



The *ORC* Newsletter

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



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

Volume XLII

April 2024

Number 4

From the President

de: Bill Greaves, K9GN



The date is set – Thursday, August 15th – for the outdoor hands-on ham radio demonstration with the West Bend library's summer program. Check your calendar and volunteer to make this ORC STEM event memorable for all of the middle and high school students, the library, and the ORC this 60th Anniversary Year. Pat W9JI Volkmann, Chair of the STEM Committee, has made this effort happen. As mentioned in previous newsletters, the ORC STEM effort also includes donations to the library of several ARRL books and STEM kits.

Speaking of the ORC 60th Anniversary Year, in this issue of the newsletter is the design of our banners to celebrate the establishment of the ORC in 1964. These banners will be displayed at ORC events throughout the year. A big Thank You to Nate KC9TSO Seidler for his many efforts on this for the benefit of the club.

I know your schedules have the Spring Swapfest date of Saturday, April 27, 8a-12n, at the Ascension Columbia St. Mary's Center (Milwaukee Curling Club), W67N890 Washington Avenue, Cedarburg. The prize list is growing by leaps and bounds due to the diligent efforts of Swapfest Chair Tom KC9ONY Trethewey. For tables, contact Tom at 262-421-6351 or swapfest@ozaukeeradioclub.org.

Time marches on. We are now in spring, even with the recent snow storm, and soon summer and Field Day will be here. As always, Field Day is the 4th weekend in June. I enjoy FD; it was one of the first ORC events I attended. The event is an excellent way to introduce ham radio to the non-hams of the world, especially in our 60th Anniversary Year. Ken W9GA Boston, Nate KC9TSO Seidler, and Mike AE9MY York have all been instrumental in organizing and creating the infrastructure for our successful Field Day. We look

forward to another enjoyable event. Your participation is encouraged – we need you!
You'll have fun!

Thank you to Fred W9KEY Schwierske for leading the ORC effort on the Wisconsin QSO Party again this year. Fred reported the results at the March meeting and showed his competitive juices as he squeezed out a few more points here and there. Next year I suspect more members will get a robust “Schwierske Squeeze!”

I plan to travel-to-totality this month for the eclipse on Monday, April 8, and wanted to mention the HamSCI efforts around the eclipse. For your interest, the Solar Eclipse QSO Party (SEQP) is described at <https://hamsci.org/seqp-faqs/>.

And a thank you to Dave Ellison W7UUU for his informative and somewhat scary presentation last month. Yes, like many others, I have replaced several power strips (I got some Tripp-Lites).

The Club membership will gather on Wednesday, April 10th both in-person and on Zoom at 7:30pm, with Meet-and-Greet at 7:00pm, at the Grafton Senior Center or on zoom. The program for the meeting will be “**The Solution – A Fan Dipole for 160/80 Meters**” by Vic WT9Q Shier via Zoom. I look forward to seeing you at the meeting.

73,
Bill K9GN



Blogspot.com

A Message from the Editor

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de: Bill Shadid, W9MXQ, Newsletter Editor

Please note Club President, Bill Greaves, K9GN, on Page 1 for his monthly message. I want to add that it is nice to have Bill back to top billing this month!! Bill points out a lot going on. Special comment on ORC's 60th Anniversary. This is also my 60th year – but it took a long time for ORC and 'MXQ to meet!

It is that time of year – time for the 2024 Ozaukee Radio Club Spring Swapfest. Get details in the article from Tom Trethewey, KC9ONY, and also the last page Newsletter Flyer.

Do you have an old piece of equipment you want to bring back to life? Check the food advice form Tom Ruhlmann, W9IPR, on page 6.

Don Zank, AA9WP, and Stan Kaplan, WB9RQR, present us with their columns on Ozaukee County ARES and Computer Corner Columns, respectively. Learn more about the Transcontinental NBMS Nets with Don and check out a great printer recommendation from Stan. Pages 10 and 14, respectively..

What to spend some quality time on the air? Gary Sutcliffe, W9XT, Page 16, gives us some great ideas for April and early May. There is a lot happening. Note a big emphasis on POTA (Parks on The Air). And see some close to home activities in the POTA world.

Your Editor, Bill Shadid, W9MXQ, wants to emphasize, this month, some of the many side projects involved with collecting and using Vintage Amateur Radio Equipment. Take a look a five side projects in that article, beginning on Page 25.

Want a bargain?? Check the Classifieds Column on Page 37.

Tom Trethewey advises us of regional Upcoming Events. Take a look at Page 38!

Starting on Page 39, Ken Boston, W9GA, Ozaukee Radio Club Secretary, provides the minutes of the March Ozaukee Radio Club meeting – provided for your review. .

Jeananne Bargholz, N9VSV, our Program Committee Chair, with information on this month's program and what's ahead. See Page 41.

I draw your attention to two inserts – Pages 15 and 40 – informing you of World Amateur Radio Day. Check link provided here and spend some time on the air that day.

<https://www.arrl.org/world-amateur-radio-day>

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

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April 2024 – Table of Contents**

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Onward To the Newsletter

ORC Spring Swapfest is This Month!

de: Tom Trethewey, KC9ONY

The last Saturday of this month will be one of the annual club fundraisers. It's the Ozaukee Radio Club, Inc. 44th Annual Spring Indoor Swapfest to be held on Saturday, April 27, 2024. Once again it will be held in the Ascension Columbia St. Mary's Expo Center on the Ozaukee County Fairgrounds in Cedarburg, WI.

<https://tinyurl.com/2024-Spring-Swapfest>

This year marks the return of commercial vendor Tower Electronics. Door prizes donated by the ARRL, Bioenno Power, DX Engineering, Jeananne and Gary Bargholz, and N3FJP Software.

Also returning are the Cub Scouts from Pack 586 in West Allis, WI., with food. Menu items at this point are: Hot dogs, sloppy joes, pickle slice, chips, water, soda, cookies, and brownies. They are also planning on coffee, donuts and/or pastries.

If you have items you want to sell, please order a table or two and an admission ticket. Tickets in advance are double stub, meaning you have double the chance to win a door prize. Tickets at the door will be single stub.

Bring your friends and have a great time!

**Celebrating 60 years of service
to the community.**

Est. 1964



WWW.OZAUKEERADIOCLUB.ORG

**ORC 60th Anniversary Year Banner
See it at the 2024 Spring Swapfest**

Cursory Check of Unknown Treasure Finds

De: Tom Ruhlmann, W9IPR

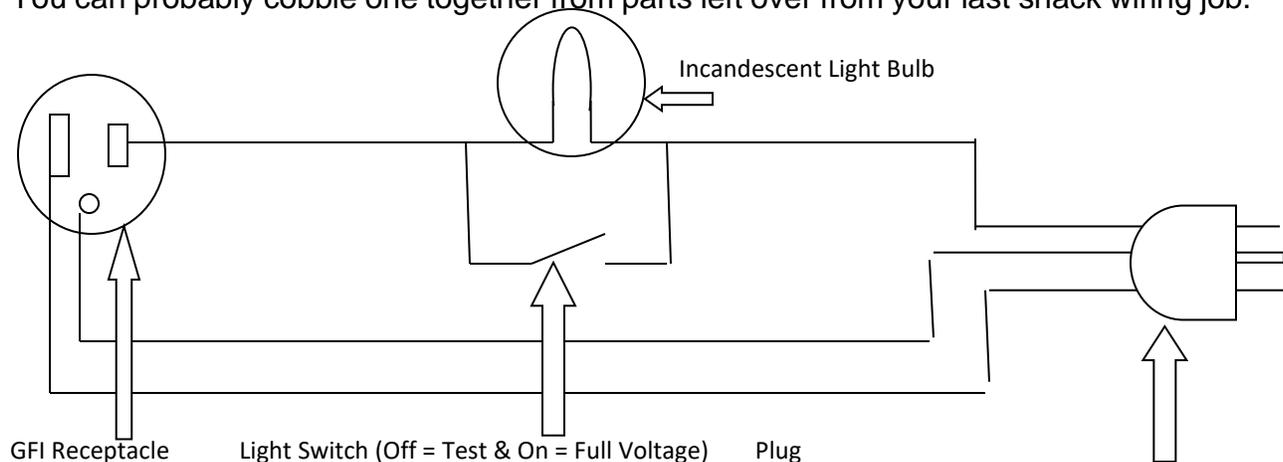
Often, we will find an item, power supply, test equipment, receiver etc. at a Swapfest or a friend's basement that we really could use if it works or if it is worth repairing. But how



to give it a fast cursory check to make sure it does not have a shorted power transformer or other supply problem that could lead to blown circuit breakers or smoke if you just plug it in before checking it out. For the first test following the visual inspection you could use a "home brew" input 120 VAC power current limiting device called a "dim lamp" test unit. It is essentially just an incandescent light bulb in series with the with the power to the unit under test. If the unit under test is not shorted etc. the lamp will glow dimly but if it is shorted the full 120 VAC will be applied to the bulb as a warning. Here is a picture of mine.

applied to the bulb as a warning. Here is a picture of mine.

You can probably cobble one together from parts left over from your last shack wiring job.



A look at the schematic makes it pretty obvious how it works. Actually, I put an ON-OFF switch in the "hot" (black) wire going to the bulb and GFI receptacle. The load to be tested is plugged into the GFI receptacle with the light switch OFF. The light bulb will actually limit the current to the load as the voltage is divided between the load and the bulb. The bulb will glow dimly if there is no short circuit in the load being tested. If there is a short circuit in the load the short will complete the circuit and the light will burn brightly. If the bulb only glows it should be safe to assume the input to the load is not "shorted" and the Light Switch can be turned on and full voltage will be applied to the load under test. This is illustrated in Figures 1 and 2 below using a 100-watt bulb as the load plugged into the

receptacle. In Figure 1 the 60-watt bulb is limiting the current to the load and as a result the total voltage is divided between the load bulb and the indicator 60-watt bulb only glows but not at full brilliance. In Figure 2 the indicator lamp switch is turned on, bypassing the lamp, and full voltage is then safely applied to the load 100-watt bulb.



Figure 1



Figure 2

Now to test something. I just “won” a Hallicrafters S-38 receiver at the meeting auction for \$2 and have been a bit sceptical about plugging it into the house power due to the warning stickers on the case about it being an AC-DC powered receiver etc. But I have the dim light test set so I figured I should be safe. As shown in Figure 3 I started with a



Figure 3



Figure 4

100 watt indicator bulb and did not get any visual indication and noted that there was 112 VAC on the load so I changed the 100 watt bulb to a 60 watt. With the 60 watt indicator bulb I got just the faintest glow from the indicator bulb and noted that I had 100 VAC on the Load S-38. I then changed the indicating bulb to a 40 watt incandescent bulb and noted

a good dim glow and 89 volts on the load S-38. Time to throw the bulb switch and apply full 120 VAC to the S-38,-----it works and I am listening to local broadcast AM stations.



Figure 5



Figure 6

Now to check all the resistors and tubes and replace all the capacitors. I looked at the specifications for the S-38 and noted that it only draws 30 watts and concluded that it is best to have the indicator bulb wattage be as close to the intended load wattage as possible and not more than about twice the load wattage. This was further confirmed when I tested small HP 721A power supply. I got no glow on the 40 watt indicator bulb and noted full line voltage Figure 7 on the supply and it was working. Then I checked the power supply wattage and it was 16 watts. For that I would probably need a 20 or 25 watt indicator bulb.



Figure 7



Figure 8

Now to test a Heathkit power supply I picked up at a swapfest. I got no glow and no power to within the power supply. It appears to be a bad ON-OFF switch. Now to fix that and retest. When done I may leave it on test with the indicator light on dim for a few hours in hopes of reforming the filter capacitors at a lower voltage.

Now to test my Hallcrafters SX-101. It is rated to draw 120 watts so while I preferred to use a 150 watt indicator bulb I didn't have one so I used a 100 watt bulb.



Figure 9



Figure 10

As you can see in Figure 9, I got a robust glow from the indicator bulb and had 72 volts to the SX-101. Looks like it's safe to apply full line voltage as you see in Figure 10. So, what do we know about a "dim light test fixture"?

1. It is simple to build, and you probably have the parts in your "good stuff" box.
2. It is a valuable test set to make sure a vintage treasure you just bought does not have a "shorted" or "open" input circuit.
3. The "indicator bulb" should probably be of a wattage from one to two- and one-half times the rated wattage of the load to be tested.

That's it for this month so what have you been up to lately?



OZARES: Ozaukee Amateur Radio Emergency Services

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

Transcontinental NBEMS Net

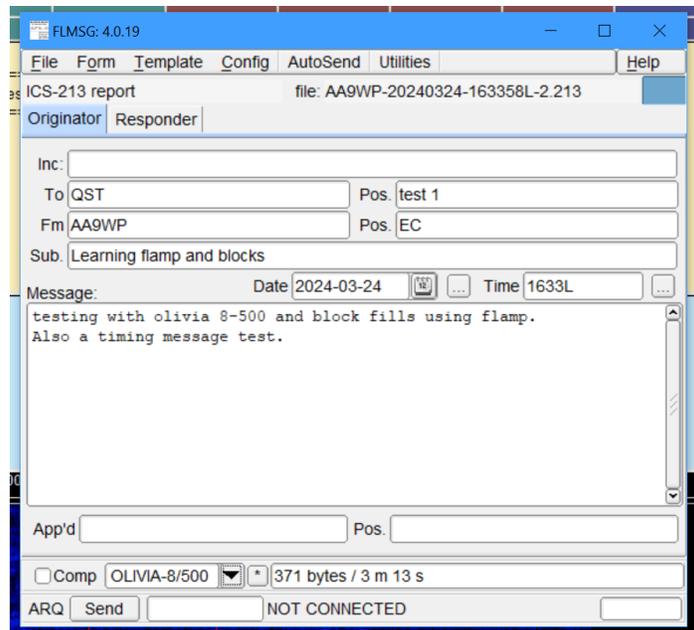


Last month I wrote about my recent activity with the Transcontinental NBEMS Net, <https://groups.io/g/transcontinental-nbems-net>, using the Olivia digital mode. Since then, we have had several more practice nets and things are going well. There has been successful message passing with any missing blocks filled in on follow-up transmissions. New members have joined, and, with the benefit of the parallel Zoom meeting, they have been able to receive and transmit before the end of the net.

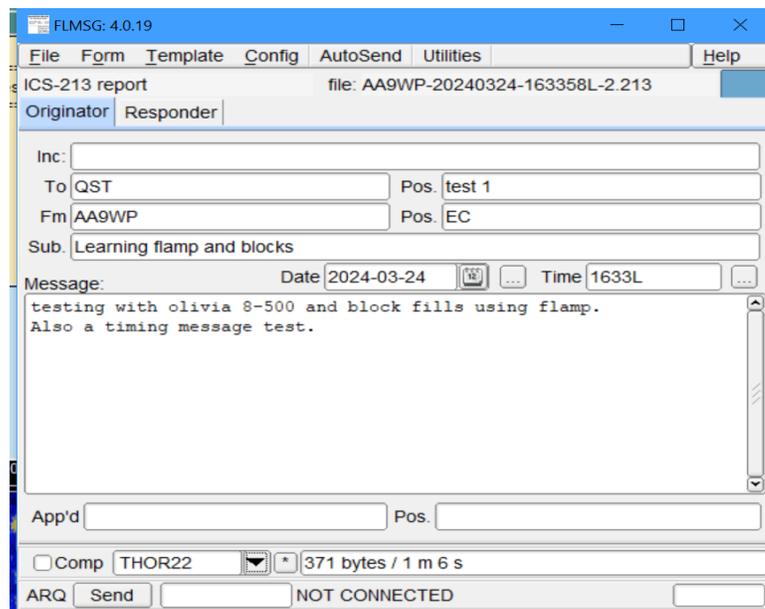
The difficult part of a digital net is the check-in procedure. This can be a problem with any net, because of doubling and stations stepping on each other. With a digital net and software having the capability to decode weak signals that may not be seen on the waterfall, the chance of doubling increases. The Zoom meeting helps in arranging the check-ins, but it may not be available during some emergencies. And the goal is to have the net as an all rf net. Fldigi, the Fast Light Digital software used for the net, has a selection called the Power Signal Monitor, or PSM. PSM monitors signals in the bandpass range of the modem and will inhibit transmit until the bandpass is clear. While it was originally developed for unattended operations it works very well for net check-ins. It is a little disconcerting when the transmit mode is selected and nothing happens so, as they say in the manual, a little patience will go a long way. It is something the net is practicing with and is improving each net.

After last week's net, there was a good discussion, with more questions than answers. The discussion started with a concern about the required time to transmit an Olivia message. The Olivia mode is great for sending messages and forms across the hf bands. But it can be very slow. See the images below. Some other nets, like the Pennsylvania NBEMS net, use the Thor 22 mode for check-in and then switch over to either MSFK32 or THOR56 for passing traffic. The second part of the discussion was concerned about the types or forms of messages that would be sent. There are many ICS forms available along with weather reports. Situational reports that provide information on the status of infrastructure, such as telephones, radio and television stations, and the electrical grid, would be used to provide information to Incident Command.

As shown in the image below, a simple ICS-213 message, 371 bytes of information, would require 3 minutes and 13 seconds to send.



While using the THOR 22 mode, the message can be sent in 1 minute and six seconds



But there is a trade-off to be made. Speed versus reception. During a recent Pennsylvania NBEMs net, the Olivia mode made it through, but the THOR 22 mode message was incomplete.

So, there may be some further testing of the various modes and evaluation of the results.

Another factor in our testing that we need to be aware of is the recent very good propagation conditions. I will keep you posted on our results.

More information about the Olivia mode can be found at:
<https://www.oliviadigitalmode.org/>

Other notes:

From the ARRL ARES newsletter of March 20:

ARRL Emergency Communications Training Courses Update -- ARRL Director of Emergency Management Josh Johnston, KE5MHV, reports that ARRL is discontinuing the ARRL Emergency Communications training courses EC-001 and EC-016, effective April 1. "We plan to launch the new Basic EmComm course on the 1st, as well as a new Intermediate EmComm course," Johnston said. "An Advanced EmComm course will be released by the end of June," he said. "We will also be releasing an ARES Leadership course in the near future." The update of courses will be enhanced by the release of an ARES position task book update as well. "Upgrading and refreshing our course offerings is important to keep the training relevant and in tune with current EmComm topics and tasks," Johnston said.

Weather Spotter Training:

Thu, April 18, 6:30 pm – 8:30pm

Where: Concordia University, 12800 N Lake Shore Dr, Mequon, WI 53097,

Pharmacy Building Room PH 008

Parking registration is obtained by using the QR codes posted at the building.





OZARES Repeaters:

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

ORC Repeaters are On the Air Awaiting Your Call:

- **146.97 MHz (- Shift) (127.3 PL)**
 - **FM Mode Only**
- **224.18 MHz (- Shift) (127.3 PL)**
 - **FM Mode Only**
- **443.75 MHz (+ Shift) (127.3 PL)**
 - **FM & Fusion (C4FM) Modes**

THE COMPUTER CORNER

No. 313: A Good HP Printer Value?

de Stan Kaplan, WB9RQR, 715 N. Dries Street, Saukville, WI 53080-1664

wb9rqr@gmail.com



Here is a value that may well be of interest to you. At Amazon.com, I spotted a Hewlett-Packard Printer for \$42.19. Now, just about anything under \$100 is a really good price for an HP wireless/USB/color/inkjet printer that prints, scans, and claims easy setup and other virtues. From the outset I did not believe the easy setup claim. Why? Because I feel that while HP makes about the best printer hardware in the world, it also makes just about the worst software in the world, so the setup programs just cannot be that good. But the rest of the purported virtues were really attractive, especially so

since my only current scanner/printer is beginning to make weird noises. So, I decided to order one.

As I expected, the setup procedures were somewhat of a pain. But having become familiar with the relatively poor logic of HP software, I muddled through the installation without too many scars, and eventually got it installed and working properly. Thereafter, printing worked without a hitch and the quality of the output was excellent. Even scanning seemed perfect on its full-sized flatbed scan surface and produced good quality scan files that printed nicely. So, what was HP's goal with these really inexpensive printers?

It turns out that HP is trying to be quite competitive by providing low priced printers that will work only with HP cartridges, either new HP or remanufactured HP, for the life of the printer. That way, you are locked in to their ink renewals. Well, that really did not seem so bad if the prices were OK. It came, and seems to work perfectly, with good clean printing and simple, accurate scanning, as mentioned previously. On the other hand, you are required to set up the printer through an HP account, which you must create if you do not have one already. Nevertheless, even with slightly more expensive HP cartridges, costs seem reasonable and in line with most other brand offerings. And their offer of 3 months free instant ink seems true. They have already sent me two new cartridges – tri-color and black – to be installed when the machine reports the old ones are really empty.

The pricing has been bouncing around. At first, there was a \$10 increase since I purchase my model (HP 2734e). Then, the current offering (Deskjet 2755e, \$54.00 at Amazon) bounced to only \$5.00 more than my original purchase, although it seems to have the same specifications and virtues as my earlier purchase. So, look carefully at the Amazon

price if you are buying there. Three months of instant ink are included with the purchase, and other virtues and limitations should be carefully scanned by you in the offering. Nevertheless, it all looks pretty good at this point, and it is my belief that you can't go too far wrong with this purchase. Well under \$100 for a color printer, scanner, wireless or USB, and so on does not seem like a bad deal at all, especially if this machine lasts as long as most HP printers have in past years. Happy Computing!



**18
APRIL**

**WORLD
AMATEUR
RADIO
DAY**

arrrl.org/world-amateur-radio-day

The poster features a woman with glasses and a plaid shirt smiling while holding a handheld radio. In the background, there are shelves with various electronic equipment. The text '18 APRIL' is in a dark blue box. The main title 'WORLD AMATEUR RADIO DAY' is in large white letters on a dark blue background. The ARRL logo, a diamond shape containing the letters A, R, R, L and symbols for antenna, resistor, and ground, is on the right. The website URL is at the bottom.

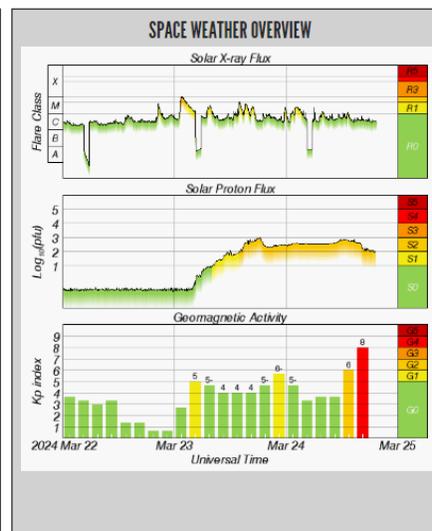
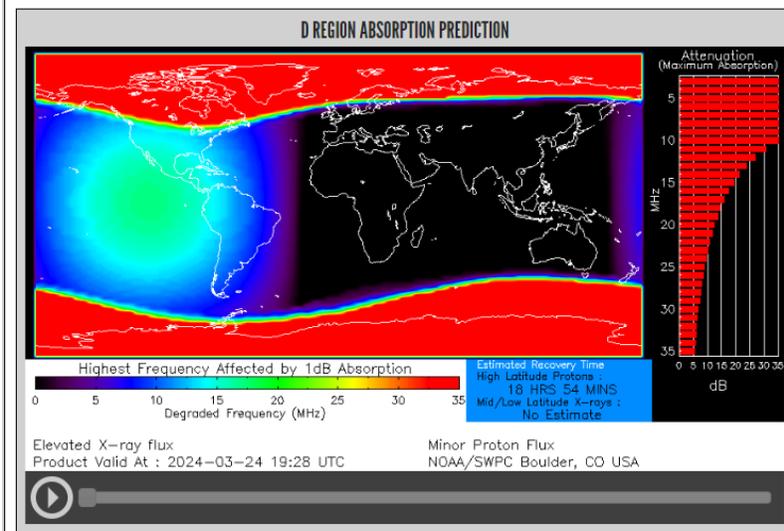
On The Air Activities!

de: Gary Sutcliffe, W9XT



As we continue to sunspot maximum, we experience one of the side effects. That is an increase in solar flares and the effects from them. March solar flare activity was very high, and the effects on propagation were interesting.

One streak of solar flares started on March 22. They are shown in the upper right chart. The first one was late March 22. Early on the 23rd, you can see the wide one. Actually, it was two flares that happened at around the same time. It touched into the X-class, the most powerful class. Later in the day, we had more high M-class flares and more the following day.



Solar activity March 22-25. NOAA Space Weather Prediction

The UV light from the flare arrives about nine minutes after the event, the same time it takes for visible light to make the trip. The UV light increases the ionization of the ionosphere's D layer. This layer forms during the day and absorbs low frequency signals. The D layer dissipates after sunset, allowing lower frequencies to pass through to the F layer, refracting them back to the surface.

That is why we can only communicate relatively short distances during the day on 160 and 80 meters, and somewhat longer distances at 40. It is better known on the AM broadcast band, where we can hear only local stations during the day but more distant ones at

night. It is also why many AM broadcast stations must cut power or change their pattern to minimize interference with other stations on the same frequency.

The left side of the chart shows the predicted absorption of the D-layer. The sun's position is in the large green area southwest of the United States. The green area shows that absorption was up to about 20 MHz, much higher than the usual D layer absorption frequency limit. Earlier, it was red, and an HF blackout occurred. A Sudden Ionospheric Disturbance (SID) occurred.

It is very dramatic if you are operating when a SID occurs. Almost all the signals disappear instantly. Your first thought is that either your radio or antenna has failed. Signals start to return after an hour or so.

Flares often eject charged particles. These particles will be directed to the Earth if the flare is properly positioned. Usually, the transit takes a couple of days. It depends on how fast they go when they leave the sun. The particles get captured in the Earth's magnetic field and move to the poles, where they can cause auroras. The geomagnetic field gets unsettled, maybe to the point of a geomagnetic storm.

The K index indicates the stability of the geomagnetic field. An index of 0-1 indicates a quiet field and usually good HF propagation. At 2-3, conditions are not so good, and it gets progressively worse as the index rises..

Looking at the lower right graph, you can see the K index over time. You can see a sudden jump in the K index on March 24. Particles from the double flare were high speed and arrived earlier than expected. With the K index at 6, an aurora was likely, but the disturbance did not last long, and the K index had dropped before any aurora would be visible from here.

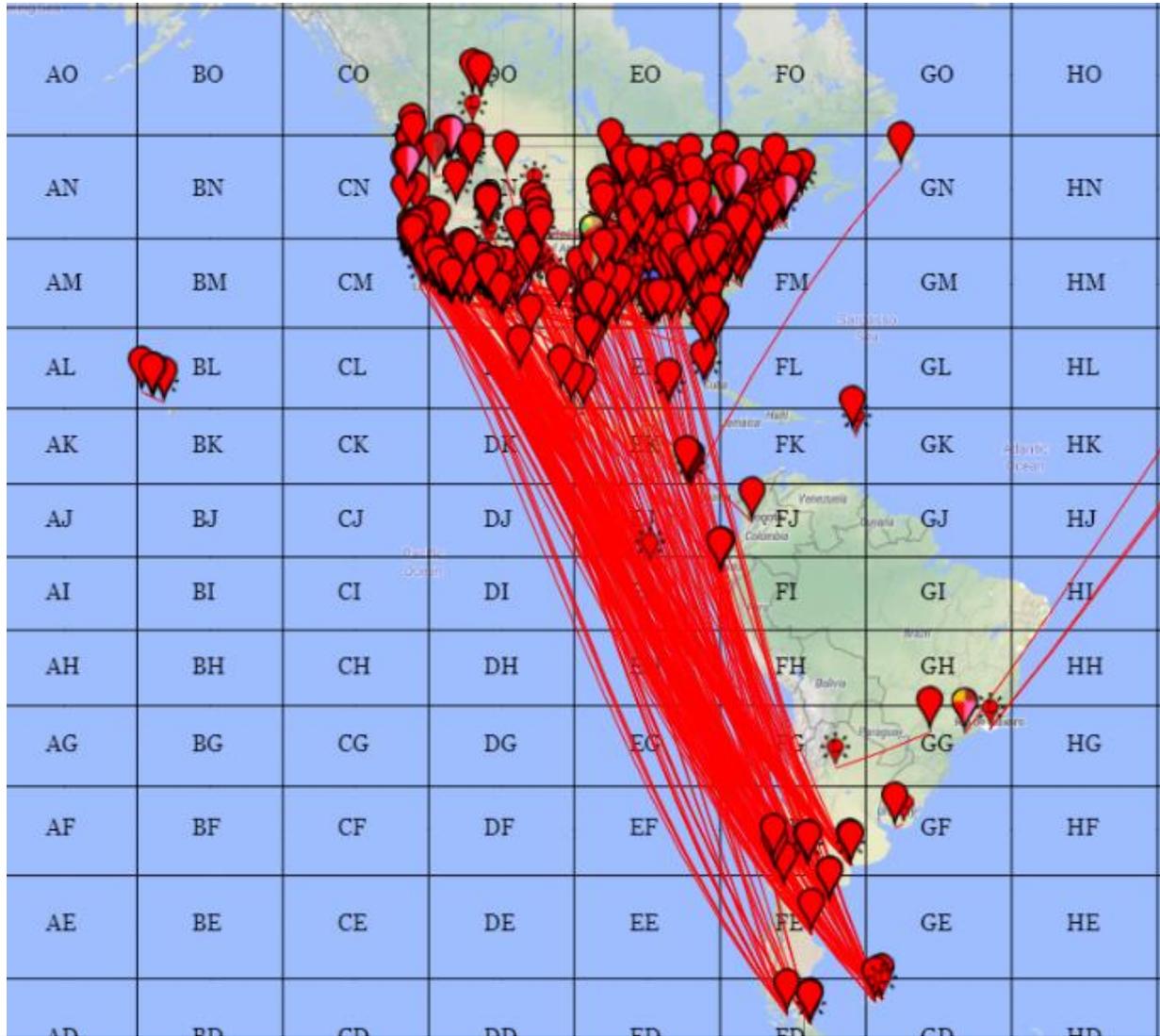
Looking back at the left side with the D layer absorption, you can see red at the poles. Particles from an earlier flare caused that. It meant that signals to places requiring a polar path, like Europe and the Far East, would be absorbed.

But sometimes, the disturbances can actually help on higher frequency north-south paths that avoid the poles. That happened on the afternoon of March 24. We had a good opening to South America on six meters. Gary, **K9DJT**, and I worked several stations in South America, including some new countries. We both made contacts with the Falkland Islands, off the east coast of Argentina. We also made contacts with French Guyana that day.

The chart from PSKReporter shows some of the stations hearing each other on 6 meters that afternoon.

The WPX SSB contest was the weekend of March 30-31. The sun decided to disrupt the contest with another big flare on Saturday afternoon. I had several family commitments, and the SSB WPX is not one of my favorite contests, so I only played around here and there that weekend. I limited my activity to 15 meters. I got on Saturday morning for a few

hours to hit the European opening. I was off the air until late Saturday afternoon. When I came back, the bands were really punky. I checked the NOAA website and saw we had another flare. By chance, I got back on just as conditions started to improve.

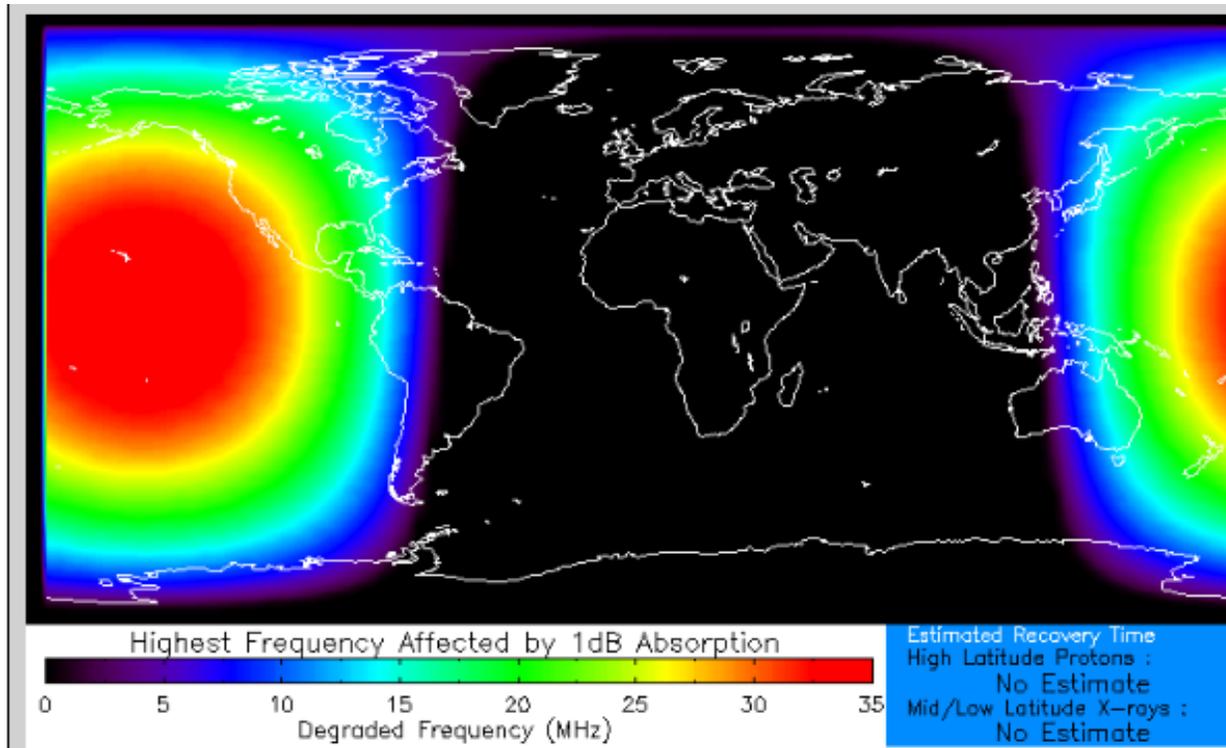


Six meter opening to South America on March 24. PSKReporter

The following charts show the flares and absorption late afternoon, Saturday, March 30. This flare also happened when the sun was over the Pacific Ocean, southwest of the United States.

I got back on at that time with hopes of working into Japan and maybe other Asian countries. They should have been strong then, but absorption was too high on the polar path. I did work European stations and one in Africa at that time. It is very unusual to hear Europe that late in the day (around 5:00 PM local) on 15 meters.

A few hours later, the band returned to normal, and I could make many contacts into Japan, China, and Indonesia. I also worked Nepal, which is pretty rare, due to not much activity plus a challenging path.



Absorption right after the SID on October 31. NOAA Space Weather Prediction

POTA

As the weather warms up, the urge to get outside gets greater. And what might be better than going to a park and operating the radio? The Parks on The Air (POTA) program is a good excuse for doing that.

The idea is to get hams to operate from parks and for those at home to work them. You get awards for working parks, working from parks, and special ones for things like working six on 6 Meters, working, or activating in the early morning or late at night, etc. There is no cost to join, and the awards are downloadable PDF certificates.

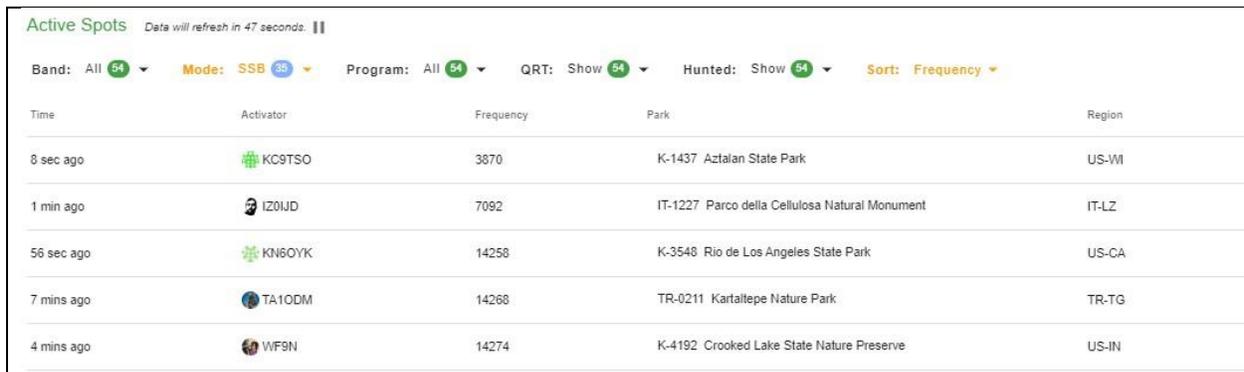
Qualifying parks are either state or national parks, wildlife areas, hiking trails, etc. County and city parks don't count. There are over 10,000 listed parks in just the US. Many other countries have qualified parks as well. <https://parksontheair.com/>

The web pages explain how the program works. You might already qualify for an award and don't know about it. When you sign up, it goes back and checks its logs. If you worked a POTA station in the past, it counts! Stations participating in their state QSO parties sometimes operate from parks. I picked up a lot on six meters from chasing grid squares on the band. The rovers activating grid squares often operated from parks.

One thing I like about POTA is as a hunter you don't have to do anything other than work the stations. The activators submit their logs. You check into the POTA app to see what your totals are.

I started about two years ago. I get hot and cold on it. I might work many stations for a few weeks, then not do it again for a few months. I just completed working 1000 unique parks from home. My next step is to go out and activate a few parks myself.

One ORC member who is very active in putting on Wisconsin parks is Nate, **KC9TSO**. I recently worked with him when he was at Aztalan State Park near Lake Mills. Although I have never worked him from a park, ORC Member Matthew, **KD9QLS**, also activates parks. Other ORC members who hunt parks are Bill, **W9MXQ**, and Dave **KB9PRF**. Did I miss anyone? The POTA app has a page with currently active POTA parks. You can filter it by band and mode to make finding the ones presently operating easier.

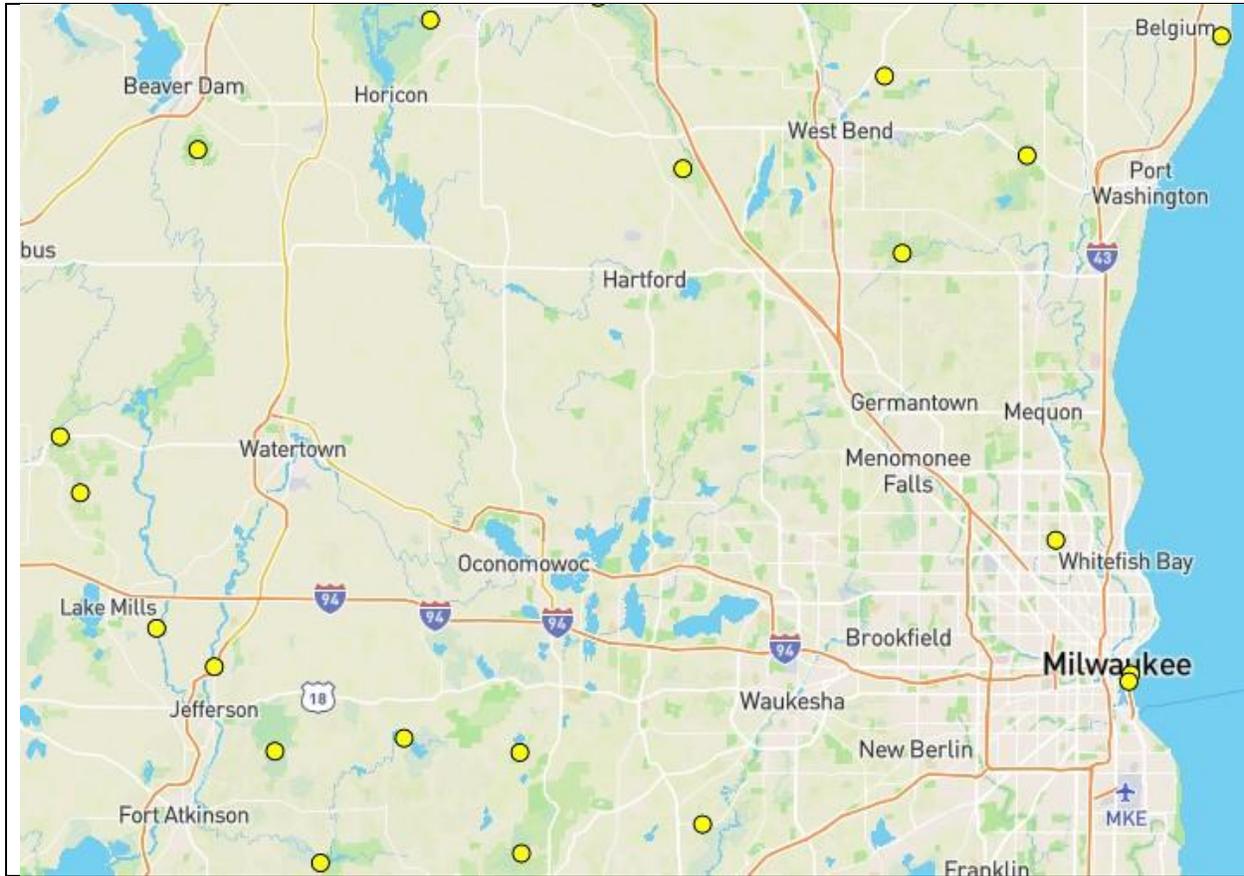


Time	Activator	Frequency	Park	Region
8 sec ago	KC9TSO	3870	K-1437 Aztalan State Park	US-WI
1 min ago	IZ0JUD	7092	IT-1227 Parco della Cellulosa Natural Monument	IT-LZ
56 sec ago	KN8OYK	14258	K-3548 Rio de Los Angeles State Park	US-CA
7 mins ago	TA1ODM	14268	TR-0211 Kartalpepe Nature Park	TR-TG
4 mins ago	WF9N	14274	K-4192 Crooked Lake State Nature Preserve	US-IN

POTA Spots showing KC9TSO activating a Wisconsin park. Note the spots from Italy and Turkey. March 18, 2024. <https://pota.app/#>

With over 10,000 eligible parks in the United States, you would expect many in Wisconsin. Well, there are! In fact, there are two within walking distance of my house. There are many within a short drive for most ORC members. The map shows some from Southeastern Wisconsin. Some others don't show up on this map. For example, Pike Lake State Park is part of the Kettle Moraine State Park, which has several components. The Ice Age Trail runs all over the state. The POTA app shows only one location for each park or trail, even if it covers a large area. Some parks and trails cover multiple states.

You might find POTA a fun and relaxing activity. It is very laid back. Although many park activations happen on weekends, especially on nice holiday weekends, there is a lot of activity on weekdays. Of course, activity is higher in the warmer months, but many operate from their cars. And, of course, just because it is cold in Wisconsin does not mean it is not pleasant and warm in other places.



Some POTA parks in our area. <https://pota.app/#/map>

Solar Eclipse

Don't forget the solar eclipse on Monday afternoon, April 8. It should be around 88% of totality in our area. I covered it in more detail last month. The HamSCI organization is encouraging people to operate the SEQP. Data collected before, during, and after the eclipse from the logs, CW skimmers, WSJT reports, etc., will be used to better understand the structure and dynamics of the ionosphere. Help out if you can.

DX

With the combination of high sunspot counts and just passing the equinox, we are in an excellent position to work some interesting DX. The bands have been staying open very late. I have worked Japan on 10 meters at 9:00 PM local time. The 12, 15, and 17 meter bands often stay open even later. I have not checked, but I would not be surprised if there are nights 20 meters does not close.

These evenings are good times to pick up some rare Asian countries. Some of these are difficult paths, and you might not hear any for years during the lower parts of the sunspot cycle.

There are a few good DXpeditions scheduled for April. A lot of them are by a single op. I generally don't list them here because, for many of them, operating is a secondary activity for vacation or business travel, and activity is often minimal. Just being on the air is the best way to stumble across these.

A group of Czech hams will be activating Liberia in West Africa April 6-16. They will be using the call sign A8OK. Liberia used to be pretty common, but not so much in the last decade or so. EL2BG has been active on FT8, but CW and SSB activity has been limited. This group will be on all bands.

K5WE and W5CCP will visit the Austral Islands April 16-30 using the call sign TX7W. Austral Islands are a relatively rare entity, ranking 57th on the Clublog's most needed list.

SP9FIH and SP6CIK will be in Bhutan from April 18 through May 8. They will be using the callsigns A52P and A52CI. Bhutan is an extremely tough path for us, and this would be an excellent time to put that country in the log. It might be a while before we get another chance.

If you need Market Reef, you will have a shot at the end of the month. A group of Norwegian hams will activate OJ0T from April 27 – May 4. They plan to use 40-6 meters.

A small group will be visiting Marian Island April 25 – 30. This activation will be an FT8 only operation on 160-6 meters. Each ham will use KH0/home callsign.

Contests

April may be the quietest month for contests. The only one on this list this month is a one-time event, coinciding with the solar eclipse on April 8. Check out the rules at: <https://hamsci.org/seqp-rules>

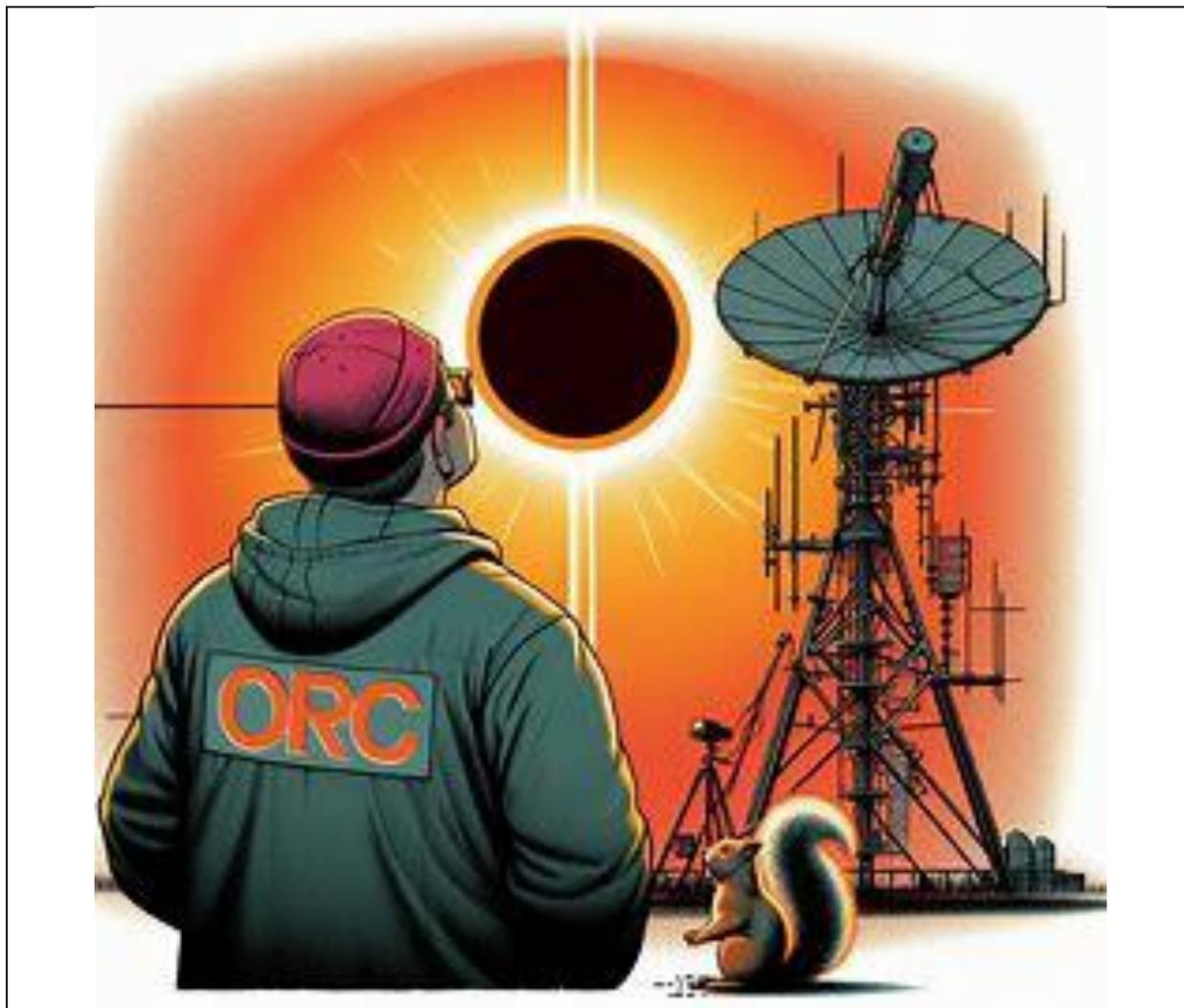
Activities

There are two area hamfests this month. The most important one is the ORC Hamfest on April 27. In case you have not been paying attention, there will be plenty of information elsewhere in this issue.

The other Hamfest is the Madison Hamfest (held in Stoughton) and hosted by the Madison Area Repeater Assoc. The date is April 13. I remember going to the first Madison Hamfest back in the 1970's. The idea came up to have one, and a date was set for about two weeks later. Maybe eight vendors set up on picnic tables at a small park. I don't think we even reserved the park, but we just all showed up. It was in September or October. It is quite a bit bigger now.

The other date to note is April 18, which is World Amateur Radio Day. The ARRL has some operating suggestions on its website.

That wraps up April. See you at the meeting and the Hamfest!



Remember the Solar Eclipse Monday April 8, 2024

>> Interactive Eclipse Tracker: <https://www.timeanddate.com/eclipse/map/2024-april-8>
>> Be sure to wear proper eye protection!!

See the following page for W9XT's DXpeditions, Contests, and Events for April and early May 2024 . . .

W9XT's DXpeditions, Contests, and Events for April and early May 2024

W9XT's DXpedition picks for April and early May 2024					
QTH	Dates	Call	Bands	Mode	Link/notes
Liberia	Apr 6-16	A8OK	160-6	C/S/D	https://www.cd xp.cz/
Austral Islands	Apr 16-30	TX7W	160-10	C/S/D	https://k5we.com/tx7w/
Bhutan	Apr 19 – May 4	A52P, A52CI	40-6	C/S/D	https://a5.dxpediti ons.org/
Mariana Island	April 25 - 30	KH0/home call	160-6	FT8	
Market Reef	Apr 27 0 May 4	OJ0T	40-6	C/S/D	https://oj0.no/

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

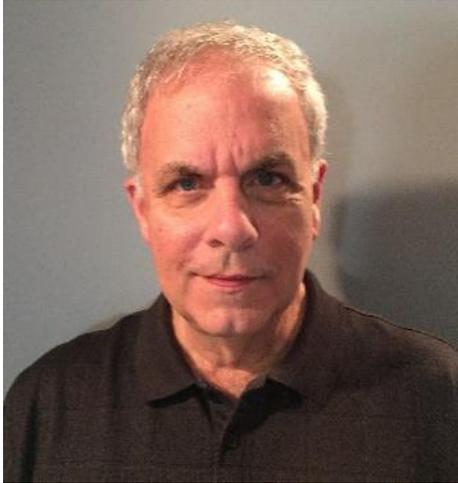
W9XT's contest picks for April and early May 2024					
Name	Start	Length	Bands	Mode	Link
Solar Eclipse QSO Party	1400 Z	10 hours	HF	C/S/D	hamsci.org/seqp-rules

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

W9XT's operating & event picks for April and early May 2024			
Event	Dates	Details	Link/notes
Madison Ham- fest	April 13		https://w9hsy.org
World Amateur Radio Day	April 18		https://www.arrl.org/world-amateur-radio-day
ORC Hamfest	April 27		https://www.ozaukeeradioclub.org

Vintage Amateur Radio

de: Bill Shadid, W9MXQ

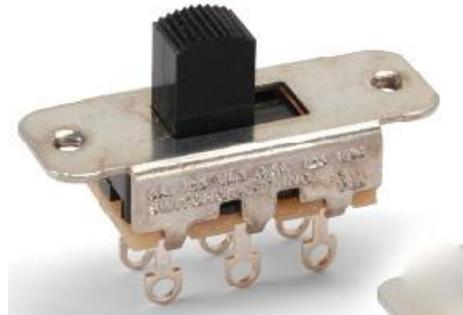


Sometimes it is a good idea to step back and take stock of some side projects that are a part of collecting Vintage Amateur Radios. This article is going to cover several such small projects that were the result of my work on several different radios.

R. L. Drake and their use of Slide Switches.

Drake seemed to have a tendency to see uses for what we call "Slide Switches." The humble Slide Switch dates from the earliest days of radio. See example picture, to the right, of a Switchcraft Slide Switch – typical of the ones Drake

used in many of its products. Not all of these uses that Drake applied were problems over time. In fact, some uses of Slide Switches in Drake Radios, such as the highly acclaimed Drake 2-A and 2-B Receivers have stood the test of time and continue to perform well in radios that are well maintained. Even the last high frequency ham radio product from Drake, the TR5 Transceiver, included an array of Rocker Switches that are actually Slide Switches.



Slide Switches on Drake 2-B Receiver in 1961

R. L. Drake Company



Rocker Actuator Equipped Slide Switches on the Drake TR5 Transceiver in 1981

W9MXQ Photo

Some applications had problems that developed over time. Drake had a tendency to use slide switches on the sides of its radios to control infrequently accessed circuits. In some cases (if not most cases) these switches were never used but caused many problems for the user who may be unaware of their presence.

From my experience, the two most frustrating places in Drake radios are on the R-4A and R-4B receivers plus all versions of the TR-4 Transceiver (TR-4, TR-4C, TR-4Cw, and TR-4Cw-RIT).

On the R-4A and R-4B there is a slide switch on the left side of the radio to allow a choice between using the internal VFO or a crystal to allow the receiver to be on a predetermined frequency that is determined by a custom-made crystal. One reader of these articles, Art Davidson, AC9CD, and I discussed a very nice Drake R-4B Receiver that he had recently purchased. It was presented to him as a nice working radio. What he found was a worsening issue of the radio being intermittent. Art related that he was concerned about a switch on the side of the radio that was tied to the radio's operation. As it turned out, that was the most important clue!



This is the Slide Switch on the Drake R-4B Receiver at AC9CD. It is located on the lower rear left side of the radio. Note the Slide Switch with the Tab installed to keep the switch in the "VFO" position.

W9MXQ Photo of AC9CD Radio

Failure of this switch opens a line from the VFO to a mixer stage in the receiver – and prevents any frequency control of the radio. The radio will provide background sound but nothing more. Sometimes touching or manipulating the switch would cause the radio to intermittently operate. The black "handle" (actuator) of the switch is actually the culprit. It projects away from the side of the cabinet in such a way that if the Receiver is stored on its side (as stored Drake radios often are), the switch handle is forced inward by the weight of the radio. In this case, the switch disintegrated, and the back of the device had separated from the actuator. Opening the radio showed the interior of the switch floating in free air, supported by its wiring to the radio's circuitry. With AC9CD's agreement, I secured the still wired switch back panel, permanently soldered the connections in the "VFO" position and removed the switch's frame and the handle. So, the receiver is left in VFO control – not an inconvenience since the necessary custom made crystals are no longer easily accessed¹. That makes the selection unnecessary, and it removes a connection in the VFO circuitry that is now redundant².

A quick note to say that Drake's choice of Slide Switch model may have been its undoing in this instance. The handle is too tall – if it was much lower – or if it was ground off in production, it would never have been a problem.

Another similar problem occurs with the long running Drake TR-4 HF Transceiver, in all forms (TR-4, TR-4C, TR-4Cw, and TR-4Cw-RIT). It was not a part of the earlier, and essentially similar TR-3 HF Transceiver design³. This application of the Slide Switch is more problematic than the one with the R-4A and R-4B Receivers.

As with many transceivers of the time, the TR-4 series Transceivers were equipped with a perhaps not so conveniently placed Side Switch.



My Drake collection includes an early TR-4, a TR-4C, and a TR-4Cw-RIT. In every case, the switch pictured to the left is present on the left-lower-rear side of the cabinet. It switches the radio from using the Internal Transceiver (TCVR) or an External Receiver (RCVR).

W9MXQ Photo

I suspect that most users of the TR-4 series of transceiver never have a need to use this Slide Switch. However, it is subject to the same damage as in the situation described above with the R-4A and R-4B Receivers. This generally comes from excess pressure inward on the switch handle and the subsequent destruction of the switch assembly. This particular application goes one step further in that it has no lock bar to conveniently lock the switch in a desired position. This switch is easily bumped and inadvertently switched to the wrong position or ends up partly switched so neither position is actually connected. The isolation of the switch between the two receivers is poor and when the switch is in the wrong position, or mid-way between the two selections, signals are still heard but are heavily attenuated. This leads the operator to think that there is a problem with the radio. In such a case, merely touching the switch will make it move to one position or another.

With the TR-4 setup, the Slide Switch actually carries the antenna signal to the appropriate receiver (internal or separate). As you might expect, the Slide Switch is marginal at best for handling very low signal receive signal levels. It is a good idea to move this switch from one position to another, and back, several times, on a somewhat regular basis. I also have applied a few drops of DeoxIT D100L Contact Cleaner for a longer term solution⁴.

Note: It is almost never a good idea to spray any kind of cleaner inside a radio. The use of a "needle type applicator" is always the best idea.

I would like to have a dollar for every time I have fought a weak, or nearly zero signal level from one of my Drake TR-4's only to find, after intensive searching, that this crazy Slide Switch is not properly set.

This simple application of the DeoxIT D100L Contact Cleaner to Slide Switches in one Drake 2-B Receiver, that once was a part of my collection, worked wonders and turned the radio from an intermittent, screeching, mess to a smooth and sensitive performer with

about thirty minutes of work⁵. Drake's revolutionary 1-A, 2-A, and 2-B Receivers were remarkable in their day – and are still fine units, today.

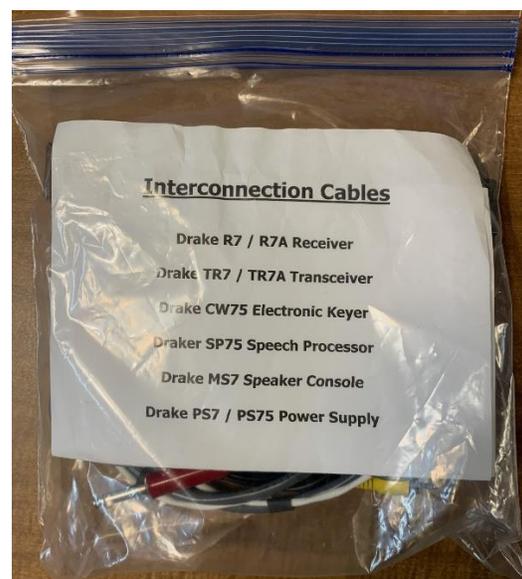
Packaging Station Setup Cables

I rotate and operate numerous Vintage Amateur Radio stations. There is always one Drake station that is permanently set up for my use in being a Net Control Station for the Drake Technical Net. Otherwise, my stations rotate on a weekly, bi-weekly, or monthly basis in a vintage radio operating position⁶. As you can imagine, one challenge is that any one setup requires a set of interconnect cables and adapters. Setting up the different brands and configurations is fun to do – at least to me – but trying to find all those cables and paraphernalia for any one setup is NOT a lot of fun!

Years ago, after temporarily misplacing a rather odd, unique, and unobtainium 120 VAC power cable for the Power Amplifier Enclosure Cooling fan in the Kenwood TS-511S Transceiver, I decided that something had to change. To the rescue came clear, one gallon Zip-Loc™ (or generic equivalent) Freezer Bags. Here are two examples:



**Kenwood TS-900 Station
Interconnection Cable Package**
W9MXQ Photo



**Drake TR7 / R7 Separates Station
Interconnection Cable Package**
W9MXQ Photo

Multiple, similar setups have their own packets. That is, there are separate package for the Drake TR7 / R7 and the Drake TR7A / R7A Stations. These bagged cable sets contain all necessary interconnect cables. When open and installed with the radios, the bags stay with the radios until returned to storage. When individual packets are in storage, between uses, they are kept in one of the other designated containers, so I always know where they are. Cable sets for the TR7/R7 and TR7A/R7A are identical but each package is complete – not relying on one package to support the needs of another.

If individual Vintage Amateur Radio stations are sold or traded, their Interconnection Cable Package go along with the radios. Currently at W9MXQ there are twenty-seven such packages set up with another fourteen to be completed, or not required. Some stations where interconnection cables are permanently installed at one end (so never detach from the radio) do not require separate cables. They do not require one of these packages. A pending project is to include adapters with other than a two or three-contact, 0.250" CW key connector. Also, I have been working on standardizing microphone connectors and including appropriate adapters in each Interconnection Cable packet.

Rotating Maintenance Schedule.

Even if you only collect a few radios, a maintenance routine is essential. Oddly, this seems more essential in the later vintage radio era – radios at the late end of my collection such as the solid-state Drake radios (TR7/TR7A and TR5 Transceivers or the Cubic Astro Transceivers) as well as the Kenwood Hybrids (TS-511S, TS-900, and TS-830S). Also, the one Yaesu Hybrid that lives here, the FT-101ZD. These radios have most (or all) solid state circuitry at a transition time in support circuitry. That is, relays, connectors, and switches that come from the vacuum tube era and lack adequate switching currents to help keep contacts working properly. More up to date components seem to be better adapted to solid-state circuitry. Here is a list, by model, of basic maintenance requirements for a representative group of radios collected here:

1. Drake TR7 / TR7A:
 - A. Annual exercising of motherboard and daughterboard connections. This means each circuit board must be removed from their connections to the motherboard then reset in place. At the same time, interconnection cables need to be disconnected then reconnected. I find it necessary to apply a tiny bit of the previously mentioned DeoxIT cleaner⁴ every couple of years.
 - B. All rotary switches need to be rotated several times to every position to insure good connection. When DeoxIT is used on circuit board connections, sparingly apply it to these contacts as well – especially if you see problems with switches performing their required functions.
 - C. Rotate potentiometers to insure that they are working properly. “Scratchy” sounding controls should be treated with DeoxIT D5 Contact Cleaner⁷. I VERY SPARINGLY spray a quick shot inside the potentiometer while using cotton to keep errant spray from escaping. Recently, I have instead been using DeoxIT F5 FaderLube – with the same procedure⁷.
2. Drake TR5:
 - A. Annual opening and resetting all board to board connectors. Loosen board mounting screws, move board around a bit, then retighten.
 - B. Repeat item B, under Drake TR7 / TR7A.
 - C. Repeat item C, under Drake TR7 / TR7A.
3. Kenwood and Yaesu Hybrid Radios:
 - A. Repeat items A, B, and C from Drake TR5.
 - B. Carefully remove the three vacuum tubes and clean the tube pins with DeoxIT D5 Contact Cleaner⁷. Using the same cleaner, clean the tube socket

pin connectors with a very small “pipe cleaner” dipped in the cleaner sprayed into the spray can lid to provide an accessible liquid. Under no circumstances should you spray cleaner onto or into the tube sockets.

I keep records of my vintage radio maintenance on my shack computer. These records are by brand, model number, and serial number. So, for instance, there are two TR7’s and one TR7A here – meaning that there are three separate records for the TR7 model.

Solving a Problem – without touching the problem radio.

I tend to leave radios as originally designed. Those that know me know that for the most part, I am fiercely dedicated to keeping radios as they were originally delivered. Some radios, however, seem to cry for help. I guess an error is an error and perhaps needs to be addressed, on occasion.

One such issue is the heat generated by the external Power Supply for the Drake L-4B Linear Amplifier. This applies, by the way, to the essentially identical power supply for the Drake L7 Linear Amplifier and the original Drake L-4 Linear Amplifier. As if not enough, I have applied similar solutions to the Collins 30L-1 Linear Amplifier, the Heathkit SB-200 Linear Amplifier, the Dentron MLA-2500 Linear Amplifier, and Hallicrafters HT-45 Linear Amplifier. My solution may have been done more elegantly – but not more easily and effectively.



Right to left . . .

**Small Fan, sitting on top of a Collins 75S-3 Receiver, Drake L4-PS
Power Supply Drake L-4B Linear Amplifier
(Air Blows Right to Left, across L4-PS and L-4B)**

W9MXQ Photo

This small fan⁸ moves a lot of air across the power supply. As a bonus, it also moves air across the top of the amplifier cabinet. The movement of air across the top of both devices draws air up and out of the respective cabinets. The usually “too warm to touch” L4-PS Power Supply remains cool to the touch on its top and sides. The extra cooling air across the top of the pressure cooled L-4B Linear Amplifier RF Cabinet is a bonus.



Here is a better picture of the little fan. The one that I use is powered by 120 VAC line voltage, but they are also available for other voltages. I use this fan mostly in this location but have moved it (quite easily) to other setups.

My Drake L7 Linear Amplifier has its L7-PS (virtually identical to the L4-PS) mounted on the floor, under the desk holding the L7 RF Cabinet. In that instance, I use a somewhat larger fan sitting next to the Power Supply, on the floor. Some of you have seen this fan in presentations I have done at various radio clubs. This eight-inch fan is a good deal larger than the one used in the example above. Here (to the right) you can see that it is a regular floor fan. I position it next to the L7-PS Power Supply (or any perforated cabinet radio or power supply), on the floor. Like the previously mentioned installation, it keeps the L7-PS cool to the touch. (This exact fan seems to no longer be available.) **W9MXQ Photos**



These two fans serve my purpose in not doing any harm to the radios, not modifying them from the original engineering design, while addressing an obvious error in allowing components in the equipment to run too hot.

Upgrading an Old Favorite Radio. (Aging VCO Trimmers – Volatile RAM Chips – and More!!)

While I imply that I am a vacuum tube radio aficionado, you must also note my obvious enjoyment of radios like the Drake TR7/TR7A, TR5, and R7/R7A solid-state radios. What can I say? “I like what I like.” As a collector, there need not be any more logic than that!! To that end, one of my favorite ham radio transceivers is the Icom IC-751A. These fine radios were introduced in 1983 as the Icom IC-751 with many problems. Performance was good but in my opinion, a lot of loose ends. In 1985, Icom introduced the much improved IC-751A version. The IC-751A came in an early version – showing the same Icom logo that dated from when Icom used the brand name “Inoue,” and primarily made well respected VHF/UHF gear⁹.



The IC-751A came in an early version – showing the same Icom logo that dated from when Icom used the brand name “Inoue,” and primarily made well respected VHF/UHF gear⁹.

This relatively early all solid-state radio brought excellent receive audio, transmit audio, receiver AGC, and QRM Control as we have come to expect from modern radios – but remember that this was the 1980's. This radio basic design (original IC-751) is now over 40- years old.

There were three areas where the IC-751A (and the original IC-751) did not stand the test of time:

1. The Trimmer Capacitors on the VCO circuit would become defective and could no longer bring the radio into alignment.
2. These radios (and other Icom radios of the time) were designed with volatile RAM that would fail when a small button cell battery became exhausted.
3. Less important – but convenient – was Icom's optional design to allow these radios to have an internal AC Power Supply.

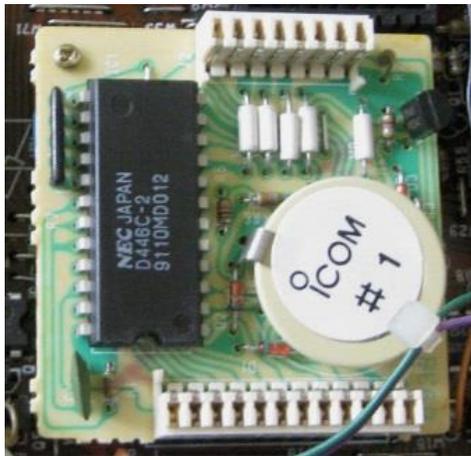
The Trimmer Capacitors are at the heart of the conversion process in the radio. As modern radios progressed they did away with crystal controlled circuits. Many were replaced by Voltage Controlled Oscillators (VCO) to provide a stable oscillator to feed mixers in the IF. In Icom's case, many of their models – mostly in the time of the IC-751 and IC-751A (some earlier and some later) had trimmer capacitors in the VCO's that became defective and failed. They had plastic frame construction and need to be replaced with ceramic frame trimmers. Symptoms would be no operation at all, or extremely distorted audio – at different places in the same band. At times, some places on the band, or entire bands would work fine.

If those symptoms seems to be what you are experiencing, you need to replace the plastic trimmer capacitors designated **C78**, **C88**, **C97**, and **C107** with equivalent ceramic types. Follow the values shown in the service manual. I found in my own experience that C97, specified as 7 pF, should more likely be in the 10 to 15 pF range. In the process, you will find that the trimmers are mounted inside of a shield box (the top of which will need to be removed) and that the enclosure is filled with wax. Using a heat gun (I used a discarded hair dryer), drained out, and discarded.

This is a delicate and exacting process – if you lack the dexterity and eyesight to do this, have it done by a professional. Any radio technician that works on Icom radios will be more than familiar with the process. I no longer do this but have done dozens of Icom radios with this problem – ranging from entry level IC-725 Transceivers to top like IC-765 Transceivers. If the installation properly done and the VCO voltages are properly set per the Service Manual, the radio will spring to life.

Volatile RAM Chips plagued Icom radios for years and are virtually a time bomb that will destroy the radio's ability to operate. The RAM stores the firmware to define the radio's features. That firmware software is supported by a common CR-2032 Button Cell Battery. The RAM Board is a plug-in circuit board on the larger Logic Board in the IC-751A. Eventually, that little button cell is going to become exhausted!! When the battery fails, the firmware is erased.

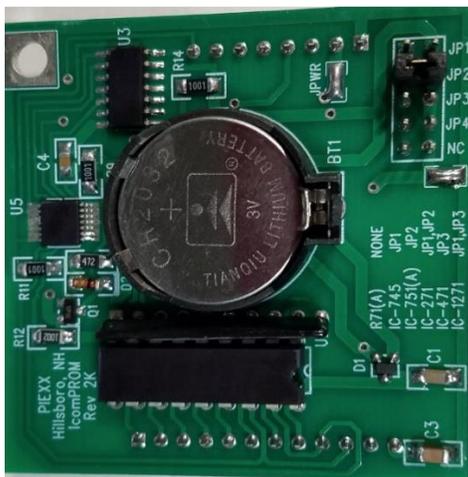
Here is a picture of the as supplied RAM Board that came with the IC-751A as originally delivered from Icom:



This is the RAM Board – as noted in the text, this is a board that plugs into the larger Logic Board. The round item that says “Icom #1” is the CR-2032 battery that is soldered in place. If removed, even for an instant, the radio becomes nothing more than an attractive collection of plastic, metal, and circuitry. The integrated circuit you see is the RAM chip.

W9MXQ Photo

Below is a replacement RAM Board, available from Piexx¹⁰ in only a few days lead-time.



This is the Piexx Non-Volatile RAM Board. This retro-fit board plug in place of the Icom RAM board on the existing Logic Board. The CR-2032 battery is clearly in place in a removeable holder. It can be removed and replaced with no radio problems. The RAM chip (below the battery in this picture) is flash programmed and therefore permanent.

W9MXQ Photo

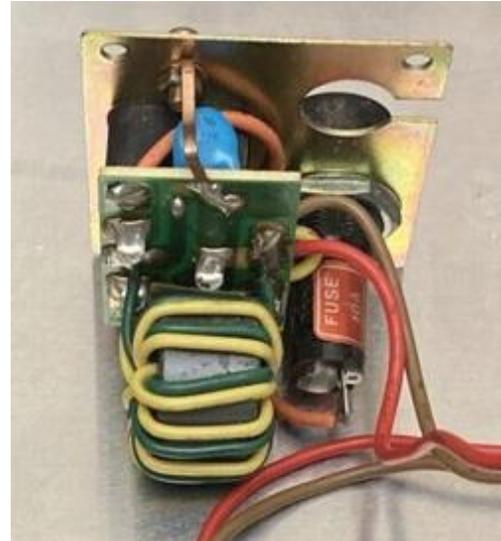
The Piexx board has jumpers to make it compatible with a variety of Icom radios of the time. You can easily set those jumpers – but if you let Piexx know your radio model when ordering it will ship to you with the proper jumpers in place. When received, the bottom of the IC-751A is removed and the old RAM Board is removed and replaced by the Piexx one. (Detailed installation instructions come with the Piexx product.) That’s it – the radio now has permanent firmware that will not disappear at the whim of battery life.

One of the things that I like best about my handy little Yaesu FT-897D is its optional FP-30 Internal AC Power Supply. Taking the FT-897D to another location meant only carrying one item – the radio itself. Icom did the same thing it its IC-745, IC-751, and IC-751A using their internally mounted IC-PS-35 AC Power Supply. Other Icom radios did this with other internal power supply products.

The IC-PS35 attaches to the bottom cover of the IC-751A and fills an open void in the bottom cabinet area of the Transceiver. It is a tight fit but possible with care. See the Power Supply details, below:



Mounting Side of IC-PS35 AC Power Supply with Access Panel to the right and standard power plug to the left.



Closeup of the Access Panel that Mounts to the Back Panel of the IC-751A.

Details of the Icom IC-PS35 Internal AC Power Supply

W9MXQ Photos

Here are back panel pictures before and after the installation. Actually, this is two radios. The one of the left does not have the internal power supply. It is owned by Dave Griffin, KB9PRF, my good friend.



Icom IC-751A without the Optional IC-PS35 AC Power Supply Fitted
KB9PRF Photo



Icom IC-751A with the Optional IC-PS35 AC Power Supply Fitted
W9MXQ Photo

See how the Adapter Panel fills an area covered in the left picture by a blank plate. That plate is removed, and the Adapter Panel fills the space. Note how the DC cable from the IC-PS35 exits through the Adapter Panel and plugs into the existing DC Power Input connector. At first that seems silly – but it is actually a clever idea. You can remove the plug and expose the regular DC input to allow for battery or other alternative power input.

Final Comments

Art's experience with his R-4B is a good word of warning when acquiring a vintage Drake radio that includes even one Side Switch. They are relatively easy to replace, if defective. Or they may just need some contact cleaner applied. Defective Slide Switches are not a show stopper - but beware of their ability to frustrate you if you do not pay attention to their possible problems. A further word on this subject is that Hallicrafters, National, and others also used these little gems in some of their radios.

If you collect a lot of radios, life can become complicated if you are looking for interconnect cables everywhere each time the operating setup is changed. Keeping a package with each setups cabling is just good practice - allowing you to spend more time operating.

Keeping switches and all moving contacts in any radio regularly exercised - especially in a vintage radio - is good practice. I outlined procedures I use with some Drake models and some vintage Kenwood models - and even a vintage Yaesu. Absent are other models of vintage equipment - like Hallicrafters, Collins, National, Hammarlund, etc. All of this equipment is in the same operating and maintenance process at W9MXQ.

I was clear with wanting to keep radios stock - just as they left the factory. Realities, however, make it necessary to meet basic needs, such as keeping the electronics cool. For a lot of reasons, I do not like modifications that touch or fasten to the radio. The cooling solutions shown are economical and effective. Oh, and in case you are concerned that the cooling of the L4-PS and L-4B that involved a fan resting on top of the Collins 75S-3 stored next to the L4-PS - be calmed by the information that the fan now hangs from the bottom of the shelf just above.

The wild card item in this article is the Icom IC-751A. Like I said, the bottom line is that I collect what I like!! I have always liked the IC-751A - to me, a high water mark for Icom. The Trimmer Replacements and new RAM Board are just the facts of life for this little radio – and for any Icom radio of this vintage. The addition of the internal IC-PS35 Power Supply is part of my quest for every radio to have all of its originally offered options installed. After some searching, the optional Icom CR-64 TCXO Oscillator and Icom FL-52A CW Filter were found and are awaiting installation as well.

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 nearly always adds commentary that makes it into the article. By the way, there is a pesky little Slide Switch on the original Drake 1-A Receiver – an Antenna Switch, on the back panel.

Credits and Comments:

¹ This decision is reversible – and a new Slide Switch could be installed. Custom made crystals for this application were readily available from several sources in 1961 when this radio was new. That is no longer the case. If price is no object, such crystals can be accessed. Contact me for details – W9MXQ@TWC.com.

² It is my experience that such switch contacts are causes of stability issues in Vintage Amateur Radio equipment. Removing this switch point only serves to enhance the radios stable operation.

³ I have always questioned Drake's decision to call their short lived original HF Transceiver, the TR-3. It is essentially the same radio as the TR-4. My thought has always been that the "3" number was ultimately confusing. But, alas, I was not consulted on the matter!!!

⁴ I use DeoxIT D100L Contact Cleaner for all contact cleaning and restoration. It comes in a needle applicator. One source is Amazon where it is called, "DeoxIT D100L-25C Contact Cleaner. That slightly more detailed description also describes the applicator.

⁵ Always make sure that the AC Power Cord and the Power Supply components are safe before moving into any other work on an old radio.

⁶ The Drake Technical Net is run weekly, on Sundays, at 4:00 PM Eastern, 3:00 PM Central Time (Standard or Daylight Time). We are always on 7.238.00 MHz (plus or minus a bit for QRM. Net Control Stations are WBØIQK, K9SQG, WB4HFN, W9DCQ, and W9MXQ. Our Technical Expert and integral part of our group is WA8SAJ. All are welcome but we do not discuss service and adjustment of other brands or vintages of equipment. But we like all check-ins.

⁷ I use DeoxIT D5 under the Amazon description of "DeoxIT D5S-6-LMH Spray." For DeoxIT F5, search Amazon for "DeoxIT FaderLube Lubricant."

⁸ I used a small Holmes 4" Personal Desk Fan. It can be found at computer stores or on Amazon using the description, "HOLMES 4" Mini High-Velocity Personal Desk Fan...." It is whisper quiet, moves a lot of air for its size, and has excellent, non-scratch feet to prevent damage to the surface on which it sits.

⁹ Say "In'-oh-Way," but admittedly I am not 100% certain that is correct. Icom was founded in 1954 by Mr. Tokuzo Inoue, JA3FA, who is still Chairman and CEO.

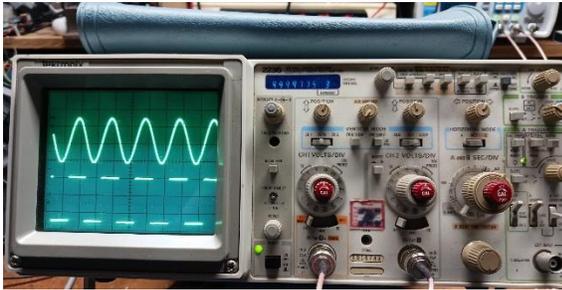
¹⁰ Piexx is at <https://www.piexx.com/index.php> and is an active company supporting many manufacturer's products – including many of the Icom radios with the RAM time bomb, as noted.

©W9MXQ



Classified Advertising For Sale & Wanted Items Ozaukee Radio Club Members

de: Bill Shadid, W9MXQ



For Sale: Tektronix 2236 Oscilloscope

- Dual trace, 100MHz
- Built in 100MHz frequency counter and DVM
- Two 100MHz probes, DVM probes
- Manuals, scope hood included.

I paid \$3,000 for this when new. Asking price \$250. That is about what “parts only” condition Tek 2236 scopes are going for on eBay when you add shipping.

I can bring to the next ORC Meeting

Gary, W9XT

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

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

Advertisements will be accepted up to the 10th of the month before Newsletter publication.

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



Upcoming Events

de: Tom Trethewey, KC9ONY

4/13/2024 – Stoughton, WI – Madison Area Repeater Association Hamfest
<https://w9hsy.org/hamfest-2024/>

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

6/01/2024 – Green Bay, WI – Green Bay Mike & Key Club Hamfest
<https://www.k9eam.org/>

6/15/2024 – Neenah, WI – Fox Cities Amateur Radio Club Hamfest
<https://www.fcarc.club/>

8/24/2024 – Baraboo, WI – Circus City Amateur Radio Club Swapfest
<http://yellowthunder.org/>

9/07/2024 – Cedarburg, WI – ORC Annual Regional Fall Swapfest
<https://www.ozaukeeradioclub.org/>

9/20/2024 – Milwaukee – HRO Superfest, ARRL Wisconsin State Convention
September 20th and 21st
<https://www.hamradio.com/>



Ozaukee Radio Club Minutes of Membership Meeting, 3/13/2024

de: Ken Boston W9GA, Secretary

The monthly ORC meeting occurred at the senior center as we have returned to live in-person meetings, along with a streaming version held via Zoom. ORC President Bill K9GN began the meeting at 7:29 PM, and due to a time constraint, we went to our guest speaker right away.

Program:

After a couple earlier attempts to stage a presentation by Dave, W7UUU via Zoom; we were treated to a complete presentation during our March meeting, as the Internet finally cooperated. His program covered a destructive ham shack fire that happened in Oct 2022, which was caused by a faulty power strip. He also described the complete rebuild of the Shack in a 3 car garage; sharing tools he used to design and outfit the new shack. Added were sources for many unique and useful items for the new shack. He also gave a lot of background on MOVs, and the proper use and type of power strips for your system.

After the program, and a short break, a go-around was conducted. Zoom attendees were also in attendance and were also introduced. Announcements; Mike Harrington has a new call, N9FPG; Gabe W19GC is travelling the US; Fred W9KEY announced that 9 ORC members participated in the WI QSO party, with a total score of 293K points

50/50 Raffle: This was won by W9IPR; winning an award of \$17.00

Scholarship Auction: W9XT auctioned off a ham-call CD

Committee reports:

1ST VP: Jeananne N9VSV: Still no sign of the FD pins posted at the ARRL website; she has an updated inventory from Gregg W9DHI; she is looking for a program committee chairperson.

RPT VP: TECH: Tom KC9ONY: reports that the Belgium site is active; the Port Washington site does still need some work, Germantown site has some voter problems: working on APRS at the main site. Tom states that ORC will have DX Engineering and Bioenno sending prize items to ORC for use as Swapfest prize items. He also asked for a volunteer to be net control for the Tuesday night net.

Treasurer: Gary N9UUR: Our club remains solvent, with over \$40K spread over several accounts and CDs. Membership stands at 98 hams, plus family members. Motion to accept report made by WB9RQR, 2nd by WB9AZH, and carried.

Secretary: Ken W9GA: reported that the February 2024 minutes have been posted, a motion to accept was made by N9UUR; 2nd by K9QLP and carried.

STEM: Pat W9JI: Our summer presentation of a Ham Radio demo at the West Bend library has been moved to August 15, and the ARRL book packages and kits are in progress.

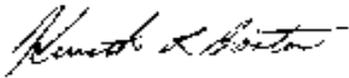
TECH: Gregg W9DHI has been repairing old repeater equipment, to save \$\$\$.

OLD business: Ken W9GA mentions that awards nominations are still open, and that the FD site at Pleasant Valley Nature park have been secured. Fred W9KEY brought up a potential issue with the system of notifications such as meeting times/places; this due to the fact that not all the club members are on groups.io; some discussion ensued, looking toward a solution.

NEW business: none

Adjournment: WB9RQR moved to adjourn, motion carried; time end was 9:25 PM. There were 21 in-person attendees, 17 zoom attendees.

Respectfully submitted;



Kenneth Boston W9GA, secretary:



**CELEBRATING
WORLD
AMATEUR
RADIO DAY**

APRIL 18

A celebration of how radio has been serving people for over 100 years.

Image via Britannica.com

This Month's Meeting: April 10, 2024 - 7:30 PM
Program: The Solution: A Fan Dipole for 160/80 Meters
Presented by: Vic Shier, WT9Q
de: Jeananne Bargholz, N9VSV



Vic Shier was first licensed in 1999 as KB9UKE. He joined the ORC that same year and has served as Vice President and then President. Ten years ago, he changed his call to WT9Q. He enjoys contesting and Field Day especially operating CW. His antenna farm includes a vertical, a beam, and several home brew dipoles.

Vic is currently the EC for Washington County ARES.

Upcoming Meeting Programs:

May: Paul Martis, W9PEM – Batteries for Ham Radio – Comparison and Applications
June: Gary Sutcliffe, W9XT and Pat Volkmann, W9JI – Contesting
July: Gregg Lengling, W9DHI – Repeater Receiver Voting Process/Operation
August: Bill Shadid, W9MXQ – The End of the Line – the Drake TR5 Transceiver
September: To Be Determined
October: Project Night **
November: Stan Kaplan, WB9RQR – Building a Crystal Radio
December: Gary Sutcliffe, W9XT – Digital Modes

****Project Night**

Sign up for Project Night! This is a round-robin of 5 minute “Show and Tells” of some of our members’ latest amateur radio-related projects! This is a way to showcase your antenna work, home brews, problem solving and even kit-building or modifications. It can be a work in progress or complete. The real trick is to summarize your project in a 5-minute (or so) presentation with a few photographs. This is open to all members regardless of how you attend meetings (in person or via Zoom). If this generates only a handful

of responses, the time allotted for each project will, of course, be a bit longer. Contact Jeananne, N9VSV 1stvp@ozaukeeradioclub.org if you would like to be on the list!

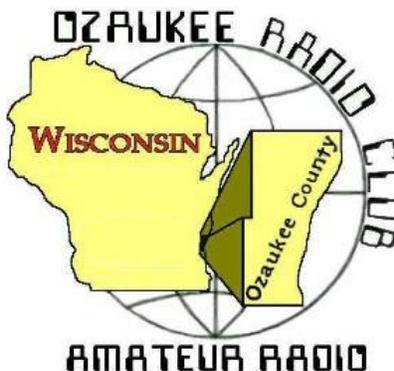
The monthly program is the highlight of the Ozaukee Radio Club meeting. We are fortunate to have many talented people in our club, many of whom have shared their knowledge through a presentation. Programs can be on any ham radio-related topic. Please consider sharing some of your experiences with the rest of us. If you have an idea and would like some help putting a program together, contact me at 1stvp@ozaukeeradioclub.org.

We are also currently in need of a member to chair the Programming Committee. If you have any programming experience or think you would enjoy coordinating our monthly meeting programs, please let me or any of the board members know.

ORC Meeting Agenda

10 April 2024

- | | |
|---|--|
| 1. 7:15 – 7:30 PM
Check-In and Introductions | 6. 1 st VP Report:
Jeananne Bargholz (N9VSV) |
| 2. 7:30 PM Call to Order:
President Bill Greaves (K9GN) | 7. Repeater VP Report:
Tom Trethewey (KC9ONY) |
| 3. Announcements, Bragging Rights, Show & Tell, Upcoming Events, etc. | 8. Secretary's Report:
Ken Boston (W9GA) |
| 4. Vic Shier, WT9Q
The Solution, A Fan Dipole for 160/80 Meters | 9. Treasurer's Report:
Gary Bargholz (N9UUR) |
| 5. President's Update:
Bill Greaves (K9GN) | 10. Committee Reports |
| | 11. OLD BUSINESS |
| | 12. NEW BUSINESS |
| | 13. Adjournment |



The Back Page

**This Month's ORC Meeting
Hybrid In-Person/Zoom Meeting
10 April 2024**

**Program:
Vic Shier, WT9Q
The Solution – A Fan Dipole for 160/80 Meters**

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

**NEXT MONTH
Hybrid In-Person/Zoom Meeting
8 May 2024**

**Program:
Paul Martis, W9PEM
Batteries for Ham Radio
Comparison and Applications**

The Ozaukee Radio Club presents its 44th Annual Spring Indoor
Amateur Radio, Electronics & Computer



SWAPFEST



featuring **TOWER ELECTRONICS!**

Saturday, April 27, 2024 – 8 AM to 12 PM (setup begins at 6 AM)

Ascension Columbia St. Mary's Center (Milwaukee Curling Club)
W67N890 Washington Ave., Cedarburg, WI 53012

Talk-in: 146.97 MHz – PL 127.3 Hz

Door Prizes! Free WIFI

Food sold by Cub Scout Pack 516/586

Admission: \$7.00 at the gate

Children 12 and under FREE, with a paid adult admission

6 ft. Tables: \$12.00 in advance, \$15.00 at the door, if available

Use the Order Form below, email, or call Tom Trethewey, KC9ONY at 262-421-6351

Email: swapfest@ozaukeeradioclub.org

More information: <http://www.ozaukeeradioclub.org/> or <http://www.facebook.com/orcwi>

For Advance Tickets and Tables, send check with a **SASE** (Business-Size #10 envelope) to:
Tom Trethewey, KC9ONY- W69N905 Evergreen Ct N, #202, Cedarburg, WI 53012-1170

Name: _____

Call sign: _____

Address: _____

Phone number: _____

Email: _____

No. of Tickets: _____ X \$7 = _____

(Advance tickets are double stub)

No. of Tables: _____ X \$12 = _____

Electricity: Yes (Add \$5) _____ No _____

Total Amount: _____

(Please make checks payable to ORC)