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Ozark QRP **BANNER**



Ozarkcon 2015 – Photo by K5DCM

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Leo's Ghost Key

Scott Laughlin, N7NET

Leo, KB7LOC, now a silent key, earned his novice amateur radio license in the early 1990s, and then limped along on a shoe string budget. After purchasing a secondhand MFJ tuner, a HW-8, and enough wire for a Zep antenna he was on the air. I don't recall what he used for a key, don't know that I ever saw it. I only remember it as a home brew device that missed a dit or dah now and then.

We both had little faith in QRP. However, we soon learned there was more to this low power adventure than we had realized. If it hadn't been for the frequency drift many folk might never have never known they were working a HW-8.

One evening on my journey home from work I visited an estate sale run by the granddaughter daughter of a long-departed ham. Not only was there furniture, dishes, and clothing for sale, but there was a truckload of old ham stuff, as well. With a houseful of kids my hobby budget was little better than Leo's, but it didn't cost anything to look, so I looked. While digging through a stained plastic bucket I found a J-38. There isn't much that can rust on those old brass keys, but some of the other items in the bucket had certainly shared their oxidation. And the old key seemed hopelessly encased in a ball of rust. The grand-daughter accepted the two dollars I offered, and a week later I dropped by Leo's radio shack.

"I don't know what you can do with this," I told him, adding that it had belonged to a operator old enough to have served in World War II.

Moving to a window, he studied it closely, rolling it over in his hand. "I don't know if I can save it, but it certainly has earned the chance to be heard again," he finally said. "One never knows," he added, "this little puppy might have sent war bulletins, or maybe news of the Great Depression. Who knows what stories it could tell?"

We both lived in Oregon's Lane County, inland, but soon after receiving the J-38 he and his YL moved to the coast, South Beach. We kept in touch with weekly CW schedules.

"I got my J-38 cleaned up and working," he announced during one of our QSOs.

"A marked improvement," I stated, "no missing characters."

"Well, it was a job cleaning and burnishing. Now that it's back in working order I've elevated the rear of it a half-inch to ease my arthritic fist. I'm so pleased with it I've decided to call it my Ghost Key."

"Ghost key?"

Of course! I brought it back from the dead.”

During the subsequent years Leo owned larger, stronger radios, but the old HW-8 always occupied a place of honor.

We continued our QSOs for a dozen more years. Then one evening in 2007 his YL phoned me with news that Leo had, with little warning, passed on. The following week she mailed me a letter stating that Leo had left all his radio stuff to me, including his HW-8 and his Ghost Key.



The SLC¹ Loop

By Bill Dekle, KV6Z

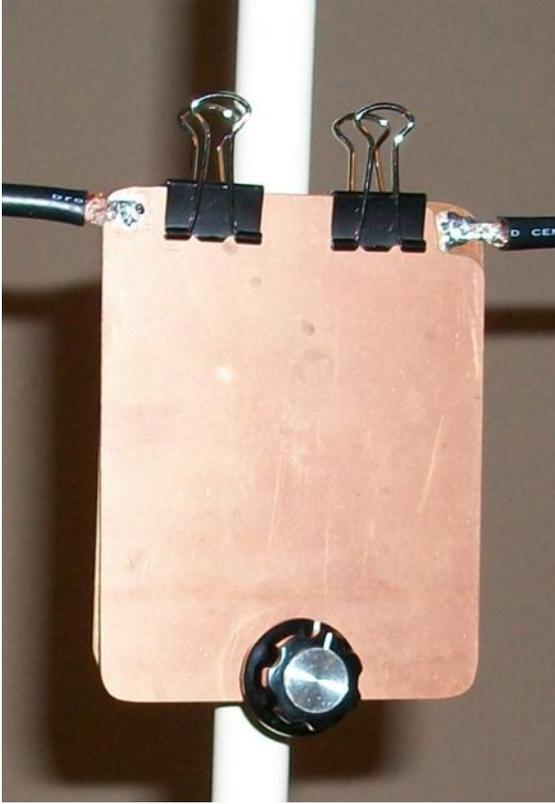
OK, so you're ready to build that mag loop antenna you've always wanted for portable operation. One that packs up small, is light as a feather, sets up fast, and won't require you to mortgage the XYL to buy the parts. So, right off the bat, that \$300 vacuum variable you've been watching on eBay is out of the question and so is that \$60 roll of copper tubing that weighs 8 pounds.

Well how about a portable loop that will tune 30, 20, 17, and 15m, weighs about a pound and a quarter with the tripod, can be built for practically nothing, and sets up in less than a minute? The photo below shows just such a loop.

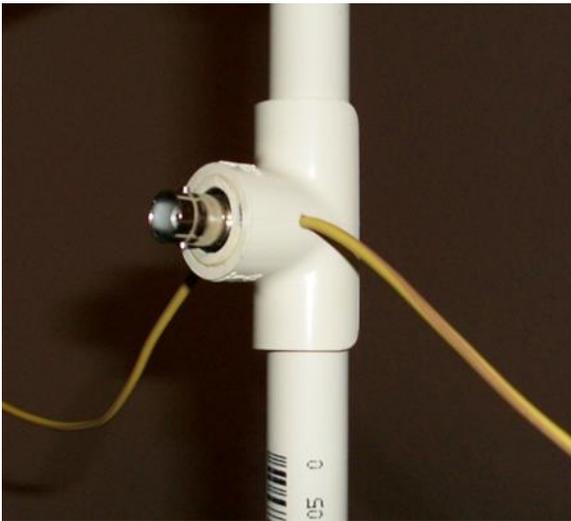


All the structural components are ½ in. CPVC that take advantage of friction fit on most parts to allow easy assembly. The main loop is 6 ft. of RG-8X coax and the feed loop is a scrap of used trailer light wiring. (I originally used 10 ga. stranded house wiring for the main loop but switched to coax to reduce the weight.) Two pieces of 3 in. x 4 in. circuit board material make up the tuning capacitor plates. Two spring clips hold the cap plates together at the top and provide the hinge mechanism required for tuning. The coax braid is soldered directly to the circuit boards. By cutting out a small section in the upper right hand corner of the top board, clearance is provided for the coax solder joint on the bottom board.

The top board was drilled and tapped near the bottom for a 1-inch 2-56 machine screw. A knob added to the machine screw provided an easy way to adjust the plate separation for tuning the loop.



A small section of CPVC tubing perfectly filled the gap between the BNC connector and the “tee” wall and that assembly provided a simple connector block for the feed loop.

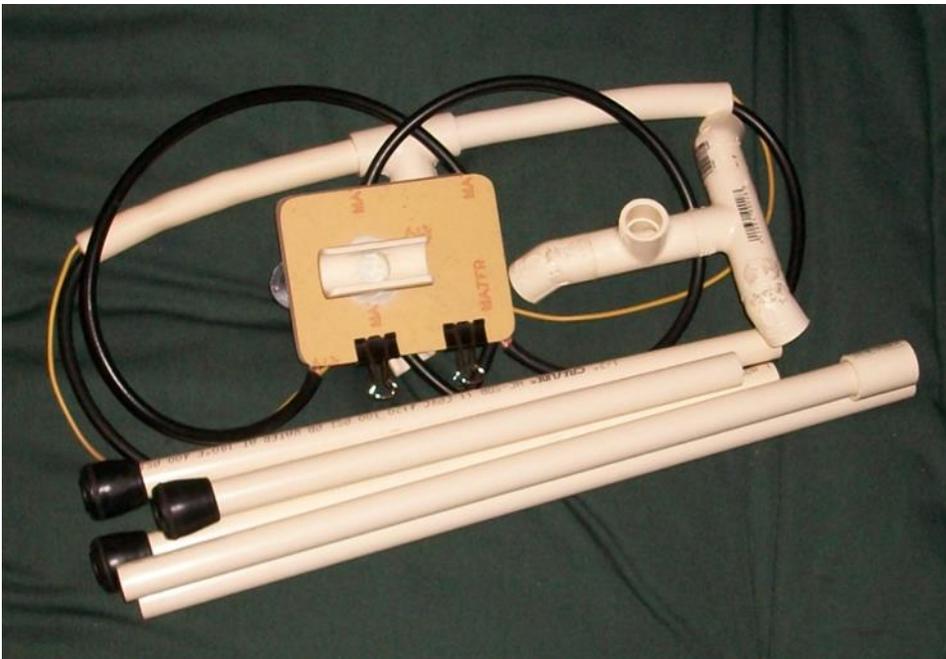


By removing a portion of a “tee” perimeter and filing down the internal ridge, PVC “clips” can be made for the tuning capacitor and the feed loop connector so that they can be snapped on and off the mast. In addition, these PVC clips allow the position of both the tuning capacitor and the feed loop to be adjusted so that a 1.0:1 SWR can easily be achieved. The bottom board of the tuning cap was glued to the PVC clip using PC-11.



The entire antenna, including the table-top tripod, can be taken apart for transport and takes up very little space. Assembly time is less than a minute. The top yoke assembly, the tripod connector block, and the coupler on one of the mast sections were permanently cemented.

The top yoke arms were bent slightly with the aid of a heat gun.



If a picnic table or other suitable platform is not handy, the mast can be lengthened to maintain a 2-diameter height above ground. Because a ½ in. CPVC mast may not be

stable enough in windy conditions, you may want to guy the longer mast or use a stiffer one. (A simple connection to ½ in. PVC can be made by inserting a ½ in. CPVC coupler into a ½ in. PVC coupler.)

This antenna has been used successfully when placed on my operating desk but not without some trepidation. Even at 5W, there is very high voltage across the capacitor plates (over 700v for this antenna) and very high current in the main loop. These conditions generate strong electromagnetic fields so, if you wear a pacemaker, back off 15 to 20 feet during use. Please read the paper listed in footnote 2 for possible safety concerns.

Tuning the loop is easy. Start by turning off your ATU. Tune for peak noise and then for lowest SWR with reduced power. Because of hand capacitance effects, I

prefer to use an antenna analyzer to tune the antenna. With a few iterative capacitor plate adjustments and possibly a small adjustment to the feed loop position, I can achieve a 1.0:1 SWR anywhere on all 4 bands. Because the machine screw used to separate the capacitor plates isn't long enough to tune 15m, I simply slide the plates horizontally a bit so they don't overlap completely (but the screw still touches the bottom plate) in order to reduce the capacitance.

Using the loop is a pure joy. In a 2 week period during development I made 13 QSOs with it that included 9 states and 2 SOTA stations. The last QSO, as of this writing, was on 20 meters with Vlado (N3CZ) in North Carolina who was participating in the QRP Marathon³. He was running 2 W and doing most of the heavy lifting with a Yagi and I was using a KX3 at 12 W. He urged me to reduce power to 5W and then to 1W. My RST reports were 599, 579, and 559 respectively. He sent me an audio clip of my 1W transmission and it was easy copy. I also had the pleasure of working Bert K1OIK in Massachusetts (The Truth Revealed About Ham Radio guy) who gave me a 219.

In addition to the fun this antenna provides, it is also useful as a learning tool. It is very easy to modify this antenna in order to investigate the effect of using different components or different dimensions. A link to a good loop calculator is listed in footnote 4.

Let me know how your SLC Loop turns out or if you have any questions. Good luck with it.

Footnotes:

- 1 - Small, Light, and Cheap
- 2 - <http://home.earthlink.net/~w6rmk/qstrfsafety.htm>
- 3 - <http://club72.su/marathon/index.php>
- 4 - <http://www.aa5tb.com/loop.html>

Dan – KB6NU's Column (April)

What would you do?

Dan Romanchik, KB6NU

Editor's Note: Dan's March column was published in the April Banner. As this is a combined issue for May/June, I have chosen to publish both his April and May columns here.

For the past three or four years, I've been threatening to buy a new radio to replace my ICOM IC-746PRO. The IC-746PRO is a great rig, though, and I've had trouble pulling the trigger on a \$3k – \$5k or more purchase. The radio that I've had my eye on is the Elecraft K3. Without a doubt the K3 is a better rig than the 746PRO, and it's certainly worth the price that Elecraft is asking. The

question I keep asking myself, though, is, "Am I going to have \$5,000 more fun with a K3?"

To put it another way, the question is, assuming that I have a \$5,000 budget to spend on amateur radio gear over the next year or two or three, what's the best way to spend it? How can I maximize my purchases so that I have the most fun?

At this point, I think that I've decided not to buy that new rig and instead buy equipment that will help me make my own rigs. Some of the items that I have my eye on include:

- * Aoyue 968A+ SMD Digital Hot Air Rework Station (I have actually already purchased this unit.)
- * Rigol DS1102E 100MHz, Dual Channel, 1 GSa/s Digital Oscilloscope
- * Rigol DSA815-TG Spectrum Analyzer
- * A more professional workbench to replace the folding table that I'm currently using.
- * Peaberry SDR V2 Kit
- * More keys! I'd love to get a fancy Begali or N3ZN paddle, and the other day someone told me about the UR5CDX keys, which look like great deals.

Even if I purchased everything on this list, I'll have spent less than \$5,000.

One consequence of going this route is that I'll have less time for operating. I'm betting (hoping?) that the extra time spent on tinkering will be just as much fun, or even more fun than I'm having now.

It also means that I'll be going to Dayton with a much different mindset than I have the past couple of years. Instead of spending my time configuring the perfect K3 in my head, I'll be looking for kits and scouring the flea market looking for parts.

I may be overthinking this, but like most amateurs, I have a limited budget to spend on amateur radio. That being the case, making conscious decisions about how to spend that money should help me have more fun with ham radio, and that's the goal, isn't it?

What do you think? Is this the right way to go, or am I going to regret this decision? If you've made a similar decision, I'd love to hear from you.

Dan – KB6NU's Column (May) Dayton was a Blast this Year Dan Romanchik, KB6NU

A couple of weeks ago, I made my annual pilgrimage to Dayton for the 2015 Hamvention. This year, I had even more fun than in the past, and that's saying a lot.

I started Dayton 2015 on Thursday by attending the QRP-ARCI's Four Days in May (<http://www.qrparci.org/fdim/>) seminar. George Dobbs, G3RJV, gave a very nice talk that not only talked about circuits, but also the people he's met over the years and the places he's been. Paul, M0XPD, gave an interesting talk on crystal filters and using an Arduino to control a QRP rig. The final talk, by Glen, KW5GP, was also about using an Arduino to control a QRP rig. Other talks covered transmission lines and SWR and adventures in PCB making. I learned something in every single one.

That evening, I participated in Vendor's Night. I sold quite a few copies of my CW Geek's Guide to Having Fun with Morse Code and gave out quite a few "I'm a CW Geek" buttons and "Hams Obey Ohm's Law" stickers.

Friday and Saturday were all about the Hamvention. As far as new products go, there were a couple of interesting announcements. Elecraft introduced the K3S, an updated and upgraded K3 HF Transceiver, and FlexRadio introduced the Maestro, a "front end" with knobs, dials, and LCD screen for their software-driven radios. Apparently, hams like knobs and dials after all.

It seemed to me that there were more people at this year's Hamvention. There were certainly more sellers out in the flea market. And deals were to be had. I picked up a Bencher BY-1 for only \$50. I also found a Hallicrafters HA-1 T.O. Keyer (http://www.ai4fr.com/main/page_ham_radio_hallicrafters_ha1.html), which I believe to be the first commercially-available electronic keyer. Produced in the 1960s, it uses tubes to generate dots and dashes.

Dayton usually has a great lineup of forums, but aside from perhaps the TAPR forum, the Antennas forum, and maybe the ATV forum, none of them really called to me. Also, I was really busy talking to people I know, meeting readers, and trying to get the dealers to carry my books, so I didn't get to a single one.

Being the CW geek that I am, I'm hoping to hold a CW forum at next year's Hamvention. I've already contacted the forum people, and while they haven't committed to giving me time, I did get a very positive response. C U THR?

Second Sunday Sprint (SSS) Standings As published by John Lonigro, AA0VE

Here are the current standings for the Second Sunday Sprints, as published by John on May 14, 2015. As you know, the station with the most contacts over the course of the year gets the coveted use of the 4SQRP club call, WQ5RP, for the October 4x4 Sprint! The current Top 5 are:

Call	QSOs
KV6Z	50
WA0ITP	41
W2SH	30
AC0BQ	22
KF7WNS & AA5CO	18

No major changes from last month, Bill, KV6Z has lengthened his lead – will Terry be able to catch up to him by September? Gary, KF7WNS, has cracked the top 5 to enter a tie for 5th place with Bruce, AA5CO.

From The Editor

Greetings to all the Four-Staters! Apologies for the lack of a May issue! With how late the April issue was, since I waited until after Ozarkcon to do it. I simply figured it would be easier to do a joint May/June issue and put things back on schedule. I promise that everyone's subscription to the banner will be extended by one issue! HI HI

As I write this, I would suspect everyone is preparing for what is one of the biggest ham radio weekends in the US (possibly second to only Dayton) – FIELD DAY!!! I myself will again be operating with the Iola Amateur Radio Club, WI0LA, from beautiful downtown Gas, Kansas. Last year's FD was pretty miserable – right about start time, a major wind & rain storm hit us head on – was a pretty mad scramble to cover up all the gear, plus shelter ourselves.

In past years, I've always taken my FT-920 for one of our stations at Field Day. However, after last year's event, when I hooked everything back up, I noticed that I had low power output on the 10m band – all other bands showed the full 100W output. So, I relegated the 920 to backup duty, and picked up a used IC-706MK-IIIG which has since been my primary radio. However, the XYL has finally given me the go-ahead to drop the money on my dream setup – so last night, I pulled the trigger on a brand new, factory-assembled KX3 + KXPA100 combo. Can't wait till I get it! 73's to you all, and hope to work you on Field Day!



Four State QRP Group

is meeting at the Country Cupboard Restaurant in downtown Seneca, Mo. This is one of the locations that 4SQRP folks gather.



The Country Cupboard has a nice menu and they have a separate meeting room we can use.

The Country Cupboard restaurant is located in the first block north of the blinker light in downtown Seneca. From Barney's, head north on Cherokee Street (that's the main street of town). Go across the railroad tracks and keep going past the blinker light stop. The restaurant is located at 1038 Cherokee street, on the west side of the street.

Caution: If you are headed north, do not make a left "J turn" into a parking spot. "J turns" are illegal in the downtown area. Keep going north past the restaurant till you reach the residential area north of downtown where a "U turn" is permitted. Make a U turn there (it's a wide street) and come back to the parking in front of the restaurant.

Our group is an informal organization with no officers, no rules, no dues or any other things to get in the way of having fun with QRP. **We get-together monthly for lunch and the sharing of ideas and information, parts swapping and just plain fun on our normal third Saturday of a month.**

All ham radio amateurs (or prospective hams) are invited to participate.



The Four State QRP Comfortable nets meet each Wednesday night beginning at 7:30 PM CDT, 0030z.

Note: on Nov 6 we'll be on CST.

If we have to QSY, I like to move up, Wayne likes to move down, and Dick doesn't have to move much at all.

Add anything to the exchange that you wish, temp rig, ant, etc. Checking into all sessions is encouraged.

7:30 CDT 0030z ... 40M CW Net on 7122, KCØPMH NCS
8:00 CDT 0100z ... 80M CW Net on 3564, WAØITP NCS.
8:30 CDT 0130z ... 40M CW Net on 7122, KCØPMH NCS
9:00 CDT 0200z ... 80M PSK Net on 3580.5, NØTGR

Thursday mornings ~ 8 to 8:30am
A gathering of CW ops are having fun on
7.122 MHz
....and you are invited!

Join us on the air on the second Sunday of
each month for the 4SQRP "SSS" – Second
Sunday Sprint – 7-9PM Central time
See: <http://www.4sgrp.com/4sgrpOnTheAir.php>
for rules and log submission!

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For news, articles, inquiries for the Banner: ozarkqrpbanner@gmail.com
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