



The *ORC* Newsletter



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

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November 2022

Number 11

From the President

de Pat Volkmann, W9JI



As the end of the year approaches it's time to prepare for the election of Club officers once again. The elections will be held at the January meeting. The ORC Bylaws place a term limit on the offices of President, 1st Vice President and 2nd Vice President. Ben Evans K9UZ, and I have reached our three-term limit and neither of us will be running for office. I will continue to be on the ORC Board as the Past President. I will also chair the Nominating Committee, which will try to find candidates for each office.

Here is the slate of candidates for office as of November 2nd:

Office	Name	Call
President	Bill Greaves	K9GN
1 st Vice President	No candidate	
2 nd Vice President	No candidate	
Repeater Vice President	Tom Trethewey (Incumbent)	KC9ONY
Secretary	Ken Boston (Incumbent)	K9GA
Treasurer	Gary Bargholz (Incumbent)	N9UUR

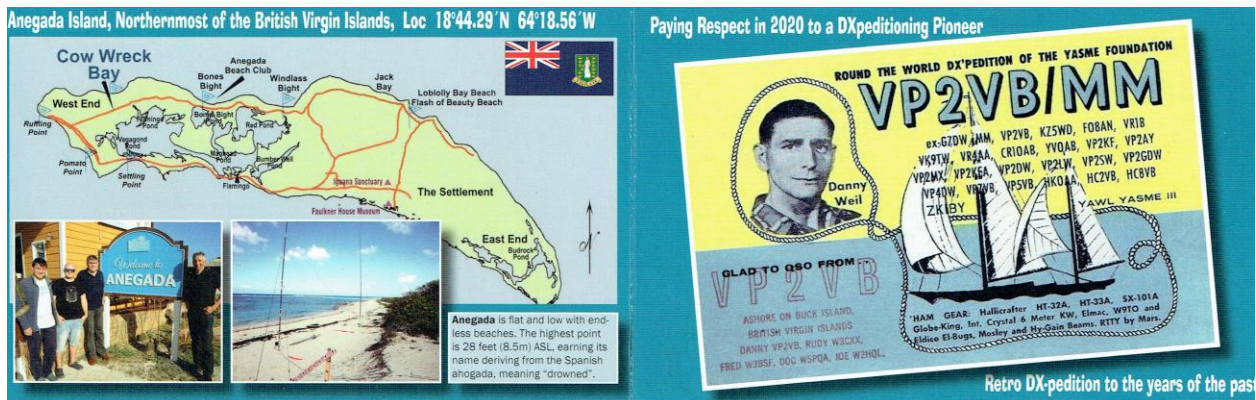
You can nominate yourself or another person for office. If nominating another, that person has to be willing to accept the nomination. Nomination is simple, just let me know that you are interested in an office. We will also take nominations from the floor at the January meeting.

If you are interested in how the election process works, it is documented in the Club bylaws on the ORC website.

We will be having a discussion on dues at the November meeting. We are spending more than we are taking in and it's time talk about raising the dues.

Last month, I mentioned the documents that the ORC has accumulated since its founding in 1964. Included in that collection are lots of old newsletters. Some of the newsletters are tucked in manilla folders, other are in bound volumes like you would find on a library shelf. The oldest one that I was able to find (so far) is the March April 1980 issue, edited by Ron Yokes, W9BCK (SK). Our Editor has included a copy of that newsletter in this issue. While all of the usual Club activities are included, one caught my eye. The report on the Big February Catchall Party opens with “Booze, babes, banjo’s and bandits” and concludes with “A good time was had by all”. It’s interesting to see what the Club was up to 40 years ago.

I recently received this card from the VP2VB 2020 DXpedition. The group was located on Aneгада Island, the northernmost island in the British Virgin Islands. The call sign was originally held by Danny Weil, who is considered “the pioneer of the worldwide DXpeditions”. In the 1950s and 60s, Danny traveled by boat to exotic locations on his boat Yasme, providing DX contacts to many hams. The Yasme Foundation (yasme.org) carries on the DXpedition spirit and sponsored this adventure. This is a very nice card that relates an interesting story, along with confirming the QSO.



VP2VB QSL Card

See you at the meeting.
Pat Volkmann W9JI



A Message from the Editor

Newsletter Table of Contents

de: Bill Shadid, W9MXQ

See Club President, Pat Volkmann, W9JI, and his monthly message on Page 1. As pat mentions, we have the complete March/April 1980 ORC Newsletter, reprinted at the tail end of this edition. See how many calls you recognize. Thanks to the help of Gary, K9DJT, I had the pleasure meeting Ron Yokes, W9BCK, very late in his life. An experience I will value to the end of my radio days. Take a look and remember.

Speaking of Pat, W9JI, see his fine article that takes my own Vintage Amateur Radio article of this month on Frequency Accuracy for Vintage General Coverage Radios and adds a related, very handy, shack addition he has installed at his QTH.

I draw your attention to Joe Bettencort, KD9RAW, a new author on these pages. Joe brings us information on his leadership at the recent Boy Scouts of America Jamboree on the Air (JOTA) activity in rural Sheboygan. It is nice to see the long tradition of JOTA support from Ozaukee Radio Club – so well handled in the past by Bill Howe, KA9WRL (SK). It is obvious that Joe continues our place in that event.

Check out a new series penned by long time contributor and past editor to the ORC Newsletter, Stan Kaplan, WB9RQR. Stan starts a new series on Linux for the newcomer. That includes me – and maybe you, too.

As the current editor of the Newsletter, I would be happy to accept hard copy issues from any of the volumes previous to XXI (21) to copy and digitize for our files. They would be gladly returned to you. Contact me at newsletter@ozaukeeradioclub.org for further details. If you have digital copies, PDF files, or most anything else) I would accept them as well for this project. See more on Page 35.

Our regular Ozaukee Country Amateur Radio Emergency Coordinator Ozaukee County EC, Don Zank, AA9WP, is here with an article on CW and it's place in ARES. Gary Sutcliffe, W9XT, brings us On the Air Activities – Contests, DX, and Special Events through November and into December. Last but not least, check out Minutes of the last meeting as provided by our club Secretary, Ken Boston, W9GA. Check the complete Table of Contents on the next page.

Be sure to note information on coming meetings and info on making presentations at our In-Person and Zoom monthly meetings.

Do you need help in getting thoughts to paper (or keyboard!!) for an article? Contact me at newsletter@ozaukeeradioclub.org.

Ozaukee Radio Club Newsletter November 2022 – Table of Contents	
PAGE	DESCRIPTION
1	Pat Volkmann, W9JI: From the President Monthly Update
3	Bill Shadid, W9MXQ: A Message from the Editor This Month's Table of Contents
5	Joe Bettencort, KD9RAW: Jamboree on the Air (JOTA) Boy Scouts of America at Kohler Andre State Park
8	Stan Kaplan, WB9RQR: Computer Corner No. 296: LINUX: INTRODUCTION
11	Don Zank, AA9WT: Ozaukee County ARES CW
13	Bill Shadid, W9MXQ: Vintage Amateur Radio Frequency Accuracy for Vintage General Coverage Radios
23	Pat Volkmann, W9JI: A Distributed Antenna and Calibration System for Vintage Radios
25	Gary Sutcliffe, W9XT: On the Air Activities! CQWW Phone Wrap-Up, DXCC Most Needed Countries, November Meteor, Contests, and DXpeditions
31	Ken Boston, W9GA: Secretary's Report Minutes of the 12 October 2022, Membership Meeting
33	Pat Volkmann, W9JI: Upcoming ORC Monthly Meeting Programs Creating a Presentation for Club Meetings & This Month's Agenda
34	A Bit About Next Month
35	REPRINT – March/April Ozaukee Radio Club Newsletter – Intro Page



_____ **Onward To the Newsletter** _____

Jamboree on the Air (JOTA) – Boy Scouts of America 2022 Event at Kohler Andre State Park, Sheboygan, Wisconsin

by: Joe Bettencort, KD9RAW



You may have heard some young voices on the radio last month. That is due to the 64th annual JOTA (Jamboree On The Air) held October 14-16. JOTA is a worldwide event run by the Boy Scouts of America. This event, which is BSA's largest, is meant to get youth involved in the HAM world. Approximately 1.3 million Scouts participate annually at over 200,000 HAM shacks!

Locally the Troop and Pack that I worked with (Troop 865 and Pack 3894 out of Mequon) participated remotely from Kohler Andre State Park while camping. Our set-up included: four radios and antennas, allowing us to run 2 HF bands and 2 UHF/VHF bands. We were able to make contacts using HF Frequency 7.205 MHz and VHF using the WiresX repeater in Sheboygan. Five scouts earned the special edition 2022 JOTA patch, and one Scout, Matthew, who earned his Radio Merit Badge. The Radio Merit Badge, by the way, is one of the least earned badges in all of Scouting!

Here is Matthew Seiberlich, Radio Merit Badge awardee, working the amateur radio bands at JOTA 2022:



KD9RAW Pictures

Bands were busy during this event! In addition to JOTA there was a POTA event weekend and QSO party happening. These three simultaneous events made finding an open

frequency very difficult. High winds at our location made the hearing a challenge at times.



The radio setup at Kohler Andre State Park

KD9RAW Picture

Bands were busy during this event! In addition to JOTA there was a POTA event weekend and QSO party happening. These three simultaneous events made finding an open frequency very difficult. High winds at our location made the hearing a challenge at times.



Antenna is out in the clear for best operation. It is ground mounted away from the operating position.

WD9RAW Photo

This event's success locally is due in large part to the volunteers from ORC, LEFROG and MARC. Special thanks to Alex, WB9X, for the use of his repeater, Leroy, WD9HOT, for being a friendly contact for the scouts, Tom, KC9ONY, for showing up to assist, Loren, N9ENR, for bringing his analyzer and running DSTAR, and Steve, W9MCU, for assisting at camp. Not to be left out was Fred, W9KEY, for scouring the air waves and making contacts along with several Scouts, including Matthew, Cyrus, James, Zachary, and Rylan. This was truly a group effort and I wholeheartedly appreciate the support and enthusiasm these groups and individuals showed from the planning process through execution.

(Editor's note: ORC members of more than just a few years will remember Bill Howe, KA9WRL (SK) who was always our window on the Boy Scouts, Jamboree, and Jamboree on the Air. Joe, KD9RAW, is to be commended for his service to our youth and his keeping Bill Howe's passion alive in the Ozaukee Radio Club. Our hat is off to you, Joe. What a fine mission you have!!



THE COMPUTER CORNER

No. 296: LINUX: INTRODUCTION

de: Stan Kaplan, WB9RQR
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WHY YOU ARE READING THIS. Bill Shadid (W9MXQ), our editor for the ORC Newsletter, suggested it. He proposed articles on Linux covering such stuff as file management (including saving files), updating, and running of programs, creating directories, and finding applications (programs) online. Seemingly simple stuff, but also mystifying for long-time Microsoft Windows users trying to get themselves introduced to Linux for the first time. So, with those suggestions in mind, plus lots of background info to cover it all properly, I have enough topics to fill the remainder of this year and all of the next with articles. Now, all I need to do is to write them! Next month's topic, most logically, will be on acquiring and installing Linux.

WHY USE LINUX? First, you can do anything with Linux that you can do with Windows. As I personally discovered early on, you can even pull document files from Windows into Linux, then modify and save them, pretty much to your heart's content, *even on the same computer!* I have done that myself using dual-boot computers, directly, after booting from the Linux side (these are machines with both Windows and Linux on the same computer, but in separate areas of the hard drive). For example, a letter written in Microsoft Word can be ported directly from the Windows files on the Windows side into Libre Office in Linux on the Linux side (Libre is a stand-alone substitute for Word that comes with my favorite version of Linux). There, the letter can be modified, expanded, rewritten, saved, and printed, as you like. So, with Linux you can read Windows directories (folders), and the files inside them, from a single hard drive where both exist. But not the other way. Microsoft refuses to read files from Linux when both exist on the same machine.

So, you are not constrained by using Linux. Indeed, your horizons are expanded. Moreover, Linux is free of charge. That means using it separates you from the marketing whims and monetary charges of commercial providers such as Microsoft. So, you are not locked into paying for upgrades every few years or paying yearly sums to keep using what you already have. Many of us old timers remember that computing started as a no-cost, shared adventure and we feel it should still be that way today. The source code for Linux itself is freely available (and it must legally stay that way), so you can actually change the Linux operating system (OS) to fit your personal needs if you have a bit of programming skill. Many users have done just that, and the result is that there are dozens of versions of Linux to pick from when you get started. Some view this as a disadvantage, with too many choices. True enough, it can sometimes be dizzying and confusing, but can be avoided by simply picking a good version. Later, if you find a version that you like better, you can always switch. You have no such choices when you pick Microsoft Windows!

WHAT VERSION SHOULD I USE? You want something that looks and feels a lot like Microsoft Windows, so the learning curve is as easy as possible. There are a couple of versions that could easily fit this bill. My favorite is **Linux Mint Cinnamon, version 21, 64-bit**, nickname “**Vanessa**”. That version is a pleasure to install and use, and it has provisions to find and install all the drivers (software to run the hardware in or attached to your computer) you might need. Once it is installed, it also has slick provisions for keeping your software updated to the latest and greatest with the least pain and time expenditure.

WHAT SHOULD I NOT GET? Don’t bother looking for a Microsoft Office substitute. **Libre Office** comes with Vanessa and is even more complete than MS Office (see the following table).

Table 1: Windows versus Linux Software

COMPONENT	MICROSOFT (WINDOWS)	LIBRE OFFICE (LINUX)
Spreadsheet	Excel	Calc
Drawing	---	Draw
Presentation	Powerpoint	Impress
Formula	---	Math
Document	Word	Write
Database	Access	Base

Most people will want software to create or open, modify, and save and print documents in the same way as Microsoft Word. Libre Office Write will do that. But all the others (Calc, Draw, Impress, etc.) are also all in your machine and ready to go when you install Vanessa.

[As an aside, Libre Office even comes in a free Windows version that works fine to sub for Microsoft Word, so you don’t need to buy MS Office even for Windows. Libre will even save documents in MS Word format (.doc, .docx and several others) so they can be read and edited in Word.] You can get Libre for Windows from MajorGeeks.

Actually, you will find there are thousands of free programs available through Vanessa after you install it. Want to run Winlink? Software is available to do it. Mine is already up and running on a Linux machine in my basement, operating 24/7. Mostly, I run it remotely, from a main machine in my office, using remote control software called AnyDesk that works beautifully on both Windows and Linux. That is, I run Winlink (Telnet) on a Linux machine in my basement using AnyDesk on a Windows machine in my office, two floors up, via either wired or wireless network. It works fine.

SYSTEM REQUIREMENTS. Let me close this introduction with a few words about collecting things you need. If you have an older computer that works well, it would be an ideal candidate to install and play with Linux, so long as it meets certain base requirements for Vanessa (which I recommend). Pretty much anything you find that was built

around 2014 or later should work, maybe even before that. It must be a 64-bit desktop or laptop computer for Vanessa. Vanessa will work with at least 2 GB of memory (RAM - Random Access Memory, those memory sticks) but 4 GB would be much better. It will work with as small as an 80 or 100 GB hard drive, but more is better. Given you have those minimum requirements, you can install a system that will be supported to at least April 2027.

GETTING A LINUX 21 DISK. The other thing you need is the software itself. You can download the *iso* file of Linux Mint Cinnamon, version 21, 64-bit, nickname “Vanessa” at this location:

https://www.majorgeeks.com/files/details/linux_mint.html

Be sure to select *download (Cinnamon)* to start the download. It will take some time since it is 2.4 GB in size. Once downloaded, you must use this file, named:

linuxmint-21-cinnamon-64bit.iso

to burn an actual bootable DVD with all the installation files on it. Pop this bootable disk in a drive, reboot, and up will come a live copy of Linux desktop that you can play with at your leisure. Shut it all down when you are done, and no changes will have been made to the hard drive. On the other hand, click the desktop icon “Install Linux 21” that comes up after reboot, and you will start the program that installs Vanessa to your hard drive. See next month’s article for details.

AN ALTERNATE TO ALL THAT. If you are a member of the ORC, WiARC or LeFrog, you can get that installation DVD free from me, just for the asking and a pick-up. Contact me by email or phone and we can arrange a mutually agreeable time and day for you to pick up the disk at my QTH in Saukville. Give me a bit of time (2 days) to prepare a disk, in case I am swamped or have a bunch of other commitments. Fair enough?



OZARES: Ozaukee Amateur Radio Emergency Services

de: Don Zank AA9WP, OZARES Emergency Coordinator, aa9wp@arri.net

CW



There is a great deal of discussion and training in the amateur radio emergency services aimed at using the digital modes. It may be WINLINK, Fldigi and NBEMS, JS8Call, psk31 or the old standby of RTTY. The advantages are obvious. The modes can transmit a great amount of information quickly. The received messages can be printed out. The possibility of misunderstanding by phone modes is reduced. The weak link of the digital modes is their dependence upon computers, and in some cases, the internet. Add in the hardware layer of TNC's or soundcards and the number of possible failure points increases. As does the complexity of the digital modes and hardware. But what about the original digital

mode of CW or Morse code? For some reason CW does not get mentioned much in the emergency services literature.

There are distinct advantages to using the CW mode. At low power levels and with its narrow bandwidth, CW can be successful in less than optimum propagation conditions. It requires simple equipment, a key, and a simple transceiver.

CW seems like a natural fit for emergency operations. No worry about the internet or computers. Basic and simple operation. It may not be as fast as digital modes or easy as phone but "when all else fails," CW would be the go-to mode. And CW on the hf bands definitely has more range than VHF FM.

Back in 1998, when the FCC started discussions about lowering the 20-wpm requirement for an Extra Class to 5 wpm, or eliminating the requirement, I decided I needed to get an Extra Class license at 20 wpm. And in October 1998 I passed the exam and CW test. However, I haven't used CW much except for contesting. Then it is pretty easy to copy call signs and 5NN. This summer I decided to freshen up those CW skills for the upcoming contest season. And the best way to learn or freshen up those skills is by training with the CWops Academy. <https://CWops.org/>

The CWops group offers three yearly sessions, each eight weeks long, that meet twice per week. An advisor will meet, via zoom, with a group of students to review the daily homework assignments and answer any questions that come up. The advisors will provide plenty of operating tips from ragchewing, and hunting for dx to contesting. A vital component of this education is the suggested minimum of one hour per day of CW practice. This is in addition to the daily homework assignments between classes. The Academy weekly sessions and daily homework supply the incentive and discipline needed to master CW.

There are four levels available. Beginner is the starting point where an operator can learn the Morse Code characters using Morse Code Trainer software. The goal is to learn the letters, numbers, and symbols by sound and not by the number and position of the dits and dahs. The minimum goal is 6 words per minute (wpm).

Next is the Fundamental class with the goals of improving head copy of CW, and the skills needed for ragchewing and contesting. The minimum goal is 10 wpm. An online training program, Learn CW Online, is employed to improve character recognition. <https://ICWo.net/>

The Intermediate Level session follows with the goal to learn Morse code at 20 wpm. As before the sessions are designed to increase instant character recognition and head copy. Software at this level includes Morse Runner <http://www.dxatlas.com/MorseRunner/> and RufzXP <https://www.rufzxp.net/>. At the RufzXP site you see this discouraging headline: *Yannis Scutaru, 11 years old, proved speed 1093 cpm (217 wpm) under supervision of the referees!*

Damn kids! Anyhow that is not the goal of these sessions.

Finally, the last session is the Advanced where the goal is 25 wpm plus. In this session, the important technique of copying from behind, basically allowing two or three characters to pass, before starting to copy or type is practiced. The fun part of this session is participating in the Wednesday and Thursday sessions of the CWops contest, hour-long contests that begin at 1300 and 1900 UTC on Wednesday and 0300 UTC on Thursday. An exciting hour of working stations sending at 30 wpm plus. Scores are submitted on the 3830 site.

Once the Advanced class is completed, membership in the CWops organization is accomplished with the sponsorship from three other CWops members. Sponsorship, after participation in several of the CWops mini tests, is easy as the other operators are familiar with the Academy members.

I am proud to say that I passed the Advanced Class and now have the CWops number 3252. But finishing the class does not mean my CW cannot be improved. Like, golf, bowling, DXing, and contesting, there is always room for improvement. Especially sending with a dual paddle CW key.

If you want to learn CW and be a proficient operator, I highly recommend participating in the CWops Academy. Now, how to integrate more CW operations into the amateur radio emergency services.

Vintage Amateur Radio

de Bill Shadid, W9MXQ



Last month we talked about the use of the 1950's, 1960's and 1970's General Coverage Shortwave Radios and their use of Bandsread controls to provide better frequency readout accuracy on the ham radio bands – or, for that matter, anywhere in the radio's coverage where the users wanted a wider spread of a frequency area on the tuning dial.

The lessons from last month are fine – and they are correct. However, what was not shown was the procedure to be reasonably sure the radio is actually tuned to the frequency shown on the dial. The fact is, it may be close but almost a certainty that in those radios mentioned in last month's article¹ it is off by some amount. Maybe by quite a bit.

This is an old story today with Vintage Amateur Radio Collectors. So, you have your totally analog (that is, not digital²) readout 1960 vintage station all aligned and ready to test and you call a fellow ham to listen to you on the bands. You tell him/her that you will transmit on 14.250 MHz but to listen and call back on the frequency where your transmitter is sending. He/she hears you and the subject of transmitter quality sound is a forgotten topic when the first statement from them is, "hey, you are transmitting on 14.248.32 MHz – you are way off!!" You, on the other hand, feel complimented because you are accurate to within a little over 0.01% - never mind how close that is – it still does not fit with your on the air partner's digital readout on his/her modern Super Band Burner Transceiver. Oh, forgot to mention, that Super Band Burner also has an accuracy measurement. But never mind – that is generally not up for conversation!! Word to the wise, find another true Vintage Radio Person to help you check that radio. In this world of letter monikers, find a LBDR ham³. This is not a testament on non-collectors or new generation hams. It is just that the history of somewhat drifty free running oscillators is fading fast among new hams.

To ensuring reasonable frequency accuracy – or at least a ensure reasonable trust of the frequency read – there are several tools involved:

1. Use of an internal or external 100 kHz Calibrator Oscillator.
2. Use of known nets on the bands being used.
3. Use of Frequency Standard Stations.
4. Use of crystals used for transmitter operation.

We will discuss all four of these methods of calibration. However, for this exercise, we are going to focus on just the Hammarlund HQ-180C Receiver – one of the radios used in the article last month. That Hammarlund is very representative of the two dial (Main

Tuning and Bandsread) system used on most radios of the time. In one form or another, you can find this system used on most radios of the time – even including units from Japan (Trio/Kenwood, mostly) or private labeled versions of these radios branded as Allied Radio, Radio Shack, Lafayette, Olson, and others.

The biggest variation was in radios like the also shown Hallicrafters SX-110. Note the following two pictures to illustrate what I mean.



The Hammarlund HQ-180C

Note the two Tuning Knobs and Readouts. Left is Main Tuning, and the Right is Bandsread.

The Hallicrafters SX-110

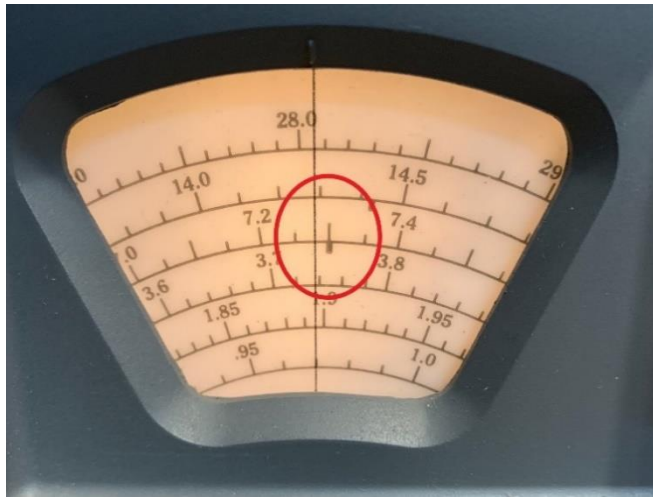
Note the two Tuning Knobs and Readouts. Left is Main Tuning, and the Slide Rule Dial on the Right is Bandsread.

Both Radios – W9MXQ Collection

Remember also, for reference, that many radios did not have a ham radio band calibrated bandsread readout. Such radios were more likely to include a 0 to 100 scale that was to suffice to spread out the scale on a portion of the main tuning dial. Do not assume that all such radios were low cost – many were just not intended for ham radio use as their primary market. A good example is the Hammarlund SP-200 SuperPro Receiver covered in the article. The SP-200 was primarily marketed to the military and other government agencies.

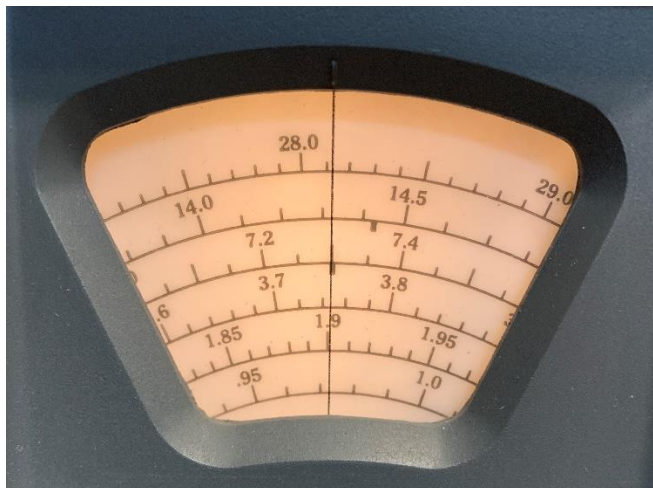
The pictures represent a top-of-the-line radio from Hammarlund and a mid-range radio from Hallicrafters – and their performance reflects that point. This illustration is to show typical radio panel design and is not related to performance.

Back now to the HQ-180C. Recall last month that the example showed how to set the radio to receive on MidCARS (Midwest Amateur Radio Service⁴ - <http://midcars.net/>). (We will talk about MidCARS, and other nets, later.) In last month's review, we showed the dial settings for 7258.00 kHz in the following three pictures:



This is the left readout window (reference HQ-180 photo, above). This is the readout window connected to the MAIN TUNING Control. Marked here is the middle arc that includes the range we need. Note in the middle of the red oval, the arc shows a bold mark, or bulge. Move the MAIN TUNING Control so that the indicator falls right on that bold mark, as in the picture just below this one.

W9MXQ Picture



As referenced above, note that the readout is now exactly over the bold mark on the arc between 7.2 and 7.4 on the dial. This indicates that the receiver is tuned to 7.3 MCS (MHz), which is the top of the 40-Meter band. We now need to move to the next picture and to start using the BAND SPREAD readout window and Control.

W9MXQ Picture



The next part of the process is to move to the BAND SPREAD readout window – to the right of the S-Meter. On the readout window, you can see that I have tuned the receiver on 40-meters (third arc from the bottom to just below 7.26 MCS (MHz) in order to tune in MidCARS at 7258 KCS (kHz).

W9MXQ Picture

The first question you should be asking is, “how do you know in the first picture that you are exactly on 7.3 MCS (MHz) on the main tuning dial.” Darn good question because

you do not know that for sure! What we showed last month is “reasonably accurate,” but leaves a lot to be desired.

So, first we will bring a 100 kc (kHz) Crystal Calibrator into the picture. These handy devices are either standard equipment in the radio (the HQ-180C has one) or they are available as an external unit or an option that plugs into the radio. Crystal Calibrators provide an accurate⁵ signal that can be engaged to provide a carrier on the radio every 100 kc (kHz) from the lowest frequency to the highest frequency the radio covers. The little oscillator provides harmonics of the 100 kc (kHz) signal so when engaged you can hear a carrier accurately placed every 100 kc (kHz) across the spectrum.

So, in the example with the three pictures above – to properly calibrate the radio against the 100 kc (kHz) Calibrator. First adjust the Bandsread dial so the readout is on the 40-meter band (third arc from the bottom) and set at 7.3 mc (MHz). Presetting the Bandsread dial becomes an important step when using any of the calibration tools indicated in this article.

Now go back to the Main Tuning Dial and set it to 7.3 mc (MHz). After setting both dials to 7.3 mc (MHz), turn on the 10 kHz Calibrator. (This is on the SEND – RECEIVE – CALibrate switch on the HQ-180C – elsewhere on other radios so equipped.) Now carefully and slowly move the Main Tuning Knob to zero beat with the Calibrator signal that is audible at 7.3 mc (MHz). If you have to move the Main Tuning to zero beat the Calibrator, do so. Then can be assured that the Bandsread dial is now at 7.3 mc (MHz).

Now tune the Bandsread dial (with the Calibrator still on) to 7.2 mc (MHz) and you should hear the calibration signal again at the next harmonic downward. If you have to adjust the Main Tuning a bit to be accurate, then do so. The fact that the dial is calibrated at 7.3 mc (MHz) does not mean that it is also calibrated at 7.2 mc (MHz). It almost certainly will not be zero beat as far away as 7.0 mc (MHz). Oscillators did, over time, become more and more linear – because the oscillators became digital – not analog. Companies like National Radio and Collins Radio took exceptional measures to make their analog dials as linear as possible – but they still had error from one end of the band to another.

So, what if you do not have a Crystal Calibrator in your radio? Frankly, the majority of radios of the time did not have such calibrators. However, they were available on the aftermarket. Check these examples:



Bud Radio, Inc. Model FCC90B from the 1950's. This self-powered calibrator used a 50C5 Oscillator and a 35W4 Power Supply rectifier. The filaments were wired in series and then powered off the AC Line. This unit was AC-DC and therefore somewhat dangerous⁶. (KB8TAD)



Hammarlund Radio Company XC-100 Calibrator – used a 6BZ6 Oscillator tube. The filament and plate voltages were taken from the host receiver. It dates from the mid-1950's. Some Hammarlund receivers had front panel switching to access the calibrator while others required separate user provided on/off control. **(Hammarlund Catalog)**



Heathkit HD-20 Crystal Calibrator dates from 1960 through 1975. It operated from an internal 9V Battery to operate the 1N409 Transistor oscillator. It is shown here connected to the Hallicrafters SX-110 Receiver. These are common at Hamfests to this day – and they still work just fine. **(W9MXQ)**



General Radio 1213-AB Crystal Oscillator Unit is a vintage calibration instrument used by fellow vintage radio aficionado, Pat, W9JI. This unit provides calibration signals every 1 mc (MHz), 100 kc (kHz), and every 10 kc (kHz) as switched. Note the also included General Radio 1203-B AC Power Supply. **(W9JI)**

External Crystal Calibrators are connected to the antenna input of the receiver to be calibrated. However, whether internal or external, when using a Crystal Calibrator, remember to turn it off when not used for calibration. The first time you forget to do so, you will find yourself wondering why there are so many carriers on an otherwise dead band! Also, you can use accessory (external) calibrators for calibration of a transceiver. By the time transceivers came along, calibrators were either standard equipment or a low-cost option that could merely be plug into the connector provided on the back or inside the radio.

(Older radios can be confusing – carefully note the instruction manual on the subject. Many things shown today as operating details were assumed to be known in 1960!)

Examples of popular vintage, analog readout transceivers that included a calibrator were:

- Collins KWM-1, KWM-2, KWM-2A

- Hallicrafters SR-150, SR-400, SR-2000, FPM-200
- Drake TR-4, TR-4C, TR-4CW, and TR-4CW-RIT
- Swan 500, 500c, 500cx, 700

Examples of popular vintage, analog readout transceivers that did not include a calibrator as standard equipment (or were optional plug-in devices) were:

- Hallicrafters SR-160, SR-500 (both came with calibrator, but crystal optional.)
- National NCX-3, NCX-5, NCX-200
- Swan 250, 350, 350c

When using a calibrator in a transceiver that did not include a special connector for connecting the calibrator you need to be careful. Completely remove the calibrator from the antenna connection before transmitting. You will make that mistake only once!!

More sophisticated oscillators, such as the General Radio 1213-AB Crystal Oscillator Unit add another level of potential frequency confirmation with the addition of the 1 mc (MHz) and 10 kc (kHz) positions for output frequency. However, beware when using as close a signal as every 10 kc (kHz) that you actually listening to the signal you think you are. For instance, when listening to 7250 kc (kHz) on the dial – be aware that you may be listening to 7240 or 7260, or even further away.

I regularly use my Heathkit HD-20 Calibrator or the internal calibrators in radios (such as the one inside the HQ-180C Receiver). One point to remember is that the calibrator itself needs to be calibrated. That is done using WWV when there is no modulation, turning on the calibrator, and zero beating the calibrator with the WWV signal by adjusting the tuning trimmer on the calibrator,

Another common way to determine dial accuracy on the vintage radio is to tune to a popular net that can be depended on to always be on the same frequency anytime you listen. I will mention only a few here – you can come across many . . .

- On 40-meters:
 - SCARS (South Coast Amateur Radio Service on 7251 kc (kHz))
 - eCARS (East Coast Amateur Radio Service on 7255 kc (kHz))
 - MidCARS (Midwest Amateur Radio Service on 7258 kc (kHz))
- On 20-meters:
 - Maritime Net on 14300 kc (kHz)
(Also Navy Net and Coast Guard Net)

When using this method of frequency calibration, tune the net on your bandspread. If it is off frequency as you see on your dial, move the bandspread to where it should be located for the frequency you are tuning. The, bring the net into tune by carefully adjusting the main tuning knob. On some receivers – including the HQ-180C, there is a fine adjustment of the dial pointer that can be engaged to move the pointer to the correct location for the frequency you are tuning. That control on the HQ-180C is shown on the

second page of this article where the front of the radio is pictured. Note the small, unmarked knob to the right of the readout and meter panel.

When using nets, always remember that on occasion they will move to avoid QRM. Listen to the net for a bit before making the adjustment – most times when this happens, the net control operator will announce frequently that the net has moved due to QRM and is operating at a frequency he will announce. For that reason, net frequencies are not as dependable as the next group of known frequencies.

In addition, there are some similar methods of determining frequency accuracy against a known accurate station. There two systems I regularly use:

- I talk to a fellow ham close-by who is using a modern transceiver who can tell me my frequency when I ask him/her to do so. (Thanks to Dave, WØAH, who receives such requests multiple times a month. As another long-time ham, he remembers the days of “estimated frequency.” Dave is also my contact for determining proper sound from my signal when using a vintage transmitter and microphone.
- I use my own Yaesu FT-817ND connected to a dummy load to transmit and detect with my vintage receiver. Dave’s equipment and the FT-817ND have integrated systems to ensure a high degree of frequency accuracy. When doing this, remember to protect the front end of your monitoring receiver or transceiver.

Another method to determine accuracy are frequency standard stations. There are frequency standard stations in most countries in the modern world. In the United States, we have WWV stations at 2.5, 5, 10, 15, and 20 mc (MHz). There was an "experimental mode" transmission on 25 mc (MHz) that ended at the low part of the previous (Cycle 24) Sunspot Cycle. It remains to be seen if it will return. These stations are primarily for calibration of the Main Tuning dial as none of these frequencies fall within the band-spread of a ham radio band⁷.

When using WWV to calibrate the Main Tuning dial, remember that most main dials are not adjustable – so you must simply remember the error that you may well see. My HQ-180C is off a small fraction of an inch on the dial when tuning WWV on 10 mc (MHz).

In the United States, there is another option that is closer to two different ham bands. CHU in Canada is an excellent frequency standard on par with the accuracy of WWV here (at least for our purposes). They transmit modulated and unmodulated signals on 3.33 mc (MHz), 7.85 mc (MHz), and 14.67 mc (MHz). CHU transmissions are not done with as much RF power as WWV. You may have trouble hearing them, depending on your location.

These stations do not significantly change frequency under most any circumstances.

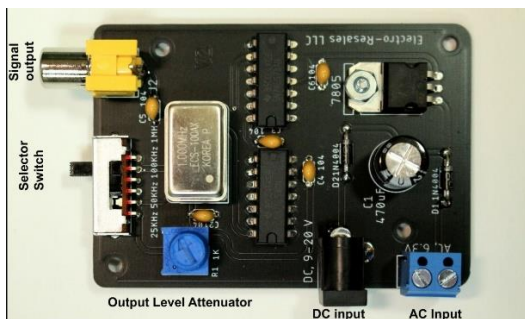
JJY in Japan is very close in its frequency transmissions to what we receive on WWV. (Kenwood radio users will note that some models show WWV/JJY on the bandswitch for 10 mc (MHz) reception.)

One final method of determining frequency on the ham bands is the use of crystals in the transmitter (if you are using a transmitter in your installation and if it can be operated with crystals). Many hams who started as Novices and were required to run crystal control still have a supply of crystals. You can use the SPOT control on the transmitter to send a very low-level signal at the frequency on the band selected on the transmitter – and then use that frequency to ensure the accuracy of the bandspread dial. Remember, however, that old crystals can change in frequency. Beware of that possible issue!

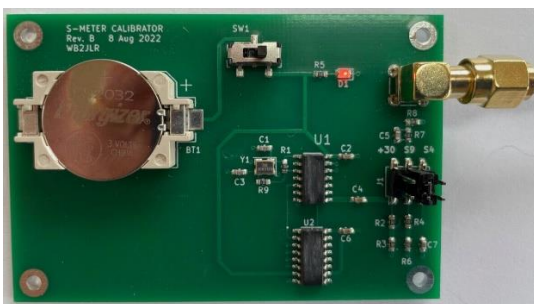
When using a crystal to check frequency you need to remember that it will show on your receiver on the intended frequency in the transmitter. The crystal itself may be on a different frequency and the transmitter is using the crystal at some multiple of its actual design frequency. So, you may be able to test in two locations. For instance, let's say you have a crystal you use on 7120 kc (kHz). It may have a fundamental frequency of half of that – or 3560 kc (kHz). So, actually, depending on what you need and the setup in the transmitter, you could test your receiver accuracy at 3560, 7120, 14240, 21360, and 28480 kc (kHz). Funny how that works – and shows the original design of how the bands related to each other. The transmitter works to “emphasize” the output on the band it is tuning (and to reject significant output on bands you are not using.

Before closing, I want to show you some modern crystal calibrator tools that have taken up residence at W9MXQ.

To replace the old Heathkit HD-20 Crystal Calibrator, I have added two devices:

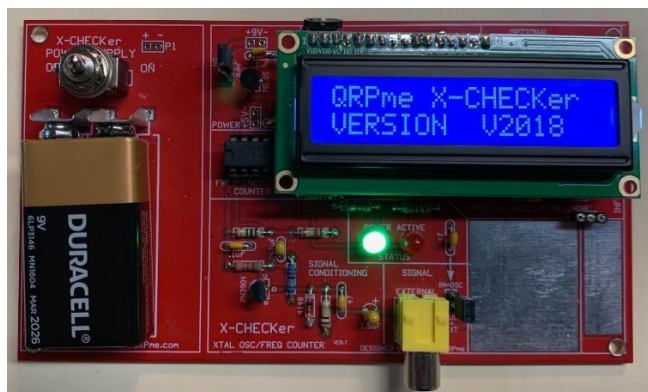


Marker Generator Crystal Calibrator 1 mc (MHz), 100 kc (kHz), 50 kc (kHz), and 25kc (kHz) Switched. This under \$25 calibrator from eBay is USA made from a company called Electro-Resales LLC. It replaces the old-style calibrator and even has the ability to be powered from 6.3 VAC filament power in a vintage radio. (eBay)



Portable S9 RF Signal Generator. This under \$35 device from eBay is USA made from rprprp54 (WB2JLR). It provides calibrated signals on frequencies⁸ through the HF and VHF spectrum. You can select from three levels that include S9+30, S9, and also S4⁹. Power is from a CR2032 Button Cell Battery. (eBay)

Recalling a product shown in an earlier article, I use a very nice piece of equipment for determining the fundamental frequency of most any crystal. I refer to the QRPme X-CHECKer. This confirms that a crystal is oscillating where you think it should. The X-CHECKer was shown only a few months ago in an article on Hints and Tips on Vintage Radios¹⁰. Above, I related that crystals age and go off frequency a bit (but sometimes a lot) or just quit working. It pays to have a way to test a wide variety of crystals. Remember, however, that most Crystal Checkers will show the fundamental frequency. The example shown above with a 7120 kc (kHz) crystal may actually be a crystal running on a fundamental frequency of 3560 kc (kHz). The 3560 would show on the readout – not 7120 in that case. Also remember that the crystal could be fundamental on 7120 and show as that frequency on the X-CHECKer.



QRPme X-Checker Crystal Checker. This is available for direct for \$50 plus shipping from:

<http://grpme.com/?p=product&id=Q17>

(W9MXQ)

One point of clarification in this article – and in any article on calibration of the two-dial (main and bandspread) tuning design. When using the main tuning dial, be sure to note in your radio's Operating Manual how to set the bandspread dial. This is important for the procedures outlined herein.

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

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a lot more than a proofreader as he often adds commentary that makes it into the article. Certainly, in an article like this, it is good to have a second person review the process.

Notes and Credits:

¹ The radios in last month's article were the Hallicrafters SX-110, the Hammarlund HQ-180C, the Allied Knight-Kit Space Spanner, and the Hammarlund SP-200 SuperPro.

² There were mechanical digital readouts in the 1960's and also some Nixie Tube™ readouts in this period that were little more than a representation of the frequency – not a true frequency counter as used on modern radios. Such units were no more accurate than the analog readout other than very critical mechanical designs to counter the tendency of mechanical readouts to be less than linear in their span. The mechanical digital readout depending on the linearity of the mechanical oscillator drive and in particular the linearity of the variable capacitor or inductor used to tune the VFO.

³ "LBDR Ham." Translation – *Licensed Before Digital Readout* Ham.

⁴ MidCARS can be found on the web at <http://midcars.net/>. On the air they are found at 7258.00 kHz. Generally, this one is pretty dependable as to being right on frequency.

⁵ Crystal Calibrators are commonly accurate to 0.005%. That said, a 100 kHz signal could be between 99.9995 and 100.0005 kc (kHz). “Close enough!!” But just remember, as you continue to use harmonics, the error of its deviation specification is also multiplied. This is not a major issue in an HF radio that covers only to 30 mc (MHz).

⁶ AC-DC power means that the unit being powered does not have a power transformer and runs directly off AC mains power. In the case of the Bud FCC90B Calibrator, the 115 VAC is rectified and use for plate voltage on the oscillator. The two tubes’ filaments are wired in series directly across the line. One side of the AC line is tied to the oscillator’s metal chassis. You can receive a shock if the AC plug is incorrectly connected. A problem from the days before polarized plugs. Be careful!! The use of an isolation transformer – NOT a Variac™ - is strongly advised.

⁷ It is true that the 10 mc (MHz) signal is in our 30-meter band area – but no older receiver includes 30-meters (or any other WARC band) on the bandsread dial.

⁸ Frequencies – mc (MHz) – provided on the Portable S9 RF Signal Generator are as follows:

N x 1.78977 mc (MHz) – fundamental is 1.78977 mc (MHz) with harmonics above.

⁹ Reference to S9+30, S9, and also S4 is also indicated as -43dBm, -73dBm, and -103dBm, respectively – at 50 ohms impedance. Calibrated Frequency Range is 1.8 to 30 MHz and therein is accurate within 1 dB (± 0.2 S-units). Extended Range is 30 MHz to 1 GHz with signals generated where the level is uncalibrated.

¹⁰ Little Tips and Tricks with Vintage Radios, W9MXQ, September 2022 Ozaukee Radio Club Newsletter. Available at <https://www.ozaukeeradioclub.org/index.php/newsletters>, check for Archives.

¹¹ Websites for other organizations mentioned in this article:

- eCARS (USA) - <http://www.ecars7255.com/>
- SCARS (USA) - <https://southcars.com/>
- WWV (USA) - <https://www.nist.gov/pml/time-and-frequency-division/time-distribution/radio-station-wwv>
- CHU (Canada) - <https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time/nrc-shortwave-station-broadcasts-chu>



A Distributed Antenna and Calibration System for Vintage Radios

de: Patrick Volkman, W9JI



My shack has several operating positions, each connected to an antenna switching panel. There are a number of boat anchor radios in the shack that are not connected to the main antenna system as they are only used occasionally. I also have a workbench for repairing radios and it isn't located near the operating positions. The boat anchor receivers and repair bench didn't readily fit into the antenna switching scheme so a new approach to an antenna connection was needed.

The solution turned out to be fairly simple. I installed an "antenna bus" in the shack. The bus* is a 16-gage copper wire attached to the ceiling with ceramic standoff insulators and runs around the perimeter of the room.

The far end of the bus can be switched between two receiving antennas. To use the antenna bus, a clip lead is run from a receiver to the overhead wire. This arrangement allows for a quick and easy connection to any receiver in the room. It is especially handy when testing a radio.



Antenna wire held by ceramic insulator. This type of insulator was used in "knob and tube" house wiring in the very early 20th century, before sheathed wire and conduit were adopted.

W9JI Picture

Calibration accuracy of an old radio is often questionable, even for those with a crystal calibrator. A benefit of the antenna bus system is that a signal generator can be connected to the wire to provide a calibration signal. This generator setup allows an accurate signal to be sent to any radio in the room. The signal intensity can be varied, allow-

ing for a rough check of receiver sensitivity. Unlike a crystal calibrator, the generator is not limited to multiples of the calibrator crystal frequency. This is quite useful for checking band spread accuracy and linearity.

A few caveats are in order. First, only one receiver at a time should be connected to the antenna bus system. If multiple devices are connected the front end of the receiver may be detuned to the point where sensitivity is reduced. Second, the antenna bus is indoors and as such it is located near a number of noise sources. The system is particularly good at picking up noise from my motion detector lamps which are on the outside of the house about two feet from the wire. Third, I do not use this system for testing transmitters. It could be used with a transmitter, but I find it simpler to use one of the operating positions where I know the antenna characteristics.



The signal generator and radio can be connected to the antenna bus located overhead. (Hammarlund HQ-129, HP Model 606A Signal Generator, and Koolertron Signal Generator)

W9JI Picture

The antenna bus provides a simple solution to a distributed antenna system with the added advantage of providing a calibration signal when needed.

W9JI

* Note: “Bus” is an electrical term used to describe a node where several devices may be connected in parallel. Some examples are a power bus, video bus, audio bus or computer data bus. “Buss” is frequently used but has a different meaning. The Merriam Webster dictionary says buss means kiss, as in “a kiss on the lips”. *Merriam-Webster.com Dictionary*, Merriam-Webster,

<https://www.merriam-webster.com/dictionary/buss>.

Buss™ is the trademark used by Bussmann, a fuse manufacturing company. “Buss™” is an old and trusted brand for fuses. Check <https://bussfuses.net>

On The Air Activities!

de Gary Sutcliffe, W9XT



November is right in the middle of the busiest time of the year for contesters. The last weekend of October is the CQWW Phone contest. The first weekend of November is the ARRL Sweepstakes, which will start within hours of publication of this newsletter. Then, after a free weekend, is the phone version of Sweepstakes. The last weekend of November is the CW version of CQWW. December starts with the ARRL 160 Meter Contest, followed by one of my favorites, the ARRL 10 Meter Contest. I used to operate all of them seriously but have cut back in recent years.

CQWW Phone

Conditions this year were the best we have had in many years. The solar flux was up around 130. The A and K indices were not great, but in general, the bands were in good shape. ORC members K9DJT, W9KEY, W9MXQ, and W9IPR, were heard or reported during the contest on the last weekend of October. Did I miss anyone?

A relatively new ham, this was W9KEY's first contest with conditions like this. Fred made almost 800 contacts with his wire antennas, on 80 through 10 meters. He was amazed at the number of unique countries he worked in a weekend, 91 in his case.

Ten meters was Fred's best band, with 340 contacts and 77 different countries worked. Fred mentioned, "Even a new ham can put up an effective, low cost 10-meter antenna in a small city lot." Excellent job, Fred!

W9MXQ reported a short time (about 4 hours total) effort with some time on both days. He worked 92 stations in 42 different countries, including an all-time new one (ATNO), Thailand. Well over 50% of his contacts were on 10-meters with the highest frequency stations works all the way up above 29 MHz – where you would expect to hear FM. Those highest frequency stations were Japanese. W9MXQ reported better conditions on Sunday than on Saturday.

Ten meters is my favorite band. It has been a long time since it was this good. So, I decided to do a single band, ten-meter effort. Unfortunately, I had terrible problems with noise. It ranged from S3 to S7. Ten meters is a quiet band, and it is possible to work stations that don't move the S-meter. Even S3 noise on the band will cover up a lot of stations.

Despite the problems hearing, I made 456 contacts in 99 countries. Although Japan is a common country to work it has been a long time since I worked Japan on 10-meter SSB. My last 10-meter SSB contact was in March 2015! So, it has been a long wait!

The three contacts I had with Japan were extremely weak. I am surprised they heard my low power signals. In a year or two, we will be working lots of S9 JA's. In the meantime, I have a project tracking down the noise sources before the CW weekend of CQWW and the ARRL Ten Meter Contest.

DXCC Top Twenty

DXers try to make contact with hams in every country. The premier award is the ARRL DX Century Club (DXCC). This award was started after WWII and has evolved over time. You need to work and confirm 100 countries to qualify. You get endorsements as you add countries.

The definition of a "country" can be a bit hazy, and the rules have changed to what a country is. Actually, they are officially called "entities." Many factors go into what is an entity and what is not. Things like distance from other land masses, administration by different government departments, and other factors go into it. This means that Alaska and Hawaii are separate entities, as are Puerto Rico and other possessions of the United States.

There are 340 current entities. Sometimes new countries are added, and others are deleted. One example is Czechoslovakia. In 1993 the country split into the Czech Republic and Slovakia. Czechoslovakia was deleted, and two new ones were created. If you have Czechoslovakia confirmed, you have all time credit, but some awards, such as the DXCC Honor Roll, which requires 331 or more confirmed countries, only count current ones.

Some countries have many hams so contacting them is easy. Others don't have many active hams, or even any. Some don't even have any people living there! It can take a long time to get on the Honor Roll and longer to work them all. It took me over 40 years to get to the top of the Honor Roll, with all of them confirmed.

The website Club Log (<https://clublog.org>) periodically publishes its list of the top countries needed by DXers. The latest version of the top 20 is below.

There are many reasons for making the list. North Korea is simple. Ham radio is not permitted there. The last time it was on the air was in 2002. An NGO aid worker was allowed to operate for a while from his hotel room under special restrictions, including two security officers being present. Then North Korea was found to be cheating on their nuclear development program, and they responded by kicking every foreigner out of the country.

Others, like Bouvet Island, are located in very remote locations that are difficult to reach. No one lives in Bouvet, and it is tough and expensive to go there. The last DXpedition failed to land on the island and had to return. That trip cost about \$750,000.

Some are military bases like KG4, Guantanamo Bay. You need special permission to go and operate there. Fortunately, that KG4 is on from time to time. But five US possessions are on the top 20 list. They are the ones with KP and KH prefixes. Some of these are wildlife sanctuaries, and the government agencies that oversee them just don't allow anyone to visit. For example, Desecheo is off limits even though it is visible from Puerto Rico and apparently a frequent stop for Haitian fishermen, pirates, and smugglers who camp on the beach.

Club Log Top Twenty Most Needed List		
Rank	Prefix	Country (Entity)
1.	P5	DPRK (NORTH KOREA)
2.	3Y/B	BOUVET ISLAND
3.	FT5/W	FT5/W CROZET ISLAND
4.	BS7H	SCARBOROUGH REEF
5.	CE0X	SAN FELIX ISLANDS
6.	BV9P	PRATAS ISLAND
7.	KH7K	KURE ISLAND
8.	KH3	JOHNSTON ISLAND
9.	3Y/P	PETER 1 ISLAND
10.	FT/G	GLORIOSO ISLAND
11.	FT5/X	KERGUELEN ISLAND
12.	YV0	AVES ISLAND
13.	VK0M	MACQUARIE ISLAND
14.	ZS8	PRINCE EDWARD & MARION ISLANDS
15.	KH4	MIDWAY ISLAND
16.	PY0S	SAINT PETER AND PAUL ROCKS
17.	PY0T	TRINDADE & MARTIM VAZ ISLANDS
18.	KP5	DESECHEO ISLAND
19.	VP8S	SOUTH SANDWICH ISLANDS
20.	KH5	PALMYRA & JARVIS ISLANDS

China did not allow ham radio when I was first licensed. Neither did Turkey or Albania. Now they are relatively common, and I have worked a half dozen or so Chinese stations in a single contest. As conditions improve, many more Chinese stations will end up in the log. Right now, they have 174,000 licensed hams, according to the ARRL. Probably most don't have stations or are on VHF only, though.

COVID put a halt on DXpeditions, which meant few of the rarer ones were on the air for a few years. That is loosening up. We are in for a treat! Numbers 2 and 3 on the list will be activated in the next few months. More on them next month.

November Meteor Showers

I have covered making 6- and 2-meter contacts via meteor trails a few times. The Leonid shower peaks on November 18. There are a few 6-meter grid operations scheduled for the Leonids.

Another event, the Taurid Swarm, will peak on November 5, but it is not a sharp peak. The Taurids are a minor shower, but its orbit has close encounters with Jupiter, and that has caused the meteoroids to form clusters. These clusters encounter earth every 3-7 years, and this year is expected to be one of the good years.

One characteristic of the Taurid Swarm is it produces more fireballs, large meteors that are very bright. Hams call them blue whizzers, and they can sustain propagation for tens of seconds or more.

Contests

As mentioned earlier, November is a hectic month for contests. The CW portion of the ARRL Sweepstakes starts on Saturday, November 5. It was covered last month. The phone event starts two weeks later, Saturday, November 19. So, what I wrote last month for CW applies to the phone weekend.

The last weekend of the month is the CW running of the CQWW contest, which was also discussed last month. Unfortunately, this is the Thanksgiving weekend, which can be an issue with family conflicts. I much prefer the CW event over the phone weekend. It is easier to make contacts using a small station from this part of the world on CW than phone.

The first weekend of December is the ARRL 160 Meter contest. You can work anyone in this contest. Note the odd start and end time. It starts at 4:00 PM on Friday afternoon. The times are set to take advantage of the dark hours when 160 is open. This is a CW only contest.

We send a signal report and state (599 WI). DX stations only send a signal report. Multipliers are states, Canadian provinces, and DXCC countries. Contacts with US or VE stations are worth two points. DX stations count as five points. Multiply QSO points with the multipliers for the final score.

DXpeditions

This month has a good supply of DXpeditions. With the decent number of sunspots, a lot of interesting DX can be worked this month.

Last month I mentioned a Russian group going to Benin using the call sign TY0RU. They showed up as planned and did a good job. I noted in previous operations they showed up in additional countries after their announced one. True to form, they have

moved on to Togo with the call 5V7RU. I have already worked them on 12 meters for a new band country. While in Benin, they seemed to be spending the majority of their time on FT8.

P29RO continues to be on from Papua New Guinea. I got them on 17M FT8 and also worked them on 10M SSB during CQWW.

Lesotho, using the call 7P8CW, and operating from one of the South African homelands, should be on by the time you read this. The same is true for T88WA from Palau, although they have been delayed a few days. Both were mentioned last month.

The Rebel DX Group will be sailing to Banaba Island. The start date will be around November 7 or 8 as of this writing, and they plan to stay for ten days. Apparently, they will only be using FT8 and only in Fox/Hound mode.

Over in the Central African Republic, TL8AA will be used by the Italian DXpedition Team. This group has done a great job in previous operations. If you see them on FT8, they will use Fox/Hound mode. The dates are November 12-26.

Down in the Caribbean, a group of W9s, including a few friends of mine, will be operating from St. Martin. The call is TO9W, and they will be on 160-10 meters, but their focus will be on the low bands. They may get on 60 meters as well if time allows. November 30-Dec 9.

That wraps up November. Between the contests and DXpeditions, your radio will barely have time to cool off! See my Charts, next page.



Sorry, I couldn't resist . . .

W9XT's Contest, Operating, DXpedition, and Special Event Picks for November and early December 2022

W9XT's contest picks for November and early December 2022					
Name	Start	Length	Bands	Mode	Link
ARRL Sweepstakes CW	2100Z November 5	30, work 24 max	160, HF	CW	www.arrl.org/sweepstakes
ARRL Sweepstakes Phone	2100Z November 19	30, work 24 max	160, HF	Phone	www.arrl.org/sweepstakes
CQWW CW	0000Z November 26	48	160, HF	CW	https://www.cqww.com/rules.htm
ARRL 160 Meter Contest	2200A December 2	42	160	CW	www.arrl.org/10-meter

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

W9XT's DXpedition picks for November and early December 2022					
QTH	Dates	Call	Bands	Mode	Link/notes
Togo	Nov 1-11	5V7RU	160, HF, 6	CSD	
Papua New Guinea	Oct 25-Nov 10	P29RO	160, HF, 6	CSD	
Lesotho	Nov 2-7	7P8CW	HF	CSD	
Palau	Nov 2-14	T88WA	160M HF, 6	CSD	
Banaba	~Nov 7, 10 days	T33T	160M, HF, 6	D	Apparently FT8 F/H
Central African Republic	Nov 12-26	TL8AA	160M, HF, 6	CSD	http://www.i2ysb.com/idt/
St. Martin	Nov 30-Dec 9	TO9W	160M, HF, 6, maybe 60M	CSD	http://www.k9el.com/TO9W/TO9W.htm

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

W9XT's operating & event picks for November and early December 2022			
Event	Dates	Details	Link/notes
Taurid Swarm	Peak November 5		+/- 1 week or so
Leonids meteor shower	Peak November 18		

Ozaukee Radio Club Minutes of Membership Meeting. 10/12/2022

de: Ken W9GA, Secretary

The monthly ORC meeting occurred at the senior center as we have returned to live in-person meetings, along with a streaming version held via Zoom.

ORC president Pat W9JI officially initiated the meeting at 7:28 PM; and with actual members attending, a go-around was conducted. Zoom attendees were also in attendance and were introduced individually. Pat noted that Tom KC9ONY is confirmed as the RPT committee chairman. The question was posed as to which member could obtain the senior center key before the meeting. ORC now has QSL cards for W9CQO, and Mike KD9GCN is answering the requests for the Lighthouse event. Gary N9UUR noted that 10 meters has been open lately.

Program:

Pat introduced the new section manager [ARRL] for the Wisconsin section; Jason KC9FXE; who has taken over for Pat Moretti, who recently retired. Jason [via Zoom] gave our members a brief overview and history of his ham radio career, and his involvement in public safety and police work. He then was approached as a suitable candidate to take the job as the ARRL section manager for WI, which he stepped into with interest. He has some desire to expand the section newsletter and assist with the ARRL's intention to cultivate new and young hams into being active in the hobby. He will be required to stand for re-election in 2 years [as this is a temporary appointment] but has a good outlook on improving the hobby, and the ARRL's involvement.

50/50 Raffle: This was won by bill K9GN; an award of \$18.

Scholarship Auction:

Stan WB9RQR held a short auction, consisting of magnets and some computers.

Committee reports:

[there were no first or second VP reports and no RPT VP report]

Treasurer: Gary N9UUR handed out balance sheets and reported that we were still solvent. The July treasurers' report was accepted; motion made by KC9FZK, 2nd by K9QLP and carried.

Secretary: Ken W9GA reported the Sept 2022 minutes are posted; a motion to accept was made by KC9TSO; 2nd by N9VSV, and motion carried.

Scholarship/STEM: no report.

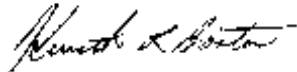
Tech committee: no report

OLD business: Ken W9GA reported that he is updating the club standing as an affiliate club, with special club status.

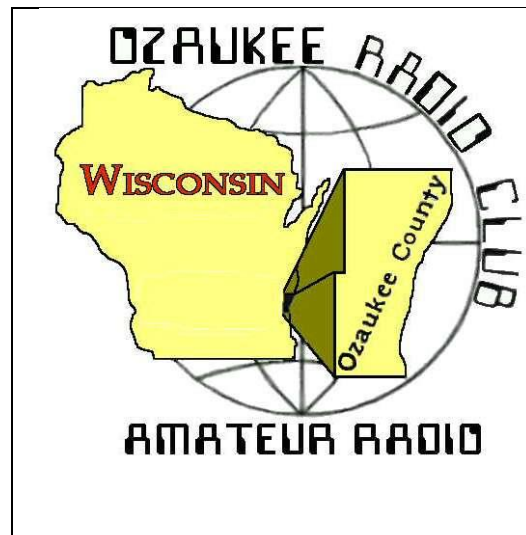
NEW business: Jeananne N9VSV suggested a review of the secretary's tasks include tracking club status.

Adjournment: WB9RQR moved to adjourn, KD9RMX 2nd, motion carried; time ending was 8:51 PM. There were 23 in-person attendees, 13 Zoom attendees.

Respectfully submitted.



Kenneth Boston W9GA, Secretary



Upcoming ORC Monthly Meeting Programs

de: Pat Volkmann, W9JI

- November – Dave Ellison W7UUU - From the Ashes: Fire and Rebuilding the Ideal Ham Shack
- December – Fred LeMere KD9IGO Horizontal Loop Antenna and Feedline
- January - Elections

We need some programs for the coming year. Please consider sharing some of your experiences with the rest of us. 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 to discuss your idea for a program

ORC Meeting Agenda <i>November 9, 2022</i>	
1. 7:15 – 7:30 PM Check-In and Introductions	6. 1 st VP Report: Ben Evans (K9UZ)
2. 7:30 PM Call to Order: President Pat Volkmann (W9JI)	7. 2 nd VP Report: Bill Greaves (K9GN)
3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc.	8. Repeater VP Report: Gregg Lengling (W9DHI)
4. Presentation: Dave Ellison W7UUU - From the Ashes: Fire and Rebuilding the Ideal Ham Shack	9. Secretary's Report: Ken Boston (W9GA)
5. President's Update: Pat Volkmann (W9JI)	10. Treasurer's Report: Gary Bargholz (N9UUR)
	11. Committee Reports
	12. OLD BUSINESS
	13. NEW BUSINESS
	14. Adjournment

ORC Repeaters are On the Air – Awaiting Your Call . . .

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

Next Month's ORC Meeting Planned Hybrid In-Person/Zoom Meeting 14 December 2022

**Program
Fred LeMere KD9IGO
Horizontal Loop Antenna and Feedline**

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

The following eight pages are a complete reprint of a copy of the March/April 1980 issue of the Ozaukee Radio Club Newsletter.

The quality of the document is controlled by the quality of the perhaps multiple copied version of the Newsletter provided by Pat Volkmann, W9JI, which came from a collection of club documents provided by Stan Kaplan, WB9RQR.

If any of you have any old Newsletter copies that precede the earliest one shown on the Ozaukee Radio Club Newsletter Archive List (January 2002), please contact this Editor:

Bill Shadid, W9MXQ, at newsletter@ozaukeeradioclub.org

Recall Pat, W9JI's note (in "From the President," at the beginning of this issue), he has collected many back issues. There may be more, so let us know.

Take this opportunity to review our past. Do you want to see more back issues?



Its March / April 1980 – starting on the next page

APRIL 1980.....NEWSLETTER.....W9BCK, EDITOR

The Ozaukee Radio Club Newsletter is published six times yearly and mailed five days prior to club meeting dates in January, March, May, July, September and November. Filing deadline for publication for articles and items is 15 days prior to club meeting dates. Mail items to be published to W9BCK c/o RCA - Suite 403 - 101 Falls Road, Grafton WI 53024. Questions or comments regarding the club or any of its activities may be directed to Barry Anderson WB95FK, President, W55 N838 Cedar Ridge Drive, Cedarburg WI 53012, or phone 375-0590.

ELECTION OF CLUB OFFICERS - 1980

The elective process took place during the regular meeting on January 9, 1980 at the Pleasant Valley School Club Meeting Room. Congratulations are very much in order for:

Barry Anderson	WB9SFK	President
Herb Roehner	WA9UVK	Vice President
Micheal Behlen	WD9FQW	Treasurer
Lee Voge	KA9EXZ	Secretary
Skip Douglas	KA9DDN	Vice President Repeater
John Strachota	WB9OHY	Activities Manager
Terry Berg	W9AWO	John's Hand Holder

Congratulations gents, and thanks on behalf of your electors for stepping up to the tasks before you (and us) in 1980.

OUR PRESIDENT SPEAKS

In a year which will be dominated by nation wide political races and foreign diplomacy, perhaps the word of the month should be "communication". Webster defines communication as:

1. A process by which meanings are exchanged between individuals through a common system of symbols (CW..?)
2. A technique for expressing ideas effectively.
3. To make known. An exchange of information.

In this coming year, I'm sure we all hope these many attempts at communication are accurate and successful. But who should really understand communication better than we? The Ozaukee Radio Club is founded upon this word ... "communication" (and of course, self-training and technical investigation).

It has bothered me that, in this era of highly technological communications, we haven't been able to get the word out that our club exists for all hams. Why, when some sources state there are 100+ Amateurs in Ozaukee County, there are only 60 some that have applied for membership in 1980? And worse, only 30+ attend monthly meetings? I invite the hams who are not members and the members who are inactive to contact any club officer or myself personally regarding any "problem" they perceive in our organization. After all, we cannot attempt to correct any such problems unless they're brought to our attention.

Therefore, let's communicate to all Ozaukee County Hams (and beyond) our club goals for 1980: (which include but not limited to)

1. Educational Meetings
2. Field Day
3. Novice & Higher Level License Classes
4. Local Communication Efforts
5. Swapfest
6. Corn/Brat Roast Family Party

I would like to promote 1980 as a year of involvement, be it technical or social, and Communication!

73, Barry WB9SFK

TREASURER'S CORNER

Mike, WD9FQW says we have 14 regular, 43 regular & repeater and 11 repeater only members as of 3/6/80. Bring a guest to meeting & join him up.

SWAP FEST UPDATE

Mike is also chairman of Swapfest, May 10 at Cedarburg Gymnasium in down town Cedarburg. Tickets \$1.50 in advance, \$2.50 at the door. Tables are \$3.00. Much membership help is needed for ticket sales...See WD9FQW or WB9SFK at meeting 3/12/80. Volunteers are needed May 9 (evening) to set up tables and May 10 all day. 70 tables are needed for Swapfest. If anyone knows of table availability in quantity please contact Mike at 377-6577.

CLUB MEETING DATES

March 12 at Pleasant Valley School and April 9 in Port Washington at Ozaukee County Emergency Operating Center in the basement of the Courthouse Annex. Take I-43 to Hy 33 Exit and proceed to Port Washington Downtown area and turn left (North) on Milwaukee St. (one block East of Stop Lite). Go North 1/2 block and turn right into alleyway. Parking on South side of alley. Enter Annex at door across alley just north of parking lot. A video program dealing with severe weather reporting is planned along with a tour of the Communication Facilities.

GOVERNORS CONFERENCE, A COMMUNICATION EXERCISE

On Thursday 2/28/80 Jeff WA9USA, Cesar N9APC and Terry WA9AWO attended the Governors Spring Conference for Emergency Preparedness in Madison. HF and VHF amateur stations were set up at the Concours Hotel in downtown Madison. 62 of 70 Wisconsin Counties checked in between 9 am and 4 pm. Ozaukee County hams accounted for 33 - 2M and 7 - 75M check-ins and placed 3rd behind Milwaukee and Dane Counties. A darn good showing for Wisconsin's smallest county. A total of 487 contacts State-wide were logged. Governor Dreyfuss stopped to make one HF & one VHF contact. Several Emergency Co-ordinators from various Wisconsin Counties were most impressed by station operations. A good time was enjoyed by all attendees. Thank you all for your support and check-in cooperation with especial thanks to Joe Bauer W9WQ who passed the 37/97 check-ins to the 75 meter relay to Madison.

Terry Berg, WA9AWO

REPEATER NEWS - WR9AAE HAPPENINGS

As most regular repeater users know, the WR9AAE Autopatch is back in service. Please keep in mind the new procedures for identifying calls to our recorder. After accessing the patch, but before dialing a phone number, identify with your call, date, and local time. Also note that due to the coming 911 telephone system, Ma Bell has changed the Metroline access number from 9 to 7. If you inadvertently use 9 you will get a busy signal signifying your error.

Several members of the club, notably K3GGN - Dean, WB9PAS - Russ, WA9UVK - Herb, and AA9W - Ed, have recently been active in developing our repeater system. We can use lots of help in several areas to speed up the work ahead. Specific talents I am looking for include CMOS Circuit Design, PC Board Layout Design, and Electronic-Oriented Drafting. In addition, we are looking for volunteers to help in raising the repeater antenna some 30 feet to the top of the 210 foot tower we are on. This will be done this summer if other plans pan out.

Some of the "bells and whistles" which will set WR9AAE out from the crowd are already in the design stage. We will have voice I.D. as well as CW I.D. An emergency Autopatch with a 911 access will be available to all licensed amateurs. This will have an autodialer programmed to call the Ozaukee County Sheriff's office. Several taped messages will be available via touch-tone access. Examples of use would be information about upcoming club meetings or events and information concerning operation of the repeater systems.

I'm sorry about the recent problem with the tone burst logic. Rest assured that I'm working on permanent solutions to all such troubles.

WR9AAE is your repeater. What can you do to contribute to its growth?

See you on '97-KA9DDN, Skip

2250 HERTZ TONE ACCESS CIRCUIT

Joe W9WQ has done it again!! He has invented a 2250Hz circuit that will "blow" your mind. It uses no current at all, unless it's moving air currents. The W9WQ lung powered Tone Burst Oscillator made from a piece of 1/4" OD Brass Tube closed at one end. It's length is slightly more than 1-3/8" for 2250Hz. As Liz' sez "just put your lips together and blow". Thanks Joe, we really needed that.

RTTY REPORT

I am not quite sure why, but there was enough of a response to the first column so that a little RTTY column will regularly appear in this paper. The one column format will be the rule. This means that if you want an in depth analysis on the subject, you can go to the library. I don't know what you will find, but I am sure it won't be much. To my knowledge there hasn't been a really good amateur orientated RTTY Handbook published since 1962. The New RTTY Handbook, Byron H. Kretzman, Cowan Publishing Corp. I don't know if this is still in print. There are a few copies around the county. There are other handbooks around, but they do not seem to be more than indifferently organized reprints of previously published magazine articles. The only other landmark publication is a series of nine articles by Irv Hoff K8DKC (now W6FFC) appearing in January-November 1966 QST. I regard these issues of QST so precious that I won't let them out of the house. If you want copies, I will be glad to furnish them to anyone interested. However don't even bother to ask to borrow the magazines in which they appear. The problem with most current RTTY Handbooks is that they expect the reader to run before he is ready to walk. Lately this situation has been made even worse. Computers and RTTY are made for each other. Recent articles presume that the novice is familiar not only with RTTY, but also speaks computer. Even for an old bugger like me, it is a bit much.

I might add that the author of those RTTY articles in QST, Irv Hoff, can be found almost every evening on 14.075 or so exchanging computer programs with his buddies on the East Coast. At least half of the RTTY DX runs computer. You can tell by the sound of the keying.

The point of this column is that there is a great deal said about RTTY, but not many places where you can find the basics. The format of this column is such that I will try to hit a high point each issue, no more.

Recent investigation revealed that AJ9J has three Model 15's none of which he wants to keep. One is in nice shape. One "needs a little work". The third--well if he offers to help you put it in your car, don't let him do it. It is parts only.

BEACONS IN THE NITE (AND DAY TOO)

This might be called the "In Case You Missed It Department". October QST p. 86 had a very interesting little table jammed up in the upper left corner of the page, reproduced below. All of these beacons have been logged since May of 1979.

Active 10-Meter Beacons			
Call	Location	Freq.	Keying
VE3TEN	Ottawa, ON	28.175	fsk
DL0IGI	Germany	28.205	fsk
N4RD	Englewood, FL	28.2075	cw
3B8MS	Mauritius	28.210	fsk
GB3SX	England	28.215	fsk
5B4CY	Cyprus	28.220	fsk
VP9BA	Bermuda	28.235	fsk
A9XC	Bahrain	28.245	cw
EA2OIZ	Spain	28.2475	cw
DK0TE	Germany	28.255	fsk
ZS6DN	So. Africa	28.315	*
ZE2JV	Rhodesia	28.330	*
W6IRT	N. Hollywood, CA	28.888	cw

*Mostly fsk, but other emissions are used for propagation tests.

6Y5RC Jamaica 50.05 fsk
unk. Jambia 28.2025 unk*
*Operates daily 0400Z-0500Z
1500Z-1600Z
Ed, WA9BMA

NOVICE NET

Each Sunday, Larry KA9EXY is sharpening our slo-speed CW skills each Sunday at 1:30 pm CST on 3725 Khz. Larry is using the standard CW QN_ series of Q signals for CW new operation. A reprint of these Q sigs and their meanings are found elsewhere in the letter along with message form information. Sounds like fun guys, let's all give Larry a boost, help him speed up the action and give true purpose to his worthwhile effort. February check-ins include W9WQ, WB9SFK, WD9ISS, KB9DY, K9IWC, WA9AWO, and W9BCK (yes, I can still copy 5 WPM smart guys, it's those Q-sigs that kill me).

RON, W9BCK

3940 KHZ NET

"Good Grief!" You say, "you mean there are still some people who can tune below 146/97MHz Well, believe it, because its true! The 3940 41, 42, 43, 37, 39 (etc)Khz net meets each Sunday at 1 pm CST. First off we have transmitter hunt to find the NCS station. After you find him you gotta watch him because he sneakily moves around (clearing the band, I think its called). But Oz-Rad Hams are tough, determined guys who know how to stick with the fox, no matter how sly his maneuvers. He even changes his voice. Sometimes it's high pitched, other times low.

3940 (cont'd)

NCS's (who ever they are) are working up a neat and regular system to allow those rock bound or phase locked 2 meter types to cross band check the net through alternate NCS operators. This is going to be a lot of fun and help bring two different Oz-Rad tribes together more often. Catch him if you can, there ain't no rocks on 75.

RON, W9BCK

CLUB ADVANCEMENT CLASSES

Advancement: To move forward, achievement.
Class: Structured environment conducive to learning.

Teacher: A learning facilitator. As principal instigator for the "pass the blankety-blank exam class" which will be finished by newsletter time, I want to express my sincere thanks to Kieth and Pete McIver, Ralph Evans WA9UDZ, Mike Behlen WD9FQW, Nels Harvey WA9JOB and Joe Bauer W9WQ who graciously consented to teach selected topics for the advancement class. FCC exams are scheduled 3/26/80 in Milwaukee which should be the "proof of the pudding". I also want to thank the students who suffered through this, our first grand experiment and who endured above and beyond the limits of the posteriors while planted in seats for younger sized students. I hope those planted will blossom in spite of the fertilizer draped upon them. 73, Terry Berg, WA9AWO

THE BIG FEBRUARY CATCHALL PARTY

Booze, babes, banjo's and bandits. They were all there, whooping it up at D & G Hall with Russ, WA9PAS choking the mike with his usual fervor; embarrassing the more inactive among us by showing various postures assumed by participating Field Day Hams (all horizontal); revealing technical competence which would have better remained hidden; showing all the guys (& gals) who quit drinking since they invented the funnel; mug shots of "what? me worry?" types; stories of messed up mess cooks (mashed potatoe pancakes, indeed!) Southern comfort gone' northern, all the way from Minny-a-no-place; gals captured jewelry; guys got their surprise package. The gathering was great, the food and program excellent and the nite caps better than ever. A good time was had by all.

RON, W9BCK

CHANGE OF IDENTITY

Daryl, ex-WA9DMX is now AJ9J (another one of those "new countries" in Ozaukee).

CHANGE OF ADDRESS - (TEMPORARY)

N9AJ - Faustin Prinz
Bay Beach 2 #B-5
Fort Meyers Beach FL 33931

FOR SALE

Kenwood TS-820 W/CW Filter...\$675.
Kenwood 820 Remote VFO.....\$150.
Dentron MLA-2000(2kw) Amplifier...\$600.
Above items mint condition -(Barry)WB9SFK

Estate Sale (WB9RQW)

Colins S-line, complete....\$negotiable
Viking 80-10 Antenna Tuner\$80.

For all above items contact Barry, WB9SFK
375-0590

Bearcat 210 Scanner

Ring 284-4360 ask for Harvey, K9EOY

XYL CORNER

Ann Berg WD9JHP, expresses appreciation on behalf of all long suffering wives of our male membership for an enjoyable evening at D & G "what-cha-ma-callit" Party.

STOLEN GOODS!!

...From Dennis Wroblewski K9DTK....
(1) KDK FM-2015R Tx/Rx Serial 5331
(1) FMMC-1 Microphone with built-in
Micro-pad Touch Tone

Forward information to Greendale Police
Dept. or K9DTK - 4200 West Rivers Edge Dr.
Milwaukee WI 53209
Tel. 355-4922

CLUB STATION

Club is seeking equipment to set-up a club station a Pleasant Valley School to provide a permanent place of radio operations for club members. This project is not moving so good. Give it some thought, then tell your newly elected officers to move it along. The club has equipment that it owns scattered all over the county. For those "most interested" members, insist on an inventory of these items and put the stuff to work.

RON, W9BCK

RECOGNITION - RECOGNITION

The next time all you guys are bumping bellies trying to beat each other out of the tasty cakes, donuts and sugar coated jelly filled paunch puffers and washing it down with sugar filled pop & coffee at our next meeting - just take a minute or two away from your mad scramble toward dietary disaster and look for the skinniest guy around - that's right, reac

SHEBOYGAN COUNTY ARC

George Mienert K9GM, president of SCARC and editor of their newsletter and I, exchange letters to publish things of mutual interest to our memberships.

- 2 meter net 147.06/.66 Wed. Eves.
- George reminds us that FCC form 610 must be filed if you moved recently.

FOR SALE

Regency HR 212 Tx/Rx, 12 Ch, 17W.
Regency HR 2MS, 8 Ch, Scanning Tx/Rx
Complete Model 19 Teletype set-up
w/receiving converter and home brew P.S.
Call Gene WB9NRM at 458-6238

BTI LK 2000 8-10M Amplifier. Floor Model
(2 plus kw) Excellent condx.
Ring George K9GM at 565-2810

Personalized Rubber Stamps made to order
Contact K9XJ at 876-2370

The Farnsworth Club has two complete
Novice Stations for Sale. Good buys
@\$100 to \$200.

Contact K9ERO, Jim
c/o George K96M @ 565-2810

SHEBOYGAN NOVICE

Larry, KA9EXY should be on lookout for
a new group of Novices from Sheboygan
on air soon and invite them on the
3725 Khz. Net. Contact K9GM for more
information Larry. Ask WA9AWO to climb
upon 147.06/.66 & find out calls, freqs.,
etc.

Thanks for your input George

RON, W9BCK

MORE NEWS'S ON NEVE'S NOVICE NET (WHEW!)

As many of you know, the Ozaukee Cw Net finally got off the ground. As 6 of you know, it got off to a shaky start, but after a while it got humming pretty good. Three cheers and thanks to: WB9SFK, Barry; WD9ISS, Harold; W9BCK, Ron; KB9DY, John; W9IWC, Reed from Milwaukee; WA9AWO and maybe some others were cheering us on as SWL's. The previously mentioned shaky start came from the fact that my rig was off. Another reason was that we didn't have a very good way of checking in, after some thought, I finally came up with what I thought would be the best way. Using the first letter of the suffix of the call, the members would

check in. An example might be that the NCS would send OCWN (Ozaukee CW Net) and his call. He would then send "A" and everyone who's call was "A" would check in, such as WA9AWO, then NCS would send "B" and the B's would check in, such as W9BCK. And so on through the alphabet. This way we avoid the problem of having a meg of stations on at once. If you have any suggestions scratch us a line. The QTH is the same as the one in the Novice Corner, but please, if you call me up, or write use the call, or else you'll end up confusing my dad Larry Sr.

73 Es Cu All On Sunday
Larry KA9EXY

DX CORNER

This corner is going to be WB9BGJ's corner. Sus Sez he will contribute here if we keep after him. So...guys.... let's tickle Sus with a few reminders that there is good DX interest in Ozaukee County. From just casual listening it's not hard to tell that all the bands are doing very well. I even heard some europeans on my old BC-348; and every body knows you can't make RF go through those old 6K7's (right Jeff?) So let's hear it from Sus & all his old DX buddies next time.

RON, W9BCK

SOME THINGS THAT DIDN'T MAKE IT.....

My apologies to Lee KA9EXY for not getting his "brain teaser" in. Will try for the May issue Lee.

A low current drain tone access circuit from KA9DDN suitable for handy talkie and other 2 M installations.

Mike, WD9FQW submitted a circuit which is excellent but will be superceded by KA9DNN which is the same circuit with one device removed. Didn't want to get anybody mad. (I still like W9WQ's the best though.)

CONTRIBUTING EDITORS

WA9BMA Ed RTTY Corner
WA9AWO Terry Activities/Classes/GUV's Conf
WD9FOW Mike Swap Festival
WB9SFK Barry Inaugural Address/Swap Fest
KA9EXY Larry Novice Things
KA9EXZ Lee Jacket Man
KA9DDN Skip Repeater...Repeater...Repe...
WD9JHP Ann XYL Stuff

EDITORIAL

.....Who said it couldn't be done?
Thanks, you big bunch of Amateurs
Well done ES 73' til' May-RON W9BCK.

out and give a firm handshake to W9DQS, Bob Williams, who has been rounding up and serving the goodies (and yes, cleaning up after everyone is filled & gone) since the club started way back in the late fifties. Please say, "thank you Bob, I owe all of this (place hand on top of bulbous frontal protrusion) to you, thank you very much (burp)" Bob's long standing steady contribution is, indeed, more appreciated than anyone can say. We all thank you, Bob.

RON, W9BCK

ABOUT CLUB JACKETS

All jackets listed below come in the light gold color, number 1-5 are shell type jackets and the other two are winter and spring type. The jacket samples will again be at the March 12 meeting, which is the deadline for the initial order. Tax is included in the price. The price is for the jacket imprinted not just the jacket itself.

1. APPOLLO snaps only, no pockets, sizes available S 36 - 38 to XL 48 - 50. \$10.92
2. WARM-UP snaps only, large arm holes, no pockets, sizes available S 36 - 38 to XXL 52 -54 \$13.00
3. COMET snaps only, 2 large front pockets, sizes available S 36 - 38 to XXL 52 - 54. \$13.52
4. DAYTONA PACER - 2 pencil pockets on sleeves, 1 large pocket in front, zipper only, large racing stripes, sizes available XS 34 to XL 48 - 50. \$15.08
Specify stripe colors: Royal/Red/Royal
White/Red/White
White/Royal/White
White/Black/White
Red/White/Red
White/Black/White
White/Old Gold/White

They are a must!
5. SURFER - zipper only, zippered pocket, hidden hood, colored string stripes on front, any color, sizes available XS 34 to XL 48 - 50 @\$10.52
6. QUARTERBACK - snaps only, 2 front pockets, pile lined winter type jacket, hidden hood, sizes available S 36 - 38 to XXL 52 - 54. @\$21.84
7. BIG LEAGER - snaps only, flannel lining for spring, 2 front pockets, sizes available S 36 - 38 to XXL 52 - 52. @\$15.55

8. T-SHIRT - available in Light Gold heather tones, sizes are regular T shirt sizes. CAUTION, shirts will shrink so order one size larger. Name and call cannot be stitched on but the club logo can be imprinted. @\$ 6.24

ACTUAL FINISHED DIMENSIONS

	XS	S	M	L	XL	XXL
CHEST	38	45	49	53	57	61
LENGTH	24½	28	29	30	31	32
SLEEVE	32	33	34	35	36	37

INK COLOR TO BE USED IS ROYAL BLUE

NAME TO BE STITCHED ON FRONT IN SMALL LETTERS WRITTEN IS \$1.00

CALL SAME SIZE, Individual is \$1.29

CALL CAN ALSO BE ON THE BACK IN LARGER INDIVIDUAL LETTERS, WHICH CAN BE IN THE STATE OF WISCONSIN OR IN OZAUKEE COUNTY, THE LETTERS COST 60 CENTS EACH. ADD 4% TAX FOR LETTERS.

NAME _____
 ADDRESS _____
 PHONE NUMBER _____
 CALL _____ WHERE _____
 JACKET TYPE _____
 SIZE _____
 COLOR _____
 COST/JACKET _____
 LETTERING/NAME & CALL _____

NAME ON FRONT ADD \$1.04
 T SHIRT SIZE (IF ORDERED) _____

PLEASE BRING THE MONEY TO THE MARCH MEETING
 ORDERS WILL BE SENT AFTER THE MEETING FOR THE INITIAL ORDER.

IF YOU HAVE ANY QUESTIONS, PLEASE CALL LEE
 VOGUE KA9EXZ AT 692-2158

LEE KA9EXZ

FIELD DAY

What, Where, Whom, When? Somebody said to stir up the Think Tanks and get an early start on Field Day thinking. Volunteers needed at next meeting: Someone who can cook, 14 Supervisors, 39 Beer Drinkers, 1 CW Operator, 4 Balloon Operators (for Giese's antenna) 3 Fishermen and a Partridge in a Pear Tree.

ARRL QN SIGNALS FOR CW NET USE

QNA*	Answer in prearranged order.
QNB*	Act as relay Between.....and.....
QNC	All net stations Copy.
QND*	I have a message for all net stations.
QNE*	Net is Directed (controlled by net control station).
QNF*	Entire net stand by.
QNF	Net is Free (not controlled).
QNG	Take over as net control station.
QNH	Your net frequency is High.
QNI	Net stations report In.*
	I am reporting into the net. (Follow with a list of traffic or QRU.)
QNJ	Can you copy me?
	Can you copy.....?
QNK*	Transmit messages for.....to.....
QNL	Your net frequency is Low.
QNM*	You are QRMing the net. Stand by.
QNN	Net control station is.....
	What station has net control?
QNO	Station is leaving the net.
QNP	Unable to copy you.
	Unable to copy.....
QNQ*	Move frequency to.....and wait for.....to finish handling traffic. Then send him traffic for.....
QNR*	Answer.....and Receive traffic.
QNS	Following Stations are in the net.* (Follow with list.)
	Request list of stations in the net.
QNT	I request permission to leave the net for.....minutes.
QNU*	The net has traffic for you. Stand by.
QNV*	Establish contact with.....on this frequency. If successful, move to.....and send him traffic for.....
QNW	How do I route messages for.....?
QNX	You are excused from the net.*
	Request to be excused from the net.
QNY*	Shift to another frequency (or to.....kHz) to clear traffic with.....
QNZ	Zero beat your signal with mine.

*For use only by the Net Control Station.

Notes on Use of QN Signals

The QN signals listed above are special ARRL signals for use in amateur cw nets *only*. They are not for use in casual amateur conversation. Other meanings that may be used in other services do not apply. Do not use QN signals on phone nets. *Say it with words.* QN signals need not be followed by a question mark, even though the meaning may be interrogatory.

INTERNATIONAL Q SIGNALS

A Q signal followed by a ? asks a question. A Q signal without the ? answers the question affirmatively, unless otherwise indicated. See the ARRL *Handbook* and *Operating an Amateur Radio Station* for an expanded list.

QRA	What is the name of your station?
QRG	What's my exact frequency?
QRH	Does my frequency vary?
QRI	How is my tone? (1-3)
QRK	What is my signal intelligibility? (1-5)
QRL	Are you busy?
QRM	Is my transmission being interfered with?
QRN	Are you troubled by static?
QRO	Shall I increase transmitter power?
QRP	Shall I decrease transmitter power?
QRQ	Shall I send faster?
QRS	Shall I send slower?
QRT	Shall I stop sending?
QRU	Have you anything for me? (Answer in negative.)
QRV	Are you ready?
QRW	Shall I tell.....you're calling him?
QRX	When will you call again?
QRZ	Who is calling me?
QSA	What is my signal strength? (1-5)
QSB	Are my signals fading?
QSD	Are my signals mutilated?
QSG	Shall I send.....messages at a time?
QSK	Can you work breakin?
QSL	Can you acknowledge receipt?
QSM	Shall I repeat the last message sent?
QSO	Can you communicate with.....direct?
QSP	Will you relay to.....?
QSV	Shall I send a series of V's?
QSW	Will you transmit on.....?
QSX	Will you listen for.....on.....?
QSY	Shall I change frequency?
QSZ	Shall I send each word/group more than once? (Answer, send twice or....)
QTA	Shall I cancel number.....?
QTB	Do you agree with my word count? (Answer negative.)
QTC	How many messages have you to send?
QTH	What is your location?
QTR	What is your time?
QTV	Shall I stand guard for you.....?
QTX	Will you keep your station open for further communication with me?
QUA	Have you news of.....?

ABBREVIATIONS, PROSIGNS, PROWORDS

CW	PHONE (meaning or purpose, exception obvious)	CW	PHONE (meaning or purpose, exception obvious)
AA	(Separation between parts of address or signature.)	HX	(Handling instructions. Optional part of preamble.)
AA	All after (used to get fills).	Initial(s). Single letter(s) to follow.
AB	All before (used to get fills).	IMI	Repeat; I say again. (Difficult or unusual words or groups.)
ADEE	Addressee (name of person to whom message addressed).	K	Go ahead; over; reply expected. (Invitation to transmit.)
ADR	Address (second part of message).	N	Negative, incorrect; no more. (No more messages to follow.)
AR	End of message (end of record copy).	NR	Number. (Message follow.)
ARL	(Used with "check," indicates use of ARRL numbered message in text.)	PBI	Preamble (first part of message).
AS	Stand by; wait.	Read back. (Repeat as received.)
B	More (another message to follow).	R	Roger; point. (Received; decimal point.)
BK	Break; break me; break-in. (interrupt transmission on cw. Quick check on phone.)	SIG	Signed; signature (last part of message).
BT	Separation (break) between address and text; between text and signature.	SK	Out; clear (end of communication, no reply expected).
C	Correct; yes	TU	Thank you.
CFM	Confirm. (Check me on this.)	WA	Word after (used to get fills).
CK	Check	WB	Word before (used to get fills).
DE	From; this is (preceding identification).	Speak slower.
PHONE	Phone; telephone.	Speak faster.
HI	(Error in sending. Transmission continues with last word correctly sent.)		

over

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AMATEUR MESSAGE FORM

Every message originated and handled should contain the following component parts in the order given.

I PREAMBLE

- Number (begin with 1 each month or year)
- Precedence (R, Q, P or EMERGENCY)
- Handling Instructions (optional, see text)
- Station of Origin (first amateur handler)
- Check (number of words/groups in text only)
- Place of Origin (not necessarily location of station of origin)
- Time Filled (optional with originating station)
- Date (must agree with date of time filled)

II ADDRESS (as complete as possible, include zip code and telephone number)

III TEXT (limit to 25 words or less, if possible)

IV SIGNATURE

CW MESSAGE EXAMPLE

I NR 1 R HXA WIAW 8 NEWINGTON CONN 1830Z July 1
a b c d e f g h

II DONALD R SMITH AA
164 EAST SIXTH AVE AA
NORTH RIVER CITY MO 00789 AA
PHONE 733 3967 BT

III HAPPY BIRTHDAY X SEE YOU SOON X LOVE BT

IV DIANA AR

CW: Note that X, when used in the text as punctuation, counts as a word. The prosign AA separates the parts of the address, BT separates the address from the text and the text from the signature. AR marks end of message; this is followed by B if there is another message to follow, by N if this is the only or last message. It is customary to copy the preamble, parts of the address, text and signature on separate lines.

RTTY: Same as cw procedure above, except (1) use extra space between parts of address, instead of AA, (2) omit cw procedure sign BT to separate text from address and signature, using line spaces instead; (3) add a CSM line under the signature, consisting of all names, numerals and unusual words in the message in the order transmitted.

PHONE: In general, use *prowords* in place of procedural signals or *prosigns*. The above message on phone would go something like this: "Message Follows Number one, routine, IX Alpha, WIAW, check eight, Newington, Connecticut, one eight thutree zero zulu, July one, to Donald Initial R Smith, Figures one six tower, East Sixth Avenue, North River City, Missouri zero zero seven eight nine, Phone seven thutree thutree, thutree niyen six eight, Break Happy Birthday X-ray see you soon X-ray love Break Diana, End of Message, Over." Speak in measured tones, emphasizing every syllable. Spell out phonetically all difficult or unusual words, but do not spell out common ones.

PRECEDENCES

The precedence will follow the message number. For example, on cw 207R or 207 EMERGENCY. On phone, "Two Zero Seven, Routine (or Emergency)."

EMERGENCY - Any message having life and death urgency to any person or group of persons, which is transmitted by amateur radio in the absence of regular commercial facilities. This includes official messages of welfare agencies during emergencies requesting supplies, materials or instructions vital to relief of stricken populace in emergency areas. During normal times, it will be very rare. On cw, this designation will always be spelled out. When in doubt, do not use it.

PRIORITY - Important messages having a specific time limit. Official messages not covered in the "Emergency" category. Press dispatches and other emergency-related traffic not of the utmost urgency. Notification of death or injury in a disaster area, personal or official. Use the abbreviation P on cw.

INQUIRY - Messages pertaining to the health or welfare of persons in a disaster should carry this precedence, which is abbreviated to Q on cw. These messages are handled after PRIORITY traffic but before ROUTINE.

ROUTINE - Most traffic in normal times will bear this designation. In disaster situations, traffic labeled "Routine" (R on cw) should be handled last, or not at all when circuits are busy with emergency, priority or inquiry traffic. Most traffic handled on amateur circuits in normal times will fall in this category.

Handling Instructions

HXA - (Followed by number.) Collect landline delivery authorized by addressee within . . . miles. (If no number, authorization is unlimited.)

HXB - (Followed by number.) Cancel message if not delivered within . . . hours of filing time; service originating station.)

HXC - Report date and time of delivery (FOD) to originating station.

HXD - Report to originating station the identity of station from which received, plus date and time. Report identity of station to which relayed, plus date and time, or if delivered report date, time and method of delivery.

HXE - Delivering station get reply from addressee, originate message back.

HXF - (Followed by number.) Hold delivery until . . . (date).

HXG - Delivery by mail or landline toll call not required. If toll or other expense involved, cancel message and service originating station.

This prosign (when used) will be inserted in the message preamble before the station of origin, thus: NR 207 R HXA50 WIAW 12. . . (etc.). If more than one IX prosign is used, they can be combined if no numbers are to be inserted, otherwise the IX should be repeated, thus: NR 207 R HXAC WIAW. . . (etc.), but: NR 207 R HXA50 HXC WIAW. . . (etc.); On phone, use phonetics for the letter or letters following the IX; to insure accuracy.

OZAUKEE COUNTY AMATEUR RADIO CLUB -WR9AAE

W I S C O N S I N

SWAPFEST

S A T U R D A Y

MAY 10

1980

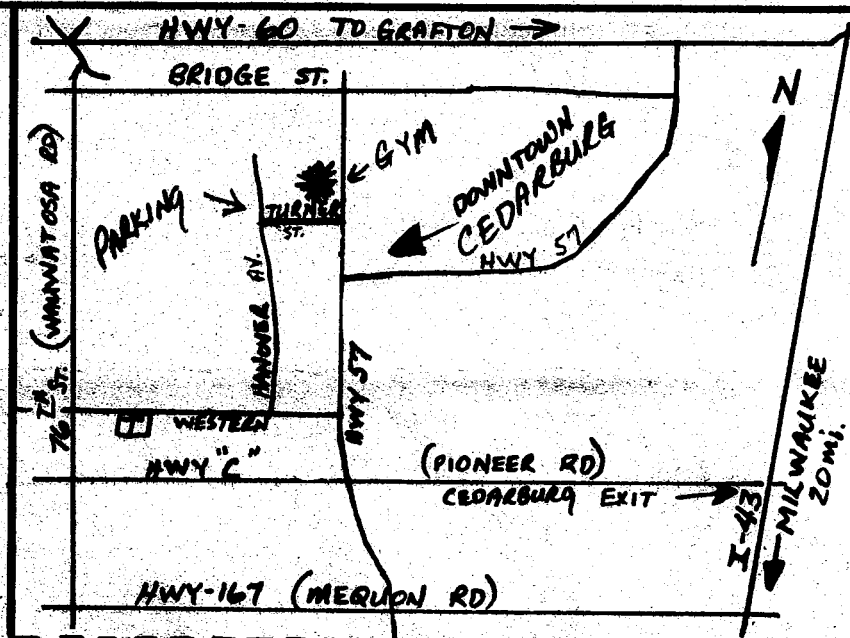
***** CEDARBURG COMMUNITY GYMNASIUM *****

OPENS: 8 A.M. (SWAPFEST SELLERS ADMITTED :7 AM)

ADMISSION: \$1.50 ADVANCE - \$2.50 DOOR
TABLES(6') \$3.00 ADVANCE
TABLE AND ADMISSION AT DOOR - \$5.00

TALK - IN 146.37 / 97
146.52

- * WE'VE OUT-GROWN LAST YEARS SWAPFEST, AND MOVED INTO THE GYMNASIUM!!!!
- * REFRESHMENTS WILL BE AVAILABLE THROUGHOUT THE SWAPFEST.
- * FREE FM CLINIC
- * PRIZE DRAWINGS
- * COMMERCIAL EXHIBITORS
- * SAVE BY SENDING FOR YOUR ADVANCE TICKETS NOW .



73

--- ADVANCE RESERVATION ---

NAME _____ CALL _____

ADE _____ CITY _____ STATE _____ ZIP _____

SEND _____ TICKETS @ \$1.50 EACH
RESERVE _____ TABLES @ \$3.00 EACH

PLEASE SEND CHECK OR MONEY ORDER TO: OZAUKEE RADIO CLUB, INC.
PO BOX 13, PORT WASHINGTON, WI. 53074