

A PUBLICATION OF THE JOHNSON COUNTY RADIO AMATEURS CLUB, INC.

## President's Corner

The astronomical Spring is here. That means meteorological Spring is not far off. April is the beginning of Public Season Events season as well. Public Service Events are good for new Amateur Radio operators. These events provide you with a way to learn how to program and use your radio. You are also exposed to how a (directed) net operates. Another byproduct is meeting other Hams in person and not just on the air.

Due to church activities on April 12th, the meeting room will not be available. We will switch around our meetings a bit for accommodation. On April 12th, we will meet in the church parking lot for a program on mobile radio installations. Several members will show how they solved the task on mounting and powering their equipment in their vehicles. If it is raining, we will move to a location with some cover. Listen to the 145.29 repeater for where we are gathering in the event of weather.

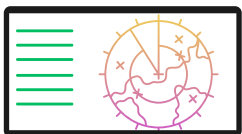
The April 26th meeting will start with a brief meeting followed by a demonstration on the Kraken SDR direction finding system. Keith and Sam Bowman will hunt and find the fox in real time. We will track their progress.



## Upcoming Club Events

- Tue. Apr 2 @ 1830 - Club VE Testing - JoCo Library 9875 W 87th St, OPKS
- Fri. Apr 12 @ 1900 - Club Meeting - Parking Lot interactive presentation - Topic: Mobile Radio Installations by various club members
- Fri. Apr 26 @ 1900 - Club Meeting - Short Business Meeting and presentation with Q&A - Topic: Kraken SDR Direction Finding System by Sam and Keith Bowman
- Tue. May 7 @ 1830 - Club VE Testing - JoCo Library 9875 W 87th St, OPKS
- Fri. May 10 @ 1900 - Club Meeting - Biz meeting and presentation - Topic: Weather Balloon Tracking by Mike Laney KEØGHU

Bill  
KA2FNK



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# Meeting Minutes 02-09-2024

## **Johnson County Radio Amateurs Club**

These minutes were approved by the membership in attendance at the 03-08-2024 meeting.

Meeting Date: Friday February 9, 2024. The meeting Started at 7:00 PM.

Attendance: Self introduction with name and call sign. 27 signed the check in sheet. This was followed by the Pledge of Allegiance.

As per the new By-Laws, the Minutes of the previous meeting from January 12, 2024, were posted on the club website instead of being read. The posted minutes were approved unanimously.

The Treasurer's report was read and accepted unanimously. We currently have 145 active members.

### Old Business:

- We welcomed all 1st time visitors to the meeting.
- Repeater Update – Bill Brinker, WA0CBW reported that all Repeater are working well.
- Kevin Van der Does, AD0IM reports the Club's VE team is now affiliated with ARRL. We had 8 participants at the February 6th testing session.
- Field Day 2024 – Will again be at Shawnee Mission Park (Old Hutton Farm). We have secured a new Army Push-up Mast. Look for an announced time and date to practice setting it up.

### New Business:

• The Board met on January 20th. It was determined that the Treasurer's responsibilities have increased to the point where it's becoming too much for one person to handle. Therefore, it was decided to create the following Positions:

--> Membership Manager – Open

--> Club Store Manager – Jaimie Charlton, AD0AB has agreed to do this.

It was also decided to stop requiring expenses for Club activities be paid up-front by the membership. Instead, the Club will have 2 Debit Cards issued to the Treasure and President to pay for expenses. This will avoid extra work on the part of the Treasurer to cut reimbursement checks.

Finally final Position, currently done by the President, was created to free up his time was:

--> Program Manager - Open

These positions are available to any member if interested.

- Members Only Tab on website has been permanently taken down.

### Reports:

- 6 m – NR.
- 10 m SSB Roundtable – 2 on 1/31, 5 on 1/25, NR on 1/18, 3 on 1/11, 3 on 1/4.
- 40m SSB Roundtable – 4 on 1/24, 3 on 1/17, 3 on 1/10, 5 on 1/3.
- Fusion Digital 440 net – 8 on 1/31, 10 on 1/24, 12 on 1/17, NR on 1/10, 8 on 1/3.
- 2m Wheat Shocker net – 9 on 1/25, NR on 1/18, 16 on 1/11, 15 on 1/4.
- HF Activity – Europe on 10m, Bermuda on 20m, Antarctica FT8, and Belize on 160m.
- Pota Activation – None.

# Meeting Minutes 02-09-2024 cont'd

## Johnson County Radio Amateurs Club

### Announcements:

- Beryl Breakfast every Saturday Morning 8:00 am at Hy-Vee in Prairie Village.
- SFTARC Ensor Fest Saturday May 11. More details to follow.
- Club Net Controllers are needed for the Thursday Nets. If interest let Dave Porter, K0DVP know. We are currently planning a Net Controller class.
- Garmin Marathon April 20th. See Herb Fiddick, NZ0F.

Business meeting adjourned at 7:42 PM.

### Program:

The program was WINLINK Global Radio E-Mail by Bill Gery KA2FNK.

Submitted by Ted Knapp, N0TEK Secretary.

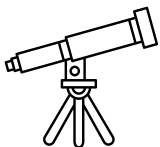
## Meeting Presentation 03-08-2024

For this club meeting, there was a business session conducted prior to our meeting presentation. The Meeting Minutes from this business meeting have not been approved by the membership at the time of this publication, but they are available for review on the club website at [www.w0erh.org](http://www.w0erh.org) and will be voted on for approval by the membership at a later meeting. Once approved, they will be published in the following issue of Feedback.

The topic of the presentation for this meeting was The Powell Observatory and Other Things Out of this World led by Mitch Cloud, KCØMC. During this presentation, Mitch discussed how he became involved with Ham radio. He spoke about his interests in astronomy and wanting to be able to communicate with the astronauts on the International Space Station. It didn't take Mitch long to see a solid connection between astronomy and Ham radio, especially when you are talking about using antennas and telescopes to receive weak radio signals and light emissions. He did discuss what the Powell Observatory is, the equipment located at the observatory, and how people can have access and use the facility.

Mitch is also the school counselor at Fairview Elementary in Olathe. Last year, Mitch and his school were one of a select few that we chosen to speak with the astronauts on the ISS. Through a remote station in Australia, his school was able to communicate with the ISS and ask several questions while the ISS passed over Australia. The video of this communication between Fairview Elementary and the ISS is available on YouTube if you would like to see if yourself.

Mitch also stated that there are some opportunities to introduce amateur radio to others at Powell. One such instance was the Annular Solar Eclipse which occurred in October 2023. Jay Greenough, WJØX, brought out the Salvation Army's SATERN Communications Van to Powell for the events at Powell that day. If you should be interested in more about Powell Observatory, you can connect with Mitch or go straight to the Astronomical Society of Kansas City at [www.ksac.org](http://www.ksac.org) where you can find more info and a calendar of events. If you would like to know more about how you might be able to connect Ham radio with astronomy, Jay or Mitch are great resources to get started.



# Meeting Presentation 03-22-2024

The second meeting of the month features an extended presentation. For this meeting, the topic was presented by Randy Schulze WØICQ and Dave Hinkley KAØSOG on mystery radio transmissions coming from Amelia Earhart following her crash. Randy and Dave were asked by the new Amelia Earhart Hangar Museum in Atchison KS about a possible link between transmissions said to have been heard and Ham radio.

For the museum, they prepared a slideshow presentation on findings that they've uncovered from historic records and verified them for validity. Since this presentation is geared toward the general public with little to no knowledge about Ham radio, it did include many fundamentals about Ham radio including a bit about antennas, frequencies, and harmonics. For the non-Ham members of the audience, this was helpful. Included in their presentation were some records of who heard what and where those receivers were located, what frequencies transmissions were heard, types of radios used, or likely used, to hear those transmissions, and more. Because they will be presenting this at the museum later this year, I don't want to publish too much to take away from their presentation later, but it was quite the fascinating presentation. If you do have an interest, monitor the museum's website for upcoming events where Randy and Dave may present this slideshow or reach out to them directly.

## Hambone

### **"Hambone & the All Band Antenna"**

*A Hambone story by Jaimie Charlton ADØAB*

It's Spring Break at Hambone's engineering school, but he and some friends are spending it in town instead of carousing in Miami with Joey and Foxy. It's not that they don't like a good carouse. They do. But due to their impecunious state, caused by excessive weekend carousing, they are stuck at home.

Consequently, they are attending a seminar sponsored by their fraternity and Hambone is the emcee. "Good afternoon, everyone, and welcome to the Engineering Frat's third Spring Break Seminar. Today's topic not only expands on the content of our classes on electromagnetism, it offers a glimpse of a new product soon to go on the market. This product is a game-changer in the wide band antennas market and will be of particular interest to us ham radio operators.

"Our speaker today is the inventor of this unique product and the CEO of Dynamic Electromagnetics Inc., a new start-up specializing in antenna design. Originally from Embu, Brazil, our guest moved to Kansas City to continue his education. He graduated from this school about twenty years ago with degrees in physics and electrical engineering.

Upon graduation he returned to Brazil and accepted a teaching position at the Papo Furado University in Cubatão where he received his doctorate and did research leading up to his invention.

"After about two years, he established Dynamic Electromagnetics (i.e. Eletromagnéticos Dinâmicos) and began manufacturing specialized antennas. Now, he is expanding his line of antennas to include the ham radio market.

Without further ado, I present to you Doctor Pior Trapaceiro."

"Thank you, Hambone. It's an honor to speak to your group.

"Before I discuss my new line of extra short, all-band ham radio antennas, I would like to review a little about antenna design from the ham's point of view."

Doctor Trapaceiro steps up to the portable whiteboard to illustrate his explanation.

"Let's begin with the ordinary half-wavelength dipole and the famous formula:  $L = 468/f$  Where: L is the overall length of a half wave dipole in feet and f is the frequency of interest in MHz.

"In other words, we use this formula to find the length of a half-wave dipole for any given frequency.

## Hambone cont'd

“We’ve all seen and probably used this formula and found it works pretty well. But how many of you have taken the time to figure out where that magic number, 468, comes from?”

Scanning the audience, Trapaceiro sees no raised hands and continues.

“By the show of no hands, I guess that’s nobody.

“Since we know the wavelength of any radio wave is the speed of light divided by the wave’s frequency, it seems as though the half wavelength should be:  $L = (1/2)c/f$  Where:  $c = 984,000,000$ , the approximate speed of light, in feet per second.

“So, that makes the formula:  $L = 492/f$  Oh, oh, why isn’t that number 468 like in the ‘real’ formula?”

“I’ll tell you. That big number,  $c$ , is the speed of light in free space. It’s how fast a radio wave or as we say, RF, travels when there is nothing to slow it down. It’s not the speed RF travels along a wire.

“When traveling along ordinary insulated wire, RF goes slower by an amount that is determined by the metal in the wire and the type of insulation around it. The percentage it slows down is called the *Velocity Factor*. In this case it’s:  $VF = 468/492$  or about 95%.”

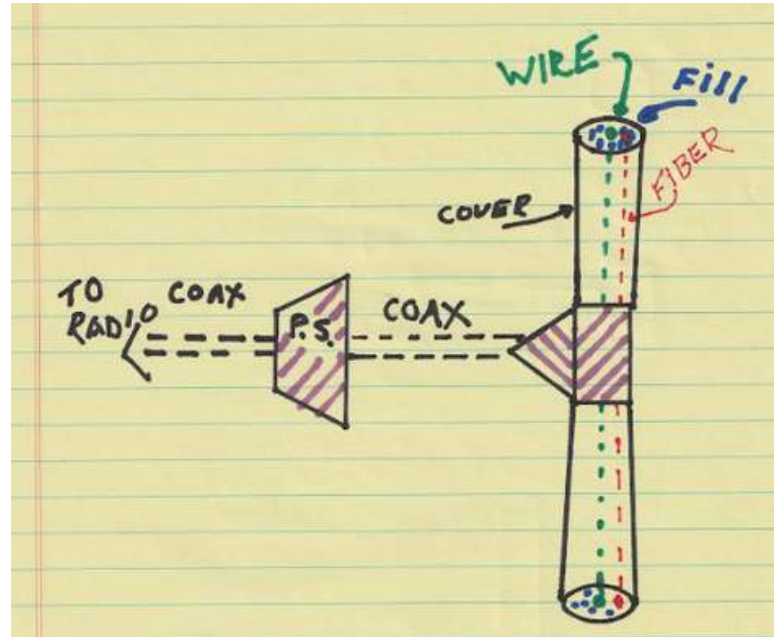
“Is that like in coax?” asked a voice from the back of the room.

“It’s exactly the same thing, In coax the velocity factor, or VF, is determined largely by the insulation inside the coax. On antennas, it’s determined mostly by the insulation on the outside of the wire and somewhat by the wire itself.

“Because the physical length of the antenna is determined by the wavelength of the signal it’s radiating multiplied by the wire’s VF, we must make the antenna a bit shorter than the signal’s free space wavelength. That’s the simple principle upon which our new all band antenna operates.”

*Author’s note: I have taken the liberty to reproduce the Doctor’s drawing on this yellow pad.*

“This simplified sketch shows the inside of our antenna. Everything is contained in the outer plastic cover. Inside, is a copper antenna wire surrounded by our proprietary dielectric fill along with an optical fiber. This extra red line is that fiber.



Here, where the dipole’s center insulator is located, we’ve replaced that with a small control box.

“Note that the antenna’s overall length is about nine feet two inches or about right for a six-meter dipole. But this antenna can actually be used at any frequency between about seven and fifty-two megahertz. Or basically, the forty to six meter ham bands with very low SWR!”

A voice from the back of the room asks, “Don’t you need a really wide-band tuner to work forty meters?”

“No, that is what makes this antenna special.”

“It must be voodoo or magic.”

“It’s neither. It’s just good - no great - engineering.”

“Okay, how do you do it?”

“I thought you’d never ask.”

“As I mentioned earlier, it’s the speed of light,  $c$ , that determines the length of an antenna for a given frequency. Since we’ve always considered  $c$  to be fixed, we tune our antennas by changing their lengths. That’s why an antenna for a low frequency is so much longer than one for a high frequency.

## **Hambone cont'd**

“But what if we turn that process around and say the antenna’s length is fixed and we tune the antenna by varying the speed of light? Never thought of that, did you? Well, that’s how this antenna works.

“It all begins with Maxwell’s formula for the speed of light. I’m sure you all remember it from your classes, but I’ll write it here just for reference.

$$c = 1/(\mu\epsilon)^{1/2}$$

Where  $\mu$  = permeability of free space and  $\epsilon$  = permittivity of free space.

“Now let’s rephrase the terms above. Let’s call  $\mu$  and  $\epsilon$  the permeability and permittivity of the local medium which the radio waves are passing through. That is, the permeability and permittivity of the material surrounding our antenna wire. All we have to do is raise either or both of those values and the speed of light, as far as our antenna is concerned, goes down.”

The room falls silent as the audience ponders this possible perversion of Maxwell’s and Einstein’s definitions of the speed of light.

Breaking the silence, Doctor Trapaceiro continues, “Okay, I lied a few minutes ago. There is a little magic and it comes in right here. My associates and I have discovered a way to greatly change the  $\mu$  and  $\epsilon$  of the space around the antenna and we use that to tune the antenna.

“My sketch shows the antenna wire with a thin fiber optic line running next to it. Both are inside a flexible black plastic covering. The space between the wire and the covering is filled with our proprietary material.

“As it stands, the proprietary material raises both  $\mu$  and  $\epsilon$  to such an extent that the velocity factor becomes only about one eighth of its free-space value. That’s why this demonstration antenna looks like it’s cut for six meters, but really tunes up on forty meters.”

Hambone raises his hand and asks, “That’s very interesting, but how does that antenna operate on other bands? Is that box at the transceiver a tuner?”

“That’s a great question. No, that box isn’t a tuner in the conventional sense. It’s a power supply that puts a DC voltage on the coax along with the RF. The real magic is in this box that replaces the center insulator of the dipole.

“Inside that box there are two ultraviolet light-emitting diodes, or LEDs, attached to the optical fibers. When these diodes are energized by power provided by the power supply, they illuminate the glass fibers with ultraviolet light.

“When the LEDs are dark, the proprietary fill material surrounding the antenna wire provides a VF of about one-eighth or 12.5%. That makes the antenna seem to be electrically about eight times longer than it physically is. But when the LEDs are lit and their UV light is distributed, via the optical fibers, throughout the material, an interesting thing happens. The material loses its ability to reduce the VF. So, as the light gets brighter, the VF increases eventually almost reaching the free-space value of 1.”

“That’s amazing! How does a ham operator change bands without a tuner?”

“He simply adjusts the brightness of the LEDs by varying the voltage put out by the power supply box. When the LEDs are dark, the VF is at its lowest and the antenna resonates at about seven megahertz. When they are at full brightness, the VF is nearly 1 and the resonant frequency is about fifty-five megahertz.

“There’s a calibrated dial on the power supply that indicates the band. But we recommend that the operator also use an SWR meter to optimize the power supply setting.”

“That’s so cool. Where can we buy the antenna?”

“Well, they are not for sale, yet. We are trying to build up a stock. I do have a few demonstration models with me. They are preliminary beta test prototypes.”

“Why not let us buy them? We can help with the beta tests in real-life ham shacks?”

“I don’t know, the factory said they want their prototypes back.”

## Hambone cont'd

“Please? Let us buy your demos.”

“Well, I only have this one model, the *Lhe-Figado*.” Terceiro pauses to consider selling his demos.

“Oh, all right. I guess you can have them for \$250 each. That’s half the market price when they go on sale.”

As the boys are jostling each other to be first in line, a grinning Doctor Trapaceiro accepts their credit cards and hands out the antennas.

When all the antennas are sold, the boys and Doctor Trapaceiro leave the meeting hall. The boys head for the ham shacks to hook up the antennas. Doctor Trapaceiro, still grinning, heads for the airport to hook up with a flight back to Brazil.

\*\*\* *The next day, at Hambone’s Uncle Elmer’s ham shack, we find Hambone lamenting his purchase to his uncle.* \*\*\*

“Unck, I don’t get it. I just can’t make this antenna work. It seems to be sort of okay on six meters, but the SWR goes through the roof on all other bands.”

Skeptical, but willing to help his nephew, Elmer says, “Let’s look inside this antenna.”

Opening the power supply box, Elmer observes, “Hmm... there’s not much inside this power supply. There’s a pot with a knob, but no actual power supply. It looks like the coax just passes straight through.”

“Darn, I bet I got a prototype that wasn’t quite finished.”

Saying nothing, Elmer opens the LED box.

“Geez,” gasps Hambone. “There’s nothing in that box except an insulator. There’s no LEDs and certainly no optical fiber. I don’t know what’s going on here.”

Finally, grasping the inner wire of the antenna with his needle-nosed pliers, Elmer pulls it out of the black plastic cover. It seems to be nothing more than plain antenna wire. No special covering, just black insulation.”

Now, Hambone is well and truly pissed, “I’m gonna email that Doctor Trapaceiro and demand my money back!”

“Good luck with that,” replies his uncle as he reads some fine print stenciled on the wire where its brand name should be.

The print says, “Primero de Abril, bobo.”

Jaimie "Unck" Charlton  
ADØAB  
Author of Hambone



## This is Only a Test

Are you new to the hobby? Maybe you recently received your Technician class ticket and what you have learned is still fresh. Or maybe you have held your Extra class ticket for a while and have forgotten some of what you have learned. Regardless, let's keep those mental pencils sharp by reviewing some of the questions from each of the question pools. Only a Tech? Push yourself and try the higher class questions. You might surprise yourself and be encouraged to try your hand at upgrading!

General pool questions changed effective 1 July 2023. Amateur Extra pool questions will change effective 1 July 2024.

1. T2A01 – What is a common repeater offset in the 2 meter band?
  - A. Plus or minus 500 kHz
  - B. Plus or minus 1 MHz
  - C. Plus or minus 5 MHz
  - D. Plus or minus 600 kHz
2. T0B05 – What is the purpose of a safety wire through a turnbuckle used to tension guy lines?
  - A. Secure the guy line if the turnbuckle breaks
  - B. Provide a ground path for lightning strikes
  - C. Prevent loosening of the turnbuckle from vibration
  - D. Provide an ability to measure for proper tensioning

## Test cont'd



3. T8A10 – What is the approximate bandwidth of AM fast-scan TV transmissions?
  - A. About 6 MHz
  - B. About 1 MHz
  - C. About 3 MHz
  - D. More than 10 MHz
4. T4A10 – What function is performed with a transceiver and a digital mode hot spot?
  - A. RTTY encoding and decoding without a computer
  - B. High-speed digital communications for meteor scatter
  - C. FT8 digital communications via AFSK
  - D. Communication using digital voice or data systems via the internet
5. G5C12 – What is the capacitance of a 20-microfarad capacitor connected in series with a 50-microfarad capacitor?
  - A. 1,000 microfarads
  - B. 0.07 microfarads
  - C. 14.3 microfarads
  - D. 70 microfarads
6. G7C02 – What output is produced by a balanced modulator?
  - A. Audio with equalized frequency response
  - B. Double-sideband modulated RF
  - C. Audio extracted from the modulation signal
  - D. Frequency modulated RF
7. G2E01 – Which mode is normally used when sending RTTY signals via AFSK with an SSB transmitter?
  - A. CW
  - B. USB
  - C. LSB
  - D. CW
8. G1C09 – What is the maximum power limit on the 60-meter band?
  - A. 10 watts RMS
  - B. ERP of 100 watts PEP with respect to a dipole
  - C. 1500 watts PEP
  - D. ERP of 100 watts PEP with respect to an isotropic antenna
9. E7E04 – What is one way a single-sideband phone signal can be generated?
  - A. By driving a product detector with a DSB signal
  - B. By using a loop modulator followed by a mixer
  - C. By using a balanced modulator followed by a filter
  - D. By using a reactance modulator followed by a mixer
10. E1E09 – What may be the penalty for a VE who fraudulently administers or certifies an examination?
  - A. A sentence of up to one year in prison
  - B. Revocations of the VE's amateur station license grant and the suspension of the VE's amateur operator license grant
  - C. A fine of up to \$1000 per occurrence
  - D. All these choices are correct
11. E6C09 – What is a Programmable Logic Device (PLD)?
  - A. A programmable collection of logic gates and circuits in a single integrated circuit
  - B. A logic circuit that can be modified during use
  - C. Programmable equipment used for testing digital logic integrated circuits
  - D. A type of transistor whose gain can be changed by digital logic circuits
12. E7F11 – What sets the minimum detectable signal level for a direct-sampling SDR receiver in the absence of atmospheric or thermal noise?
  - A. Reference voltage level and sample width in bits
  - B. Missing codes and jitter
  - C. Data storage transfer rate
  - D. Sample clock phase noise



## Test cont'd



Answers: 1d, 2c, 3a, 4d, 5c, 6b, 7c, 8b, 9c, 10b, 11a, 12a

## How did you do?

If you got all the questions correct, *Congrats!* If you hold a Technician or General class license, this may be the sign you need to work on that upgrade. Plenty of resources are available for study. The JCRAC VE Team holds testing sessions on the first Tuesday of each month at the Johnson County Library at 87th & Farley in Overland Park. The VEs start arriving and setting up about 6:30 PM, but as long as you arrive by around 7:00 PM or shortly thereafter, you should be able to complete your test. The library does close at 8:00 PM.

Are you ready and don't feel like you can wait? Contact Kevin, ADØIM, and see if a pop-up VE session can be held. Only 3 VEs are needed and there a plenty of Club VEs, so it usually isn't too difficult to arrange. They understand that when you are ready, **YOU ARE READY!**

## Intentional QRM

If things were named like Walkie Talkies:

- Postage Stamp - Licky Sticky
- Bumble Bee - Fuzzy Buzzy
- Pregnancy Test - Maybe Baby
- Nightmare - Screamy Dreamy
- Socks - Feetie Heatie
- Defibrillator - Hearty Starty
- Fork - Stabby Grabby
- Hippopotamus - Floatie Bloatie
- Detention - Tardy Party
- Ladle - Soupy Scoopy
- Wind Chill - Freezy Breezy

## Upcoming Public Service Events

April is here and Public Service Events are starting **THIS MONTH!** In case you are new to the hobby, PSEs are a great opportunity to test your equipment, familiarizing yourself with it, as well as learn how to properly operate in a directed formal net. These are also great opportunities to meet other area Hams while giving back to our communities.

Below is a list of currently scheduled PSEs. Changes and additions are possible. If you are interested in helping with any event, send an email to the Point of Contract provided.

**April 20** - Garmin Olathe (OZ) Marathon, Olathe - Herb F. NZØF - hfiddick@gmail.com

**April 21** - Wild West Ride, Wyandotte Co./NE Kansas - Ray E. KØRSE - rerlichman@kc.rr.com

**May 4** - MS Walk, Overland Park - Gary S. N2FSH - gary.schlotzhauer@gmail.com

**May 4** - FISH Armed Forces Event - New Century Airport - Herb F. NZØF - hfiddick@gmail.com

**June 9** - Summer Breeze, Raymore - Ray E. KØRSE - rerlichman@kc.rr.com

**July 14** - Shawnee Mission Triathlon, SM Park - Mike R. KØKCK - wmralls@comcast.net

**July 20** - Lenexa Moonlight Bike Ride, Lenexa - Steve R. WDØDPB - wd0dpb@comcast.net

**July 21** - Lizard Under the Skillet (**NEW**), Douglas Co. - Ray E. KØRSE - rerlichman@kc.rr.com

**August 10 & 17**- Kill Creek Triathlons, Kill Creek Park - Mike R. KØKCK - wmralls@comcast.net

**September 7 - 8** - Hawk 100 - Clinton State Park - Bill G. KA2FNK - ka2fnk@gmail.com

**September 21 & 22** - Bike MS, Olathe/Douglas Co. - Herb F. NZØF - hfiddick@gmail.com

**September 28** - Tour de BBQ (**NEW**), KCMO

**October 13** - Octoginta (**NEW**), Douglas Co.

# QRP-LABS Kit Build

By John S. Raydo, KØIZ

Heathkit is long gone but kit construction is alive and well. Kits are a great way to develop construction skills and create some useful equipment. One source popular with several club members is QRP-LABS ([www.qrp-labs.com](http://www.qrp-labs.com).) Transceivers, balloon and APRS trackers, VFO's, amplifiers – and more - at very reasonable prices.

I was interested in building a VFO for a vintage transmitter and decided to order one of their kits to do some experimenting. QRP LABS is located in Turkey but ordering and delivery was as easy as anywhere else. It took six days from order to delivery. Not bad!

The kit I selected can be used as a VFO or frequency generator. For \$44 plus speedy FedEx shipping (\$15) this complete kit includes a MS5351M synthesizer (up to 200 Mhz output), optional TCXO (ultra stable temperature-compensated oscillator), and pre-programmed microprocessor. Assembly took less than two hours plus another hour to figure out the configuration settings.

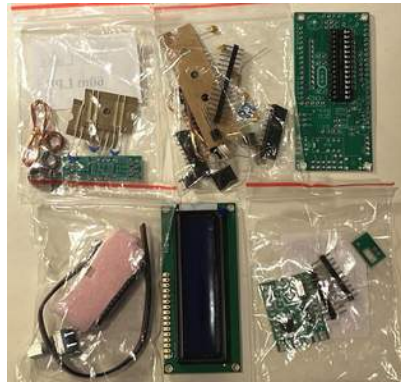
My pride took a big hit, however, as it took another two hours to locate and fix an assembly mistake. Hans GØUPL with QRP-LABS provided quick on-line help.

The boards and parts are high quality and surface-mount parts are pre-installed. Comprehensive information and instructions are available from the website. The synthesizer output is a digital square wave, which is rich in harmonics. For some applications this is ok but I wanted a sine wave output. A \$4.60 low pass filter (LPF) from QRP-LABS worked beautifully.

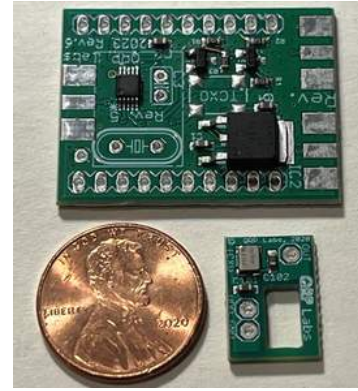
Boat anchor kits of years ago are no more but kit construction is alive and well. For fine work I use 0.020 rosin solder (60/40 or 63/37) and a tiny soldering tip, temperature controlled. I set mine to 700 degrees. Some method for holding a board while soldering is important. I use a PanaVise but there are less expensive options. Flush-cutting pliers are also a necessity.

If you screw up, like I did, there is on-line help and club members willing to lend a hand.

- John, KØIZ



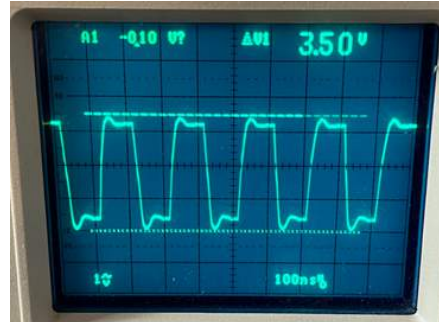
Kit modules as received



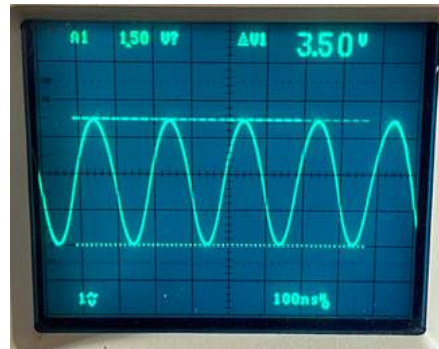
Tiny synthesizer and even smaller TCXO



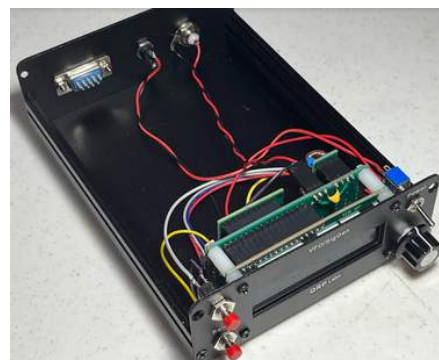
Assembled motherboard, synthesizer, and low-pass filter



Square wave 5 MHz output from synthesizer



Sine wave output after low pass filter



Completed VFO in QRP-KITS metal case

## Announcements

### *The Wheatshocker Net Wants You!*

Have you wondered what it takes to be Net Control? Do you want to be a Net Control for the club? If so, contact Dave Porter, KØDVP, expressing your interest in learning how to become Net Control for the Wheatshockers nets.

Dave and other veteran Net Controls will put together a training session to teach what it takes to become an effective Net Control, how to log check-ins, how to identify and handle “doubles,” and other tips and techniques. Don’t worry! Being Net Control is not a weekly commitment. And more Net Controls allows for more flexibility in when and how often you act at Net Control. Plus it provides experience when the need arises for a formal net.

Again, contact Dave KØDVP if you have interest in becoming at Net Control for the club.

### From the Editor

Well.... Spring came in with quite the roar. What was that roar? For some, it was the sound of baseball-sized hail. For others, it was just the roaring of a weather alert from our phones as the Storm Prediction Center issued the first watch of the year for Johnson County, Tornado Watch #37, in effect throughout the evening of March 13th. Fortunately, we did not have tornadoes in our area with that storm, but the National Weather Service was definitely seeing some rotation within the storm so the potential was there.

And, in case you haven’t noticed, many of the Club members like to use the lovely Ham radio craft outside of just Club activities by volunteering for various community events. Several of the Club members are also ECS members and help Johnson County Emergency Management and the NWS with providing storm spotter reports. That night resulted in the first ECS activation of the year.

Coincidentally, as a result of the evening ECS activation, the net control for the UHF Wheat Shocker net that Wednesday evening was one of the spotters activated. This meant that the Wheat Shocker net was canceled.

What does this mean? Well, since the baseball season just started so using a baseball reference, we need a deeper bench. We need more net controls. By having some additional net controls available, when a scheduled net control is unable to host the net due to an unforeseen or unscheduled circumstance, it would be nice to go to the bullpen and have another net controller provide relief. I know Dave Porter KØDVP is always looking and will be hosting a net control operators’ class soon, so if you are interested in learning to become a net control or just want to know more about what is involved, reach out to him.

As for the rest of the events that evening... well, it looks like a majority of Johnson County lucked out. There was some large hail in the northwest part of the county ranging from DeSoto northeastward through Shawnee and Bonner Springs with the largest hail reported near the county line and K-7. For the initial line of storms that evening, the southeast half of the county really remained dry. There were some more storms that rolled through later that night with some small hail at times, but it was the first batch that really did the damage. And if you look around, there are some parking lots full of vehicles from car dealerships waiting to be inspected for insurance purposes. I’ve even seen a couple dimpled vehicles out on the roads in those areas that were most heavily hit.

I do get the feeling this won’t be the last storm of the season. I know I saw small hail again the evening of March 25th in Olathe. Hopefully, the rest of the season remains more of that type of storm. Oh, and beware of the influx of roofing companies. Please, get references if you find yourself needing some new shingles.

73!

Tim Wiegman, Jr.  
KBØYQN



## What's Your Traffic?

Have something you'd like to announce to the club? What about a useful Tech Tip? Is there club member that should be spotlighted? Photos from a presentation?

Your input including ideas, photos, news bits, etc. will help me curate the monthly "Feedback" newsletters. Together, we can create an awesome publication to advance and further the Amateur Radio hobby.

Submit a contribution by emailing me at [twiegman+feedback@gmail.com](mailto:twiegman+feedback@gmail.com)

Thank you to those that submit photos for events and meetings as well as provide tech tips and other information.

## Club Nets

The club has weekly nets on Wednesday and Thursday. It is a great way to test your equipment. Many public service events conduct their communications in a similar way, so this is also a great way to gain experience applicable to assisting in public service events.

Wednesday @ 1900 - Yaesu Fusion net via Kansas City Room, also accessible from select local KC repeaters (visit [www.kansascityroom.com](http://www.kansascityroom.com) for a list)

Wednesday @ Conclusion of Fusion net - 40M Roundtable *near* 7.273 MHz LSB

Thursday @ 1900 - Wheatshocker analog net on 145.29 MHz club analog repeater (negative offset, PL Tone of 151.4 Hz)

Thursday @ Conclusion of analog net - 10M Afterglow net on 28.475 MHz USB (within Technician Class portion of band)

## Need Club Swag?

If want to show off your JCRAC pride and need some club swag, you may order some by visiting the "Store" tab on the club website where you can purchase hats, patches, name badges and shirts. Also, some items along with other goodies may be available for purchase at club meetings.

Club website: <https://www.w0erh.org>



## **FEEDBACK**

*A publication of the Johnson County  
Radio Amateurs Club, Inc.*

### Officers

Bill Gery, KA2FNK, President

Jaimie Charlton, ADØAB, Vice-President

Ted Knapp, NØTEK, Secretary

Cal Lewandowski, KCØCL, Treasurer

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*Bill Brinker, WAØCBW, Repeater Trustee*

*Tim Wiegman Jr., KBØYQN, Editor*