

**JOHNSON COUNTY RADIO
AMATEURS CLUB, INC.**
P.O. Box 93
Shawnee Mission, KS 66201

FEEDBACK

FEBRUARY 2021

Bob Heil, K9EID to speak to JCRAC – February 12, 2021

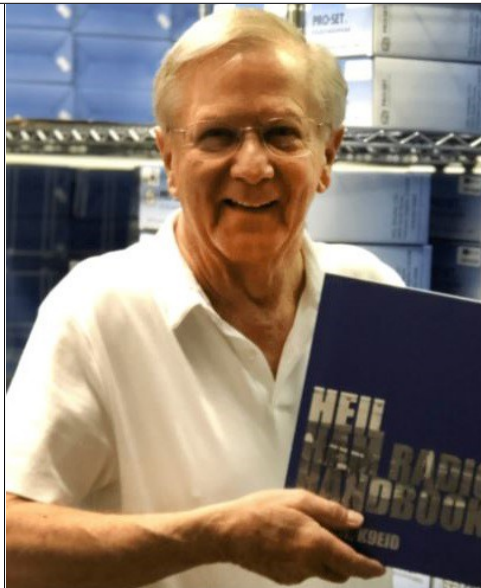
Musician/Ham/Audio legend Bob Heil joins the JCRAC Zoom meeting this week to speak on “The Science of this Great Hobby”.

Heil's early career as the house organist for the Wurlitzer theater organ in St. Louis' Fox Theater provided him an opportunity to combine musicianship with his interest in tinkering to tune and voice the instrument. At the same time, in those teenage years, he began designing and building ham gear.

In his twenties, he founded Heil Sound and experimented with live audio sound in the St. Louis area. His big break came when the Grateful Dead lost its sound engineer to a brush with the law and, on a day's notice, Heil was called in to create a live sound system for the performance. The Dead took him on tour, which led to tours with The Who, Joe Walsh, Peter Frampton and Jeff Beck.

Later that decade, Heil returned to amateur radio, where he applied science he had learned from a variety of source to improve ham radio audio.

Heil Sound was an early entrant into the custom home theater market and digital satellite systems.



Heil has published books on the Hammond Organ, Concert Sound and several ham radio topics, including the Heil Ham Radio Handbook (shown above).

Receiving Data from NOAA Satellites – February 26, 2021

In two weeks, club president Bill Gery, KA2FNK combines his

National Weather Service vocation with his Raspberry Pi and amateur radio avocations to tell us how to use a Raspberry Pi microcomputer to capture and decode weather data from National Oceanic and Atmospheric Administration (NOAA) weather satellites.



MARCH MEETINGS

February 12 – Bob Heil

February 26 – Receiving NOAA Satellites using a Raspberry Pi – Bill Gery, KA2FNK

The Johnson County Radio Amateurs Club normally meets on the 2nd and 4th Fridays of each month at 7:00 PM at the Overland Park Christian Church (north entrance), 7600 West 75th Street (75th and Conser), west of the Fire Station.

Much of the membership travels to the Pizza Shoppe at 8915 Santa Fe Drive for pizza buffet and an informal continuation/criticism/clarification of the topics raised at the meeting ... or anything else.

LEAVE THE CHURCH, TURN RIGHT (WEST) ON 75TH. TURN LEFT (SOUTH) ON ANTIOCH. TURN RIGHT (WEST) ON SANTA FE. THE PIZZA SHOPPE IS JUST PAST THE SONIC ON YOUR LEFT.

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-> FEEDBACK <-

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Johnson County Radio Amateur Club, Inc.*

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JCRAC Program Suggestions for 2021

- (1) Bob Heil – Jay Greenough WJ0X
- (2) LiFePO4 Batteries – Kevin van der Does AD0IM and Sarah Dickey N6OPE
- (3) Construction Project
- (4) Kit Building Expert Joe Eisenberg K0NEB from Lincoln Nebraska
- (5) KCMESH – Bill Gery KA2FNK
- (6) Ensor Museum – Howard Cripe N0AZ, Joe Krout KR0UT, Marty Peters KE0PEZ
- (7) Polar Orbit Satellites – Bill Gery KA2FNK
- (8) Demo or Clinic on Spectrum Analyzer and Scope – Bill Brinker, WA0CBW
- (9) Grid Dip Meter use – John Raydo K0IZ
- (10) Crimping of Coax/Installing Connectors – John Raydo, K0IZ
- (11) G5RV Antenna analysis via EZNEC - John Raydo, K0IZ
- (12) Parks on the Air Experience - Kevin van der Does AD0IM and Herb Fiddick NZ00F
- (13) Synthesizers in Radios – Tech Talk on how they work.
What's good and bad – Tom Wheeler N00GSG
- (14) Vintage Transceiver Built – John Raydo K00IZ
- (15) Special Event occurring at Ensor in 2021
- (16) Covid-19 Fox Hunt Continuing
- (17) Things you know about RF but are Wrong – Jaimie Charlton AD00AB
- (18) Raffle – Vince Sabia KE0CGR
- (19) Microcontroller Projects Book Review

PRESIDENT'S CORNER

The first month of 2021 is now behind us. Hopefully with the



COVID-19 vaccinations rolling out we will be able to start larger group gatherings in the not too distant future. Of course, we

will have to see how things develop. In the meantime, let all try to be as safe as we can.

Because we hope that we will be able to have group gatherings in June, we have started Field Day 2021 planning. Jay has contacted the Park and we have the permit for the site at the old farm. We will re-evaluate Field Day activities as the date nears.

We are doing the same kind of thinking about the Ensor auction in the Fall. We will set a date and see how things improve. In the meantime, we will be asking for volunteers for Ensor to cover our club's commitment to the museum once it is open for tours again.

I hope you have been able to take part in the "COVID fox hunts" that were started by Kyle. Watch 'Larry's list' for information.

Bob Heil will be joining us for our February 12th Zoom meeting. He will be the program following the business meeting.

- Bill Gery - KA2FNK

Johnson County Radio Amateurs Club - January 8, 2021

Meeting Date: Friday January 8, 2021. The meeting Started at 7:00 PM.

Attendance: Due to COVID-19 restrictions, this Meeting took place online using Zoom Video Conferencing. 34 were present.

There were no Minutes from the last Meeting to read as it was the Christmas Party.

The Treasurer's report was read and accepted unanimously.

Old Business:

- We welcomed all 1st time visitors to the meeting.
- Repeater Update – Bill Brinker, WA0CBW, reported all working well today. However over Christmas the 154.290 MHz Repeater experienced some power issues due to some generator work going on by T-Mobile at the Repeater Site. T-Mobile was very responsive getting the issue resolved.
- Bill Gery KA2FNK suggested that the Club send a letter of Appreciation to T-Mobile's Field Representative and Site Crew for their speedy response correcting all the issues we have encountered over the last year. It also might be nice to provide some donuts to the site Crew.
- Bill Gery, KA2FNK asked if there was any update on Gary Adams, KC0TFR. There was no response. The last report we had was he was in a rehab center after being in the hospital.
- Thanks to Ted Knapp, N0TEK and Jay Greenough, WJ0X for sending out Christmas Cards to the Membership on behalf of the Club's Comfort and Care Committee.

New Business:

- It's time to start thinking about Field Day 2021. We will reach out to Shawnee Mission Park to secure the Old Hutton Farm (same location as the last few previous years).
- Mike Bellinger, K0UAA Missouri ARES District Emergency Coordinator and coordinator of public service events sponsored by the Shawnee Mission Park became a Silent Key. Bill Gery, KA2FNK would like to see the Club pick up those public service events. Shawnee Mission Park has never charged us for conducting our many Field Days on their property. It's only right that we return that favor.
- Ensor Auction for 2021. It appears that we will not be able to hold the Auction in the Spring due to ongoing Covid-19 concerns. We will plan to hold the Auction in the Fall of 2021.

Reports:

- 6 m – NR.
- 10 m SSB Roundtable – 7 participated on January 7 and 5 participated on December 31.
- 40m SSB Roundtable – 3 participated on January 6.
- Fusion Digital 440 net – 19 Check-ins on January 6 and NR for Check-ins on December 30.
- 2m Wheat Shocker net – 15 Check-ins on January 7 and 8 Check-ins on December 31.
- HF Activity – St. Helena island in South Atlantic and Africa 20m both CW and SSB.

Announcements:

- Johnson County Emergency Communications Service (ECS) - storm-spotting organization for Johnson County is looking for new members. Training opportunities are taking place during the months of January and February. Go to www.k0ecs.org for the 2021 training schedule. Questions about ECS can be directed to training@k0ecs.org.
- See Larry's List for upcoming Events.

Business meeting adjourned at 7:24 PM.

Program:

The Program was a Brainstorming session for future Programs for 2021.

Submitted by Ted Knapp, N0TEK, Secretary.

Johnson County Radio Amateurs Club - January 22, 2021

Meeting Date: Friday January 22, 2021. The meeting Started at 7:00 PM.

Attendance: Due to COVID-19 restrictions, this Meeting took place online using Zoom Video Conferencing. 39 were present.

The Minutes from the January 8, 2021 Meeting were read and accepted unanimously.

The Treasurer's report was read and accepted unanimously.

Old Business:

- We welcomed all 1st time visitors to the meeting.
- Repeater Update – Bill Brinker, WA0CBW, reported all 5 Repeaters are working well.
- Field Day 2021 – We have reserved the Old Hudson Farm site at Shawnee Mission Park and should have the Permit in hand soon.
- A suggestion was made to send out the List of potential Programs for 2021 to all the members. One addition to the Program List is a Tour of Bill Brinker WA0CBW Ham Shack.

New Business:

- The Program for the February 12th Meeting will be a presentation by Dr. Bob Heil, K9EID on “Sharing the Science of this Great Hobby”.

Reports:

- 6 m – NR.
- 10 m SSB Roundtable – 6 participated on January 21.
- 40m SSB Roundtable – 3 participated on January 20.
- Fusion Digital 440 net – 19 Check-ins on January 20 and 20 for Check-ins on January 13.
- 2m Wheat Shocker net – 18 Check-ins on January 21 and 12 Check-ins on January 14.
- HF Activity – NR.

Announcements:

- Johnson County Emergency Communications Service (ECS) - storm-spotting organization for Johnson County is looking for new members. Training opportunities are taking place during the months of January and February. Go to www.k0ecs.org for the 2021 training schedule. Questions about ECS can be directed to training@k0ecs.org.
- Pluto Anniversary Countdown Special Event – The Northern Arizona DX Association is conducting a 10-year special event countdown to the 100th anniversary of the discovery of Pluto by Clyde Tombaugh at Lowell Observatory in Flagstaff, Arizona. This year's event will be February 13-21, 2021. Doug Tombaugh (N3PDT), Clyde Tombaugh's nephew, will be operating during the event as W7P/0. For more information please go to: https://www.nadxa.com/w7p_pluto_2030.html
- See Larry's List for upcoming Events.

Business meeting adjourned at 7:28 PM.

Program:

The Program was "Lithium Iron Phosphate Battery (LiFePO₄) Discussion" facilitated by Kevin van der Dose, AD0IM.

Submitted by Ted Knapp, N0TEK, Secretary.

Hambone and the Reflected Power Blues

Winter has finally come to Kansas and the small town in which Hambone and his family reside. Oh sure, there have been cold days before now.

Christmas was, well, green and cold and the birth of the new year was happy, but cool. No, it was cold, too. But like Christmas, it was a gentleman's sort of cold.

Low to mid-thirties chilled those who ventured out without coats, but water left in the bird bath from the previous rain still displayed its shinny liquid surface. But things are different now.

No more 'Mister Nice-Guy Jack Frost', the single digit air has been blowing snow horizontally at double digit speeds for over a day. In Colorado, skiers thrilled at the sight of the light, dry, fluffy powder accumulating on the peaks. But in flatland, Kansans were less excited about the drifts blocking their doors and driveways.

Although it was very cold outside, things were getting hot inside Hambone's happy home. It seems that Hambone has just discovered that his prized antenna analyzer no longer worked and that his younger brother, Dude, was the last one to use it.

"Dude, I don't want you to ever touch my stuff again!" snarled Hambone.

"You told me I could use your stupid meter and it didn't even work! I only tried to measure my shortwave listening antenna. You know it's just a long piece of wire,



no transmitter no nothing. I think you broke it and are trying to blame me. You probably hooked it to your

transmitter instead of the antenna," countered Dude. "Quit lying, Dude!"

"I'm not lying! You are, you big

dummy!"

The war of words was about to turn into a war of knuckles when a loud knock on the kitchen door brought the battle to a halt.

Hambone opened the door, a blast of cold air slapped the boys' faces, and the abominable snowman emerged from a swirl of flakes. After stomping his feet solidly on the landing, the snowman entered the warm kitchen and upon removing his mittens, ski mask, earmuffs, stocking cap, scarf, parka and galoshes, he revealed himself to be their Uncle Elmer.

Aside: For those not native to the Midwest, it is customary to always come to the back, or kitchen, door when visiting friends or relatives. The front door is the entrance reserved for visits from people you don't know.

It's also customary to solidly stomp your feet outside to dislodge snow before entering the kitchen.

"Boy, that wind blows right through, ya," exclaimed Elmer, as he popped a cartridge into the coffee maker and started it on his first hot cup.

"How are you boys doing? Your mom called and asked me to check on you. The storm still has her and your dad stranded at work. She asked me to remind you to eat something besides pizza," said Elmer as he eyed three empty Dominos boxes in the trash.

"We were fine, until Dude broke my antenna analyzer," said Hambone.

"No, I didn't!"

"Yes, you did! You were the last one to use it and now it doesn't work!" said Hambone as his anger rekindled the heat of their previous battle. Luckily, Elmer stepped between the boys before first blood was drawn.

"C'mon, boys, it's only a meter. Let's have a look at it while you tell me what happened," soothed Elmer.

"It's simple," said Hambone. "It was working last week when I put it away. Dude borrowed it and now it doesn't work. Dude wrecked it."

"No I didn't! I only hooked it to my SWL long wire antenna, turned it on and, nothing. It was dead. Or almost dead. The meter moved only a little bit.

Hammy's just trying to blame me for his screwup. I bet he broke it and is trying to cover it up. The next time I borrow something I'm gonna test it first!" Countered Dude.

"There's not going to be a next time!"

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from HAMBONE on page 5

“Cool it! Hammy, get me your multimeter,” commanded Elmer as he used his all-in-one pocket tool to open the antenna analyzer revealing the circuitry inside.

After carefully examining the circuits, Elmer made a few measurements with the multimeter and announced his conclusion, “This meter s been damaged by excessive voltage being applied to its input. Like what might happen if it were connected to the output of a transmitter.”

“Yes!” shouted Dude. “I couldn’t have burned out the meter, I don’t even have a transmitter!”

“Not so fast,” said Elmer. “You said you connected the analyzer to your antenna this morning and then turned it on?”

“Yes.”

“Let’s see that antenna,” said Elmer.

“It’s right here,” said Dude. “But it’s just a long wire and there’s no transmitters or strong radio stations around here.”

Elmer opened the side of his pocket tool and removed a small neon voltage tester. “This tester is the handiest thing. It is just two tiny neon glow tubes connected with some resistors. The first tube lights when the applied voltage reaches about 120 volts. The second tube lights when the voltage reaches 240 volts or more. It’s not very accurate but, is good enough for a lot of uses.”

Elmer grasped one of the tester’s two leads with his hand and touched the other to Dude’s antenna connection. Instantly both lights flashed orange. “Just as I thought, you’ve been snow zapped!”

“Wow!” the boys exclaimed, “Where did that voltage come from?”

Elmer explained, “That is a static charge that built up on your antenna due to the snow hitting it. It’s actually possible to get thousands of volts, but even a few hundred is more than enough to fry the analyzer.” He touched the lead and the tester flashed again.

“See, it doesn’t take very long to build up a fresh charge when the weather is this cold and dry. At least not as long as the blizzard is going on.”

“But Unck, I don’t understand. My transceiver is hooked up to my outdoor long wire antenna and I was using it this morning. It worked fine. If you are right about the snow, why doesn’t my antenna have the same high voltage?”

“It’s because your transceiver’s low input impedance bleeds the charge off the antenna before it can accumulate any voltage.

I read someplace that another way to prevent snow static build-up when your antenna is disconnected is to put a high value resistor, say 10K to 100K-ohms, between the center conductor of the coax and the grounded shield. The resistor would bleed off any charge before it could accumulate. That resistance is so high compared to the fifty-ohm coax impedance that it doesn’t affect the SWR. If you are using ladder line, you need two resistors.”

Elmer continued, “It just seems right on cold, snowy days to play radio in a nice warm shack. We all do it. But have you ever noticed sort of a low-level noise that sounded a little like frying bacon?

If you did, you were hearing the sound of tiny bits of electric charge being deposited on your antenna and bleeding off through your receiver.”

“You’re kidding us, right, Unck?” asked Hambone.

“Oh no. It’s called the *triboelectric* effect. You can look it up. Although snowflakes are normally electrically neutral, they can acquire a charge when they are slammed and rubbed against each other by a strong wind. The physical effect is called *saltation* and is like the static charge you accumulate when your feet rub against certain types of carpet. There is even work going on to develop and market triboelectric generators to take advantage of the effect in chronically snowy areas. The available power is very small, but it might be enough to power tiny transducers etc.”

Elmer paused looked at his watch and finished his coffee.

“Well, I’ve got to get going home. I’m running a net that starts in a few minutes. Give me that analyzer, I’m pretty sure I can make it as good as new.”

“Thanks, Unck,” replied Hambone. “Oh, by the way, your dad asked me to tell you guys to shovel the sidewalk and driveway and clear any drifts from in front of the doors. He and your mom will be home as soon as the snow stops. Enjoy!” With that, Elmer finished his coffee and proceeded to don his mittens, ski mask, earmuffs, stocking cap, scarf, parka and galoshes and trudged out into the blizzard. It seems that the brothers’ war was over. Last seen, both boys were observed gazing at the flashing neon tester get snow-zapped.