



# The *ORC* Newsletter

Official publication of the Ozaukee Radio Club, Inc. Email all contributions to the editor, Bill Shadid, W9MXQ (W9MXQ@TWC.com). Permission to reprint articles published in any issue is granted provided the author and the Ozaukee Radio Club Newsletter are credited.



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 XXXIV

January 2022

Number 1

## From the President

de Pat Volkmann, W9JI



Hang up a new calendar, 2022 is here. It's clear 2021 was quite a year, with some ups and more than a few downs but we've made it.

First off, the Club is doing very well. Membership remains at well over a hundred, with 18 new members joining the group in 2021. There were also 11 members who rejoined after a year of absence. It's been a pleasure to meet all the new folks and to see those that have been absent.

I can't tell you how many times I said, "we'll be back to normal soon," but I think I only said it in print 3 times. The Corona virus has been more persistent than any of us would like, and it is back for another, though somewhat weaker, surge of infections. Will this clear up in 2022? I'm not going to make a prediction.

We have been meeting on Zoom since April of 2020. While initially a huge unknown and something of a novelty, Zoom has become a familiar meeting place for us. The main benefit that I have found with Zoom is the opportunity to have conversations with people after the meeting. I have been able to spend time with and get to know many of you much better than we would have been able to do at the Senior Center meeting room. When we do eventually get pack to meeting in person, I'm sure that we will continue to have the Zoom meeting running in parallel with the face-to-face meeting.

The past year marked the first Club sponsored repeater operating event – the "Key Up" contest. Key Up encouraged members and non-members to use the repeaters to make low key, contest style contacts. It was the first time that I ever heard a pile up on the ORC 2-meter repeater.

This month we will kick off the "Key Up #2" contest. The rules have changed considerably from last time. This version should be more competitive and allow for quite a bit more use of the repeaters. Some of the changes include the addition of fixed and mobile class of operation and the ability to work stations on each repeater. The full rules appear in this edition of the Newsletter.

The Scholarship Program reached a milestone in 2021 – the creation of an endowed fund administered by the ARRL. The 2021 recipient of the Club scholarship was, for the first time, an ORC member – Nesya Graupe, KD9JNT. Congratulations Nesya and the best of luck in your studies. Please see the Scholarship Fund Report in this Newsletter.

Here's hoping that this new year finds you in good health and good spirits, with much to look forward to.

See you at the meeting.

Pat Volkmann, W9JI

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**de Bill Shadid, W9MXQ**

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**Onward To the Newsletter**

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## **Nomination of ORC Members For the Ozaukee Radio Club Board of Directors Calendar Year 2022**

The nominating committee consists of:

- Tom Ruhlmann, W9IPR Chairperson
- Jim Albrinck, K9QLP
- Tom Trethewey, KC9ONY

The committee nominates the following members to serve on the Board of Directors for the CY2022:

- President: Patrick Volkmann, W9JI (incumbent)
- First VP: Ben Evans, K9UZ (incumbent)
- Second VP: Bill Greaves, K9GN
- Repeater VP: Gregg Lengling, W9DHI (incumbent)
- Secretary: Ken Boston, W9GA (incumbent)
- Treasurer: Gary Bargholz, N9UUR (incumbent)

Note: The Repeater Trustee is appointed by the Board of Directors and is currently Mike Harrington, KD9GCM.

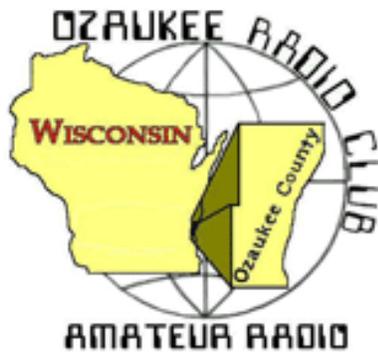
Should any member wish to also be included in the election for a specific office or have questions concerning the elections they should contact Tom Ruhlmann.

The elections will be held at ZOOM meeting on the second Wednesday (1/12/2022) in January 2022.

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.

Candidates and voters must have paid their dues for Calendar Year 2022.

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## Ozaukee Radio Club “Key Up #2” Activity

**Purpose:** To support training in radio communications, talk with other amateurs, improve operating skills, and encourage use of the Ozaukee Radio Club (ORC) repeaters.

**Objective:** To contact ORC members using any of the ORC repeaters.

**Who can participate:** All licensed hams are welcome to participate? You do not need to be a member of the ORC.

**Date and Time:** The event will begin on Friday, January 14, 2022, at 5:00 PM Central Time and end at 5:00 PM Central Time on Sunday, January 23, 2022.

**Mode:** FM

**Exchange:** Call sign, name, ORC membership (member or non-member), class (fixed / mobile)

**Entry:** For each contact, record call sign, name, time, date, ORC member status, class and repeater used. If you operate more than one class, submit a separate log for each class.

**Award:** Qualifying entries may request a certificate. A separate award will be made for each class of operation.

### Rules:

1. All contacts must be made using one of the ORC repeater systems during the activity period.

Frequency	Offset	PL Tone
146.970	-	127.3
224.180	-	127.3
443.750	+	127.3

### 2. Class

- Fixed Class – All operation occurs from the home location.
- Mobile/Portable Class – all operation occurs portable and/or mobile.

All contacts must be made more than 1000 feet from the home location. Stations must identify as being portable or mobile when operating away from the home location.

These are separate classes and members must submit a separate log for each class in which they compete. Stations can compete in both classes. Other stations can work the same call sign twice for credit, one for the fixed station and once for portable/mobile. A station cannot be worked portable and again on mobile for credit.

For example, if you work W9JI/M, you cannot work W9JI/P for credit, but you can work W9JI from his home station for point credit.

3. Scoring – Three points for every ORC Member worked or one point for non-members. Each station may be contacted once per repeater per class. Contacts made during the Tuesday net do not count for credit.

To calculate your final score, multiply the number of ORC members worked on each repeater by three. Multiply the number of non-members worked on each repeater by one. Add the member and non-members points. Submit a separate log for each class of operation for which you are claiming credit.

- Example #1: W9JI worked 15 ORC member on the 2-meter repeater and 7 ORC members on the 440 MHz repeater for a total of 22 members, multiplied by 3 for a score of 66 member points. He also worked 8 non-members on the 2-meter repeater and 4 non-members on the 440 MHz repeater, a total of 12 non-members, for a score of 12 non-member points. W9JI's total score is 66 member points plus 12 non-member points for a total of 78 points.
- Example #2: W9JI worked W9XT on the 2-meter repeater. W9JI also worked W9XT/mobile on the 2-meter repeater. W9XT is an ORC member. W9JI can claim 3 points for each contact, for a total of 6 member points. W9XT can claim 3 points for the fixed station contact and 3 points for the mobile contact, as he was operating as a different station for each contact. W9XT operated both fixed and portable/mobile and must submit a separate log for each class.

4. Operating Conduct – Remember that a repeater is a system shared by many people. Maintain good operating practice at all times and listen before you transmit. Only one person can talk at a time!

5. Safety – Mobile operation can be distracting. Stop at a safe location before participating in the contest. Be especially careful when logging so as not to endanger yourself and others.

6. Logs may be paper or electronic – Cabrillo, .doc, .docx, spreadsheet or plain text format.

7. Entries will be reviewed by the Awards Manager.

8. The Awards Manager may verify some or all of the contacts claimed for credit. All decisions of the Awards Manager are final.

9. All entries must be received by January 30, 2022.

10. Send your entry to [kboston6@wi.rr.com](mailto:kboston6@wi.rr.com)

# THE COMPUTER CORNER

## No. 286: Let There Be Light

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

This article is not about computers, as such. It is about light bulbs, although there are plenty of electronics and computing circuits inside the latest style bulbs. It is really about LED (Light Emitting Diode) bulbs, which everyone should be using nowadays.

First, why should everyone be using them nowadays? Power savings. A 100-watt conventional light bulb consumes 100 watts of power, and we all know that at least a substantial portion of that is released as heat. Try unscrewing a 100-watt conventional bulb right after it was on for a long period with just your bare fingers! Painful! An LED 100-watt replacement bulb shines with about the same amount of light as the conventional bulb but uses only about 13 to 15 watts of power. That won't burn your fingers nearly so badly! Furthermore, it will last 13 to 14 years or so, based on 3 hours use a day (most are guaranteed to last for 5 years). Bulb life also depends on brand and a bit on the type of fixture it is mounted in. But you can get it in soft white (similar to an incandescent bulb, ~2700K), or daylight (bright white, similar to a fluorescent bulb, ~5000K). Negatives are: 1. LED bulbs are usually non-dimmable, unless you shop for ones that specifically state they will work with light dimmers. 2. Many will not start (light up) if they are under 5° F or near that chilly temperature.

Yep, you can get LED bulbs in the 3-way variety, just as you can with the old incandescent style. A 3-way bulb is just that; turn the switch once and it goes on low. Turn it again and it gets brighter. A third turn and it goes on the brightest. The next click turn turns it off. You can tell if you are holding a three-way bulb by looking at the base. One central contact isolated by black or white plastic or ceramic insulation, followed by a surrounding ring (the latter is part of the screw-in threads) indicates an ordinary one-way (on-off) bulb. One metal central contact, then insulation, then a metal ring contact, more insulation, followed by a surrounding metal ring base is a 3-way bulb. See Fig. 1.

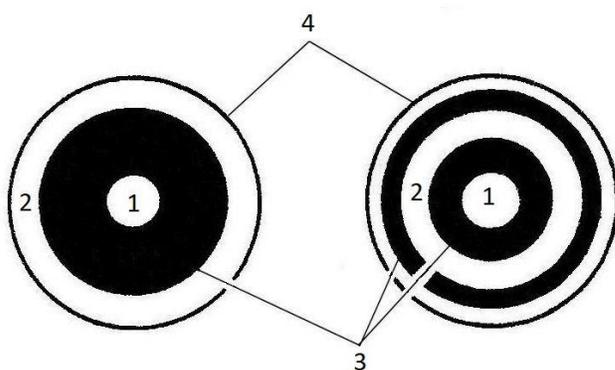


Fig. 1. Light bulb bases, as seen from the bottom. Left is a 1-way bulb (a knob click turns it on or off). Right is a 3-way bulb (a knob click turns it on low, another click turns it on medium, one more click turns it on high, and another click turns it off). 1 is the metal contact in the center of the base; 2 is also a metal contact; 3 is insulation (shown here in black) and 4 is the threaded metallic screw that allows you to screw it into a socket.

Common wattage values for LED 3-way bulbs are 40-60-100 watt and 50-100-150 watt. A 100-150-200-watt bulb also exists but those are incandescent, big, and used in a larger (mogul-size) socket.

Can you use a three-way bulb in a one-way socket? You bet. But just one light level will go on, then off, when you turn the knob. Which goes on/off (low, medium, or high) depends on the design of the bulb. Can you use a one-way bulb in a three-way socket? You bet. But only one of the successive clicks with the knob will light the bulb, and one will turn it off. And it will light only at the single level the bulb is designed for.

I mentioned at the start that there are circuits inside LED bulbs, and when LEDs first came on the market these circuits sometimes gave us hams grief because they generated unwanted noise in our receivers. Some consumers even complained about interference with television reception. This should no longer be a problem in any case. If you come across any sort of interference and you localize it to an LED bulb, try another and take the defective one back to where you purchased it for a replacement. If it happens with more than one, take them all back and try another brand. Such interference should not be tolerated. I can tell you from experience if it happens with an occasional bulb, the store will replace it and will simply write off what they had to supply the customer. If it happens often, they will send the bulbs back to the supplier with information that they are defective, and this will get back to the manufacturer.

So, there you are. Who, among us old-timers would have thought that we would be dealing with complicated electronic devices when we screwed in a new light bulb? But we must since we live in an age of electronics! Happy computing!

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# OZARES: Ozaukee Amateur Radio Emergency Services

by Don Zank AA9WP, OZARES Emergency Coordinator



It was rather disconcerting news I heard the other week when Amazon Web Services (AWS) suffered a large outage. In fact, I have learned that they had gone through two outages in the past three weeks.

<https://www.nbcnews.com/tech/tech-news/internet-outages-web-concentrations-power-rcna8942>

So, what does that have to do with amateur radio, other than delaying the new rig under the Christmas tree, or emergency communications?

Well, WINLINK, an email over radio or internet application depends upon the Amazon servers to distribute emails for its users. The Amazon servers, known as the Common Message Servers, or CMS in WINLINK terminology, are used to save and distribute the emails. The AWS system has been used by WINLINK since October 31, 2017.

WINLINK has grown from a military and government service to an email at sea application for ocean going sailors and is now an important asset for amateur radio emergency communicators. Because of its ability to transmit forms, which can include ICS type message forms, csv formatted forms, Red Cross health and welfare messages and then distribute the information to a geographically dispersed and varied users, WINLINK has become a highly accepted and used application for Emcomm. Served agencies like it because emails can go to non-amateur radio operators, and they understand how an email message works.

I can use software such as WINLINK Express to compose a message, post the message in the WINLINK Express Outbox and then connect to a nearby gateway station on VHF or, if on HF, a more distant station. So, when I connect to my local VHF gateway or distant HF gateway, after verification of my call sign and password, my message is moved to the CMS server, which again is the Amazon Web Service, and any incoming messages on the CMS server are sent back through the gateway. It is pretty slick.

WINLINK is classified as an asynchronous type of communication. And that means what? Asynchronous communications are communications that take place without the sender and the receiver being in direct contact with each other. I never heard of the term until I watched an OH8STN video titled *Asynchronous Ham Radio for Preparedness*. It kind of makes sense but it just one of those things you don't give much thought to or think of giving it a name.

When I send my WINLINK message I am depending upon the receiver to open his WINLINK app, connect to an RMS station and download the message from the CMS server. The same as any other email application.

So, what are synchronous communications? I am pretty sure you already guessed that type of communication occurs when the sender and receiver are in direct connection. This is your normal face-to-face or over the airway communication.

Is WINLINK, like many other digital modes, a weak Emcomm mode because of its dependency on the availability of the internet and on the message receiver to check for emails? During an emergency, the lack of the internet or very slow-moving internet traffic is almost guaranteed and would be a major disruption for everyone. The missing or slow internet can be worked around by using a feature available in the WINLINK application. It has the capability of performing peer – peer, or direct station to station communications. It then becomes a synchronous mode of communication. Of course, the success of peer-to-peer requires that each of the two stations are in contact so they would know the frequency and when the message is being sent. And in an emergency situation emails everyone would check their emails in a consistent manner.

Does WINLINK make the hand written ICS-205 message form or any other ICS form obsolete? I don't think so. Not every message is going to be a large list of material requests, or list of names from a shelter. And if the WINLINK traffic is heavy it is best not to increase the burden with simpler messages. Emcomm operators should be familiar with all of ICS forms and how they are used to improve their use and understanding of the digital communications.

For more information about WINLINK please see <https://winlink.org/>

OZARES operates a WINLINK gateway, WI9OZ-10, for packet and VARA FM on 145.610.

Next month I will look at Narrow Band Emergency Messaging Software (NBEMS), a great way of sending digital messages without a sound card or TNC interface. <http://www.arrl.org/nbems>

OZARES repeaters are on 147.330, +, 127.3 PL and 443.525 +, 114.8 PL.

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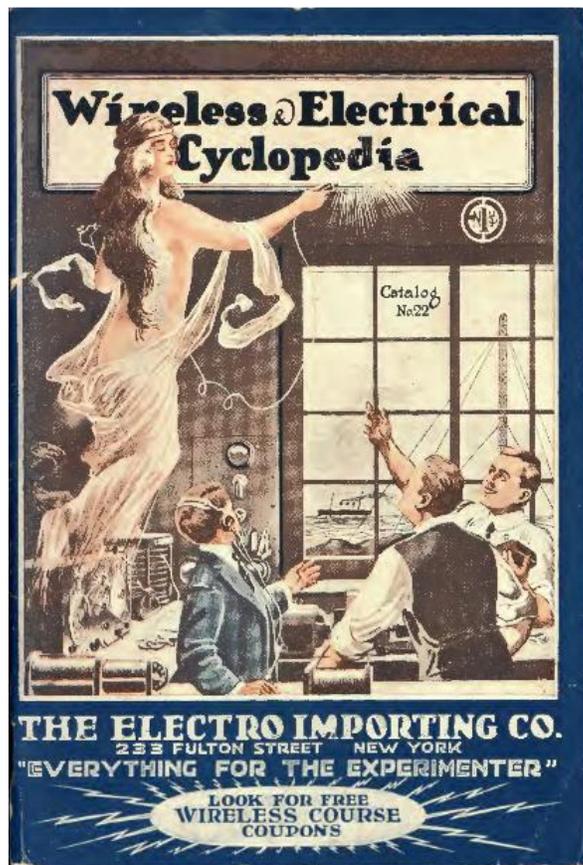
# Vintage Magazine Cover Art

de Pat Volkmann, W9JI



Our cover this month is from Hugo Gernsback's 1922 Electro Importing Company catalog. Gernsback, an early wireless entrepreneur, started the E.I. Company in 1904 with its stated purpose "to sell solely experimental electrical goods". Gernsback authored many books and articles, offered a wireless radio course and taught telegraphy. Gernsback was also the publisher of *Amazing Stories*, the first magazine dedicated to science fiction.

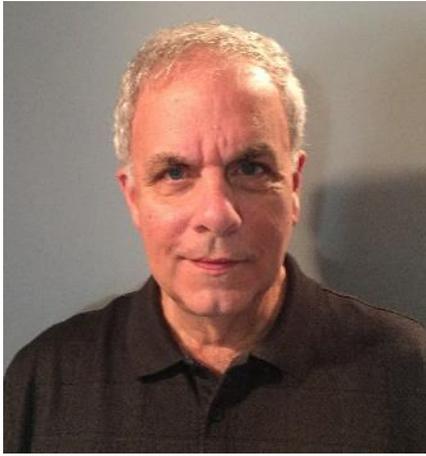
Radio catalogs were an important part of the early radio landscape. In addition to listing a huge variety of parts for sale, they included detailed information on assembling and using a wireless station. A typical catalog contained more than 50 pages and thousands of words of text. The writing, in a friendly prose style, helped to convince the prospective buyer that they were not only getting the best parts but that they were buying them from the best company too.



Electro Importing Catalog, 1922

# Vintage Amateur Radio

de Bill Shadid, W9MXQ



Some of the most successful and historically dependable linear amplifiers offered to the amateur radio community, beginning in the 1960's, came from the R. L. Drake Company of Miamisburg, Ohio USA. While not a producer of the volume of amplifiers made by Heathkit in the same time period, Drake certainly was a contender in the market. This article will discuss the features of the first two Drake Linear Amplifier models. Two subsequent articles will cover the later Drake Amplifiers with attention paid to common failures that can occur across the several products. Some of this detail can apply to other brands of amplifiers of similar design.

Drake's first amplifier and its successor became classics, and in my opinion, two of the finest linear amplifiers made available to the amateur radio community – when cost and effective power are considered. The first model is shown here . . .



**Drake L-4 Linear Amplifier**

**WB4HFN**

This first amplifier was meant to match the Drake TR-3 Transceiver that was introduced in 1963, the R-4 Receiver/T-4X Transmitter from 1964, and the early TR-4 from 1964. Here are those matching components:



**Drake TR-3 HF Transceiver**  
W9MXQ



**Early Drake TR-4 HF Transceiver**  
W9MXQ



**Drake R-4 HF Receiver**  
WB4HFN



**Drake T-4X HF Transmitter**  
WB4HFN

The Drake L-4 Linear Amplifier had the following specifications:

- Two Eimac 3-400z or Amperex 8163 Triode Tubes
- 2000 Watts PEP Input SSB or 1000 Watts CW / RTTY
- Linear AM input power to be held to 500 watts (in SSB Mode)
- 80-10 Meters (WARC Bands using close-in appropriate band<sup>1</sup>)
- Separate L4-PS Power Supply (see picture below)



**L4-PS HV Power Supply Views (Front and Back)**

W9MXQ

There appears to have been only one version of the L-4 Linear Amplifier. Unlike the later L-4B, some features were either absent or not as conveniently accessible. For instance, the metering on the L-4 was as follows:

- Top Meter – Plate Current only
- Bottom Meter (on rotary switch, functions – left to right)
  - Grid Current
  - Plate Voltage
  - Relative Output

ALC Threshold was adjustable, via a control that was located on the rear panel. Also on the rear panel were connectors for feeding high voltage (through a Millen High Voltage Connector) and control interface (through a large, 8-pin, Jones Connector) to the separate L4-PS HV Power Supply. The interface cables and main AC feed cables were hard wired to the L-4-PS. The transformer providing filament voltage for the final amplifier tubes, the meter lamps, and the voltage for the transmit/receive control relay was inside the RF Cabinet with primary voltage fed via the control interface cable.

Like some other amplifiers of the time (such as the Heathkit SB-200 and SB-220), there was no way to allow the Drake L-4 Amplifier to operate in Stand By mode – that is, no way to have the amplifier under power but not operating when the exciter was transmitting. The addition of a front panel mounted Stand By switch – which merely interrupted the PTT line from the exciter when high power operation was not desired – was probably the most popular field modification on the Heathkit amplifiers found today.

Presumably, Drake learned from the short life of the L-4 Linear Amplifier because they soon introduced its replacement, the L-4B.



**Drake L-4B Linear Amplifier (Early Model)**

W9MXQ

As you can see, the L-4B took most of its styling cues from the original L-4. The L4-PS HV Power Supply changed a bit in terms of the location of the high voltage fuse resistor being moved from the negative side of the voltage feed to the positive side. This change may also have appeared in the later shipments of the original L-4 amplifier model.

The Drake L-4B Linear Amplifier had the following specifications:

- Two Eimac 3-500z or Amperex 8802 Triode Tubes
- 2000 Watts PEP Input SSB or 1000 Watts CW / RTTY
- Linear AM input power to be held to 500 watts (in SSB Mode)
- 80-10 Meters (WARC Bands using close-in appropriate band<sup>1</sup>)
- Separate L4-PS Power Supply

Pictured above is the first of three versions of the L-4B. Metering and control features of all three versions were very identical. But metering was greatly improved over the original L-4 model:

- Top Meter – Plate Current only
- Bottom Meter (on rotary switch, functions – left to right)
  - Grid Current
  - Plate Voltage
  - Forward Power (3,000 watts)
  - Reflected Power (300 watts)
  - Forward Power (300 watts)

The availability of a true wattmeter was an excellent feature. The selection of 300 and 3,000-watt forward ranges was tied to another feature of the L-4B – the AGC Threshold Control. It was moved to the front panel. And it included an integrated push-pull Operate/Standby switch. In the standby position the meter could be set to accurately read the power level of the exciter as it by-passed the amplifier. (Be careful – do not leave the meter in the 300-Watt Forward position when using the amplifier!)

Here are two product models that matched the L-4B Linear Amplifier in its Early Model design format:



**Drake R-4B HF Receiver**



**Drake TR-4 HF Transceiver (Late Model)**

**Drake Model Examples matching the Early Model L-4B Linear Amplifier**

**W9MXQ**

In 1973, Drake released the “C” version of the R-4/T-4X line (the R-4C Receiver and the T-4XC Transmitter models) and the TR-4 Transceiver (TR-4C model). The L-4B did not

change model number but did change in appearance. Below is a picture of the midway model of the amplifier.



**Drake L-4B Linear Amplifier (Midway Model)**

**W9MXQ**

The design change is small but is very noticeable once you know where to look go back to the L-4B (Early) picture and compare it to the picture just above of the L-4B (Midway). Look at the edges of the front panel and notice that there is a silver color outer ring at the top, bottom, and sides of the panel. Then look also at the matching product shown with that early version – those products have that same design feature on their front panel.

Below are products that include the same front panel style as the Midway Model version of the L-4B:



**Drake R-4C HF Receiver**

**W9MXQ**



**Drake TR-4CW-RIT HF Transceiver**

**W9MXQ**

Other products in the series were similarly updated. These include the MN-2000 Matching Network, MN-4 Matching Network, the CS-4 Station Console, and the CC-1 Converter Console. Products such as the FS-4 Frequency Synthesizer accessory for the R-4C and SPR-4 Receivers were not available until after the styling change, so no early design version exists.

Some examples of this new styling are shown below.



**Drake MN-2000 Antenna Network**  
W9MXQ



**Drake SPR-4 HF Receiver<sup>2</sup>**  
W9MXQ



**FS-4 Frequency Synthesizer<sup>2</sup>**  
W9MXQ

At the time, the FS-4 was a unique product that replaced the Range Crystals in the 4-Line Receivers and Transmitters plus, depending on the internal main oscillator crystal, can be used with the Drake SPR-4 or 2-C Receivers.

The Late Model of the L-4B Linear Amplifier was identical to the Midway Model except that it lost the ability to work on the 10-Meter band. This was in keeping with legal issues tied to the illegal use of these products on the 11-Meter Citizens Band.



**Drake L-4B Linear Amplifier (Late Version)**

KO4BG

The Late Version was identical to the Midway Version except for the lack of a 10-meter position on the bandswitch. There was a Drake documented procedure to activate 10-meter operation by a licensed amateur operator. These amplifiers are rare – and it is obvious on the units that Drake used parts from the earlier model even to the point of painting over the “10” printing on the panel. PLATE and BAND legends with a silk-screened circle over the number. The Late Versions indicate model “L-4B-1,” on the rear panel. I have never seen a late version L-4B but “Woody,” KO4BG sent the above

pictures of his amplifier. Woody further reports that the “dots” covering the “10” number on the PLATE and BAND controls are easily removed to reveal the “10” that was hidden from the factory.

A collector’s note for the L-4B relates to the three screws across the top edge and the three screws along the bottom edge of the front panel of the Midway and Late Versions. These are most often silver (likely cadmium plated). But, on some units they are black – chemically blackened, not painted. This is also true of other units, such as the TR-4CW or TR-4CW-RIT, the R-4C, and the T-4XC, the MN-2000, and others of the same timeframe.

The L-4 and all the L-4B versions were equipped with a pressurized chassis. Air intake was on the back panel to a squirrel cage fan that forced air into the sealed under-chassis, through the glass chimneys on each tube, and then out via the perforated top cover.

In the late 1970’s, Drake moved to their 7-Line Transceiver, Receiver, and accessory line. These replaced the venerable 4-Line series. The TR7 HF Transceiver was introduced in 1977 to soon be joined by the matching L7 Linear Amplifier. The Drake L7 and the later L75 will be covered in a future article. Another article will cover the failures, foibles, preventative maintenance, and repairs of all these quality products.

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.

#### **Credits and Comments:**

<sup>1</sup> Coverage of the WARC Bands (30, 17, and 12 meters) may require some returning of the input circuits – as covered in the Drake Operating Manual for the L-4 and L-4B Amplifiers.

<sup>2</sup> Subject of a future article.

<sup>3</sup> Product specifications for the Drake L-4 and L-4B models shown come from their respective Instruction Manuals – all of which exist in my files. Most Drake manuals are available on line for downloading. I download Drake manuals from Ron Baker, WB4HFN, at:

<http://www.wb4hfn.com/DRAKE/DrakeManuals.htm>.

<sup>4</sup> Colors for Drake radios were very consistent through the years. Be advised that such color match does not extend to my pictures in this article! Drake did go to an epoxy panel paint in later models – models that did not have the silver trim ring around the edges of the front panel. The gray on those units is slightly darker than the gray on earlier models. I am blessed, or cursed, depending on how you look at it, with a good color difference perception. This was observed using the MacBeth Color Checker Test in my early professional career in Automotive Trim Systems with 3M Company.

<sup>5</sup> I am indebted for the kindness of several members of the Drake Technical Net (7.238 MHz, Sunday afternoons at 3:00 PM) for their contributions to this article and their support of my writing efforts on old radios. They include, but are not limited to KO4BG, WB4HFN, NO8J, WA8SAJ, and WB0IQK. I am certain to have missed someone – if so, I apologize and will try to include you in two more articles on Drake Linear Amplifiers.

© **W9MXQ**

# On The Air!

de Gary Sutcliffe, W9XT



## Ham Radio New Year's Resolution

This is the time of year we usually make resolutions for making us better in the new year. Usually, they are good for us, but we don't find them particularly pleasant, like losing weight, getting more exercise, etc.

What would be some fun resolutions? Something in ham radio! Ham radio is a hobby with many sub hobbies. How many have you tried? Probably a very small fraction of those that are available. So, how about making a resolution relating to your

hobby?

Let's start with getting on the air. When was the last time you were on the air? That long, huh? How about making a resolution to make at least ten contacts each month? The upcoming Key Up Contest will make it easy to cover January. How about trying a new band or mode? Ten meters will be getting better, and DX will be easy on the band. If you have a Technician license, you can get on phone and data on 10M, the only HF band you currently have those privileges. A 10M dipole or vertical is pretty tiny.

Try a contest. The Wisconsin QSO Party is coming up in a couple of months (Hint Hint!). Build something. There are a lot of kits available. Or homebrew a new antenna. Every ham should build at least one thing in their station. If you are more ambitious, consider upgrading or learning CW.

The huge tornados that killed about 70 people on December 11 show that a disaster can happen anywhere at any time. Make up a Go-kit. Get involved with ARES. The ORC has an incredible knowledge base. If you speak up and say you would like to try something, there are probably at least one or two old hands on the subject and are happy to give you some guidance.

This is a tiny sprinkling of suggestions. Find something you have not tried before this year. You will learn something, and it might give you a new shot of excitement for the hobby.

When you do, write up something telling us about your experience. Just because you are new at it, and there might be members who have been doing that for years, is no reason not to tell others. A newcomer brings a different viewpoint and a sense of excitement that can be contagious to others. I know Bill, W9MXQ, the newsletter editor, would love to publish a couple of articles like that every month. I'm even going to volunteer his help editing your article if you feel a bit uncomfortable with your writing!

Whatever you decide to put on your radio resolution list, it will be a lot easier than passing up on that slice of chocolate cake because you want to shed a few pounds.

## December Meteor Shower Recap

Last month was the Geminids meteor shower. It was a good chance to make some contacts out to about 1200 miles on 6 and 2 meters. I was able to pick up a new grid on 6 meters and make a contact on 2 meters that was not only a new grid, but also a new state, Vermont. That brought me up to 40 states worked on 2 meters. And you think 2 meters is only for local work?

I was not the only ORC member operating the meteors in December. Fred, W9KEY, made his first meteor scatter contacts. Fred made it on 6 meters. He used a wire H Double-Bay antenna. Look for an article on meteor scatter from Fred in this issue of the ORC newsletter.

Gary, K9DJT, was also active on meteor scatter in December. Gary writes:

"I completed *nine* 2m Q's between December 13th and 14th during the Geminids meteor shower. The farthest was KA6U in Florida at 1128mi. During that same shower I had made *three* 6m Q's with the farthest being W5THT at 904 miles in Texas. Closer to the Christmas holiday, during the Ursids shower, December 22nd through the 23rd, 6m's was the band. I managed to work 16 stations with the farthest being W5TRL in Texas at 1039 miles.

For the year though, my very best MSK144 contacts were both in Oregon, K0JJ and N7BAV, 1718 miles and 1639 miles respectfully. Those were made during the Orionids shower and verified on LoTW. I continue to be fascinated by the ability to communicate on a dead band using the ionized trails of meteors. What do I use to accomplish to accomplish it? I run 500 watts to a 4-element beam at 38 feet on 6m, using the WSJT-X MSK144 mode. The same is done on 2m, except it is 200 watts to a 14-element beam at 34 feet.

The big thing though is not the power or antenna...It is patience, patience, patience...and communicating on PingJockey. I've spent as much as an hour and ten minutes to complete a long distance QSO. Therefore, one needs to keep in contact with the person on the other end to ensure they hadn't quit trying."

## Ten Meters is hot!

The last two contests of December were the ARRL 10 Meter Contest and the Stew Perry Top Band Distance Challenge. I was looking for good conditions on 10 meters seeing that solar Cycle 25 is progressing faster than expected. But we had a big dip in solar activity, and the solar flux was a measly 76 during the contest, meaning we had one more year of essentially a VHF contest.

The following weekend was the Stew Perry 160 contest, where low sunspot numbers are not a problem and are actually better. So naturally, the solar flux jumped up to around 120 for the 160-meter contest. Murphy must have had control of the sun in December.

The 160-meter contest ended on Sunday morning, December 19. That afternoon we had some exciting openings on ten meters. Gary, N9UUR, and Fred, W9KEY reported working stations worldwide using FT8. Fred said he added many countries to his 10-meter DXCC totals, working 20 different countries that day. Gary was looking for Hawaii on the band to finish his 10 meter Worked All States but did not hear any despite several spotted. He did work Samoa, so he knew he was getting out. Gary got his elusive KH6 a few days later.

Getting only an hour or so sleep the night before during the contest, I woke up from my post contest nap and saw there was a lot of activity on 10M. What interested me was that my favorite "secret" path to Northern Europe was open. This path does not open every day when we have conditions that support 10 meters to Europe, but it often happens.

This path opens after the sun has set in Europe and the higher HF bands have closed. The signals are usually fairly weak and have a hollow tone to them. The countries most often heard are Finland, Sweden, and Norway. Fred reported working the last two on FT8. I decoded Aland Island, off the coast of Finland but did not make a contact.

This answered a question I had been wondering about for a couple of years. Would the odd aurora zone enhanced propagation distort FT8 signals so that this path could not use this mode? Back when PSK31 was the rage, I noticed many times you would see loud signals on long polar paths, but the error rates were really high, making contacts difficult at best.

But the contacts by Fred indicate it does work. There might be some degradation, as it seems contacts are more difficult. More operating will be necessary to see if the path affects FT8 signals.

This path has been valuable to me in many contests over the year. If we have disturbed geomagnetic conditions, the aurora zone expands, and signals going through it are absorbed. From this part of the world means the northern European countries are the first to be knocked out. There are many contests where I could not get these multipliers on the usual paths but got them later in the afternoon on this path when the rest of the country's attention has shifted away from Europe.

It is pretty late in the Scandinavian countries when this path opens up, something like 10:00 PM local. Back in the 1990s, I was playing with some string and a globe. I was trying to find out what the geometry would be if we were on the eastern side of a similar path. It turns out that the other end of the path would be Mongolia.

Now, there are not a lot of hams in Mongolia. So, it might be possible the path was open often, but not a lot of hams around Wisconsin would be looking at 10 meters at that time of day, and probably even less likely there would be a ham in Mongolia listening for us. A DX contest was coming up a few weeks after playing around with the globe. I was doing a single band 10M effort and decided to get back on later in the evening, a few

hours after the band closed, and turned my beam northwest. Before long, I heard a Chinese station near the border of Mongolia!

Unfortunately, he had his beam pointed towards Europe, and he was working them one after another. Although he was easy to copy, he was not very strong. No doubt the European stations were much louder. After a while, I contacted the 10-meter operator at KS9K, a big contest station near Kenosha at that time. They had a stack of four large 10-meter Yagis on a 200' rotating tower. We both tried to get through for a half hour or so without success. But it proved there was a path that opened up at least occasionally.

Finding things like this is what makes HF operating so much fun. Even after 50 years of operating, I learn new things from time to time.

### **QRP Fox Hunt**

One event I have been doing on and off for several years is the QRP Fox Hunt. I am not a QRP fanatic, but it is a fun challenge in small doses. The QRP Fox Hunt program is just the right size. There are two hunts, one on 40 meters on Tuesdays, and one on 80 meters on Thursdays. These are separate events. Some nights are easy, and others are really hard. You might think 40 is easier, but most nights, 80 is easier.

They started at the start of November and run through March. They begin at 8:00 PM local and run for 90 minutes.

Each night there are two "foxes." They will be in a 20 kHz range running 5 watts maximum. Your job as a "hound" is to find and work the foxes while also running 5 watts or less. You gain a "pelt" for each contact you make. The program has all sorts of names for things.

Contacts are on CW. At first, they will be working split, listening up about 1 kHz, and then working on frequency towards the end.

The exchange is "signal report – State- Name – Power" I send "559 WI Gary 5W." Most signal reports are 559, but not always.

There is no cost or registration required. Just work one of the foxes, and you will show up in the standings, which are updated about once a week.

For whatever reason, a lot of hams in the state get on for this. Usually, Wisconsin is near or at the top of the list for state participation. Maybe it is our cold Wisconsin winters.

The website show has the full rules, the schedule of foxes, and the leader board.

<https://www.qrpfoxhunt.org/>

This season I am making all my contacts with my FT-818. That is a small radio designed for QRP. It is a fun radio, but the receiver is not even close to my main HF rigs. The challenge is what makes this fun.

### Contests

Starting on January 1, the low power category limit on ARRL contests is 100 watts, down from 150 watts. This was done to be more in step with CQ and just about every other contest that limited low power to 100 watts maximum. Note this does not apply to Field Day.

Since my radio puts out 200 watts, I liked the higher limit. The extra 50 watts give you an additional 1.8 dB in signal strength. That might be just enough not to need to send a repeat or bust through a pile up a bit faster.

January will see the second running of the ORC Key Up contest. The rules have some new wrinkles to make it even more interesting this running. The rules are located elsewhere in this newsletter.

W9XT's contest picks for January and early February 2022					
Name	Start	Length	Bands	Mode	Link
ORC Key UP	Jan 14 2300	Ends Jan 22 2300	2/220/ 432	FM ORC Club re- peaters	
ARRL Jan VHF Contest	Jan 15 1900	Ends Jan 17 0359	6M & up	ALL	<a href="http://www.arrl.org/january-vhf">http://www.arrl.org/january-vhf</a>
NAQP SSB	Jan 22 1800	12 hours, work 10	HF	SSB	<a href="https://ncjweb.com/NAQP-Rules.pdf">https://ncjweb.com/NAQP-Rules.pdf</a>
CQ 160	Jan 28 220	48 hours	160M	CW	<a href="https://cq160.com/">https://cq160.com/</a>

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

The January VHF contest is not as active as the ones in June or September. We don't usually get the sporadic E propagation that is common in the spring, but you never know. We have been getting some really nice 6-meter openings via Es the first few days of January.

You can work a station once per band. The mode does not matter. You can even use FM, but not with repeaters. FT8 has become very popular due to its ability to make contacts under conditions that won't support CW or SSB. One problem is that way too many hams operating VHF contests never get off FT8. If the band supports CW or SSB, you can make 2-3 contacts at the same time in the amount of time it takes to make one on FT8. If the band has some strong FT8 signals, and it's not quite good enough for other modes, at least give FT4 a try. It is faster than FT8.

I have promoted the NAQPs many times. They are great contests for the smaller station. Everyone is limited to 100W, and low antennas work well in domestic contests. The exchange is your name and state.

The CQ 160M contest is the last big 160-meter contest of the season. There is an SSB version in February but doing SSB contests on 160 with low power can be a real exercise in frustration.

## DX

Hams are part of the general population and, as such, have their share of bad actors. One fairly common problem is that sometimes someone will get on and sign with a call from a rare country. This sometimes happens when there is a big DXpedition. It can be a big disappointment to think you worked a difficult new one only to find out he was not real.

These miscreants are called "Slims" or "Pirates" in DX terms. Sometimes they are pretty obvious. Maybe they are at the wrong beam heading. Perhaps they are on a band that does not have propagation to that part of the world at that time. Maybe ham radio is not allowed for that country. If you hear a P5 station, you can be pretty sure it is not real because ham radio is not permitted in North Korea.

But how can you be sure? Sometimes countries that don't allow radio suddenly have a change of heart. Maybe a surprise group can get permission but can't or does not want to give advance notification. It is rare but does happen.

What do you do? The standard advice is WFWL. Work First Worry Later. Maybe it is a pirate, but you will be even more upset if you skipped it and found later it was real.

W9XT's DXpedition picks for January and early February 2022					
QTH	Dates	Call	Bands	Mode	Link/notes
Guadeloupe	Jan 20- Feb 1	TO6S	HF, 6M	C/S/D	<a href="https://les-saintes.f6kjs.fr/index.php">https://les-saintes.f6kjs.fr/index.php</a>
Zimbabwe	Feb 3- 20	Z22O, Z21A	HF, 160	C/S/D	

Modes: C = CW, S = SSB, D = Digital (may include RTTY) HF = 80, 40, 20, 15, 10 Meters

There are not a lot of announced DXpeditions coming up. Guadeloupe is not particularly rare, but a group of five primarily French ops will be there at the end of the month and may be a good chance to fill in some empty band slots.

DL7BO and DJ6TF will be heading to Zimbabwe in early February. I need that on digital and a couple of WARC bands, so I am looking forward to this one.

That wraps up January. Stay warm!

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## **A Beginners Look at Amateur Radio Meteor Scatter and MSK-144**

de: Fred Schwierske, W9KEY

Although interested in ham radio way back in my teen years, I didn't become licensed until well into retirement. As my radio involvement accelerated, it became obvious the hobby offered a lifetime of diversified technical activities. So early on - to "get my arms around those opportunities" - I developed a list entitled, "Various Aspects of Amateur Radio." That list contained thirty-six items, and I remember thinking, "There's a lot to do - I should have started this hobby a long time ago"!

While no attempt was made to put those thirty-six items in any order, number 20 on the list was, "Meteor Scatter DX". The idea of bouncing a tiny signal off the ionized trail of a flaming meteor traveling 75,000 MPH at an altitude of 50-75 miles above the earth just seemed so incredibly cool!

That initial meteor scatter (MS) interest dovetailed with a desire to extend my station capabilities to six meters. So last summer I searched for a suitable home-buildable antenna that could join my other backyard tree supported wire antennas. One suggestion was the "H Double-Bay," originally presented in CQ Magazine's September 1995 issue by Paul Carr, N4PC. Design calculators can be found at:

<https://sites.google.com/site/wvfisher/hdoublebay>.

It's two stacked vertical wire loop antennas - one on top of the other - perfect to hang from a tree branch.

Unfortunately, a great opportunity was lost as the antenna was not operational for the large Perseids shower in August. Many meteors enter the earth's atmosphere every day and can certainly be used for amateur communication purposes, but hams tend to focus on the major showers which occur every few months throughout the year.

After several failed attempts in the fall (operator learning curve), my first official meteor scatter (MS) contact was completed during the Geminids shower on December 14, 2021, with NF3R, Joel in PA, on 6m (50.277 MHz) using digital mode MSK-144 and 500 watts.

Like other modern computer enabled digital modes, a valid QSO consists of exchanging very basic information - Call Sign, Grid Square, and Signal Report. Meteor burns (pings) may only last a fraction of a second - so no rag chewing is possible! MSK-144 transmits at an effective transmission rate of 250 characters per second - so it often takes several meteor "burns" to complete a QSO. Six meters is the most popular meteor scatter band, but higher frequencies are also used. At this point I've made a total of eight MS contacts, all on six meters.

Several of those contacts were made using "split" mode, requiring additional settings. But I've been advised that extra complication is rarely necessary. Instead, keep it simple and use the basic calling frequency for your first attempts.

So how do you participate in this exciting aspect of ham radio? Well, if you already use WSJT-X software for FT-8 digital - all that's necessary is switching modes from FT-8 to MSK-144, setting it to run on the 6-meter calling frequency (50.260 MHz), and ensuring your station is properly tuned for 6m operation.

To get started, I'd recommend some basic reading on the operating procedures and (most importantly) listening before making your first transmission. Here are several operating "suggestions" observed by considerate hams:

1. When beaming West, transmit on the odd time slice (Tx even/1st box NOT checked). If transmitting East (in other words you are the western-most station), check the software box to transmit even/1st. Obviously, this is more relevant if you have a directional antenna. However, since transmitting can interfere with others on the calling frequency, coordinate your transmission with other local hams (so all transmit simultaneously) to avoid interfering with their reception.
2. Search for and become familiar with the Ping Jockey Central website. Log in and use that service to see who is working MS. Short text messages can be exchanged but avoid any contact details which would invalidate the meteor scatter QSO.
3. Avoid using MSK-144 for contact with local hams in your area – concentrate on stations in the 300–1500-mile range, which is where MS occurs.
4. Be patient!! Completing a QSO takes time, luck, and several meteor burns. Each contact may take 15 minutes or more. Periods of high meteor activity (showers) make things easier.

For those desiring more technical background, MSK-144 details and specifications are contained in the 2017 July/August **QEX Magazine** article by Franke & Taylor – yes, the same team that created the FT-8 digital protocol:

[https://physics.princeton.edu/pulsar/k1jt/MSK144\\_Protocol\\_QEX.pdf](https://physics.princeton.edu/pulsar/k1jt/MSK144_Protocol_QEX.pdf)

While you can run MS anytime, it is easier during times of high meteor activity. The big three showers and their peak dates — Quadrantids (1/3/22), Perseids (8/13/22), and Geminids (12/12/22) — are spread throughout the year and extend a number of days on either side of their peak dates. In addition, several other smaller showers occur during the year – a quick internet search will help configure your 2022 operating calendar.

If you have 6-meter capability and looking for an interesting new amateur radio challenge – consider giving Meteor Scatter a try!

# Ozaukee Radio Club Final Scholarship Fund Project Report

## For the period of August 31, 2018, thru December 31,2021

Submitted by Tom Ruhlmann, W9IPR, Chairperson

### History

The Ozaukee Radio Club (ORC) Scholarship Fund was instituted with the Foundation for Amateur Radio on January 1, 1997, and its original monetary donors were the Ozaukee Radio Club, Dr. Stanley Kaplan, Edward Frac and David Knaus with a total sum of \$600.00. Matching funds were then advanced to provide for an award of \$1,000.00.

The original committee members were Chairman Stan Kaplan (WB9RQR), Dick Scarvaci (K9CAN), Dave Knaus (WA9POV) and Ed Rate (AA9W).

The objective of the project was to provide an annual scholarship to a deserving Wisconsin amateur radio operator youth seeking a 4-year baccalaureate degree at an accredited university/college. The scholarship would be funded by monetary donations and the proceeds from the sale of donated equipment.

The award of the scholarship was administered by an outside board so as to avoid favoritism for ORC related individuals. For the original 20 years the selection was administered by the Foundation for Amateur Radio (FAR) and in 2018 the administration was transferred to the ARRL Foundation. In 2015 the amount of the award was increased from \$1,000.00 to \$2,000.00 at the direction of the Scholarship Committee. We have been sending a check to the selection foundation annually to cover the scholarship award. They in turn notify us of the recipient and we normally receive a letter of appreciation from the recipient.

In two installments we have sent a total of \$60,000.00 to the foundation to fund an endowment in the name of the ORC. The funds are invested by the ARRL with the objective of earning a minimum return of 4% or more annually. The annual award will then be withdrawn from the foundations ORC endowment account. To fund a scholarship of \$2000 in perpetuity would require an endowment of \$50,000. The endowment can be increased in increments of \$2,500 as desired. The amount of the scholarship and their number can be changed at the direction of the ORC. The scholarships would be awarded until such time as the endowment funds are exhausted.

### **The past Wisconsin youth recipients of the scholarship were:**

<b>YEAR</b>	<b>RECIEPIENT</b>	<b>WI HOMETOWN</b>	<b>SCHOOL ATTENDING</b>
2021	Nesya Graupe (KD9JNT)	Mequon	UW Madison
2020	Dakota M. Nyberg (KK6OCG)	River Falls	UW LaCrosse
2019	Adam Johnson (KD9KIS)	Ellsworth	
2018	Emily Palm (KC9VEM)	Westby	Christendom College
2017	Emily Palm (KC9VEM)	Westby	Christendom College

(Continued from previous page)

YEAR	RECIPIENT	WI HOMETOWN	SCHOOL ATTENDING
2016	Christopher Palm (KC9JTL)	Westby	Benedictine College
2015	Christopher Palm (KC9JTL)	Westby	Benedictine College
2014	Christopher Palm (KC9JTL)	Westby	Benedictine College
2013	Christopher Palm (KC9JTL)	Westby	Benedictine College
2012	Sadie Barozos (KJ4PLW)	Madison	UW Madison
2010	Natalie Harding (KC9KIR)	Burlington	UW Madison
2009	Benjamin Steffes (KC9PMN)	North Fond du Lac	Milwaukee School of Eng.
2008	Natalie Harding (KC9KIR)	Burlington	UW Oshkosh
2007	Natalie Harding (KC9KIR)	Burlington	UW Oshkosh
2006	Matthew Weeks	Racine	Cedarville University
2005	Travis Waack (KB9YRC)	Manitowoc	Northland College
2004	Amber Ericksen (KC9FVW)	Chippewa Falls	UW Eau Claire
2003	Jayson Kempinger (KB9VGR)	Milwaukee	UW Madison
2002	Andy Knitt (KB9JOZ)		Michigan Tech Uni
2001	?		
2000	Michael M. Imrick	Madison	Michigan Tech Uni.
1999	Michael M. Imrick	Madison	Michigan Tech Uni.
1998	?		

**Typical sources of program revenue:**

The ORC typically has an auction of donated items at the monthly membership meetings. Half the proceeds are given to the Scholarship Fund and the other half is donated to support OZARES.

Typically, donated equipment is evaluated, and the donor is provided a letter indicating the value of the donated items for their tax records. Some of the smaller items may be auctioned at a membership meeting however the bulk of the items and higher value items are sold on eBay, directly or at any of several local Swapfests.

**Typical of estimated value of recent donations of equipment are the following:**

2021	<b>Jon Gilmore (KB9RHZ)</b> <i>IC-746 Transceiver, VHF vertical, mobile and beam antenna, Rig Blaster, headset, CB, mobile antenna mounts, cloning software and various cabling.</i>	\$728.00
	<b>Robert Schatzman (WI9BOB)</b> <i>Antennas, PC, Manual, Speaker, etc.</i>	\$407.00
	<b>Nels Harvey (WA9JOB) SK</b> <i>Antennas, HTs, Mobile Radios, Power Supplies, Test Equipment, tools &amp; parts, Kenwood TS-850S/AT (2), PS-31, SP-31</i>	\$2,121.00
2020	None	
2019	None	
2018	<b>Fred Helmstetter</b> <i>Scanner, TNC, Gin Pole &amp; Books</i>	\$332.00
	<b>Dr. Dan Riley 88</b> <i>Kenwood mobile Radios (3), Power Supply (2), and Antenna Tuner</i>	\$508.00
2017	<b>Mrs. Kent Christiansen (W9WH - SK)</b> <i>Kenwood TS2000 Transceiver, SP950 speaker, RS-35 Power Supply, Antenna and assy., MFJ Antenna Analyzer, RigBlaster, Heil Headset, Antenna Rotor and Controller, etc.</i>	\$1,757.00

(Continued from Previous Page)

	<b>Mr. Sandy Wirth</b> <i>Kenwood TS950SD Transceiver</i>	\$850.00
	<b>Ms. Anna Lewandowska</b> <i>assorted receiving equipment</i>	\$2,669.00
2016	<b>Everett Hokanson (K9PSX) estate:</b> <i>Variety of assorted vintage equipment</i>	Not estimated
	<b>Mr. Chuck Curran</b> <i>New Components for an RF Amplifier and Test Equipment</i>	\$1,084.00
	<b>Mr. Scott Fischer for Ed Fischer (SK) (KC9LRJ) &amp; Bill Shadid (W9MXQ)</b> <i>Vintage Hallicrafters S-38 and various RME Receivers</i>	\$239.00
	<b>Mr. Ed Seigworth</b> <i>ICOM IC-2710 Mobile Transceiver</i>	\$150.00

### **TYPICAL SOURCES OF INCOME FROM EQUIPMENT/ITEM**

	Income from 2017 South Milwaukee ARC Swapfest	\$84.00
	Income from ORC 2017 Fall Swapfest	\$220.00
	Income from ORC 2018 Spring Swapfest (No Participation Due to Illness)	\$0
	Income from ORC 2018 Fall Swapfest	\$491.00
	Income from ORC 2019 Fall Swapfest	\$449.00
	Income from ORC 2020 Fall Swapfest (Cancelled Due to Covid-19)	\$0
	Income from ORC 2021 Fall Swapfest	\$315.00
	Equipment sales – Direct	\$400.00
	Silent Auction	\$87.00
	Cash/Check donations	\$353.01
	<b>TOTAL NOTED CASH INCOME FOR PERIOD:</b>	<b>\$2,312.01</b>

### **Cash outlays during the period**

	2016 FAR Scholarship reimbursement	\$2000.00
	2017 FAR Scholarship reimbursement	\$2000.00
	2018 ARRL Scholarship reimbursement	\$2000.00
	2019 ARRL Scholarship reimbursement	\$2000.00
	ARRL Endowment first installment – August 2019	\$34,000.00
	ARRL Endowment second and final payment – December 7, 2021	\$26,000.00

### **Program balance as of December 31, 2021**

	Bank Account #1 – Money Market Fund	\$3897.24
	Bank Account #2 – 1-Year CD	\$10,000.00
	Cash	\$400.00

### **The current committee consists of:**

- Chairperson: Tom Ruhlmann, W9IPR
- Ed Rate, AA9W
- HF Equipment Technician: Bill Shadid, W9MXQ
- VHF/UHF Equipment Technician: Jim Albrinck, K9QLP
- Auctioneer: Stan Kaplan, WB9RQR
- Treasurer: Gary Bargholz, K9UUR

## **The Future**

The scholarship program activity as such is essentially ended. However, the club can continue adding to the endowment or change the amount and conditions of the award via the ARRL as desired and voted by the board and membership.

The inventory of equipment for sale and the balance of funds at the Cornerstone Bank are to be transferred from the Scholarship Program for use by the ORC STEM Awards program. The STEM AWARDS program will be locally administered program funded as was the Scholarship program with monetary awards for STEM programs, projects, and related individuals.

Respectfully submitted,

Tom Ruhlmann, W9IPR  
Chairperson

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**Equipping a Powerful Station has its challenges.**

Your Newsletter Editor is looking for “fill items” such as you see above. Want to contribute something? Send contributions to . . .

Bill Shadid, W9MXQ, ORC Newsletter Editor: [newsletter@ozaukeeradioclub.org](mailto:newsletter@ozaukeeradioclub.org)

Tasteful material only, please. This is a family Newsletter!!

## **Ozaukee Radio Club Minutes of Membership Meeting: 12/8/2021**

de: Ken W9GA, Secretary

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 7:30 PM, as introductions were recognized when members checked into the meeting, a go-around was not conducted.

### **Program:**

The program was given by Brian Page N4TRB on the original transatlantic radio tests conducted in 1921 by the fledgling ARRL and various British hams. An earlier attempt in February of that year had failed, as the British had been restricted to the 1000-meter band, while the US hams were permitted to operate at the 200-meter band and above. Paul Godley [2ZE] was sent to the UK, packing 200 meter receiving gear, and after setting up a reception site in Scotland was successful in copying several US stations in December of that year. Godley had met Harold Beverage on the voyage over to the UK and had erected the new antenna design at his site, helping him to receive signals at 200 meters. Two-way communication soon followed, and the world learned about long distance communication via the ionosphere, using the MF and the HF frequencies.

### **Committee reports:**

Repeater: W9DHI reported good operation of the repeater system, and that some audio balancing had been performed, and minor adjustments made at the Germantown site.

Treasurer: Gary N9UUR reported that renewals are at 70%, and that the \$26,000 payment had been transferred to the ARRL for our scholarship fund. The November treasurers' report was accepted; motion made by WT9Q, 2<sup>nd</sup> by WB9RQR, and carried.

Secretary: Ken W9GA reported the November minutes had been posted; with a date correction made, K9QLP moved, WB9AZH 2<sup>nd</sup>, motion to accept carried.

Tom W9IPR reported that an updated report from the scholarship committee would be forthcoming at the January 2022 meeting and is looking for individuals to help in the committee. Tom is also heading up the nomination committee, and any interested individuals should contact him.

**OLD business:** None

**NEW business:** None

**Adjournment:** WB9RQR moved to adjourn, W9DHI 2<sup>nd</sup>, motion carried; time ending was 8:42 PM.

There were 34 attendees.

Following the meeting breakout rooms for the program, and a general topic; were opened.

Respectfully submitted,



Kenneth Boston W9GA, secretary:

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## Upcoming ORC Monthly Meeting Programs

de Pat Volkmann, W9JI

January – Elections

February – Gary Sutcliffe, W9XT – Antenna Basics

March – Chuck Curran, W9KR - Hickok tube testers

April – Bill Shadid, W9MXQ - Drake Linear Amplifiers – Features and Failures

Please contact Pat W9JI with your program ideas.

### Creating a Presentation

Many 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 PowerPoint, 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) to discuss your idea for a program.

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## **ORC Meeting Agenda**

*January 12, 2022*

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: Elections
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:**

Until the club decides it's safe to hold in-person meetings again, we will be holding the meetings via the Zoom Videoconferencing platform on the same evening and time as we had the in-person meetings. President Pat Volkmann will email sign-in info, W9JI via the ORC remailer usually about an hour before the start of the meeting.

**Next ORC Meeting via Zoom  
12 January 2022**

7:15-7:30 PM – Check-In

7:30 PM – Meeting Begins