Ozark QRP Banner

The Official Newsletter of the Four State QRP Group

WQ5RP

November 2026 Edition

In This Edition: Antenna Mast Care and Feeding, Ham TV, New Book on Morse Code, Tilt Stand for the K1, Trip to Japan and the Tokyo Ham Fair, 2 Band Ladder Line Antenna, My Magnetic Loop Antenna, Cave Radio System, Navy Brings Back Morse Code, Radials on the Ground, Icom IC-7110, Join the Brass Knuckle Group and more…

Used radio market prices drop! Here is a video provided by WØDF that sheds light on what has happened over several years to effect the market.
https://www.youtube.com/watch?v=cbJuwljyj2w

What is Spothole?

Spothole is an aggregator of amateur radio spots from DX clusters and outdoor activity programmes. It's free for anyone to use and includes an API that developers can build other applications on. For more information, check out the **"About" page**. If that sounds like nonsense to you, you can visit **the FAQ section** to learn more. https://spothole.app/

The first live channel for your Ham Radio. HAM TV is completely free, and you can now find it on **Roku, Amazon Fire TV, and Google TV**. If you have a Google TV device, you can now enjoy HAM TV right on your television, alongside the existing Roku and Amazon Fire TV versions. https://hamtv.app/ *See more information later in this issue.*
73, **Andrei — KO4ZHL**

Many of us who have been around for some time, remember the Ten Tec Argonaut radios. Here is a story of the beginning and all the way to the end. Although they still have a booth and advertise at Hamvention. https://www.youtube.com/watch?v=LlIoq6jphuM

The low-power radio reference, built by homebrewers.
https://qrpedia.com/?utm_source=amateur-radio-weekly&utm_medium=email&utm_campaign=newsletter

Antenna Mast Care and Feeding

(or: How I Learned to Stop Worrying and Love the Bomb[1])

Jeff Logullo, NØMII

Outdoor radio fans fall into two camps: rope chuckers and pole pushers. I've got a few "good stories" about throwing lines into trees. Eventually I decided I am not an arborist and never will be. So I've settled on "bringing my own tree" i.e. a collapsable pole.

And I have a few: a pair of "Sunny Day" SD-20 crappie poles (old timers will remember these fondly), a few cheap Chinese fishing poles, a Spiderbeam 12m mast, and a SOTABeams 10m Travel Mast.

The SOTABeams Travel Mast is my "daily driver" these days. Most of my POTA outings start with putting that mast into a drive-on mount under my right front tire. And so it was recently when I did a quick before-dinner run to Castlewood.

Setup was uneventful, aside from a very light misty rain that began to fall as I extended the mast sections. Today's sky wire was an EFHW (bright yellow wire with fluorescent pink twine to stretch it out – high visibility!). I slipped into the car and had an enjoyable activation.

And then it was time to pack up. Usually a five-minute job. But as I gave sections 3 and 4 a twist I was surprised to see they weren't budging. I wiped my hands on my shorts and tried again. Nothing. "Uh-oh. Well, I'll just leave those sections to deal with at home." If only! Turns out sections 4 and 5 were also being balky, as were 6 and 7. And I suppose others. But I started to realize that getting this pole home was gonna be a challenge. Fifteen feet of mast sticking out the window was a non-starter.

I'd never had this happen before. But I also had never put this mast up in the rain! My theory was that the rain had acted as a lubricant, letting me slide the sections together more tightly than usual. Well, it didn't matter why it was happening; I had to work the problem.

Then I remembered two things: first, DJØIP has a description of what to do when you have stuck segments that I remember reading. Second, I had a piece of somewhat stiff closed-cell foam inside the bottom of the mast. So I gripped the stuck segment a few inches above the stuck joint, took a deep breath, and SLAMMED the segment down into the foam. Success! It broke free. I carefully repeated the process with each stuck joint, and soon I was headed home for dinner.



I was glad for that piece of foam, and I recommend adding one to each of

[1] That's for Jim KK0U



your fiberglass masts. Not only will they cushion things if you ever have a "stuck" problem, but they also reduce the rattling while driving or hiking.

Wish I could tell you exactly what type of foam this is; it's white, it has closed cells (i.e. won't absorb water). It's not like a sponge. Whenever I've gotten a piece of electronics gear with this stuff in the box, I stash it in that corner of the shack with all the rest of the treasures.

To make the filler I traced around the base of my pole with a Sharpie, then cut it to fit with scissors. I've actually made a second layer to add extra cushion and take up all the space; if I ever get "stuck" again I'll pull out one of the layers before doing the "slam" trick. Too much bounce would make it harder to unstick things, I'm thinking.

When I got home I dried off, ate dinner, and then thought about the mast. I realized the whole thing was wet inside and it wouldn't dry packed up. So I grabbed an empty tall kitchen trash can, put the mast into it upside down (after removing the top cap), and then it was a simple matter to slide the outermost section up and drop it back in the can. Seventeen segments later I had the whole thing disassembled in a can that would (probably) not tip over. Two days rest and it was dry and ready to be re-packed.

Which reminded me of my trip to the beach (the successful one, not the Lambert Bomb Scare of 2025). That time the Travel Mast came home with sand inside. It's not good to ignore sand as it's abrasive and would scratch the paint on the mast (ick) or cause stuck segments (grr!). In that case after a day or two of drying, I rigged up a piece of cord with a loop at the end. And I cut a few different sized squares of scrap cotton cloth to use as a "swab" to pull through the inside of each segment to remove the sand. It was awkward and took a little time but the results paid off.

A few more tips: I've marked each segment at the top with a consecutive number, using a Sharpie. This becomes a handy reference if you want to repeat a setup – you can jot down in your notes "suspended a doublet at 20' at the top of segment 11" for example.

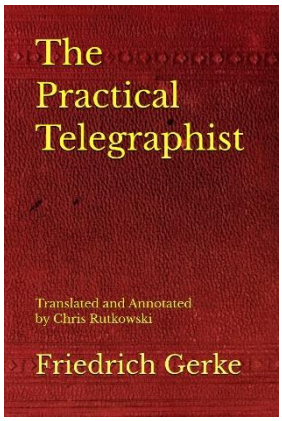
I've also used clear packing tape (one layer) to attach a short piece of braided cord at the tip-top of the smallest segment. This facilitates fishing that one out to get things going, without having to turn the whole business upside down after you've already got the mast situated in a stand or etc.



I have 3D-printed eyelets that fit the mast junction at various heights, and they're attached to the center support of many of my antennas. But guess what? A small zip-tie works great for this application. If you snug it down so it *just* slides down to where you need it, it'll keep a loop of twine where you need it. And if you're careful not to pull it any tighter, it'll stay at the size it needs to be. Toss a few spare zip ties in your backpack or glove box and you'll always be covered.

I hope some of these tips are useful for you!

"New" book by the guy who invented "Morse" code 175 years ago



Friedrich Clemens Gerke's 1851 book, "The Practical Telegraphist," is now available in paperback on
Amazon. https://www.amazon.com/dp/B0HC3LR82G

Gerke, a German, invented what most call "Morse" code in 1848. His code was the basis of "International" Morse - which was used everywhere except on America's telegraph lines. It's what we still use on the ham bands today.

Gerke wrote a book about it, in 1851,"The Practical Telegraphist." However, it was all but unknown in the English-speaking world. Then last summer, Dr. Stephen Phillips of Morse Code World (https://morsecode.world) gave me a link to the German version he found on Google Books EU. Its very existence made it historically important, but I soon realized it was far more.

Along with how to build and troubleshoot a Morse Telegraph system (like a Radio Amateur's Handbook, circa 1851) Gerke explains why he made his own alphabet - our Morse code - then sets out the theory and practice of the straight key used to "write" it at the 20+ WPM (expected even then). We learn how and why "uniform motion" in musical half- and quarter-note timing generates a perfectly proportioned 3:1 code, which set the model for today's ITU standard.

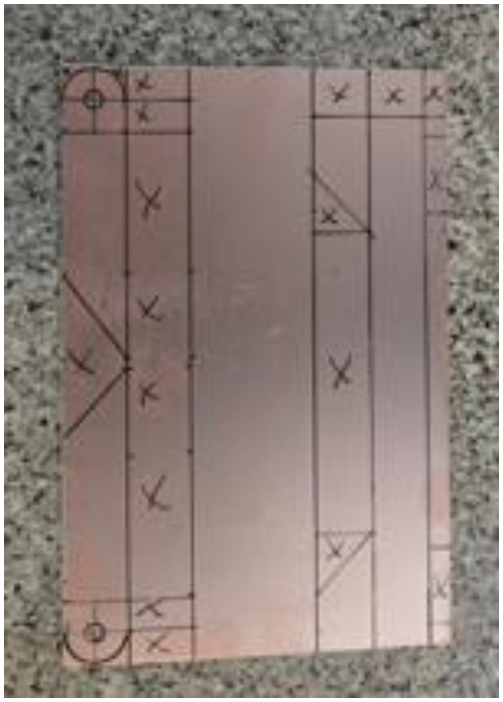
*The rhythms came before the standards.
*This is: "How to make perfect code," - from the guy who invented the code :-)
*There is nothing else like this in the historic record.

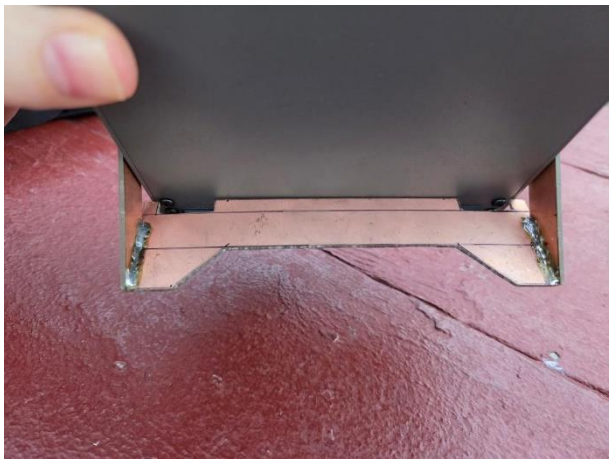
Oh, and Gerke's explanations about code rhythm apply to ALL key types. Bugs. Sideswipers. Even paddles. So It's relevant to us all.

Tilt Stand for the Elecraft K1

Wes - KEØFWZ

Wes needed a tilt stand for his recently acquired Elecraft K1. Wes fabricated his tilt stand from printed circuit board material.









Nicely done!

November 7; Mag Loop Day ~~Cancelled~~, or so I thought[1].

A text from NØMII asked if I wanted to join him and KB5YZY and KTØAA for breakfast at Ginghams in St. Charles. Turns out they wanted to do a POTA activation possibly on the Katy Trail. So during breakfast I suggested going to the parking lot by the river near the boat house, where they keep the replica of the Keel boat Lewis & Clark used. So they followed me there. Low and behold a flagman wouldn't let us enter the lot as they were preparing for a parade. Wouldn't you know it, another obstacle. So I thought go to the north end of Riverside Dr. where there is parallel parking right along side of the Katy Trail. Great idea --- well maybe not. It was blocked off for the parade.
OK, let's try this again. Off of North Second Street is a park with picnic tables, perfect spot, parade free, next to the Katy Trail. When we get to Second Street to turn right, the road was closed for construction. Are you serious??? Now what? Oh and I forgot to mention Mark had his camper in tow.

Mark suggested the big parking lot at the St. Charles Arena. This might work, until we pulled in. There was an event scheduled and it was pay to park. So Mark took the lead and it was off to the Weldon Springs Conservation Area/Katy Trail/Lewis & Clark Trail. A 3-fer.

This was our 5th location. Mark and Jeff set up tables and their Mag Loop antennas. Mark and I worked 20 meters while Jeff worked 30 meters. Had 3 successful 3-fer activations.

So the moral of the story, maybe we should have stayed home… but we would have missed the fun and wouldn't have had this story to tell.







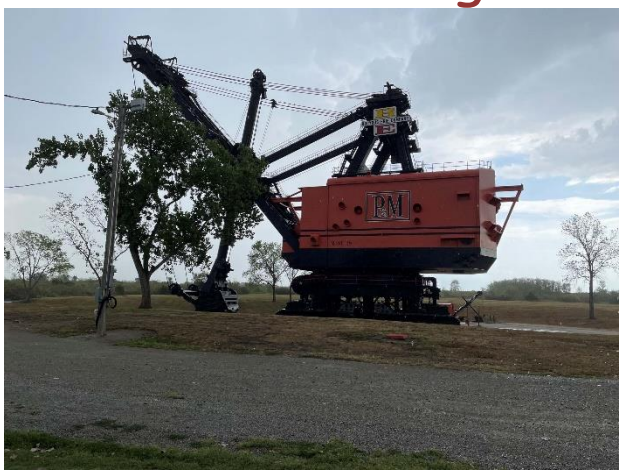
Check out the 20 meter Mag Loop on the ground. Signals were great and contacts came easy.

It is always amazing to me how well a Mag Loop antenna works. Small, portable, easy to set up, perfect for POTA/SOTA. I have used mine in the shack sitting next to my desk. And they are so easy to build. The only hard part is finding a good variable capacitor. But that is only important if you want to cover multiple bands.

So build one and check it out for yourself.

Note 1: Our original plans were cancelled due to the park being closed for deer hunting. The second-choice location had a large event so it would have been unusable. It was then decided to reschedule the event.

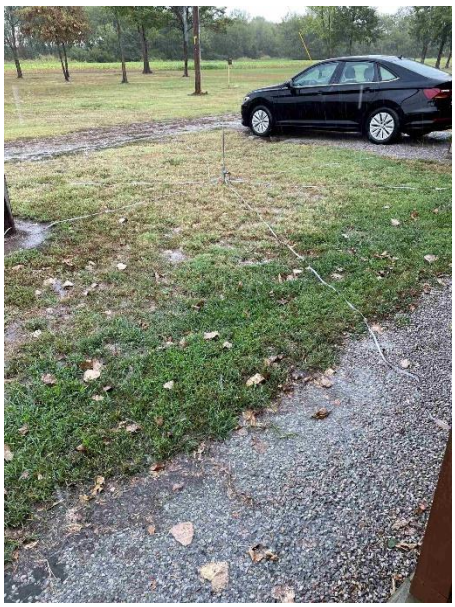
2026 Big Brutus Weekend









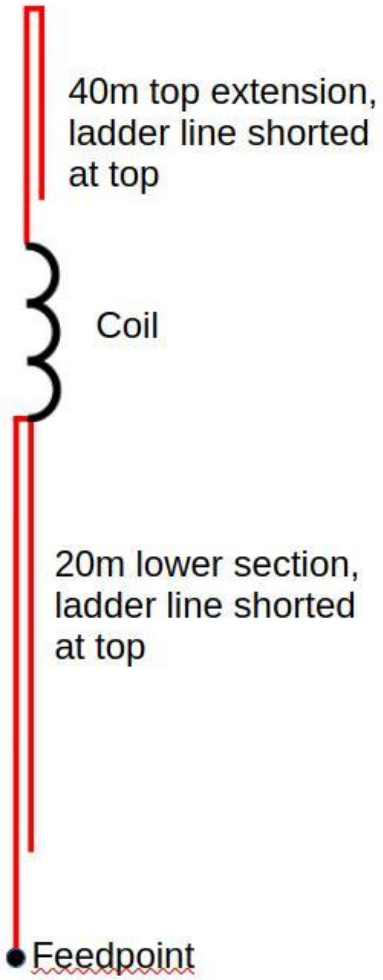




A short 2-band ladder line antenna for portable ops

Introducing the 2B2L antenna

Wouldn't it be nice to have a short, fairly efficient, rapidly deployable, low visual impact, vertical antenna that can be operated on both the 20 meter and 40 meter bands? The 2B2L (2 Band Linear Loaded) antenna comes very close to a perfect match for those specifications.



The 2B2L is the brainchild of Tim KQ4TQ who pitched the idea to me in an email recently. Seeing the potential in Tim's idea, I hastily built a prototype and erected it in my backyard for testing. The 2B2L is based on the "Simple Ladder Line Antenna for Portable Ops" discussed a couple of weeks ago here on Ham Radio Outside the Box. But here is the genius in the 2 band version: by adding a loading coil and a tail section – also made from ladder line – to the top of the original single band (20m) version, we can add the 40m band. The whole antenna towers up to the dizzying height of just 15 feet!

But, just a moment; before the grey-haired, white-coated men with a physics diploma hanging on the wall pick up their quill pens to denounce the 2B2L, a confession is in order. Yes, admittedly, the 2B2L is not perfect; field portable antennas rarely are perfect. Those of us who like to operate out in the Big Blue Sky Shack must necessarily accept some compromises. Those of us who like to operate QRP accept even more compromises. So where's the gotcha?

The loading coil for the 40m extension is the weak link. It serves two purposes: (1) it acts as an RF choke for the lower 20m band section; it's high impedance effectively terminates the lower section of the antenna so that the top section does not affect operation on 20 meters; (2) it acts as a loading coil for the 40 meter top section which is considerably shortened as a result. But is it actually all bad? Yes, it has some loss due to the i^2R effect, but consider this: the whole antenna is radiating on 40 meters and the coil is near the top where the current is lower. If I am thinking with half a brain here please correct me in the comments. I did once think I was wrong, but I was mistaken!

Can an antenna that is only 15 feet tall really be efficient on 20m and 40m? The secret to how it can claim enough efficiency to actually make contacts out in the field lies in its use of linear loaded elements. Two sections of ladder line, each shorted at the top, provide the linear loading which shortens the required length by about 30%. Linear loading is considered one of the most efficient ways of shortening an antenna.



2B2L coil and 40m extension

Also, the 2B2L is mounted quite close to the ground which inevitably diverts some RF to warming the earthworms. Mine is fed about 12 inches (~30 cm) above ground. It could also be raised higher and used with tuned, raised radials, but on 40 meters the radials would each be around 33 feet long. I chose to use short ground radials instead.

Where to buy a 2B2L?

Sorry folks, this is another real hobbyist's project – you gotta build it yourself. You're going to need some ladder line from whatever source you go to for ham radio supplies. Mine was a generous gift from my friend and CW buddy Mary VE3MVM. You will also need a coil. I had an air core coil lying in the drawer from a previous project. I built it using a a short section of PVC tubing about 2 inches (5 cm) in diameter. You will need an inductance meter, or a NanoVNA, to measure the inductance. As a purely rough guide, my coil has 35 turns of 20 awg stranded insulated wire. Here is the materials list:

- 11.5 feet (3.5 meters) of ladder line for the 20 meter radiating element
- 38 inches (0.97 meters) of ladder line for the 40 meter extension
- 35 microhenry coil

Setting up the 2B2L antenna

The 2B2L can be erected on a pole about 16 feet (or about 5 meters) tall. It is fed at the bottom via coax to a transceiver. The 2B2L requires radials. I tried a set of 8 radials, each 7 feet (2 meters) long. That worked but 4 radials, each 13 feet long provided a better return path on 40 meters.

2B2L lower section showing GTU, Common Mode Current Choke and radials



In keeping with recent practice here on Ham Radio Outside the Box, the radials are tuned with a GTU (Ground Tuning Unit). The GTU has to be separately adjusted for each of the two bands. This ensures that the antenna system is working as efficiently as possible – without a tuner! An antenna analyzer connected via a short coax showed an SWR well below 1.5 could be obtained on both bands.

Does it QSO?

No, it just sits there grinning at the sky, but I have QSO'd using the 2B2L. My best contact so far has been a 2000 kilometer QSO with a station in Colorado on 20 meters by QRP CW. 40 meters is most active in the early morning and in the evening when I am inactive, but I am going to have to make the effort to go 40 meter QSO hunting real soon. Stay tuned.

de VA3KOT

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Radio History:

November 19, 1954 – First transistor portable radio introduced, the Regency TR-1
November 24, 1890 – First recorded use of the term "Radio"
December 12, 1901 – Marconi receives first trans-Atlantic signal
December 30, 1918 – Armstrong applies for superheterodyne patent

My Magnetic Loop Antenna

Dave – WØDCX

Earlier this year I got the itch to build a magnetic loop antenna. I primed myself by perusing descriptions of some other mag loop designs including the SLQS mag loop. I wanted an antenna that would allow me to operate CW from 40 through 10 meters, and I adjusted my design with the aim of achieving this.

Key elements:

1) 3/8-inch ID (½-inch O.D.) soft Type-L copper coil pipe for the radiating loop. The 10-foot length yielded a 39-inch diameter loop.
2) 10mm wide by 0.6mm thick copper strip for the 8.5-inch diameter coupling loop. It was supported using a narrow cylinder cut from a larger cardboard building form tube that was then adjusted to the desired diameter. Self-fusing silicone tape was used at the top of the coupling loop to ensure that it did not contact and was insulated from the radiating loop.
3) 3-gang (3x365pF) variable capacitor. To achieve a sufficient capacitance range to cover the desired range of frequencies, I placed two gangs in parallel by soldering them together with short jumper wires. The resulting double-gang and the remaining single-gang were placed in series with the radiating loop.
4) 8:1 vernier dial.
5) The needed wires were comprised of 16 AWG silver-coated stranded wire and were kept as short as possible. Solder was 62/36/2 silver-bearing rosin core.
6) Wires connections to the copper loop surfaces were with copper ring terminals and tightly bolting with stainless steel machine screws, washers and nuts.

Testing:

I placed the antenna, now dubbed the mag-π, on a small work stand on my driveway and fed it with 25-feet of RG-8X with ferrite choke near the feed point. I used my Rig Expert analyzer and adjusted the capacitor for lowest SWR at a CW frequency on each band, noting the numerical reading on the vernier dial. Precise tuning was dicey, but possible.

40M – 1:1.5 SWR / 20
30M – 1:1.7 SWR / 45
20M – 1:1.4 SWR / 64
17M - 1:1.3 SWR / 77
15M – 1:1.3 SWR /84
10M – 1:2.3 SWR / 100

On the air:

I retuned the antenna at 14.060 MHz and using my KX2 sent out a CQ at 5 watts on a Sunday afternoon. I received an immediate response from K3UZ in Pennsylvania and had a nice QSO under poor band conditions. The antenna worked!



10 GHz - QRP!



KOØZ

When we think of operating QRP, it is always on HF.

Here are two members of the SLQS in the VHF Contest operating on 10 GHz at QRP power levels.

Herbert AF4JF and Ron KOØZ.





Just made a 340km (211+ miles) QSO on 10GHz CW from this direction. We are located in Hannibal, Mo. on the Lovers Leap Bluff, looking to the East and Northeast over the Mississippi River Valley in EM49hq.



HAM TV

is a live channel for your station, on your TV

It runs on any Roku or Amazon Fire TV and Google. You open the channel, type in your callsign, and your station goes on the air on the biggest screen in the shack: every contact as it happens, with both operators, their flags and the flight path between you; a live world map and a 3D globe of DX spots from the cluster; band conditions with solar flux, sunspots and K-index; and big local and UTC clocks you can read from across the room. Then you leave it running. No radio hookup, no computer to keep on, no cables. Glance up any time and see what your station has been up to.

Everything it shows comes from your QSL World log, so if your contacts are there, your channel is already full. If you keep your log on QRZ.com, it can read from there too.

HAM TV is included with Hamilton Pro: the same key that activates the Hamilton desktop apps signs you in to your channel. Google TV is next.

How to get it, and what's on the channel: https://autoft8.com/hamtvchannel/

Search "HAM TV" in the Roku Channel Store, or "HAM" in the Amazon Appstore on your Fire TV, add it, enter your callsign or scan the QR code, and you're on the air.

Thank you again for reading, and for keeping all of this alive.

73,
KO4ZHL

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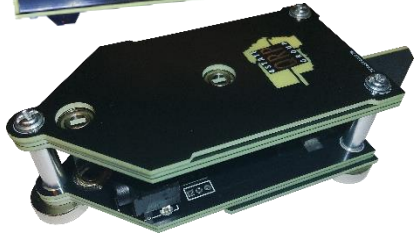
Get your order in for Christmas – 4STATE Kits



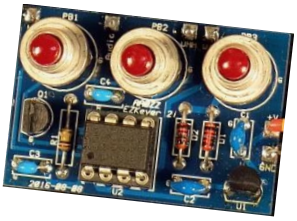












Join the Michigan QRP Club Weekly QRP Chat – Every Thursday at 4 PM ET

By Sid Caesar / 2026-06-15

Looking for a place to talk QRP, ask questions, share projects, and connect with fellow amateur radio operators?

The Michigan QRP Club invites QRP ARCI members and all amateur radio enthusiasts to join their weekly QRP Chat. **When:** Every Thursday, **Time:** 4:00 PM Eastern Time

Join Information: Visit: https://www.miqrp.net/zoom

Zoom Meeting ID: 811 0835 6229

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Radials importance explained at the ground level

The earth is a big resistor, a great way to burn transmitter power. The function of a counterpoise/radial system is NOT to couple to the earth, but rather to provide a low impedance path for return current.

A wire laying on the ground connected as a radial or counterpoise couples the current it carries to the earth below; from an analytical point of view, that loss in the earth shows up as series resistance in the conductor, and for a single wire (radial), it carries all of the antenna's return current. That loss is I squared Rg, where Rg is that series resistance.

When we add radials, the return current divides between them; in homogeneous soil, and with identical length radials, it divides equally.

The loss in each is still I squared R, and because it's I squared, the total loss is reduced by the number of radials.

Rudy Severns did some excellent experimental and tutorial work on this at least a decade ago. His published work on this is worthy of serious study.

73, Jim K9YC

https://shop.rf.guru/pages/short-radials-rudy-severns-n6lf-measured-ground-systems

https://www.bing.com/search?q=rudy%20severns%20ground%20radials&qs=n&form=QBRE&sp=-1&ghc=1&lq=0&pq=rudy%20severns%20ground%20radials&sc=12-27&sk=&cvid=3F433AA2F4EE448E890C7C179CC065FC

Credit to Jim K9YC via TowerTalk@contesting.com email reflector

Members of the St. Louis QRP Society have been very busy.

September 16th was the annual Tailgate Swap Night.







October 3rd was the annual Bike-In ride and POTA Event.











NUØN's Trip to Japan

As most of you already know, I went to Japan for two weeks and donned the call **JL1LAF**. I had two major ham goals for this trip: first, an activation of a summit, and second, to attend the Tokyo Ham Fair and report back about the new Icom and whatever else neat I could find there.

Activations



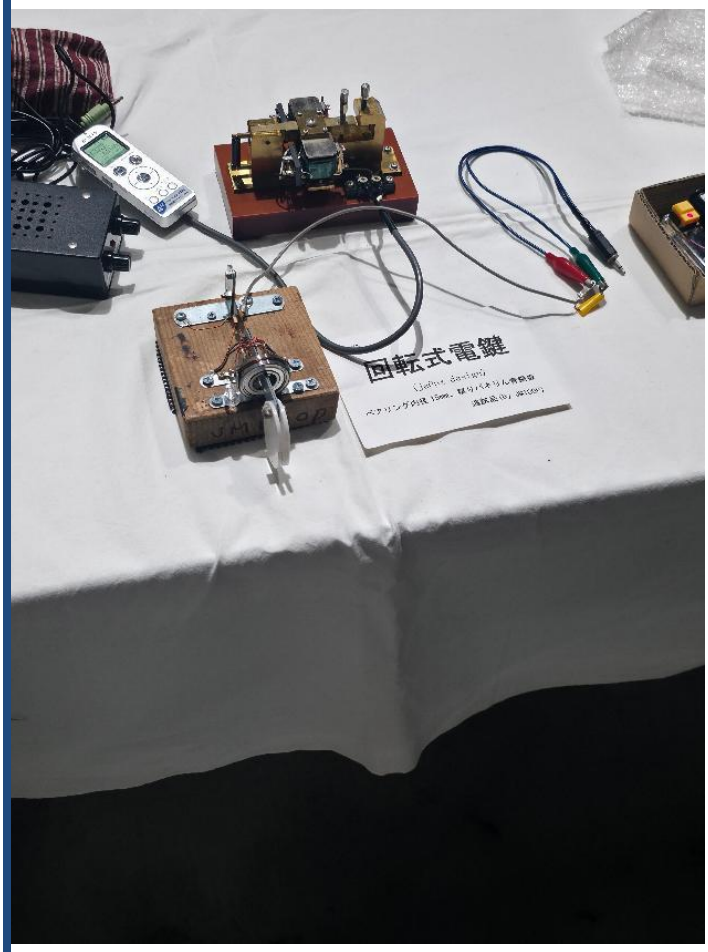
Let's start with the activations. The original intent was to climb Mt. Fuji and activate from the summit either in the early morning or late evening hours to take advantage of greyline. Unfortunately, due to some medical issues in the months leading up to the trip, I was unable to prepare effectively for a 13,000 foot hike. So last minute plans were changed to Mt. Moiwa in Sapporo, which had the added benefit of a cable car to the summit and, supposedly, a beautiful view at the summit in the evening. I switched to a planned activation on the evening of 08/27/26 JST. With my KX2 in tow and a litany of antenna options, I took public transit with my group to the ropeway and went to the top.

Unfortunately, not realizing the length of time it would take to get up the ropeway, I was about an hour late to the summit. Coupled with a lack of good activation spots, I had to sneak off the summit a bit to find a solid field to set up in. I got set up and managed to make one contact prior to lightning rolling in and sending me packing. Disappointed with the attempt and the weather, I headed back to the Airbnb, where we would be packing in the morning and heading to the airport for Tokyo. I resolved to try a second activation in Tokyo.

The original location chosen was Mt. Tsukuba, due to the presence of another ropeway. Unfortunately, August and September are typhoon season in Japan, and rain and lightning were rife early in the week in Tokyo. The earliest activation opportunity I had was Wednesday the 2nd, but due to food poisoning and transit line closures, I moved my activation to Thursday at Kasai Rinkai Park, JP 1227. I got down to the park and realized I'd forgotten my steel whip. Oops.

So the attempt moved to Friday. At this point time was running out, since my flight home was the following day. I got to the park and set up on the beachfront, spending time calling and attempting skeds in the Slack (thanks to all who tried to work me). After 30+ minutes of hearing nothing on 17, 20, and 40 meters except locals having ragchews, it began to rain, so I

packed it up. Multiple mistakes were made, and I should have spent more time on activations, but it was a great learning experience and I still had fun. Thanks again to everyone who attempted to work me.



Tokyo Ham Fair

As for the Tokyo Ham Fair, I had a front row seat to Icom's 7110 reveal, though I was on the back side of the display at first and had to circle back after 30 minutes. The highlights of the ham fair included the 7110, the SUR Kobo keys, and speaking with the JARL QRP Club.

Speaking with the JARL QRP Society

Of interest, apparently big names over in Japan are the **St. Louis QRP Society**, **4 States QRP** and **NorCal QRP**. Finding out that *Dave Gauding's Bicycle Rim Antenna* is a very popular antenna for QRP in JA, was an awesome experience. I spoke at length with the members of their QRP club and got some insight into what JA does differently from us. As expected, they are



very CW heavy over there, since it's already an effective mode. However, due to their reliance on public transit and their rules for deploying inside parks, they tend to gravitate toward extremely small antennas and very tiny single band transceivers as well. There were several SW3B and SW6B rigs on display for sale, with a review in Japanese detailing their capabilities. Overall, it was a really cool experience to talk to QRPers from another region and learn what they do differently.

SUR Kobo Keys https://sur-kobo.jimdofree.com/

Due to the ITU region differences, and needing to cross 10,000 miles with the gear I bought, I was super limited in what I could purchase. Because of Japan's tight restrictions on gear, most bands are hard coded into the microprocessors in JA radios, and there is zero way to loosen those restrictions like you can with EU models. The exceptions to this are certain Icom HF radios and older non SDR radios.

I digress. I went in with the desire to buy something, of course, because it's a hamfest. I came across the SUR Kobo booth almost immediately, and recognizing their keys, I had to have one. With a substantial amount of hand gesturing, "hai" (the Japanese word for yes), and Google Translate, I walked away with a Kobo single lever paddle and mag base. This key is awesome, the best I've ever personally felt other than Larry's (NØSA) keys. You can order them online, although I suspect with tariffs and shipping it won't be as great a deal as I got.



The Icom IC-7110



Bear with me, as translation was rough at best with this reveal, and I gleaned what I could from the promotional material and the booth. I did get to handle the radio as well. As most already know, it's a 7100 replacement and covers all the usual bands at 100W, including 2m and 70cm. This rig is obviously geared toward field use, more specifically car installs, as it fits nicely into the position left by the 7000 and the 706MKII.

The mounting is designed around a car install, and from what I could glean, they are either intending for it to work with the Icom AH740, or they are planning a much more budget friendly ATAS competitor. Either way, the 7110 lacks an internal ATU, so you will be expected to use an external tuner or a resonant antenna. As for handling, I see this being another smashing hit from Icom. It's a 100W 705 that's purpose built for car mounting. No price yet, but I suspect somewhere between $1500 and $1800.

SLQS at the Halloween Hamfest, St. Louis



Several SLQS members joined the Brass Knuckle Group (BKG) at the hamfest, thanks to Jeff, NØMII.



BRASS KNUCKLE GANG
KCOPP
BKG
144.025 MHZ
MO

https://www.bkg.club/

ABCCRS Cave Radio System

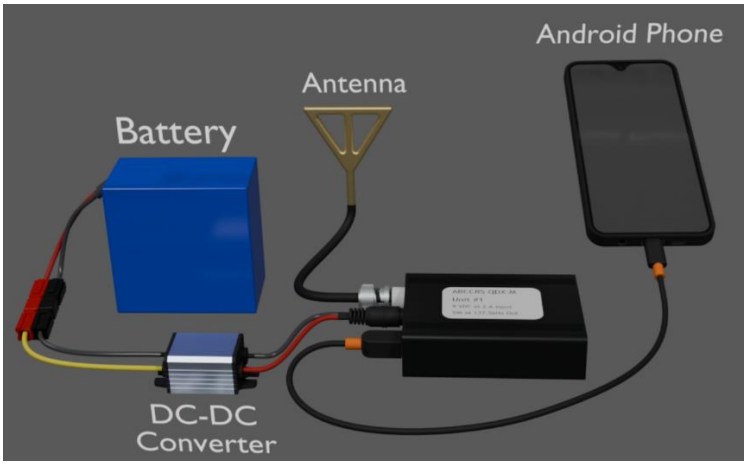
A brief description of the Cave Radio System being developed by ABCCRS for emergency communications



Specialized radios for through-the-earth (TTE) communication, or more simply, 'cave radios', have existed for many decades. Although pioneered with mining or tunneling applications in mind, much development work has been done over the years by cavers, especially those with amateur radio backgrounds. Historically the vast majority of cave radios used for communication (vs. radiolocation) were custom – constructed and used voice transmission based on single-sideband technology. In 2022, however, pioneer caver and cave radio builder Ian Drummond was the first to notice the potential for a digital, texting – focused cave radio in a new kit marketed to amateur (ham) radio hobbyists by a company called **QRP Labs**. This kit offered the possibility of a smaller, lighter and cheaper design than had previously been available. Since then, a small team of caver-amateur radio operators based out of Alberta and British Columbia have been collaborating on a project to build, test, and refine this hobbyist radio transceiver into a specialized digital through-the-earth communication system for use in cave rescue and exploration applications. We are grateful for development funding from Search & Rescue Alberta.

Functional Components:

- A QRP Labs QDX-M transceiver with custom modifications to operate on 137 kHz. QRP Labs is planning to release a 137 kHz kit 'soon'...
- Android phone running RadioMSG.
- Mag loop antenna of a design suitable for cave transport, tuned to ~137.4 kHz
- Battery and 9V power supply
- Packaging for cave ruggedization (see below)





https://caverescue.ca/en/Cave_Radio

Navy brings back Morse Code



In 2022, the U.S. Navy did something that surprised headlines worldwide: it brought Morse code training back after a twenty-year gap. By 2026, that decision looks less like nostalgia and more like prescient engineering. Contested electromagnetic environments, satellite dependency risks, and lessons from Ukraine's communication challenges have validated what CW operators never stopped knowing — dots and dashes survive when everything else fails. Military and amateur Morse communities have been converging on the same conclusion from opposite directions. Here is why the Navy returned to Morse, what it means for 2026, and why civilians should pay attention.

What Happened: The 2022 Navy Revival

After discontinuing mandatory Morse training around 2002, the Navy determined that a generation of communications specialists lacked backup skills for environments where primary systems fail. The 2022 reintroduction targeted Information Warfare and signals personnel — not every sailor, bu

t the specialists responsible for maintaining communication links under adversarial conditions.

Official reasoning centered on three factors: satellite vulnerability to anti-satellite weapons and jamming, GPS denial in contested theaters, and the need for low-probability-of-intercept communication methods that require minimal infrastructure. Morse code over HF radio addresses all three simultaneously.

The announcement generated viral debate — critics called it archaic; supporters cited historical resilience. Four years later in 2026, the critics have grown quieter. Real-world conflicts demonstrated exactly the communication fragility the Navy anticipated.

Contested Electromagnetic Environments

Modern warfare targets communication infrastructure aggressively. Electronic warfare units jam voice radio, disrupt satellite uplinks, spoof GPS signals, and disable cellular networks. Sophisticated militaries deploy these capabilities routinely; non-state actors use cheaper jammers with increasing effectiveness.

Morse code's advantages in this environment are structural, not sentimental:

Narrow bandwidth: CW occupies roughly 150 Hz versus 2.4 kHz for voice SSB — harder to target and easier to copy through noise

- **Low power effectiveness:** A five-watt Morse signal can span oceans; voice at the same power often fails
- **Human-in-the-loop:** No dependency on digital protocols, encryption key management, or network routing
- **Equipment simplicity:** A basic transceiver, wire antenna, and battery suffice — no satellite terminal required
- **Jam resistance:** Skilled operators copy through interference that destroys voice intelligibility

These properties are documented in military communication doctrine and validated daily on amateur HF bands where CW contacts routinely succeed when SSB nets struggle during solar storms and contest congestion.

What Navy Morse Training Looks Like in 2026

Contemporary Navy Morse curriculum differs from 1940s radioman schools but shares core objectives: copy accurately under noise, send with correct timing, and operate field equipment without reliance on digital aids.

Training Components

International Morse Code at five to thirteen WPM minimum for recognition

- HF radio setup, antenna deployment, and power management in field conditions
- Integration with broader signals intelligence and electronic warfare awareness
- Contingency communication planning when primary networks are denied
- Cross-training with amateur radio community resources and emergency communication protocols

Equipment Focus

Training emphasizes transferable skills rather than specific proprietary systems. Software-defined radios, portable HF transceivers, and standard CW keys mirror equipment available to licensed amateur operators. The Navy's message: the skill belongs to the operator, not the hardware vendor.

The Ham Radio Parallel

Amateur radio operators never stopped using Morse. In 2026, CW remains active on every HF band, with contest weekends generating hundreds of thousands of contacts and daily nets serving emergency communication groups worldwide. The Navy's revival created unexpected synergy:

- Military trainees practice on amateur bands (with appropriate licensing)
- Ham elmers mentor service members learning CW fundamentals
- Emergency communication organizations like ARES and RACES share protocols with military contingency planners
- Equipment developed for ham QRP operation informs military portable communication kits

Our Ham Radio Morse Code guide covers licensing paths that connect civilian and military communication communities. The ARRL reports steady CW interest among new licensees despite Morse no longer being an FCC exam requirement.

Getting Started: Navy-Inspired Training Path

Apply military training discipline to civilian learning:

- **Week 1-2:** Master SOS, E, T, A, I, N, S at five WPM using the trainer
- **Week 3-4:** Complete alphabet via Koch Method progression
- **Month 2:** Reach ten WPM with Farnsworth spacing — see our Farnsworth guide
- **Month 3:** First live QSO on amateur bands after licensing
- **Ongoing:** Daily copy practice, emergency phrase drills, equipment maintenance

Full beginner roadmap: Learn Morse Code. Compare training methods in our Farnsworth vs Koch analysis.

https://morsecoder.us/blog/morse-code-navy-2026/?utm_source=ARRL&utm_campaign=379e4a1326-EMAIL_CAMPAIGN_2026_10_02_07_07&utm_medium=email&utm_term=0_-379e4a1326-443817609

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".

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

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

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

JS8 Net - 1700 UTC until 0030 UTC, NYØJ

Currently there is no PSK31 Net

Everyone is welcome to join in!

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 Walter (K5EST):
SecondSundaySprint@4sqrp.com

Thursday Morning

The Four State morning CW 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. I prefer articles in **Word** format, that works the best, but I will try to work with what you have as I can. Some of the items of interest would be outings and/or operating events by yourself or a group, construction projects, radios, antennas, accessories, QRP Field Day, SOTA, etc. Anything QRP is welcome.
de KCØPP

editorqrpbanner@gmail.com

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