



## ARRL Midwest Div. Newsletter — December 2023



### December 2023 Division Newsletter

Edition Editor: Dave Proper, K2DP  
Vice Director – ARRL Midwest Division

Greetings from Vice Director Proper. The late Summer and Fall has been full of amateur radio related activities ranging from POTA (Parks on the Air) activations to Hamfests to the Fall DX and Contest season.

A big thank you goes out to each of you who have contributed to this edition of our Newsletter. Included in this edition are stories covering a variety of topics:

- VOTA Operations – W1AW/0 “Volunteers on the Air”
- Fox Hunting
- Club News
- On the Air Activities
- Hamfests
- DX’ing and Contesting
- Scouting Activities
- Operating and Station Maintenance
- ARES and EMCOMMS
- Amateur Radio History

#### **ARRL Volunteer on the Air Activities – Missouri Section**

Mitch Odneal, NW0M, Missouri Section VOTA Coordinator provided the following summary of the recent “Week 2” W1AW/0 event for the Missouri Section:

“Well, as they say, there's no Meters like 10 Meters. 10 meters accounted for 25% of our Qs!!! Let's hope that is a good indicator for our current propagation cycle.

And check out the DX. Europe accounted for 1,180 contacts - 24% of our total.

You can see we beat our Week 1 QSO total by 2K!!! The huge log totals by AB0RX and W0MB made that a reality.

Week 2 Total Contacts = 4,902

Week 1 Total Contacts = 2,911



# ARRL Midwest Div. Newsletter — December 2023



Thanks so much to the MO amateurs that operated. I hope you had a fun! See you next time... “

73, Mitch  
NW0M

### \*\*\*VOTA MO Week 2 Summary Report\*\*\*

Operating Period: 2023/10/11 - 2023/10/17

#### Total Contacts by Band and Mode:

Band	CW	Phone	Dig	Total	%
160	6	0	0	6	0
80	67	33	39	139	3
40	298	373	197	868	18
20	656	1,200	75	1,931	39
15	258	460	11	729	15
10	160	1,031	37	1,228	25
<b>Total</b>	<b>1,446</b>	<b>3,097</b>	<b>359</b>	<b>4,902</b>	<b>100</b>

#### Total Contacts by Operator:

Operator	Total	%
AB0RX	1,610	33
W0MB	1,162	24
NZ0T	474	10
NW0M	446	9
W0RH	359	7
N0AX	268	5
K9ZTV	215	4
A16O	167	3
WB2UFO	105	2
AA0Z	95	2
N0UI	1	0

Total = 11



## **Fox Hunting – Iowa City Style (courtesy of the Iowa City ARC)**

Author – William Robinson, KC0JFQ

Submitted by John Kauble, K0GH

Sections of the original article selected by Dave Propper, K2DP (the complete article and photos are available on the website listed at the conclusion of the article)

### **1 Genesis of a New Fox Transmitter**

The Iowa City Amateur Radio Club resumed foxhunting activities in early in 2018 following a long pause, a pause long enough for useful skills to have been lost to the mists of time. The location where we resumed our hunts is a county park near town. The park provided a lodge that was used as a comfortable base of operations. We started our hunts with a set of three transmitters that all operated at 146.565MHz. These are typical fox transmitters that are time multiplexed so that their transmissions do not occur concurrently.

Although these early hunts were comfortable for our event organizers, the novice fox hunters were having a rather difficult time locating the transmitters. With each transmitter being active for only one minute out of five, obtaining fixes was proving rather difficult. The success rate, that being the ability to find the transmitters, was disappointing.

To address this, I started a design effort to come up with a richly featured fox transmitter that would be able address the problems seen with our hunts. The fox transmitter architecture must be able to reproduce the operating modes used by other fox hunting products as well as satisfy the needs of novice hunters.

A casual set of requirements emerged somewhat as follows:

- Easily configured and synchronized schedules (a USB or WiFi connection to a host)
- Software selected frequency (no jumpers allowed for this!)
- Convenient mechanical packaging (easy to transport, setup and physically find)

Some wag even commented "Why doesn't it talk?". This, of course, was said in jest, but it turned out to be difficult to resist.

Two designs emerged, one using a single chip processor, a System-On-Chip, that draws minimal power. A second design replaces the SOC with a Raspberry PI-Zero that adds a PWM audio (i.e. voice) capability. The board outlines and the external mechanical interface of the two designs are identical.

#### **1.1 A Tale of Two Transmitters**

The SOC design provides control and programming access through an on-board USB UART. A simple verb/noun command structure allows the device to be tested and configured through the USB UART.



## ARRL Midwest Div. Newsletter — December 2023



The Raspberry PI-Zero design can be accessed through the USB port provided by the PI-Zero. Substituting a Raspberry PI-Zero W provides network access through the on-board WiFi hardware. Operation of the PI-Zero hardware is predominantly using features present in the Linux system that runs on the PI-Zero.

### 1.2 Packaging

The first boards produced for the project were built to fit in a Hammond 1599E enclosure. This enclosure provides room for the circuit board and a battery and may be obtained in several mechanically compatible variations. Subsequent revisions were built on the same circuit board outline, moving the external connectors a bit to improve fit. The final artwork for both the SOC design (figure 17) and the PI-Zero design (figure 18) keep the external connectors in the same locations so holes in the housing match, allowing a single drilling jig to be used on the case.

## 2 Hardware

The two hardware variants are described in the following paragraphs. The first variant makes use of a ZiLOG zNEO SOC (System on Chip) device with a generous sized program memory (128KB). The second variant makes use of a Raspberry PI-Zero. The PI-Zero uses a 1GHz single core processor with 512MB of RAM. The PI-Zero is available without the 40pin header installed which allows the PI-Zero to be located above the main logic board with the top of the PI-Zero visible and easily accessible.

### 2.1 DC Power

Power conditioning is identical on both units. A switchmode regulator is used to improve battery life and allow freedom in the selection of the power source. A secondary linear regulator supplies 3.3V to the digital logic on the board.

Nominally power is supplied using a 6 cell AAA alkaline pack. Although a simple 9V radio battery would work, in practice six AAA cells seems to be a bit less expensive with the added benefit of longer run time. Primary cells are used to simplify battery management, simply replacing cells when necessary. A 3 or 4 cell Li-Po pack that will mechanically fit would also work well as the first stage regulator will tolerate input voltages up to 24V.

### 2.2 Frequency Control

Both units make use of clock synthesizers produced by Integrated Devices Technology. These integrated PLL (Phase Locked Loop) devices provide an integrated oscillator, PD (Phase Detector), CP (Charge Pump), VCO (Voltage Controlled Oscillator), and output scaler. Frequency selection is controlled by the oscillator crystal selected and the values loaded into several divider registers in the device.

The SOC variant uses an ICS525-02 clock synthesizer that is powered from either the 3.3V rail or the 5V rail. The output of the clock synthesizer is fed directly to an amplifier daughter-board

The PI-Zero variant uses an ICS307-02 that is powered from the 3.3V rail. The ICS307 output runs through a level shifter to supply a 5V logic level clock to the amplifier daughter-board.



## ARRL Midwest Div. Newsletter — December 2023



### 2.3 RF Amplifier

The RF amplifier, when present, is located on a daughter-board to allow a bit of experimentation without having to alter the main board. The clock synthesizer raw output is, however, sufficient to produce about 20mW of power from 3.3V logic levels. Using 5V logic levels increases the output to about 30mW.

A simple class-D amplifier daughter-board has also been tested that uses a pair of CMOS inverters as the output amplifier that is able to produce about 60mW. This daughterboard is visible in figure 18)

### 2.4 FM Modulation

The transmitter is modulated by changing the load capacitance on the crystal on the ICS525/ICS307 using a pair of varactor diodes. Care must be exercised when selecting the crystal for the ICS525/ICS307. The load capacitance specification for the selected crystal must be high enough to allow for trim parts to allow the crystal to operate at its designed frequency. Installing a crystal with a poorly chosen load capacitance specification will have the crystal oscillating below its intended frequency when the modulation control is idle/disabled.

### 2.5 Audio

The SOC variant uses a timer channel to produce a square wave for generating the audio tone that modulates the carrier. This, of course, limits the SOC variant to transmitting code. The square wave is buffered and passed through a low-pass filter to reduce harmonics. It is then passed along to the modulation control circuit. The PI-Zero has two PWM channels (stereo), only one of which is used to generate audio. The PWM signal from the PI is buffered in the same manner as the SOC variant. The audio signal is filtered and passed to the modulation control circuit in the same manner as on the SOC board.

On the PI-Zero an audio amplifier is added to drive an on-board speaker or an external speaker. Producing sound from the PI-Zero typically requires an audio file.

Sending code on the PI-Zero variant is handled differently than on the SOC variant. Although a bit more involved, the PI-Zero approach provides some improvements. Code messages must be generated and stored in an audio file. I found a small utility written by Thomas Horsten called "cwwav" that I found on GitHub. A text file is fed into cwwav and a .wav files results that can be moved over to the PI-Zero and sent out through the audio device.

### 2.6 HT Control

Controlling the RF section of the fox transmitter is, for all practical purposes, identical to controlling a handheld transceiver. The audio and a separate Push- To-Talk control are routed to a header that provides the capability to control an external handheld transceiver. This connector also provides connections to the power subsystem to allow external power to be routed into the board.



## ARRL Midwest Div. Newsletter — December 2023



[Sections 3 to 5 are available to download from the website listed at the end.]

### 6 Performance

Battery life was of particular concern during design and prototyping of the SOC transmitter. Throughout the design several steps were taken to reduce the power requirements to allow the unit to operate for a reasonable time on battery.

Battery life for the PI-Zero variant is limited due to the use of the Raspberry- PI as the control element. The PI-Zero, when idle, requires about 1/2 watt. Power consumption when active rises to about 3/4 watt. Although this is almost 20 times the SOC power draw, a set of 6 AAA batteries should provide four to eight hours of operation.

Figure 1 is the power measurements taken from the first few units produced. The FOX1 through FOX4 units are built from early revisions of the artwork that lack the switchmode supply.

The current SOC revision, referred to as the "-25" revision in the figure, has several power saving updates from earlier versions. In particular the the "-25" revision changed to a switch-mode regulator to reduce battery voltage from nominally 9V to 5V for use by the amplifier and the ICS525. The discrete oscillators X1 in Figure 4 and X2 in Figure 2 were not used, being replaced with crystals to reduce cost and power consumption.

Operational cost is further reduced by using a six cell "AAA" pack (or an external pack) rather than a 6LR61 battery. Cost of six "AAA" is usually less than a single 6LR61. Operational life is also extended considerably.

The Estimated Run Time columns break down the best case times for the 6LR61 having a capacity of 550mAh and "AAA" cells that range from 850mAh to 1200mAh capacity. Estimated run times, even for the 6LR61 battery, should be sufficient to handle most hunts.

The "AAA" six cell pack fits in the target case while a "AA" pack is too large to allow the cover to be installed. If extended times are needed, an external pack or lithium chemistry batteries may be employed to extend run time. The primary voltage regulator will tolerate input voltages up to 24V to allow a multi-cell pack to be employed.

### 7 Conclusion

The first hunt where these new units were deployed resulted in a dramatic increase in the number of transmitters that were actually located by the hunters. Managing the transmitters by the event organizers is rather trivial, simply turn the unit on as it is dropped in its hiding place and move on. The brightly colored antenna provides an easy to find visual for the hunter as well as for the event organizer at the end of the hunt. No synchronization procedure is required on the day of the hunt.

For the hunters, we move away from punch cards to record a find and simply have them record a random ID number that is taped to each unit. This method, of course, requires a bit of effort to update the ID number on each unit prior to the hunt but eliminates the need to station additional hardware at the fox transmitter.



## ARRL Midwest Div. Newsletter — December 2023



### 7.1 Authors email

kc0jfq@n952.ooguy.com

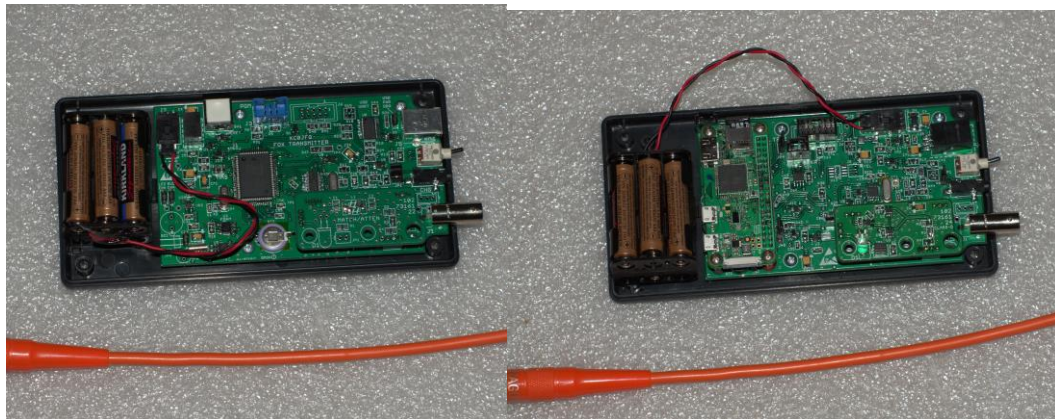
### 7.2 Board Availability

Transmitter boards may be obtained from the author for \$10 each.

### 7.3 Additional Documents

The authors web site for the Fox Transmitters: <http://n952.ooguy.com/HamRDF>

The board is predominantly surface mount. Assembly requires some skill with an iron and a static safe work area. Build documents are available on the web site.







## ARRL Midwest Div. Newsletter — December 2023



### Club News –

#### **Macon County ARC, submitted by Dale Bagley, K0KY**

##### **2023 RADIO CLUB FALL PICNIC REPORT -**

**There was a nice turn-out of members and guest at the Macon County Fall Picnic at Long branch Lake. Chris Clark, KFØGUS arrived early and set-up his operating station as a POTA station. (more info with pictures later in the newsletter). Larry Ballew, ABØHP, did an excellent job grilling the burgers and brats. There was plenty of food that was shared at the picnic.**



**The youngest operator was a nice young lady and her dad Eric Hughes, KEØARP, shown here with Chris, KFØGUS.**

#### **Kansas City Contest Club Submitted by Drew Vonada-Smith, K3PA, Secretary**

The Kansas City Contest Club is looking for new members interested in contesting. The ARRL Club circle size has recently expanded, so we now cover Eastern and Central KS, most of MO, and parts of NE, OK, and IA.

Interested parties should contact me at [drew@whisperingwoods.org](mailto:drew@whisperingwoods.org)





## On The Air Activities

### **MOKAM - St. Louis and Southern Illinois Group Luncheon**

Dave Propper, K2DP

There is a group of AM (that is Amplitude Modulation, not Antique Modulators (sic), enthusiasts who meet together on 3885khz weekday mornings (Monday thru Friday) at 0900 local time. MOKAM is the acronym for the “**Missouri/Kansas AM**” **Net** where fellowship, a bit a chicanery and technical discussions take place in the well mannered decorum of a amateur net. All amateurs are welcome to join the group on any morning. While many of the net members are using true vintage “boat anchor” equipment dating from the 1950’s and 1960’s, many join us using the AM mode on current solidstate transceivers which sound just great. Low power (20 watts) from a new transceiver in AM, driving your amplifier to produce 150 watts of carrier, will work wonderfully well! Come join us sometime!

The net covers an area reaching across the Mississippi River from Southern Illinois to Kansas City, Kansas, with occasional check-ins from folks in the 5<sup>th</sup> call district as well.

The gang from the Metro- St. Louis area and Southern Illinois met for lunch recently and is pictured below.



On the lefthand side are (front to back) AB0RX, W0MJ, K2DP, K9EID, WB0SND and W0HRO (standing).

On the righthand side (front to back) are K4SX, K9JTS, WB4OJM, K4EGK and WA0JCO (standing).



## On The Air Activities (continued)



**Kilowatt Amateur Radio Club SES, W0E, at the Wyatt Earp Fall Festival – contributed by Chris Hunt, NY0H – edited by Dave Propper, K2DP**

On October 7<sup>th</sup>, the Kilowatt Amateur Radio Club (K0KWC) brought the fascinating world of amateur radio to life, delighting festival-goers and visitors with a special event that celebrated both the Wild West heritage and the enduring allure of ham radio.

The Wyatt Earp Fall Festival is an annual event that transports attendees back to the Wild West era, offering a taste of life in 1869 when Wyatt began his famous law career as Constable in Lamar, Missouri. Against this historical backdrop, the Kilowatt Amateur Radio Club set up a captivating display that paid homage to the technology of that time while showcasing the modern capabilities of amateur radio.

K0KWC's booth at the festival was a focal point of intrigue. We erected a fully functional amateur radio station, complete with a variety of different radio equipment. Visitors were invited to step into the world of ham radio aboard the "Ham Bus", explore the technology, and even make their own radio contacts with enthusiasts from around the world.

Festival attendees weren't just passive observers; they were encouraged to actively participate. Some guests enjoyed sending messages in our simulated telegram using Morse code, a skill that was once essential for early radio operators. This hands-on approach to learning provided attendees with a deeper appreciation of the rich history and technical intricacies of amateur radio.

A special THANKS goes out to all the W0E operators who made the SES a success. In no particular order: Leonard, K6LBB – John, KF0BQL – Shannon, W0SDK – Buddy, K5MCK – Tim, N5STR – Chris, N0YH.

*John, KF0BQL, and Tim, N5STR and daughter.*





## On The Air Activities (continued)

On the Ultra Highs – Nosebleed Amateur Radio, Contributed by Ron Ochu, KO0Z, edited by Dave Propper, K2DP

Have you ever used the phrase or some variation of it, “sitting in the nosebleed section?” While many of us think of ham radio in terms of operating HF, VHF and UHF; did you know there’s a ham radio “nosebleed section?” SHF or super high frequency is considered by many amateurs to be equivalent to the nosebleed section in the ham radio spectrum. The perception is there are fewer operators there, the cost per QSO is extravagant and it appeals to esoteric amateurs. That may be somewhat accurate, however, SHF is a vibrant, fascinating facet of amateur radio!

SHF (super high frequency), also known as the microwave bands, offers excitement and challenges. Until recently, major commercial radio manufacturers did not offer anything over 23 cm or 1.2 GHz. Icom now offers a multiband VHF to microwave transceiver (Icom-905). It’s a bit pricey. Well, okay, it’s pricey, but it offers a lot of neat features and bands comparable to their HF transceivers. Before the IC-905, hams wishing to pursue microwave contacts mostly used transverters from Down East Microwave or Kuhne Electronics. I have a DEMI (Downeast Microwave Electronics) 10 GHz transverter and I’ve been using it for well over ten years. To say I am having a blast would be an understatement. Before continuing, let’s get a few technical details out of the way.

A transverter and an IF rig is the heart of a microwave station, but like all electromagnetic frequencies, microwaves need an efficient antenna. Preferably a directional one for greater distances. For the lower microwave frequencies, yagis and loop yagis are prevalent. 10 GHz and higher bands use feedhorns and dish reflectors. while 122/132 GHz and higher rigs can use a lens to focus the signal into the ether.

We’ve been taught that microwave frequencies are only line-of-sight. That’s not entirely correct. Microwave signals can propagate well past line-of sight. In August, AF4JF and myself, KO0Z made a 523-mile QSO with Mike KM0T! About twelve years ago, I made my very first 10 GHz (3 cm) QSO with Harry WA0CNS at Creve Coeur Memorial Park. At the time, I was living in central Illinois, so I drove to St. Louis to test my newly constructed rig. It was only one-hundred yards or so, but it worked. Since then, 40-mile, 3 cm QSOs are routine. Typically, we make 100–300-mile contacts. You can contact the St. Louis Amateur Microwave Society for

additional help and information:  
<http://slams-stlouis.blogspot.com/>.



KO0Z (left) and WA0CNS (right)



## ARRL Midwest Div. Newsletter — December 2023



### **On The Air Activities (continued)**

#### **NOLL Grid DX-pedition – submitted by NOLL**

From August 9th to 13<sup>th</sup>, KB0NTC, Annie and I went up to Northwest Nebraska DN82, a rare grid square for the Perseids meteor shower and 6 meters. We rented a hunting lodge. We had a blast although the sporadic E season wasn't very good this year and the season was about over at that time of year. We made 134 meteor scatter digital contacts and 59 FT8 contacts but did lower the demand for the FFMA or Fred Fish Memorial Award guys (work all 488 US contiguous grids) from 28% needed to 13.5% needed. Am planning on going to EM18 for the Orionids meteor shower October 19th - 21th. shower.

#### **Newton Amateur Radio Club-“ Park Activation” – submitted by Chuck Wagoner, K0WAG, edited by Dave Propper, K2DP**

The Newton Amateur Radio Association Inc has been setting up our radio equipment in a local city park, one Saturday each month for the past 4 months. The operating site is the Aurora Heights City Park, located in Newton, Iowa along US highway 6, just off of I-80. This highway has a lot of local traffic and offers good exposure of our set up.

We installed a canopy cover over the operating area and have signs set up showing who we are and inviting the public to check us out. We have been using a G5RV antenna and an Icom 7300 radio with a 12v battery for power, making QSO's on both phone and cw.

Several folks have stopped by and one young man has begun studying the Technician class manual which our club supplied.





## ARRL Midwest Div. Newsletter — December 2023



**VFW Post 3115 Amateur Radio Club – Wichita, KS, submitted by Larry Mac, W8LM; edited by Dave Propper, K2DP**

The W0VFW Radio Club held a Parks on the Air (POTA) event this past Saturday (10/7/23) at Cheney St. Lake/Park (park # K-2331). We logged ~100 contacts in roughly 4 hours, several were from Europe and a handful from Canada. The rest were from all over the 48 contiguous States and I believe one from Alaska. Overall, we had a great time---- de Gaylen Kline KE0QPG



Photo below show K0VFW Marc Hammond, now Silent Key - one of the founders of VFW Post 3115 Amateur Radio Club and KF0TG Dennis, one of the founders of VFW Post 3115 Amateur Radio Club, Wichita Kansas, being awarded the title of President Emeritus.





## ARRL Midwest Div. Newsletter — December 2023



### Scouting in the ARRL Midwest Division- submitted by\_Dudley Allen, KD0NMD

The KN0BSA Radio Scouting Group had a summer vacation between the June/July five weeks of Camp Cedars summer camp and the Fall Camporee months of Sept and Oct. Summer Camp was a complete success yet again. We averaged about eight scouts per Friday session. Two Radio Merit Badge classes are held throughout each week. Each Friday at least two radio operators arrived early on Friday morning to activate the KN0BSA station and put scouts on the air until about 10am. We made use of anything that was open to give scouts wide exposure: HF, VHF, CW, SATCOM, ARDF, etc... Many thanks go out to operators that were our distant end. These unnamed operators are an essential part of the success we enjoy. Your assistance on site and as a distant end is appreciated when you can do so.

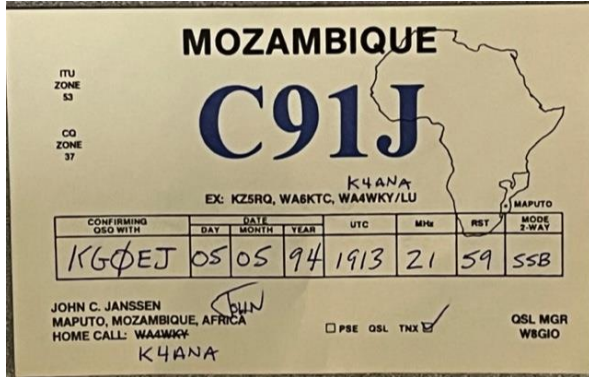
September 30th started a trifecta of large fall Radio Scouting events. On Sept 30th a group of North -East Nebraska Scout troops gathered at Camp Cedars for a STEM weekend of Radio, Astronomy, Robotics, and Weather study. Five Radio Scouting operators set up a station with HF, VHF (with WinLink), and Radio Direction Finding. Each scout was given the opportunity to get on the air. Twenty meters was booming so all scouts willing to talk spoke with someone around the nation. Our VHF Yagi antenna pointed back to Omaha gave us easy access to the ALOR packet station in Valley and the AKSARBEN club .940 repeater system. Traffic over the .940 repeater provided scouts opportunity to speak regionally. A few scouts were interested in sending a message over Packet. They were impressed when I explained that the message would not originate from the internet but pass through a gateway to travel to the destination.

The second event of the trifecta was the 7 Oct WEBELOS Woods event held at Camp Cedars. A WEBELOS Woods event is an opportunity for Scout Troops to demonstrate scouting skills to Cub Scouts in the rank of WEBELO, who are having to make the decision to continue in scouting and select a troop. Radio Scouting is an old scouting program and is appropriate for demonstrating what awaits a new scout. During this event the Radio Scouting team activated KN0BSA and WW0BSA for demonstration over HF, VHF, ARDF, and SATCOM. Throughout the day groups of scouts escorted by parents passed through the station for an introduction to the Radio Scouting program. Also, during the day our station participated in the nationwide Simulated Emergency Test (SET) by originating WinLink traffic to a tactical station in order to test and stress the system for exercise purposes. We have not heard of any other Nebraska stations participating in the SET so we may have been the only one.

The final trifecta event was the annual Jamboree on the Air (JOTA). JOTA is always held the third full weekend in October. This year it was on 21/22 Oct but KN0BSA could only participate in the Saturday, 21 Oct, event. Both Wagon Wheel and Iron Horse Scout districts were at Camp Cedars and Camp Eagle. Hundreds of scouts were in attendance so we had to set up two stations. One at each camp. Both KN0BSA and WW0BSA were in operation to illustrate radio technology as the scouts and their leaders passed through each station. Because both camps were activated we kept a dialog between camps going. We used our local simplex frequencies to deconflict HF frequencies and coordinate efforts such as ARDF. Looking toward future years, the Mid-America Radio Scouting Group is encouraging other Scout councils and districts to establish a working relationship with local Ham clubs for the benefit of youth participating in the Scouting. The problem is that Amateur Radio organizations do not have an outreach program that targets those young people in their schools and scout organizations. If you can do Field Day then you have proven that you can do outreach.



# ARRL Midwest Div. Newsletter — December 2023



## DX'ing and Contesting

### It's Never Too Late to QSL ! - submitted by Todd LeMense, KK0DX

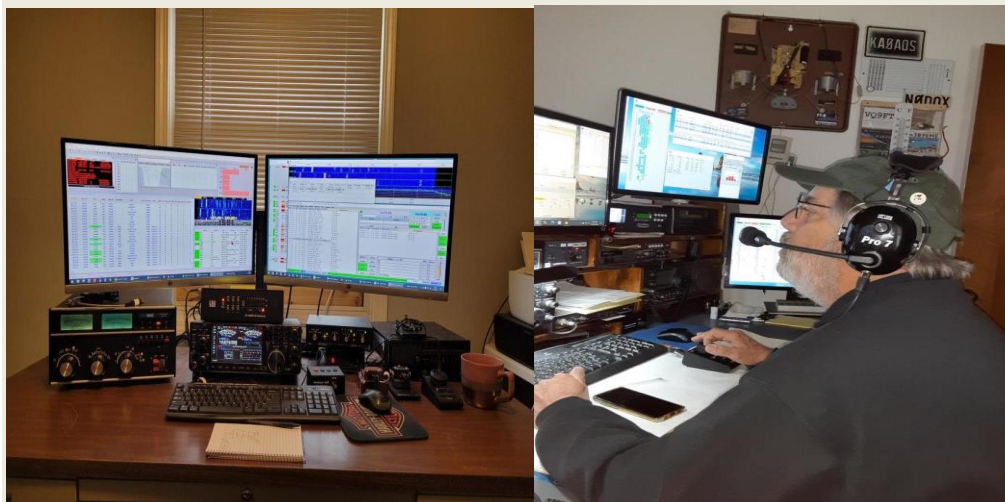
It's never too late to QSL

This summer, I was going through my old paper log books and ran across a 15 meter log entry with C91J. After looking through my confirmed list, I saw that I still didn't have Mozambique confirmed on 15! I was able to find John

Janssen, now K4ANA on QRZ, and sent him an email explaining the situation. Within an hour he responded that he was out-of-town on an extended vacation, but would be happy to confirm our contact and he still had a few C91J cards left. I had to find one of my old KGØEJ cards, and sent John my QSL along with an SASE. Today, October 12, I received my 15 meter confirmation of C91J - 29 1/2 years later!. It's never too late to QSL!

## Kansas City DX Club – Member Profile of KØXM, submitted by ABOX

The KØXM radio shack is shown below. Nice set up! Chuck seems to work everything from this station!







## ARRL Midwest Div. Newsletter — December 2023



### Around Your Shack

#### Annual Tower Maintenance – An October Ritual submitted by Ward Silver, N0AX

October is great antenna weather so don't neglect maintenance! It's a lot easier to "get 'er done" when the weather is nice than in November when those nasty winds from the Dakota Division start to visit.

As you can see from the picture, I have some tower cleaning and painting to do. Rust gets to all steel outdoors, sooner or later. Take a day to haul a wire brush, sandpaper or steel wool, some cleaning rags, and a can of cold galvanizing spray up to the top of the tower and work your way down. Start at the top and work your way down. If you want to avoid getting paint on your climbing gear, wrap it in plastic and secure with duct tape. Paint only when the temperature is suitable for the paint to dry and adhere properly.

While you're at it, check all the bolts on tower sections and guy points - add a couple of wrenches to that kit. And take some electrical tape and UV-resistant black tie-wraps to secure any cables that are getting loose. Tighten terminal strip screws and inspect coax for chafing from rubbing on the tower in the wind or from rotation of the antennas.

As you're going up and down, watch out for wasps or hornets. Check out the tower with binoculars before climbing. A small jar of Adolph's Meat Tenderizer will kill the sting, should you get one, by neutralizing the venom with the tenderizing enzyme, papain. Spit on the sting and rub in some tenderizing powder. Best to just stay the heck away from any nests until after the first freeze.

Then measure the guy tension using a Loos Tension Gauge (<https://loosnaples.com/product/tension-gauges/professional-models/>) of the right model for your guy wires. Keep track from year to year to see if any are getting too tight or too loose. Carefully inspect the guy point hardware for tightness and make sure you have a safety wire through any turnbuckles.

Inspect all electrical connections to the tower, such as for a shunt-feed or tuning network. Make sure corrosion is not occurring between dissimilar metals and freshen up the anti-oxidation compound, if need be.

It's a nice trip up the tower in the fall! You get a great view of fall color and it's a good feeling later in the winter when you know everything is as it should be "up there"!



## **ARES – Portable Antennas**

Submitted by Colin Wheatley, W9UPK

Members of the Dubuque/Jackson ARES team met at the Dubuque County Regional Emergency Training Center to view portable antenna installations--- portable antennas that could be used for emergency communication-deployments. Portable antenna assemblies were presented by Dan Shireman—KB0DAN; Pat Daly---KE0RS; Robert Smith—K0RMS; and Colin Wheatley—W9UPK.





## Amateur Radio History

### Santa Fe Trail Amateur Radio Club - Ensor Park and Museum submitted by Rick Nichols, Edited by Dave Propper, K2DP

It has been an eventful year at Ensor Park and Museum in Olathe, Kansas, the eight-acre site owned and operated by the City of Olathe where two amateur radio clubs, the Santa Fe Trail Amateur Radio Club and the Johnson County Radio Amateurs Club, collectively provide the hosts for guided tours of this one-of-a-kind attraction.

In early June, and for the third year in a row, the SFTARC held a special event commemorating the anniversary of the presentation of the Paley Award for 1940 to Marshall Ensor, W9BSP, in recognition of his valuable contributions to the field of amateur radio beginning in the late 1920s and continuing into early 1940. Later in the month members of the club gathered at EP&M to again hone their technical and communication skills during Field Day, the annual emergency preparedness exercise organized by the American Radio Relay League.



Saturday, August 12 saw the SFTARC, with the assistance of the City of Olathe, pull off a first-time event marking the 100th anniversary of the first documented contacts that originated from the radio station at the 120-acre Ensor farm, which was initially licensed as 9BSP and later as W9BSP and then W0BSP. Ensorfest 23 included a presentation focusing on the Morse code, tours of the woodworking shop where equipment and tools Marshall used during his lengthy career as an Industrial Arts teacher are exhibited.

On September 28, LeEtta Felter, a member of the Olathe City Council was given a tour of EP&M by SFTARC members Howard Cripe, N0AZ, Marty Peters, KE0PEZ, Peg Nichols, KD0VQO, and Rick Nichols. Park Services Manager Paul Krueger and John Gray, KD0VRS, also were on hand for the look around.

Listed on the National Register of Historic Places, EP&M is open from 1 to 5 p.m. Saturdays and Sundays during the months of May, June, September and October. There is no charge for admission, but freewill donations are always welcome and accepted.

For additional information about EP&M, visit [www.ensorparkandmuseum.org](http://www.ensorparkandmuseum.org).

A Look Inside ARRL Headquarters and the W1AW Station –





## ARRL Midwest Div. Newsletter — December 2023



Submitted by George Mackus, AB0RX; edited by Dave Propper, K2DP

One of the things on the AB0RX Ham Radio bucket list has been a visit to ARRL Headquarters in Newington, CT. I always wanted to visit New England during the annual color changing in the fall. This year, 2023, was finally the year for both.

I arrived at ARRL HQ on 6 October in the morning. The first thing was to walk the grounds to



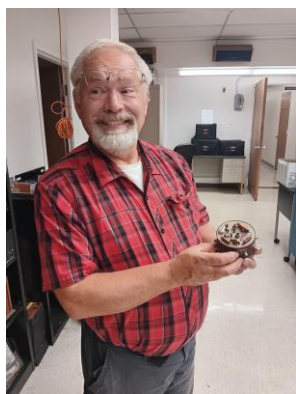
look at the W1AW building and antenna setup. Many pictures were taken. I also took some pictures of the ARRL HQ building. The W1AW antenna farm consists of 4 main towers with many antennas on each one.

Since I has a prearranged appointment to tour the ARRL lab in the morning, I went to the HQ building first.



The ARRL HQ building is just across the parking lot from the W1AW building. In the lobby, there was a nice display of Harvey Wells and Heathkit equipment. There I was met by Bob Naumann, W5OV, ARRL Director of Operations, who gave me a tour of the ARRL historical collection and the ARRL lab. There was a great display of antique equipment from the early days of radio through the boat anchor years. There is

also a collection of various projects that were featured in QST over the years. Shown left is the original “Tuna Tin” QRP xcvr developed by Doug Demaw, W1CER in the early 1970’s.



The HQ building also houses the new “state-of-the art” SDR driven station, W1HQ, which is used for the ARRL laboratory development and is separate from W1AW. W1HQ has its own antenna system with two towers mounted on the roof of the HQ building. Knowing I would be spending the afternoon at W1AW, I did not attempt to operate from W1HQ.



## ARRL Midwest Div. Newsletter — December 2023



After the HQ building tour was over, I walked across the parking lot to the W1AW building where I was greeted by Dan Wall, W1ZFG. Dan is an ARRL HQ retiree who now volunteers at W1AW. After a quick tour of the W1AW building, I was ready to get on the air. My plan was to operate SSB on the highest band that was wide open to Europe and if possible, operate SO2R running FT8 on a second band. The SO2R request was a little unusual to them, but after explaining what was involved to Dan, he suggested I operate from Studio #3. Studio #3 was set up for FT8 operation using a Kenwood radio.

Fortunately, Studio #3 has two operation positions with the Kenwood Radio on the right and another radio on the left. As luck would have it, that other radio just happened to be the Yaesu FTDX9000. Each operating position has its own separate computer for logging and could be independently operated. This was just the way I wanted it and all I had to do was tilt the right station monitor over so I could read it from the Yaesu station, and move the wireless keyboard and mouse over to the left station where I could easily reach them.

Since there was another guest operator operating 10M CW when I got there, I elected to start out on 15M SSB on the Yaesu radio and 20M FT8 on the Kenwood radio. Both beams had separate rotators and could be controlled independently. I started out with both beams pointed at Europe. It didn't take long before I had two simultaneous pileups going.

After an hour, to give a chance to work the friends back home, I moved the 20M antenna to the west. After another hour, I moved it back to Europe for the duration. I never touched the rotator for the 15M beam until the final QSO. I operated for over four hours. I think that there were almost 300 QSO's on 15M SSB and over 100 on 20M FT8. At the end, the W1AW staff presented me with a nice certificate stating I had visited and operated W1AW.



I really enjoyed my visit to ARRL HQ. If you are visiting the Hartford, CT area, Newington is just a short drive south of Hartford. A visit to ARRL HQ is defiantly worth the time. You might even consider making a special trip for it.





# ARRL Midwest Div. Newsletter — December 2023



## Midwest Division Hamfests – Dave Propper, K2DP



Art, K0AIZ, ARRL Midwest Division Director and Dave, K2DP, ARRL Midwest Division visited several Division area hamfests during the past few months. Photo on left shows Art, K0AIZ and Ron Cowan, KB0DTI, ARRL Kansas Section Manager at the Wichita Area Hamfest and ARRL Kansas State Convention.

Dave, K2DP, travelled to the Cedar Valley Amateur Radio Club Hamfest near Cedar Rapids, IA and was hosted by David Cripes, NM0S and his



XYL for a BBQ dinner prior to the event. David also showed me his beautiful homebrew HF SDR QRP transceiver (see left below). Photo directly below is K2DP.



Other hamfests attended by K2DP included the St. Charles ARC Hamfest and the St. Louis Amateur Radio Club Halloween Hamfest.



## ARRL Midwest Div. Newsletter — December 2023



### Upcoming ARRL Midwest Division Hamfests and Conventions

Title	Start Date	Location	Address	City	State	ZIP	Website
Winterfest, ARRL Midwest Division Conven	01/27/2024	Gateway Convention Cente	One Gateway Drive	Collinsville	IL	62234	<a href="http://winterfest.slsrc.org">http://winterfest.slsrc.org</a>
HARC Winter RF Fest	02/24/2024	National Guard Armory	2930 Willis Ave.	Perry	IA	50220	<a href="https://www.qsl.net/kd0neb/">https://www.qsl.net/kd0neb/</a>
HAMBASH 2024	04/20/2024	Ararat Shrine Temple	5100 Ararat Drive	Kansas City	MO	64101	<a href="http://hambash.us">http://hambash.us</a>
Hannibal/Quincy Hamfest	05/04/2024	Palmyra American Legion	600 Short Street	Palmyra	MO	63461	<a href="http://www.w0kem.com">http://www.w0kem.com</a>





## ARRL Midwest Div. Newsletter — December 2023



### Your ARRL Midwest Division Leadership



**Director: Art Zygielbaum, KØAIZ**  
[k0aiz@arrl.org](mailto:k0aiz@arrl.org) 402-421-0840



**Vice Director: Dave Propper, K2DP**  
[k2dp@arrl.org](mailto:k2dp@arrl.org) 314-225-5167

### Team

**Iowa Section Manager:** Lelia Garner, WAØUIG

**Kansas Section Manager:** Ron Cowan, KBØDTI

**Missouri Section Manager:** Cecil Higgins, ACØHA

**Nebraska Section Manager:** Matt Anderson, KAØBOJ

**Midwest Division Webmaster:** Steve Schmitz WØSJS email: [w0sjs@arrl.net](mailto:w0sjs@arrl.net)

**Midwest Division Website:** <http://www.arrlmidwest.org/>



## ARRL Midwest Div. Newsletter — December 2023



### Assistant Division Directors:

Name	Call	Email	City	State	Interests/skills
Tim Busch	N0CKR	N0CKR@arrl.net	Atkins	IA	
Lee Garner	WA0UIG	wa0uig@gmail.com	Robins	IA	Section Manager
C.W. Pantel	K0IIR	pastorpantel@machlink.com	Muscatine	IA	dx, clubs, traffic, contesting
Jim Spencer	W0SR	W0SR@arrl.net	Cedar Rapids	IA	
Mike Albers	K0FJ	K0FJ@arrl.net	Colby	KS	Repeaters, WinLink
Jim Andera	K0NK	K0NK@arrl.net	Gardner	KS	Public Service/Portable Operating: Alternate EC
Ron Cowan	KB0DTI	dtiham@yahoo.com	La Cygne	KS	Section Manager
Bill Henderson	K0VBU	K0VBU@arrl.net	Overland Park	KS	Contest/DX/ CW
Richard Johnson	K0RCJ	K0RCJ@arrl.net	Mopherson	KS	Licensing/Exams
Jon Jones	N0JK	N0JK@arrl.net	Lawrence	KS	VHF/UHF/Weak Signal
Brian Short	KC0BS	kcshorty@gmail.com	Olathe	KS	Repeaters, ARES, Technology
John Frederick	N8GOU	N8GOU@arrl.net	Carthage	MO	Technical And repeater Builds
Paul Haefner	K0JPL	K0JPL@arrl.net	Chesterfield	MO	CW and contesting
Cecil Higgins	AC0HA	Higgins.cecil@gmail.com	Hermitage	MO	Section Manager: ARES emergency COMMS and response
Ronald Ochu	KO0Z	ronochu.sky@gmail.com	Saint Peters	MO	ARES, SkywarnVHF, Microwave, Writes for CQ
Randy Schulze	KD0HKD	KD0HKD@arrl.net	Kansas City	MO	Club Governance and Satellite Communications
Kent Trimble	K9ZTV	K9ZTV@arrl.net	Jefferson City	MO	General help
Eric Zust	W0TT	W0TT@arrl.net	Cheseterfield	MO	Good for contest and DX advise.
Matt Anderson	KA0BOJ	KA0BOJ@arrl.net	Raymond	NE	Section Manager
Jeff Beiermann	WB0M	wb0m@flashdog.us	Omaha	NE	Scouting, photographer
Joe Eisenberg	K0NEB	K0NEB@arrl.net	Lincoln	NE	Construction, Kit building, Writes for CQ
Allen Harpham	WD0DXD	aharpham@flatwatertech.com	Hastings	NE	Revitalizing Clubs and testing
Todd LeMense	KK0DX	todd@lemense.com	Omaha	NE	DX, Clubs
Mike Osterberg	K0VZ	k0vzradio@gmail.com	Kearney	NE	Clubs