Ozark QRP Banner

The Official Newsletter of the Four State QRP Group

WQ5RP

May 2023 Edition

In This Edition: Modifying the Elecraft AX2, Non-slip CW Paddle Pads, EFRW Antenna, Battery Corrosion, OzarkCon 2023, 1/8 Wave Antenna for 20 Meters, Diary of a Mo QSO Party Nut, Portable Paddle Mounting Options

OzarkCon 2023 – 20 Years

Wow, hard to believe 20 years has passed. If you missed this year, you missed a great weekend. If you were there you had a great time once again. The speakers were all excellent.

Friday started off with a trip to Table Rock State Park for those who wanted to learn and experience Parks on the Air. It was reported that all attendees made their 10 contacts for a successful activation. In the afternoon, the usual Ocon University. This year covering Designs for Crystal Filters.

Dinner is Served, at 6:00 we had the Banquet Dinner with entertainment by Mike McAdoo and Cathy Lowe-*local musicians*.

And later a large attendance at the BUILD-A-THON. This year the kit was the 4S Dummy Load.

Saturday began with usual Stone Castle breakfast. The registration desk was open and 4S Kits were selling out. KØN was on the air with the Dummy Load QSO Party. Bert made a lot of contacts with members and others on 40 meters. The QRP Flea Market vendor fair was active for those looking for parts and those special bargains.

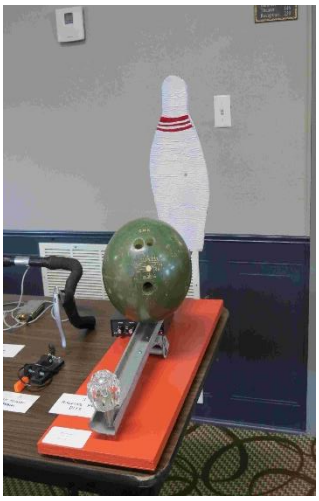
And then the presentations began with Kit Building Techniques by KØNEB. Joe always does a great job and every time he does his presentation, there is more to learn. Following Joe was Learning and reaching your CW goals with Morse Code Ninja by ADØWE. After a short break and some prize drawings, (yes there were a lot of prizes) ACØBQ and AG1P presented 20 years of OzarkCon. Ah, lunch is now served by Stone Castle. A box lunch provided by 4S and a nice break getting ready for afternoon activities. And of course, more prize drawings.

After a nice lunch, a video by K9EID on the progress of his Pine Board Project. Standby for more to come on this project as Bob is planning a small amplifier.

Then the latest news on the 4S new kits. Of course, the long awaited news on the T41. Which will be out as soon as the remainder of the parts arrive.
Other kits in the works are a NorCal 40B, 60M channelized SSB Transceiver, Cicada – 5W Crickets, Vacuum Tube Paraset, 10M Tech Special and the updated Test Set.
Thanks, NMØS.

NØAX provided a presentation on EFHW antennas. Ward captured the technical side as well as making it understandable for the non-technical or newer Hams. After a break and more prizes, ACØBQ and AG1P had the Plaque Presentations.

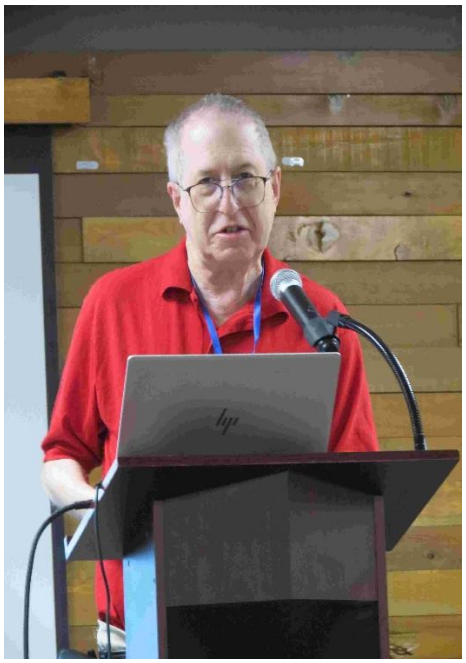
Almost forgot the Builders Contest. Best of show was a combination Semi-Automatic and Straight Key on the same base by NØSA.



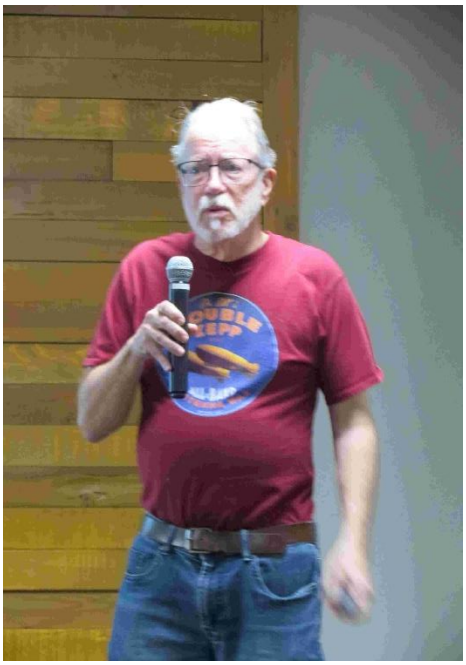
And the Wakey Key Contest that was won with a bowling ball key by W5EST.

One of the prizes donated by CWMORSE was a Hot Pink Paddle. And every Ham would want it in their shack. Well, sorry it was won by Joy, NQ5R.

Prizes



KØNEB



NØAX

ADØWE

Dinner Gathering

Lunch is Served

And for the grand finale, the final and major prizes were selected by WG5F and W5KKM. Thanks to Ed and Karen for putting together all the prizes and thanks to all the vendors and those who made this happen by donating the prizes.

Hope to see everyone in 2024.

Adventures in Modifying the **Elecraft AX2** 20-Meter Mini Vertical Whip Antenna for the 10-Meter Band

By David Corbin, WØDCX

I recently thought how cool it would be to have a portable 10-meter antenna for field ops. One feature of the Elecraft AX2 miniature 20-meter whip antenna is that it can be modified to work on other bands. The toroidal inductor, standard with 22 wire turns, is accessed through a removable cover. Wire turns can be removed to provide coverage on the 17m, 12m, 15m, 10m or 6m bands. Following Elecraft's instructions, I pried the cover off my AX2 and unsoldered the toroid lead from the solder lug on the whip side of the toroid. I removed 11 turns of wire, leaving 11 turns in place. I then cut the wire and resoldered it back onto the solder lug.

I mounted the modified antenna on a tripod using the Elecraft AXT1 tripod adaptor and ran a 50-foot length of RG8X coax to my Rig Expert antenna analyzer. I analyzed the SWR with multiple permutations of whip length and counterpoise length. My starting point was a fully extended 54.5-inch whip and an 8.5-foot (~ $\frac{1}{4}$-wave) counterpoise, which gave me an SWR of **4.8:1**. I then tested many combinations of the two variables by retracting whip sections and cutting the counterpoise wire until I finally came upon a set of conditions that yielded an SWR as low as **1.2:1**. This sweet spot was achieved by retracting the top 2 sections of the whip for a length of 44 inches and by using a 6-foot long counterpoise.

Satisfied that I had established good conditions for power transfer to the antenna, I decided to see what would happen if, instead of using a single 6-foot counterpoise, I used four 6-foot counterpoises. The use of multiple counterpoises had become my usual practice when using my AX1 antenna on 20-meters. I had adopted this practice purely on faith having never actually measured the SWR. After all, more must be better, and my KX2 had no problem giving me a good final impedance match. To my surprise, the SWR went from **1.2:1** with one counterpoise to **4.3:1** with four counterpoises. Huh?

I would address the single versus multiple counterpoise question again a bit later, but first I wanted to know if my little 10-meter modified AX2 antenna would get me on the air. I attached it to my new FTDX10 radio, with its 3:1 antenna tuner, and promptly made QSOs to Serbia and England using only 5 watts. I also took the antenna to the SLQS Winter Field Day get-together at Babler State Park where it and my KX2 radio made about a dozen QSOs on the 10-meter band.

A week later I was back out at Babler for a POTA activation. Ten meters was quiet, but I squeezed out a single QSO to Nova Scotia using the modified AX2 antenna and the KX2. I then switched over to 20 meters using my unmodified AX1 antenna with the whip fully extended and with the usual four 13-foot counterpoises. I easily made 26 QSOs on 20 meters, but before I

packed up the gear, I decided to return to the single versus multiple counterpoise question. Was my previous counterpoise observation unique to 10 meters? Was it an anomaly of the toroid modification? With the four counterpoises still in place I measured the SWR at 14.064 MHz; it was **3.5:1**. I then switched over to a single 13-foot counterpoise and measured again; the SWR was now down to **1.5:1**. Thus, the same phenomenon was observed on 20 meters with the native AX1 antenna as on 10 meters with the modified AX2 antenna. Lower SWRs were consistently achieved using a single counterpoise.

This might be useful knowledge when using a small QRP radio that lacks an antenna tuner (I'm thinking the QCX mini) with these antennas. One question that remains unanswered is whether multiple counterpoises, despite causing higher SWRs, might yield more productive propagation patterns. To test this hypothesis, I would like to do a WSPR analysis using these antennas in order to observe real-world propagation results.

Battery corrosion in your old electronics?

Here is how to clean it!

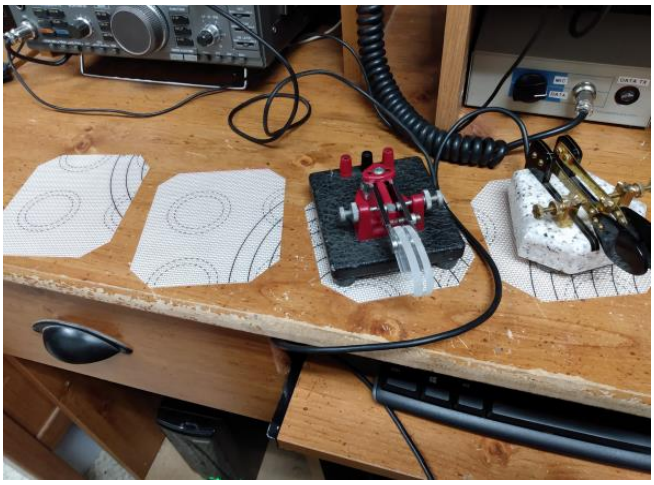
That crust is caused by battery corrosion. When left in a device for a long time, batteries will continue to slowly discharge, and a build-up of gas will leak out in the form of battery acid.

- Remove the batteries.
- With a cotton swab gently wipe away any corrosion debris in the device, taking care not to get any on your skin or in your eyes.
- Then, dip a cotton swab in a little bit of white vinegar or lemon juice and clean the device's components with the wet swab. You may hear a slight sizzling noise, which is a sign it is working.
- Now take a dry cotton swab to remove any moisture.
- Leave the battery compartment of the device open to completely dry before putting in new batteries.
- To help prevent future corrosion or if the contact/spring has been damaged, wipe a thin coat of Petroleum Jelly on the contact before inserting the new batteries.
- In place of a cotton swab, you may substitute a pipe cleaner.

Non-slip CW Paddle Pads de Tom N2UHC

I am an avid CW operator, and I've long used paddles and a keyer rather than a straight key. However, one problem I have long dealt with is having my paddles slide back & forth on my desk while operating. It happens even with somewhat heavy bases on the paddles and using a light touch. If the top of your desk is smooth, your paddles are likely to slip.

I have heard of many different ways to prevent paddle slip, but the absolute best way I've found is by using a silicone baking mat. For those not in the know, silicone baking mats are often used when baking cookies since they create a more even baking surface and give a non-stick surface on which to bake. The good thing is that most silicone baking mats have a sticky feel to them and a non-skid surface.



I bought this baking mat at Walmart for around $5, and the size (11 1/2" x 16 1/2") was large enough to allow me to cut it into numerous mats about 4 1/2" square. This gives me several mats, some to use at home and some to put in my various cases for using while portable. The baking mat contains some sort of woven material covered with silicone, and can be cut with a pair of scissors. However, I cut mine using a desktop rotary cutter so I could make sure I cut them with right angles, plus the rotary cutter sliced through the material quite easily.

The mats work extremely well at preventing paddle slip, even with the lightest paddles. The silicone material seems to work far better than the non-skid material for use in drawer bottoms, and works better than anything else I have ever tried. Not having my paddles slip back & forth has also helped me keep my CW errors down, since paddle slip seemed to be the main cause for my making mistakes.

The silicone material will attract dust and dirt, so will need cleaned occasionally. This can be done with a little soap & water, and they are back to being as sticky as new.

End Fed Random Wire EFRW Antenna, One User's Experience

During a recent Four State QRP Group DMR Net, Bert's question for the net was, *has anyone have experience with EFRW antennas with a 9:1 balun?* Well, it just so happened that day I was out doing a POTA Activation. The bands were active with POTA stations and I spent more time chasing rather than calling. I used my go to EFRW Vertical antenna. The antenna is 28 feet of #18 awg THHN stranded wire on a 31 foot Jackite fiberglass pole. These are great poles for portable antennas. The antenna is fed with 25 feet of RG-58 or RG-8X. In the past I have used a short counterpoise and have operated with no counterpoise. I cannot see much difference other than when tuning up. Several years ago NØSA tested this with a 40 meter EFHW antenna at a local park using the Reverse Beacon Network, RBN. The was little or no difference noted. However, it is recommended to use a counterpoise on end fed antennas to keep the feedline from radiating. For portable use it may not matter. For a permanent setup it may be a good idea to have the counterpoise. So, this is something that you may want to experiment with on your own. I use a homebrew 9:1 balun designed by the Honolulu Emergency Amateur Radio Club (EARC) Endfed6_40.pdf (earchi.org). *The recommended antenna length is 24 to 30 feet.* They not only have instructions on building them, they also offer them for sale. Or try out one of the 4State Group Baluns and build it as a 9:1. http://www.4sqrp.com/EFHW.php

The 28 foot vertical is a shortened version of the highly regarded Force 12, 43 foot vertical. Force 12 is no longer in business but others still sell this antenna. DX Engineering DXE-MBVE-5A-4UPR DX Engineering MBVE-5A Series SAF-T-TILT™ HF Multi-Band Vertical Antennas | DX Engineering

Keep in mind, EFRW antennas cannot be resonant on any band. There are tables for suggested lengths and can be found at Wire Lengths for 4 and 9-1 ununs.pdf (balundesigns.com), Random Wire Antenna Lengths (udel.edu)

Installation:

Ease of installation and time as well as performance makes this antenna in my opinion a perfect field/portable setup. I have two methods of installing the antenna. First is just a 4 foot or so piece of rebar pounded into the ground about two feet depending on the type of soil. I made a PVC sleeve that slides over the rebar and then the Jackite pole. The PVC sleeve helps to protect the fiberglass pole from rubbing against the metal rebar. This is not a setup for SOTA or back packing unless you like to carry the extra weight.

If I am in an area where I cannot drive the rebar into the ground, such as a parking lot, I use a drive on base constructed of piece of plywood. I have a pipe flange bolted to the plywood then I have a short ¾ inch black iron pipe that screws into the flange with a pipe cap on top to prevent damage to the pole. I then slide the Jackite pole over the pipe. With either method, I can be on the air in less than 5 minutes. I have used both setups for a few years now. For my style of POTA operations, this works great.

Note: Both methods work very well on a calm day. If it is windy, then you may want to add some guy ropes to help keep the pole steady.

Final Thoughts:

So how about performance? I usually operate with my KX3 on SSB. I generally receive good reports, 5x5 and above, but have received reports of 3x3, 4x3, 4x4, etc. Bottom line I make the contact. Even when I chase a park to park the contact is made on the first or second call. I have made contacts from coast to coast and a few DX stations. This antenna makes it easy to change bands and the ATU in the KX3 has no problem matching on 10 thru 40 meters. So I am pleased with the overall performance of this EFRW for my portable operations.

If you are not changing bands and have the ability, the End Fed Half Wave EFHW is a good performer. This would require a 49:1 transformer/balun and no radials are needed, but maybe a short counterpoise. What makes the EFHW Vertical so effective is that the high current point is half way up the antenna. Visit Steve Yates web page: AA5TB - The End Fed Half Wave Antenna

So there you have it. Try it for yourself, experiment, make changes but most of all have fun doing it.

72,
Keith, KCØPP

Diary of a MO QSO Party Nut

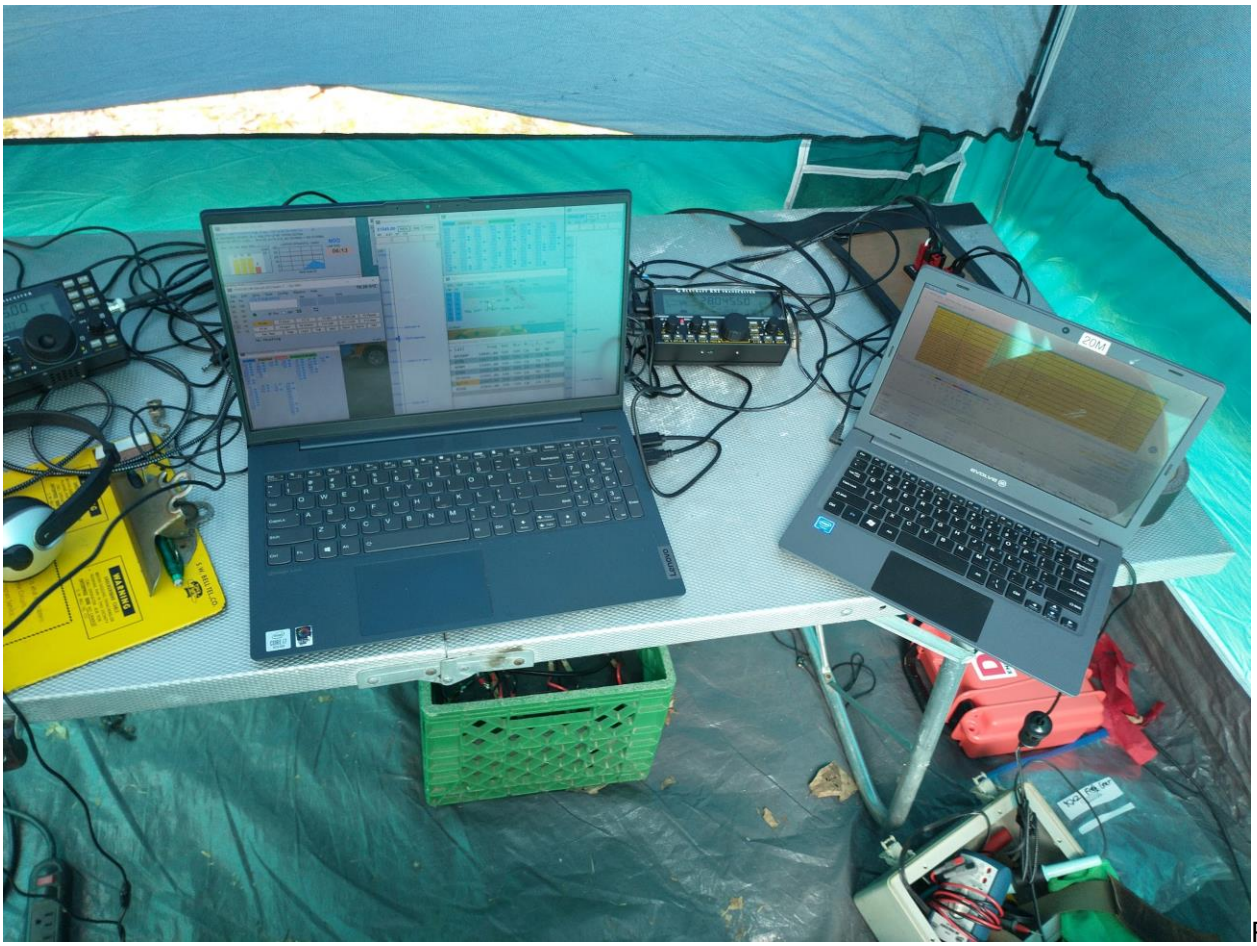
Q-Day Minus 1:

- Head up to the farm to check Extended Lazy H installation, to see if it fell out of the trees
- One Wouff Hang was dislodged, but was able to successfully reseat it

Q-day:

- Up at 0530 CDT. Rained last night, so put off loading bed of truck until this morning.
- Eat some grub, make one breakfast and two lunches for next two days. Put in cooler.
- Load bed of truck (takes roughly 20 minutes or so)
- Make coffee.
- Hit road at 0630 CDT (right on time, for once)
- Stop in Troy, MO for gas
- Arrive at Farm at 0745 CDT, right on schedule
- Find a spot for tent and truck where no dead trees/limbs are overhead
- Set up tent, done by 1308 Z (contest starts at 1400 Z)
- Load tent with table, chair, radios, laptop connecting cables, cooler, etc. Heavy on the etc.
- Decide to get inverted V set up and get on a little past the start time, rather than start with just one aerial
- Inverted V set up with 40' spiderbeam pole on lee side of woods.
- 40' spiderbeam pole comes down.
- 40' spiderbeam pole goes back up, guy lines repositioned.
- Back in tent at 1415 Z. Time to hook all those cables and wires up.
- 1425Z, everything hooked up, N1MM+ is keying the wrong radio (keying Radio 1 when it's focus is on Radio 2)
- Spend 25 minutes swearing in a mix of English, German and Gibberish
- Finally get it working, on the air at 1455Z. Ugh.
- Start on 15m, get my obligatory QSO with OM2LV, snag Fred N9BSO on 40m, then move to 20m where the action is. Move KR2Q to 10m (he needs this county on 10m), but no joy. Around 1530Z move to 40m. After that, just go where the QSOs are.
- Somewhere in here I hooked up my mic <gasp!> and picked up several in-state multipliers
- Grab lunch out of the cooler, and just keep operating. Wind is pretty strong, but here in the middle of the woods it isn't so bad. Spiderbeam pole remains standing! Find coffee you made at 0600 in cup holder. Drink warmish coffee.
- Around noon I work my first dupe. Sigh.

- Bounce around between 20m and 40m, with excursions to other bands all afternoon. Work Tony KØU on 80m around 2100Z.
- Take a break around 2230 to make and eat dinner. Forgot hot sauce.
- Start running on 80m off and on around 2300Z. Bounce between 40m and 80m all evening. WEØQ last in the log at 0358Z. Check log – same exact number of Qs as last year after day 1. Going to have to work hard tomorrow to beat my score.
- Realize I forgot my extra blankets. Going to be a cold night.
- Local dogs bark all night from dusk until 3 am. The coyotes, owls, critters being eaten I can handle, but the barking is insane.

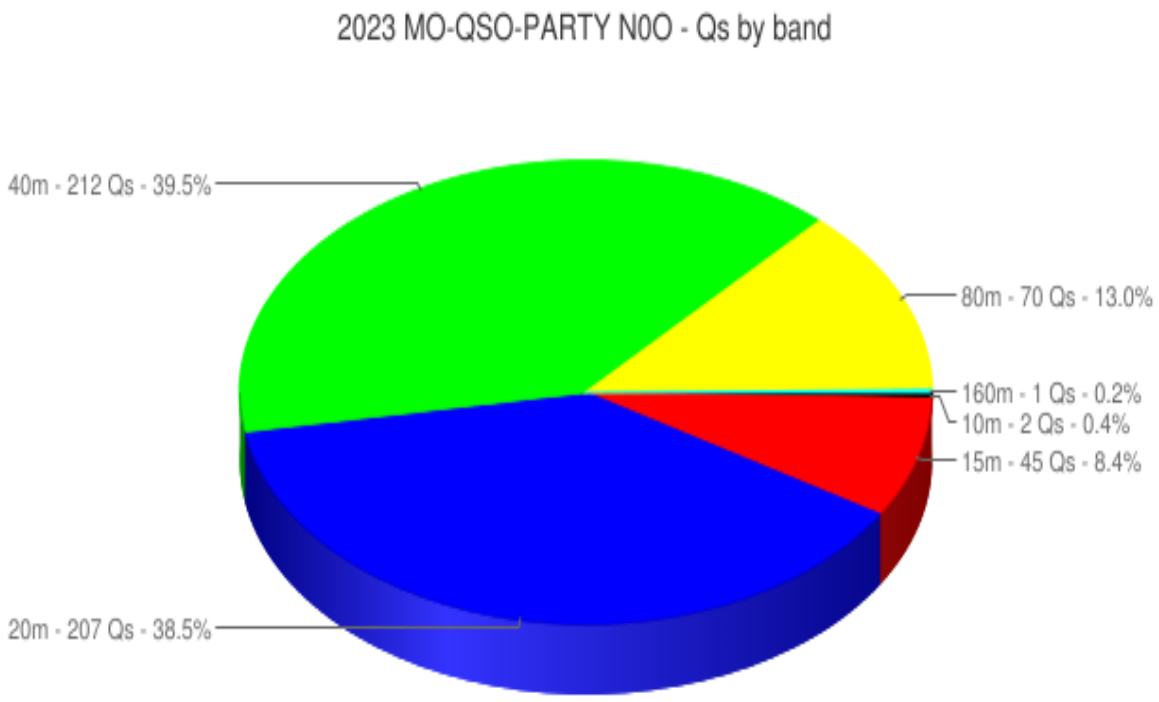
- Local dogs start back up at 5 am. Joy.
- 
Roll out at 05:30 CDT, start up truck, start charging laptop. Laptop says it will take 4 hours(!). Move laptop to inside truck to charge, as a cold battery charges really slowly, apparently.
- Got back on at 1415Z, due to N1MM+ keying the wrong rig again. This all worked at home, right?
- Started running Dueling CQs (radio 1 CQs, radio 2 listens, then they switch) on 40m and 20m. Rates were slower than molasses running uphill in July.

- It's so slow that I take it upon myself to require my field CW key, so that I can use it properly left-handed.
- Worked Scott WZØW in LCN! Finally worked the county I operate from, which is a first for me.
- Basically, the day was really slow – had a decent run on 15m around 1500Z, tried to work as many club members as I could, and gather mults on SSB.
- Second to last in log was NØH in RAY. Last in log was K4VBM at 1958Z
- Had a quick chat on the phone with the Loverly Jeanne about ETA, etc.
- Farmer shows up with spreader, set to run over my tent, truck, etc. Sort the situation and throw everything in the truck pell-mell so he can get his job done.
- Head for home at 1630 CDT.
- Damn near run into a deer right outside of Briscoe. Feh.

Overall, a pretty good time, although Sunday was super slow (as always). I need to tweak some settings in N1MM+ to get dueling CQs to run correctly (fixed). I think I worked every member of SLQS that got on the air – thanks for the QSOs! It's always a boost when you work someone you know on the air!

I managed OM2LV four times, 40-10m. I've managed him on 80m before, so maybe next year I'll work him on 5 bands! I also managed one 160m contact this year, which is a first. I heard KK9U in there (WØO), but couldn't complete the circuit.

My best rates were right at the start, and between 0100-0200Z. I need to leave the house earlier next year so that I'm on right at the start! The money bands were 20 and 40m as they usually are. Hopefully next year 10m will open up some more, and we'll get some more action out of it. There's still room for improvement on my end, obviously, so there's still incentive to do better next year!



Overall, it was a good contest. Hopefully the rules are adapted next year to encourage more mobile/rover operation. We really need those folks in order to put more counties on the map. Congrats to Sean KK9U/WØO, Tony KBØLLD/KØU & John AC9XX/NØU, Fred N9BSO and Derek WBØTUA/WØH for posting some stellar scores! Thanks to **all** SLQS members who participated and turned in a log – SLQS may very well win the club competition this year! Well done by all!

73, Jim KKØU/NØO

Crickets Outstanding in their Field!

John
KK4ITX

Order one today! http://www.4sqrp.com/cricket40.php

Were you aware, the Four State QRP website has webpage for you to spot your on the air activity? Check it out and give it a try. QRPSPOTS.com - Brought To You By The Four State QRP Group Perfect for when you are operating in the field or at home.

Special Event to Honor the Victims of 9-11 NewYork City
Shanksville Pa. and Washington D. C. Year three

Sept. 8, 2023 00:01 GMT till Sept. 12, 2023 23:59 GMT
Many members of the ACG will activate **K4A** for the third year.
This year it will be called " 9-11 Still in Our Hearts and Mind"
We will operate all modes; SSB, FT8, CW and RTTY. We will try to be on all bands 160 through 10 meters. A special QSL will be available and like last year to those who contact K4A on 3 bands using any combination of modes we will offer a full color glossy certificate it will be mailed in a full size Manila envelope all postage paid by the ACG even if you are DX. Put each QSO information on your QSL. We request a $2.00 donation to help cover cost.

Contact/QSL WA1FCN Robert Beaudoin 970 Mountainview Rd. Cordova Al. 35550

My 1/8 wave antenna for 20 Meters

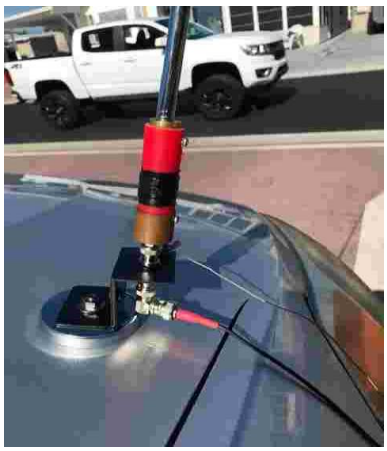
A few weeks ago, I went up to Brooksville, FL with Ron (N9EE) and his QRP group on a NAQCC Chapter outing that they were having at a park. I wanted to test an antenna that I had read about and built my version of it mounting it on a $4 camera Flea Market tripod. The antenna is only a 1/8 wave at 20m and works close to the ground. It worked quite well with WSPR @ 200mW yielding over 385 hits in about 2 hrs.

It worked so well that I thought that I might be able to use it in Maine at the beach and while I could use the tripod, I thought that perhaps a mag mount would be more compact easier to use in the crowed parking lots that I usually work from. So, I needed a magnet, bracket and some time.

Parts list

- Harbor Freight 3" magnet with the hook ground off
- 1-1/2 x 1/16 Alum Angle (my stock) (2) pcs cut 2-1/2'' long
- 1/4-20 x 1/2" bolt, washer and nut
- Female/Female BNC (My stock)
- RT angle BNC Male/Female
- (2) sets 6-32/1/2 screws, nuts
- 8-32 x 3/4 screw, nut and wing nut for counterpoise, if needed.

I assembled all of the parts, covered those that I didn't want painted with masking tape and made it a pretty black and tried out the new setup. After just 2 cycles of WSPR (1 hour) I had 806 spots reporting me with the furthest 2344 miles (VE6JY). See the attached pics for more detail.



Obviously, this is really a compromise antenna but when you find yourself in tight spaces or want a light load to carry up a summit you can deploy this guy and use your height or beach to make up for the shorter antenna.

Just amazing to me that 200mW on something of this size can get the job done!

72,

John
KK4ITX

Portable Paddles Mounting Options for the Shack—Found a Bargain!

Jeff Logullo, NØMII

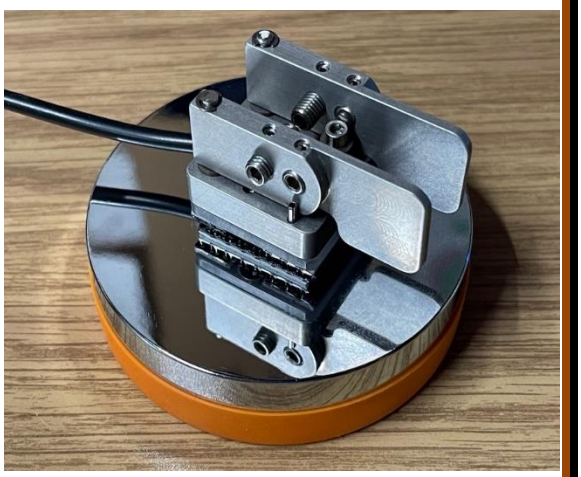
Portable keys are great for POTA/SOTA/outdoor activity. I've got a couple of Larry NØSA's micro paddles which I mount on a clipboard or portable desk surface using Scotch Dual-Lock "Velcro on steroids." Works great!

Back home in the shack I thought it would be useful at times to use one of these at my desk. But instead of mounting on a clipboard, I wanted to mount them on a heavy base like that of the club's single-lever paddle kit. Trying to source an appropriate chunk of steel always made me give up with a "maybe someday" thought.

Had that thought often enough that I broke down and bought a "Morse Code Key 1/2" Steel Base For Pocket Paddles With Magnets" by CW Morse LLC. Ordered via eBay for $25.95. The base measures 3" x 3" x ½", weighs 1.24 lbs., and was exactly what I wanted. A little steep for a hunk of steel, but it was painted and finished to blend in well on the desk.

If only I had waited a few months more! Recently I read a list post that caught my attention. I learned of the "OWDEN Professional Steel Bench Block" which is used by jewelers as a base when stamping stuff.

It's a round steel disk with mirror-finish chrome plating, 3" dia. x ¾" and weighs 1.1 lbs. Comes with an eye-catching (attractive perhaps) orange rubbery plastic base, which is quite non-skid on my desk. The price? Only $11.99 from Amazon! I just *had* to have one! The photos show the result of mounting my two NØSA treasures. I'm very happy with the Owden base. I know that several of us have ordered the magnetic-mounted portable keys and I think they'd look great on one of these bases. Either base would help you make use of a portable key while in the shack. The Owden is a functional and attractive bargain!



(Disclaimer: links above are just links – no monetary benefit to me if you follow them.)

Stray Cats

WA2BHS

Have you ever thought about what would happen to your collection of Ham radio equipment after you become a silent Key? Just like your bank accounts and real estate, you need to make advance provisions for your radio equipment and towers.

You don't want the burden your family with the cost of dismantling your station and deciding what to do with it. This can add stress to an already stressful time in their lives. So what do we need to do to prevent the shock of dealing with the shelves of equipment that you have accumulated in the basement.

1. Make a list of all the equipment that you are currently using, and back up equipment, including power supplies and accessories. The newer equipment has higher value and easier to sell. Keep all the operators' manuals together for these items.

2. Make an inventory of the older equipment recording the make and model of any receivers, transmitters, transceivers, and accessories such as straight keys, bugs, or limited edition keys.

3. Make a list of any special bequests to fellow hams or your local radio club.

4. Leave instructions on how you want your radio estate handled. There are quite a few options here. Make the decision based on which would be easier for your surviving spouse to use. Let them know that your fellow hams are always willing to lend a helping hand.

5. If you have a large ham radio collection and want it all sold at once do some research on companies that will buy the equipment lock stock and barrel. There are some good ones out there that offer fair value to the estate. Be careful as there are some that will take advantage of you. Make sure that you leave a list of them and there contact information for the estate. I will be glad to share information on two of these companies that have been used by my friends with good results and one that I have first hand experience with.

6. Contact me if you have any questions at wa2bhs38401@gmail.com.

Just remember a little planning now, can prevent problems in the future.

de Everett, WA2BHS

Four State QRP Comfortable Nets

Meet each Wednesday night beginning at 20:00 Central Time. Add anything to the exchange that you wish, temp, rig, ant, etc.
Checking into all sessions is encouraged. We call it the "Clean Sweep".

8:00 pm Central time - 40 Meter Net on 7.122 +/- QRM ACØBQ/NCS

8:30 PM Central time - 80 Meter Net on 3.564 +- QRM ACØBQ/NCS

9:00 pm Central time - DMR Net on Talk Group 31654 NØYJ/NCS

NO dIGITAL Net currently.

All are welcome!

DMR Voice Net

Wednesday evening DMR Voice Net will be at (Thursday) 0300 UTC (9:00PM Central Time Wednesday/) Four States QRP has a Brandmeister DMR Talk Group (TG31654). Join us to discuss QRP, ask questions, or just ragchew. The Wednesday net is a directed net but any other time you may use the Talk Group to chat with other QRPers. Net Control operator is Bert NØYJ.

For information and help, check out the DMR subgoup on 4sqrp.groups.io

https://4sqrp.groups.io/g/DigitalFM

Second Sunday Sprint

Occurs on the second Sunday of each month, 7 to 9 PM Central
Any mode, any band (except WARC & 60 mtrs) -

- Suggested frequencies: standard calling freq. plus 7122 and 3564 (CW), and 3985, 7285, and 14285 (SSB).
  as well as the usual QRP watering holes.

QSO's with the same station on different bands are allowed. CW and SSB portions of a band count as two bands.

- Calling CQ is suggested to be "CQ 4S"
- Exchange is "RST, SPC, member number (power if non-member)"
- 5 Watts max CW, 10 Watts PEP max SSB.

The station with the most contacts each month will be emailed a certificate. Furthermore, the top three stations with the most SSS contacts during the year will also receive certificates via email.
Scores are submitted via the grpcontest.com/4sqrp website (compliments of W8DIZ).
For full details, please download the complete rules (PDF) here.
For questions, please contact John (AAØVE): SecondSundaySprint@4sqrp.com

---

Thursday Morning

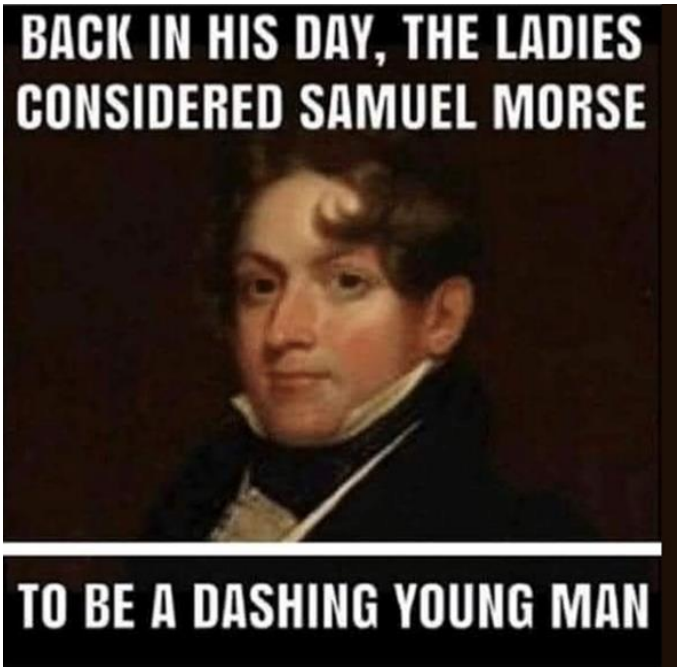
The Four State morning net has been convened for members who like to start the day on the air.

We meet each Thursday morning at 8:00 AM Central on 7122 kc.
7122 has become the Four State 40M hangout frequency, and often members can be found there on any morning.

Editor's Note:

Articles are needed to make every Banner issue successful. If you have something of interest, please send it to the editor at the email address below. You do not need to send a finished article. You can send some comments, notes, etc. and I can put it all together for you. Pictures are always of interest. Some of the items of interest would be outings and /or operating events by yourself or a group, construction whether equipment, antennas, accessories, QRP Field Day, SOTA, etc. Anything QRP is welcome.
de KCØPP

editorqrpbanner@gmail.com



"**dashing?**" Guess they forgot about his dits.