the repeater will do a final ID in CW ten minutes after its last ID. If the repeater remains unused for ten minutes after the last CW ID, the next time someone accesses the repeater the Voice ID will be heard.

On Tuesday at 8 P.M. we hold an informal Net. During the net the reset beeps represent the CW letter 'N', for Net. The main site receiver timeout timer is set for ten minutes when the 'N' ID is heard. Since there is a control operator overseeing the net, the three-minute timeout timer limit is not necessary and can be extended as desired. We set it at ten Minutes. The five remote receive sites remain at three minutes timeout however.

The controllers that do these functions have been in service for more than 20 years. When they were programmed, notifications about impending weather events were programmed as well. Now, with cellphones, we all get the notifications, and there is no need to depend on the repeaters. Never the less, a control operator may change the reset to a 'W' in CW, or even “Tornado Warning” by voice if it is appropriate.

All three ORC repeaters are kept in good operating condition by Gregg, W9DHI, Tom, KC9ONY, and their control operators. The .97 repeater has five remote receive sites so your low power HT can be heard, and can sound as good as most mobile and home stations over a wider area.

One other good operating tip: Remember, if your signal is picked up by one of the remote receivers, it takes about 200 milliseconds for the PL tone to respond. It then needs to be detected at the main site, where another 200 Milliseconds is needed, before your signal will be

heard. The technique of keying the mic and immediately talking, like on single sideband on the low bands, will result in dropping the first couple of letters from your call sign. Even if you are into the main site there is a bit of delay.

So, turn your radio on, key your mic, wait a half second so the PL can respond, (This is important) ask "Is anyone around?" and perhaps you can have a nice QSO with someone you know!

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## **Wisconsin QSO Party**

**March 14, 1:00-8:00 PM Local**

**Let's win the state club category again!**

**Every entry helps!**

## **KA6LMS - Special Radio Event**

The Last Man Standing Amateur Radio Club is joining with a team of seasoned special-event operators across several states to present a multi-band, multi-mode special event celebrating the prime-time network TV show for its positive and accurate portrayal of amateur radio. During its nine seasons, the Last Man Standing ARC also operated as KA6LMS from real radios on the set during production breaks, making thousands of contacts with the show's amateur radio fans.

The special-event team includes the Long Island, N.Y. - based Great South Bay Amateur Radio Club, the 12 Days of Christmas and the K2Heroes teams, and a number of guest operators and podcasters.

KA6LMS and a number of affiliated stations will livestream their operations. At times, the Amateur Logic team will pick up video feeds from active stations to provide commentary and context.

The event will start at 00:00 UTC on March 24, 2021 and end at 23:59 UTC on March 30, 2021, the last day of shooting for the show, which is concluding its long, successful run.

The event will feature guest operators with special 1-by-1 call signs in most call sign areas. The 1x1 calls will act as Bonus Stations qualifying contacts to be able to download a "Clean Sweep" certificate. The KA6LMS call will also be used with a /(Call Area) attached to give access around the country.

The intent is to operate on as many bands and modes as possible. Satellite and repeater operation is also encouraged. We want to thank the PAPA Repeater system and Georgia DSTAR. We'll be running on REF012A DSTAR and a DMR TalkGroup via PAPA and REF030B via Georgia DSTAR.

Because of Covid-19 restrictions, operations from the set will be limited to crewmembers at times the stage is otherwise empty. Operations will always be spotted online.

**Contact: Lou Maggio NO2C at [lou\\_maggio@hotmail.com](mailto:lou_maggio@hotmail.com)**

More information: <http://www.gsbarc.org/lms/>

# Ozaukee Radio Club

## February 10, 2021 Meeting Minutes

de Ken Boston W9GA



This ORC meeting was conducted via an online (internet) connection using the ZOOM app. Prior to the meeting start, those members who were able to access the 'waiting room' via phone or computer/webcam were then introduced into the meeting space hosted by Pat W9JI. At that time various audio and video connection issues were addressed for the members before the meeting began.

ORC President Pat W9JI officially initiated the meeting at 7:34 PM, as introductions were recognized when members checked into the meeting, a go-around was not conducted. A few incidental comments were made by members, including notification by K9DJT that a new group of WSJT modes [Q65] were recently released.

### Program:

Tom W9IPR presented a program detailing his project in converting a common computer power supply (the ATX model) for use as a general purpose supply giving +12 VDC, +5 VDC and +3.3 VDC. His use for this supply was to provide DC voltage to an Aircraft panel, used in a mock-up or flight simulator. Tom detailed the color codes of the wiring, and showed how he re-purposed an old Heath equipment case as the PS case, installing and refinishing the cabinet for the supply.

### Committee Reports:

Gregg W9DHI [Repeater VP] reports that all repeater systems are operating OK.

Gary N9UUR [Treasurer] states renewals now total over 93 members. WA9JOB moved acceptance, W9DHI 2<sup>nd</sup>, motion carried.

Ken W9GA [Secretary] posted minutes of Jan 2021 meeting; WB9RQR moved, W9MXQ 2<sup>nd</sup>, motion to accept then carried.

Tom W9IPR [scholarship] updated cash status of award fund; with \$34,000 balance at ARRL, and new balance of \$33,038 yet to be transferred.

**OLD business:** Pat W9JI gave an overview of the repeater 'KEY UP' activity, which will start soon, and encourages the members to participate, Ken W9GA recounted that Ham of the year, and Turkey of the year awards nominations are open.

### NEW business:

Gary N9UUR presented the 2021-2022 budget with the details explained. W9QLP moved to accept, W9MXQ seconded and the motion carried.

W9JI put out a plea for a member to take up the chair of the membership committee.

W9IPR indicated the Fall ORC swapfest is scheduled for September 11, 2021 at Fireman's Park.

### Adjournment:

There were 41 members (unique callsigns) on the ZOOM site. Contact Ken W9GA to obtain the list.

Stan WB9RQR moved to adjourn, Ben K9UZ seconded the motion, and motion carried.

Meeting ended at 8:40 PM

Respectfully submitted,



Kenneth Boston W9GA  
Secretary



## Upcoming ORC Monthly Meeting Programs

**March** – Michael Schultz, WH6ZZ – Marconi's Transpacific Wireless Telegraph  
Michael Johnson, WO9B – Wisconsin QSO Party Announcement

**April** – Fred Schwierske, W9KEY – Aluminum Antenna Mast Project

**May** – Mike Harrington, KD9GCN – Virtual Shack Tour

**June** – Ken Boston, W9GA – Field Day

**July** – Pat Volkmann, W9JI – Members Field Day Reports

### Creating a Presentation

Almost all of our presenters use Microsoft's PowerPoint to organize and present their information. If you don't have access to or aren't familiar with Power Point there is an alternative. The Open Office package contains Impress, which is similar to PowerPoint. Impress is easy to use and available at no charge. You can check out OpenOffice here: <http://www.openoffice.us.com/>

The monthly program is the highlight of the Ozaukee Radio Club meeting. 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. Contact Pat Volkmann W9JI at [orc\\_pat\\_w9ji@outlook.com](mailto:orc_pat_w9ji@outlook.com) (underscores between the words left of the "@" ) to discuss your idea for a program.

## **ORC Meeting Agenda**

*March 10, 2021*

1. 7:15 – 7:30 PM – Check-In and Introductions
2. 7:30 PM Call to Order – President Pat Volkmann (W9JI)
3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc.
4. Presentation: M. Schultz WH6ZZ, M. Johnson, WO9B
5. President's Update – Pat Volkmann (W9JI)
6. 1<sup>st</sup> VP Report – Ben Evans (K9UZ)
7. 2<sup>nd</sup> VP Report – Bill Church (KD9DRQ)
8. Repeater VP Report – Gregg Lengling (W9DHI)
9. Secretary's Report – Ken Boston (W9GA)
10. Treasurer's Report – Gary Bargholz (N9UUR)
11. Committee Reports
12. OLD BUSINESS
13. NEW BUSINESS
14. Adjournment

### **Meeting Note:**

For the foreseeable future, we will be holding the meetings via the Zoom Videoconferencing platform on the same evening and time as we had the in-person meetings. Sign-in info will be emailed by President Pat Volkmann, W9JI via the ORC remailer usually about an hour before the start of the meeting.

Return undeliverable copies to:

### **The ORC Newsletter**

524 Alta Loma Drive  
Thiensville, WI 53092

### **First Class**

### **Next ORC Meeting via Zoom March 10, 2021**

7:15-7:30 PM – Check-In  
7:30 PM – Meeting Begins