Ozark QRP Banner

The Official Newsletter of the Four State QRP Group

WQ5RP

August 2023 Edition

In This Edition: The Art of Electronic Keying, A 1980's Go Box, More Go Box/Bags, Station Grounding, Portable Operating Checklist, FD w/ a Pixie, 4S Website Renovations, Why QRP, de DL/KKØU

Direct Conversion Receivers—Some Amateur Radio History Tnx NØMII

http://w7zoi.net/oldtech/dcrx68a.pdf

Unofficial QRP DXCC Standings https://www.qrpdx.com/

Since the ARRL only issues QRP DXCC certificates without endorsements and doesn't maintain standings boxes for QRP, I thought it would be nice to compile unofficial standings here on the site.

Battery Maintenance

Many of us have 12 volt AGM or gel-cell batteries and use them on occasion such as Field Day or an outing once or twice a year. These batteries will lose charge after a while. It is a good idea to put them on charge about every 30 to 60 days. Otherwise, the charge may go down too far and the battery may not recover. Test the voltage and if it is around 12 volts or higher then it is a good idea to put a load on them first for an hour or two and then connect them to a small wall wart. Twelve volts at 200 to 400 ma. will give a nice slow charge without overheating the battery. You can leave the charger on for 24 to 48 hours. This will keep your battery fresh and ready to go. With good maintenance the batteries can provide many years of service.

Many Thanks for those who contributed to this edition of the QRP Banner.

Go Box – 1980's Style

de KCØPP

Today a lot of Ham's have put together what they call a Go Box. There are many reasons for a Go Box; emergencies, portable operating, POTA, SOTA, Preppers, etc. The box contains a radio, sometimes more than one such as HF, VHF, UHF. Also, everything needed to get on the air like a battery, antenna(s) and ATU.

What makes it easy today is the radio itself. Today you can get a radio with a built-in tuner, CW and SSB Filters and radios that will cover 160 meters through 2 meters and above. Batteries are easily available today, gel cells or AGM and the latest Lithium type that are very lightweight and last a long time.

Antennas are available in portable and easy to erect style like the Soto Beam and Buddipole to name a few. Numerous wire antennas are ready to go like EFHW, EFRW and dipoles that will operate on several bands.

But back in the early 1980's it was not quite that easy. I was fortunate enough to join a small group of ham's that got together every other Thursday to visit. This was prior to when the St. Louis QRP Society was formed. Our main goal for the year was to operate Field Day, QRP style. We had 2 – Argonaut 509's, an Argonaut 515 and an HW-8. Antennas were dipoles for 80 and 40 and beams for 10, 15 and 20.

So back to my Go Box. Us seasoned ham's (OM) will remember the days when televisions were large, usually consoles in a wooden cabinet. When they needed service, a service person would come to your home. When solid state TV's began to come on to the market, one manufacturer, Motorola, designed their circuits on replaceable circuit boards called modules. They called this TV the Quasar. Motorola made a nice case for the serviceman to carry the modules so that they would not be damaged while in transport in the back of the service van. The case had several drawers to hold the modules.

I managed to acquire one of these cases and have it still today. I kept the top and bottom drawers to hold connectors and accessories. The center of the case is used to house my Argonaut 509 and its accessories like the matching CW Filter, Crystal Calibrator and Antenna Tuner.

I mounted these components on ¼ inch plywood shelves that slide in and out. As you can see in the pictures,

I made side panels that took all the rear connections and placed them in the front so that they are easily accessible. The radio in the completed Go Box can be operated anywhere as it is, just add battery and antenna.

To go a step farther, I installed adjustable feet on the bottom panel near the front. These feet allow the unit to be placed on a desk or table and tilt upwards for easy operation when at home as I operated QRP throughout the year.

Aside from Field Day the Go Box went with me on many Boy Scout campouts allowing me to operate portable and to expose the scouts to Amateur Radio.

Today's Go Boxes

Portable station by NFØR

FT-817, internal battery, NØSA Key, pen, post-it note pad and resonant antenna.

Here is Dave in action operating portable with the station on his lap. Note Dave's bicycle rim, mag loop antenna mounted on a camera tripod. Perfect for a trip to the park.

KCØPP's Go Bag contains a complete station, minus the antenna. The soft padded case is from a digital video camera. A near perfect fit. These can be found for almost nothing at thrift stores. Mine is made by AMBICO and is 14"x7"x7".

The case contains the KX3, headset/boom mic, battery, key, extra earbuds and a few types of antenna connectors. Just what is needed for those POTA activations.

My latest "Go Kit" is in the works and testing stages while on vacation in Maine. Some of the items like the QRPLabs Mini, Bienno battery and the ZM-2 (to be replaced with a 4S tuner) are secured to the Hobby Lobby, $4.75 (sale) box. (60% off)!!

This is a complete 20m package with a CW Morse 3D key, headphones, tuner, battery, 20m (1/8w) vertical, counterpoise, RF cable and a few adapters in the pill bottle. The only items not showing are the optional mag mount or/and camera tripod for the antenna.

The QCX-mini is secured with 2 strips of Velcro, the tuner has popsicle sticks glued in such a fashion so as to prevent it from moving thanks in part to the tight fitting battery. There will be a piece of foam on the inside of the top cover to hold the battery in place.

A short piece of chain and a few cup hooks allow adjustments for viewing the small screen on the little camera rig.

When I travel there is limited room for gear so I attempt to make as small and complete a package as possible. With this unit I can mount the antenna on a home brew mag mount (last Banner issue) for tighter parking lots or I can use a small camera tripod, they work equally as well. In a pinch the antenna can attach directly to the tuner, I got over 3000 miles using 4w with WSPR from inside a metal trailer during bad weather in Maine last week.

Since I don't walk well this allows me to either work from inside the car or in a chair overlooking the ocean or the mountains.

Let your mind wander and build your own. Thanks to 4S for the great kits and ideas like using Hobby Lobby boxes for my BJ !

John
KK4ITX

N2UHC

My Go Bag that I use when I want to quickly set up a station and operate, but don't want to take a lot of equipment with me. Everything fits into a camera bag and is ready to go at a moment's notice.

The equipment in this kit is as follows:

ATS-4 five band 5W CW transceiver
12 Ah battery
AA battery pack
Homebrew T tuner
Homebrew single lever CW paddle
Earbuds or lightweight over-the-ear headphones
End fed antenna
Dual display travel clock
Connecting cables & power cord
Antenna support rope & large fishing weight
Antenna strain relief
Pen & notebook, log sheet & printout of ATS-4 manual
BNC-to-PL259 adapter
Extra fuses
--

Tom Sevart N2UHC
St. Paul, KS

Here at **K2ULR** I use a bag, rather than a box.

This bag is made by LowePro and IIRC it is a model 410. The size is about 11"x6".

The bag contains the following:
My KX3
the KX3 USB cable (for updates)
A 12V cigar lighter plug to KX3 power port
A charger or a 12 V power pack
33 feet of antenna wire and a 33 foot counterpoise wire
MH3 Mic
KX3 paddles
side pocket with Andersen PP adapter
and ear buds
another pocket with BNC to binding post
BNC adapters
Front pocket with Pro Audio Engineering AC power supply & charger.

In short... everything I need to put the KX3 on the air inside an easy-carry camera bag.

73 de Ray
K2ULR
KX3 #211

Here are photos of my OZARCON Go-Kit. I worked the Club's station from my room, and this set-up was used at OZARCON to diagnosis a Cricket 40 that had been given up as hopeless! (It needed a new pair of 2N7000's in the oscillator and mixer!). The actual repair was done at my home QTH work bench, after OZARCON, and sent to the grateful owner! Also, the transceiver was used at our OZARCON POTA activity.

72,
Marc N4DR

At the top, my 300-ohm balanced feedline, my red homebrew carbon fiber hiking poles, my blue antenna mast sleeve, and my red bag of 'tent pegs'.

Left to right at the bottom: accessory can, paddle can, accessory can, balun box, kx2/batter/earbuds/cables,

The picture below shows all that stuff exploded.

All that goes into my backpack (the antenna sleeve hooks to the outside of my backpack).

I'll also carry a tarp, extra jacket, water, etc. as needed.

de KKØU

Portable Ham Radio Operations Checklist

de WBØISG

Do you have a checklist?

Over the last few months, I've had very few opportunities to get on the radio. Just a few weeks ago, I made the seven hour trek from Kansas to visit my mom and dad in Arkansas. On Saturday, I decided to get out and enjoy the late spring morning weather. It was a chilly morning for late May — in the upper 50s — perfect hiking weather. So, I got up before everyone else and drove out to a local spot, Cove Lake Recreation Area (K-7445).

As I opened the back hatch, I thought, "I packed this bag for radio specifically this weekend, so there's no reason to check it." And I shouldered the bag, complete with a radio kit, some snacks, water, and a first aid kit. It was a beautiful, steep, 1.5 mile hike to the top of the ridge. As you might have guessed at this point, I left something at the car, some 300 feet below. It was the battery pack which I had used to charge my phone the day before.

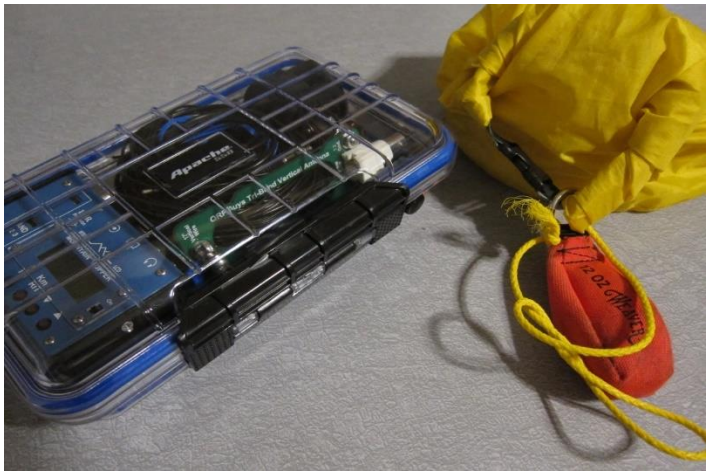
Don't get me wrong, I still had a wonderful morning hike at Cove Lake but it would have been enhanced by making a few radio contacts while enjoying the view.

The few chances to get on the radio that I've had the past few months were squandered due to lack of planning. I've decided to do something about it.

I was inspired by this post on QRPer and spurred on by the apparition of a Harbor Freight coupon in my inbox. What better place to start than Harbor Freight! A short bike ride later, I walked into the store with radio gear in hand to make sure that the largest elements were going to fit in the case.

Now that I have a hard case to place everything in, I set to work arranging all the elements. Fitting everything in was surprisingly easy since the transceiver, battery, and logbook had obvious places. Once I had that done, I took everything out, flipped to the back page of the logbook, and made a list.

You'll note that there are some elements that don't fit inside of the case, like the throw line and weight for instance. I've already started thinking about how I can further decrease the size of my setup in order to make it all fit in once case.



Some elements will forever be outside the case and others are optional.

With this setup, I can be confident that I can walk out the door and be ready to get on the air once I reach the park or summit. However, a pre-trip check could still do me some good. And now that I think about it, I bet I could put more thought into what I put in my radio hiking bag.

My Portable Radio Station Checklist

- Transceiver
- Antenna and Coax
- Battery and Cable
- Headphones and Cable
- Paddle and Cable
- Throwline and Weight (and/or) Mast with Stakes and Guy lines
- Logbook and Pencil

Not necessarily radio items, but essentials

- Backpack
- First Aid Kit
- Food
- Water
- Map and Compass if leaving sight of car
    - If you think it is necessary to carry a map and compass, you should tell two other people where you are going.
- Extra clothes, especially boot socks
- Hat and Sunglasses
- Knife

Some optional items as well

- Camera
- Backpacking Chair
- Stove with Fuel Canister
- Cookpot
- Instant Coffee

Why QRP?

I have been a Ham for twelve years. I know, that's really nothing compared to many of my 4SQRP friends, but I've been around radios and technology since I was a little kid. I work in tech as well, and I think that is what eventually drew me into Amateur Radio, but that is a story for another day.

I get asked why I bother playing with QRP quite a bit. I have come to realize that the answer to this question is many-fold. For some, the foray into QRP is economical. I tend to warn new Hams off of this path sometimes. Yes, it may be very attractive to buy one of these cheap AliExpress 5 Watt rigs when you are first starting out, and have not yet conditioned your significant-other to the $500+ purchases (and more of course) that take place in the first few years of your license. Or, in my case in 2011, I was recovering from a failed relationship, and had rebooted my whole life. New career, new location, new relationship, new everything except for a new checkbook and wallet.

I was fortunate to get licensed during the peak of the last sunspot cycle and my little, used, new (to me) HTX-10 got me France for my first-ever HF contact. I wish every new Ham an experience like that. I wanted more. QRP was tempting, even without the proliferation of cheap QRP HF rigs like we have now there were inexpensive low-power options. My Elmer, and a few other Ham Radio friends warned me off that to start, just like I do with new Hams now. Buy a decent, used HF rig if you need to save some dollars. I bought a used Atlas 210X, with the original power supply, for about $180. That rig got me the experience I needed to become a QRP operator.

I frequently ask QRP skeptics up here in the Hudson Valley if they fish (a lot do up here). Then I paint a scenario: If you could go to a lake, river, etc., and catch whatever you wanted just by typing the fish you wanted into a cellphone app, and then cast, would you like that? It would be really cool! For about 15 minutes. Then it would get really boring, and even possibly ruin your views on fishing the old-fashioned way. That's how I look at QRP. It hones your skills. It makes the hunt that much more satisfying when you snag some good DX. Alternatively, I can use the same analogy to compare my views on people that love BIG powerful amps and 200-foot tall beams, except that's more like fishing with explosives.

So, we have two answers so far. Economy, and challenge. Another is portability. I will fully agree with that one. POTA, SOTA, or just combining your love of the outdoors with Ham Radio. Win/win in my opinion. In these cases, the smaller and lighter, the better. One of the reasons I love where I live is the diverse nature of the wild lands here. I'm an amateur forager, so along with my pack of Ziploc bags, tiny field guide, and miniature harvesting tools, why not throw in a Hilltopper, coil of wire, battery, and tuner?

Three reasons now. Economy, challenge, and portability. Anything else? Yes, and this one really relates to me and my Ham Radio activities. DIY. I build a lot of kits. I love it. Especially when they work (Hai, Hai).

I run the makers forum for the Long Island CW Club, and help a lot of locals here with their builds. Although you can build a couple of full-power rigs (50 - 100 Watts I mean) the majority of kits
and homebrew projects are QRP, and even QRPp. It's here that sometimes I'll warn-off the new Hams on something as well. The Pixie! Although it can be a great first-time build for the beginner, it's also an extremely difficult radio to use for a beginner. There are better choices for a new Ham as far as beginner builds.

So I've got Economy, challenge, portability, and DIY. There is more. Hit me up in the 4SQRP groups.io with your own reasons and we can continue the discussion. Best hunting to you all and 73!

-Neil Goldstein, W2NDG

DL/KKØU

End of May and all of June the Lovely Jeanne and I were off to Germany to see ze Grandbaby, with a side trip to Italy. While I did take my KX2 to Hamburg, it did not travel to the land of Vespas. Good thing, too – I would have had no time to operate, which would have been frustrating, and who needs that?

In Hamburg, in an effort to be stealthy, I erected an EFHW cut at 135' this year. I initially rigged it with the far end 36' up a Spiderbeam 12m collapsible pole, but then moved that pole so that the aerial was in more of an inverted-V. In that configuration, either end of the aerial was only ~15' off the ground, but with the center up high it did ok. I checked it with my nanoVNA, and it had reasonable dips on 40-10m, with a pronounced resonance on 20m. This was probably due to the 150' long run of coax I had attached to it. I really only needed about 25', but it's what I had on hand.

The downsides of this installation were the long coax and the fact that the aerial ran E/W, so it mainly fired N/S, just like at home <sigh>. I jumped into the Marconi Memorial Contest very sporadically, but was able to work 14 different countries, some on two bands. Granted, that's like saying I worked 14 states from MO, but it was still fun. The funny thing is that most of my contacts were to the East, where the aerial should have had a null, but I'm not complaining!

4SQRP Website Renovations

Ron Potter – AG1P

4SQRP Volunteer Webmaster

Several years ago the 4SQRP Board of Directors realized there were risks associated with our websites. The operating system components are back leveled and we had been hacked. The hack was only mischievous, changing things on the pages. Fortunately our security prevented access to the membership database. A decision was made to renovate the 4SQRP and OzarkCon websites.

David Martin NA1MH and I have been working on the project since. The first step was to refresh the OzarkCon website. It was considered the easiest, which turned out to not be the case. We put up the first version for the 2021 OzarkCon Online session. All went well but there was still a lot of manual intervention required. Since then more changes and additions have been made and the final version was used for this past OzarkCon with few bumps along the way that were quickly addressed. Much of the manual intervention has been automated so less volunteer time required during our busiest time of the year. The site is now ready to move to its new home.

The 4SQRP site is in progress. Some preliminary work has been accomplished. We are looking for some appropriate graphics that show what we as a club are all about. Suggestions and samples are welcomed. Some pages are easy to convert to the new format. Some like the member map are much more difficult due to software compatibility issues. We have recently had quite a few DX hams sign up so we may rethink the map and how flags are displayed. Right now many feel it's unusable because the number of flags crammed in around areas with more members. Long term I would like to see a map focus on your location, showing the other members in your area, however the renovation comes first on this one.

From a security perspective, we will continue to upgrade site security but make it as unobtrusive to you as we can. We will do our best to do it without a login as the last thing we all need is yet another user id and password to clutter our minds and notepads. As always, we will work through the challenges as we can.

If there are things you would like to see on the website, now would be a really good time to let us know. It is quite possible we can honor all reasonable requests while we are early in the project. Later we will freeze the site for new content while we code the web pages.

Finally – please understand this is a work in progress. The website might be down from time to time as we update pages. If you see issues that we may have missed, please send an email to webmaster@4sqrp.com.

Thank you in advance for your patience during this exciting (for us) time.

THE ART OF ELECTRONIC KEYING:

Tom Weaver W0FN

Letters, punctuation, and prosigns that a dual lever paddle and Iambic Mode B can help automate: **C K N R F L Q Y . / ! <AS> <SK> <KN> <AR> <BK>**

Some fun things to squeeze-send with Iambic Mode B and a dual lever paddle: KNOCK, CLOCK, FLOCK, LIKELY, BENS BEST BENT WIRE/5, BEST 73

Thoughts about sending practice:

1. Always record your daily sending practice sessions (use a digital recorder, cellphone, or Audacity). Listen later (head copy) and critique your rhythm, tempo, and word spacing

2. Practice sending each letter of the alphabet individually every day, and words

3. Listen carefully to the 'sound shape' of each character as you send (combine ICR familiarity listening practice with sending practice)

4. Vary sending practice speeds; practicing at one speed all the time isn't helpful

5. Try sending much faster than you're able at least once every day; ignore errors

Have fun, enjoy practicing, become a great sender. Poor head copy is OK - you'll improve, and your QSO partner doesn't really care. Poor sending is a bigger problem - CW ops don't look forward to QSOs with someone they can't copy.

Record chatty/rambling head sending practice sessions daily, listen to them a few days later. Are you easy to copy? How is your tempo and word spacing? Listen carefully for consistent tempo and word spacing.

Deliberately 'send' each word space, don't assume they are there *('key up' is as important as 'key down')*. It's easy to run words together, especially when a single-letter word precedes a longer word.

Use Audacity to record your sending practice sessions if you'd like to view ***and*** hear your tempo, rhythm, character spacing, and word spaces. (Audacity is easy to use and it's a free download)

Iambic (Mode B) Sending Tips with dual lever paddles:

C R K N '.' and <AR> are simple 'squeeze' characters

<AS> is a quick thumb-first squeeze followed by a thumb-hold

<AR> is a slightly shorter squeeze than a period '.'

<SK> is a thumb-hold followed by a squeeze

<KN> can be thought of as a 'Y' with a dit at the end

<BK> is a 'B' followed by a squeeze

F and L are thumb-holds with a finger tap

Q and Y are finger-holds with a thumb tap

N is a quick squeeze and release, finger touches first

Practice Q-CODES: QRL QRN QSY QSO QRM (and QRL?)

Iambic Mode B automates Punctuation Characters: / . !

Think of a slash '/' as an 'F' with a dah in front of it

An exclamation point '!' <KW> is a finger-hold with two thumb taps

A period is a simple thumb-first squeeze

QSO Oriented Practice:

CQ CQ CQ de (your callsign)

TNX FER FB QSO DE (your callsign) <SK> dit dit

VRY 73 CUL DE (your callsign) <SK> dit dit

BEST 73 CU AGN DE (your callsign) <SK> dit dit

UR RST 599/579/559, NAME IS, QTH IS

ITS BEEN A PLEASURE <BK> 73, CU SOON DE (your callsign) <SK> dit dit

A few Iambic Mode B practice words (with a dual lever paddle):

ALL	CAREFULLY	LITERARY
ANY	FOR	LUCKY
ABLY	FER	NY CITY, NY
ACRE	FLY	NICKEL
AFTER	FORK	ONLY
ANKLE	FULL	QUACK
BEFORE	FAIRLY	QUICKLY
BAFFLE	FORCE	RELY
CALL	FLOCK	REALLY
CELL	FORCEFULLY	REGULARLY
CAKE	HILLY	SHYLY
CLAY	KNOCK	SLYLY
CLACK	LIKE	TRUCK
CLERK	LAKE	TRICKY
CLICK	LARK	TRULY
CLOCK	LOCK	WELL
CLEARLY	LIKELY	WILL

Iambic Mode B Squeeze-sending Practice Sentences:

MY SHACK IS FULL OF REALLY FUN STUFF.

LOCK YOUR TRUCK CAREFULLY AND REGULARLY.

FORK FULLS OF CAKE WILL ROCK A JELLY BELLY.

ITS A FAIRLY DEEP WELL NEAR THE HILL.

THE RAKE NEARLY FELL OFF THE DOCK INTO THE LAKE.

ITS LIKELY TO BE FAIRLY CLOSE TO NY CITY, NY.

IF I ONLY HAD A DOLLAR FOR EVERY NICKEL...

THIS CLOCK REALLY BAFFLES ME, ITS TRICKY.

PICK UP A STICK AND SHYLY WHACK A SICK BRICK.

A 'ditty' practice sentence (for extra credit):

MISSISSIPPI SISSIES ARE SISSIER THAN TENNESSEE SISSIES *(good luck)*

Have fun while you're building muscle memory and a great CW 'fist'!

73 de Tom W0FN

MY preference for remoting out in the forest or in local parks is this bag intended as laptop luggage

The attraction is I can carry like a laptop bag by handles, if it is going to take a while to get to destination
I can flip it onto my back as a backpack. Everything I need to operate a self-contained radio like those from Elecraft or Xiegu fits, and is protected well in all compartments that zip up.

72,
WO7T
Mark

https://www.amazon.com/dp/B09KRS33GL?ref=ppx_yo2ov_dt_b_product_details&th=1

The St. Louis QRP Society Operates Field Day 2023

All things considered, we made a respectable showing for Field Day this year. We made a total of 510 QSOs (CW+Digital+Phone). And we netted 950 bonus points. With our 5x power multiplier for operating 100% QRP, our **final claimed score is 5,965**. A bit lower than last year.

Yeah it was hot. The expected temps were to reach 95° with the "feels like" temps reaching 100°. I'm confident we hit those marks. Ugh.

And this is back-to-back with last year, when I remember thinking "It's never been **this** hot at Field Day before!" Heh. And to add insult, the temps on the days prior to and following Field Day were cooler and much more pleasant. But FD2023 will once again be remembered as the sort of weather when the log sheets would stick to your forearms. In fairness there were frequent breezes blowing. That helped a little with both the sweltering heat and the insects. But golly I'm ready for a cooler day next year.

Our park always poses some challenges to fit everything in. The area around the (shady!) gazebo is narrow and sits at the top of a hill. So this year we tended toward the vertical axis in some cases, with Rod WA9GQT's 40m inverted V alongside. Larry NØSA's well-engineered mounting brackets for the gazebo legs made it pretty easy to erect a sturdy mast that needed no guys—this became our support for a 15m vertical as well as an end-fed wire for 80.

Vern AEØTT had a good crew helping with setup/teardown of the digital station. I was able to contribute a pair of dog poop bags to keep the digital antenna field safe for travel!

As always, setup and teardown is a team effort. Thanks to everyone for making it all go smoothly!

For the past few years, I've tried to arrange things to maximize Field Day enjoyment for everyone. Some of us are gung-ho CW operators; some are not. Some of us like computer logging, while others are keyboard-challenged or prefer traditional paper logging. So this year I proposed we split operations by band into "serious" and "casual" spots. And I proposed an operating schedule for the 20 and 40 meter positions, to give everyone a fair shake at the most fun positions.

In my opinion, this was a qualified success. I'm glad to have the log data for those bands (a total of 421 CW QSOs) already in electronic form. And I know that this year for the first time we had an assortment of operators on 40 meters. In post-FD discussions, several of us have been brainstorming a more effective means to share the fun. Perhaps dividing operating time on the busiest positions in 30-minute segments would be simplest. If you're "in the chair" at the top or bottom of the hour, you just

stand up and say "Who's ready?" and let someone else slide in. No takers? Then continue for another 30. Something to think about.

With the sunspot cycle on the upswing we had high hopes for activity on 15 and 10 meters. Sadly, 10 was almost devoid of CW signals (at least when I was checking). I spent most of my operating time on 20 meters during the day, and often experienced dramatic fading of signals. 80 meters had usual levels of atmospheric noise, but a relative lack of stations on the air also meant for disappointing returns there.

Another eye-opener was the comparative lack of digital contacts made this year. Vern AEØTT had essentially the same setup as last year, but digital Qs were hard to come by. Vern recalls that prior to the official start he was seeing a good amount of FT8 and FT4 activity, but active station count really fell off as the day progressed. Band conditions, equipment issues, or a combination conspired to put a real crimp in our expected score.

The phone result was a pleasant surprise. We all know QRP SSB contacts can be a challenge, but on Sunday Gib KEØPRK strapped in and gave it a go. I believe that the total of 17 SSB contacts is a club high water mark, so that's cool!

One twist to this year's event was last-minute cancellations by several of our members, due to health conditions and/or the oppressive heat. In a nod to privacy, I'll not list names here. But rest assured that if you couldn't make it, you were missed! Here's to next year!

de NØMII

Grounding Your Station - Tips and Recommendations

There are several reasons for good grounding of your station.

- Lightning Protection
- Static Protection for your sensitive electronics and SDR equipment
- RF Grounding
- Bonding to the electrical system

There are many publications to assist you in proper grounding methods.

- The ARRL Handbook
- ARRL- Grounding and Bonding by Ward Silver-NØAX
- The National Electrical Code Handbook (This may be hard to acquire, check with your local library or ask an electrician friend)

Electrical System grounding electrodes.

A ground rod must be 5/8 inch and driven into the earth at least 8 feet.

Ground rod properly installed

Ground rod not in the earth 8' as required

The rod can be copper, stainless or zinc coated steel. Do not use cheap ground rods. They have minimal copper coating and will rust in just a few years. Purchase the UL Listed ground rods from and hardware store or electrical supply house.

The grounding clamp must be just under the soil and must be rated for direct burial or the connection can be by Cadweld, used mostly in commercial applications. (Cadweld is a brand name for the exothermic welding process. This is a process most often used to form strong bonds where arc welding would induce too much heat into the joint.) If you encounter rock and cannot drive the rod straight down the rod can be driven on an angle no less that 45 degrees. For

extremely rocky areas, such as in the Ozarks, the rod can be placed in a trench no less than 8 feet long and buried a minimum of 30 inches deep.

The electrician should have installed a bonding conductor from the ground for the electrical panel to the cold water line if it is copper. Even though you have copper water lines in your home, many newer homes have plastic or PVC type pipe from the foundation to the main water line service which does not provide a ground path.

When installing several ground rods to form a grounding system, the rods shall be placed at a minimum of 6 feet spacing. Where separate grounding electrodes are used, communications grounding electrode and power grounding electrode systems, a grounding bond conductor must be used to connect the two and shall be a minimum of #6 AWG copper. This bonding conductor should be installed around the outside of the house or building.

Install a grounding conductor from the grounding electrode system to a grounding buss or ground plate in your shack. Install a ground conductor from the ground buss or plate to each piece of equipment.

DO NOT:

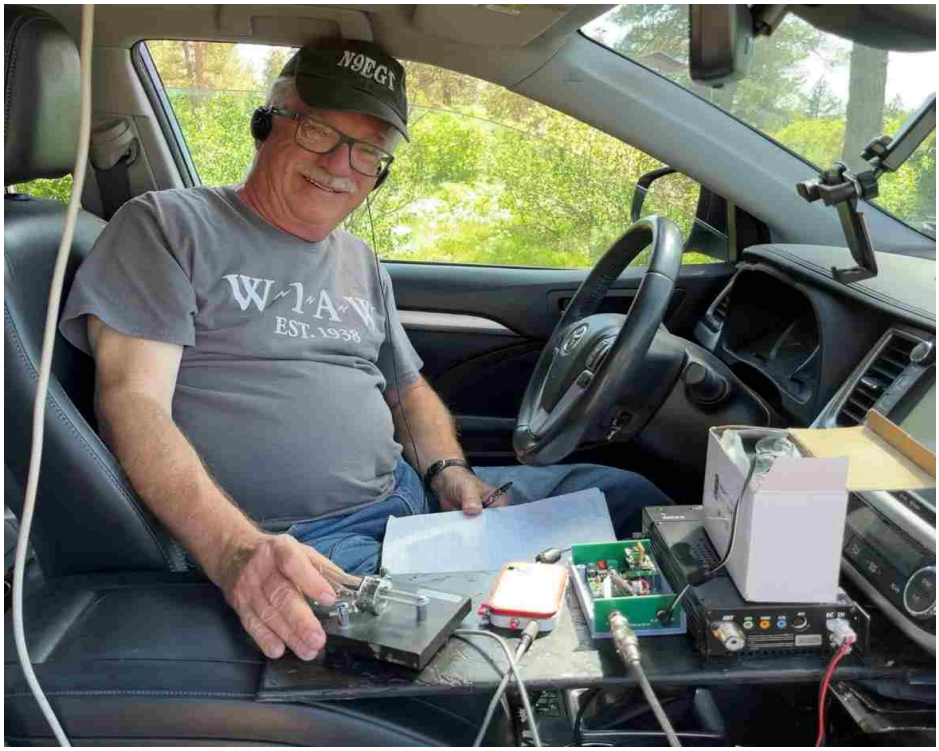
- Never connect to any gas piping for use as a ground.
- Never depend on the copper water line to provide a ground path.
- For lightning protection, do not rely on the water line. A direct lightning strike creates very high temperatures which can melt the solder joints in the copper water line resulting in leaks.
- Never use aluminum pipe or rods for electrodes. They will corrode over time and you will lose your ground.
- Do not use hose clamps for connecting to the ground electrodes. Only use UL listed connectors designed for the intended use.
- When installing a tower, do not install the ground rod in the concrete foundation. Install it outside of the foundation. A direct lightning strike can crack the concrete foundation.

These are just a few tips. It is a good idea to become familiar with the National Electrical Code on grounding methods and the ARRL, Grounding and Bonding book. Additional information may be obtained at https://www.mikeholt.com/

FD with Pixie

I was excited to make a good contact with my half watt pixie during field day weekend this year. We were up about 8200 feet outside of Grand Junction Colorado with our club group.

I made several contacts with my G 90 but my most exciting contact was with the Pixie on 20 meters using battery power, my keyer and a half wave end-fed antenna.



This Pixie has worked 26 states so far!

I am also a fan of the 80 meter cricket and the 40 meter Bayou jumper.

Wayne Steury
N9EGT

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 Walter (K5EST):
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

Illustrator: Charles Allan Gilbert
(1873-1929) - Year: 1920