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

FEEDBACK

JULY 2019

JCRAC Re-elects Officers

At the June 14 meeting, President Gery yielded the chair to Herb Fiddick, and asked him to conduct the twice-postponed elections. The membership quickly and enthusiastically nominated and re-elected Bill Gery, WA2FNK, (upper left) to be President, Jaimie Charlton, ADØAB (center left) to be Vice President, Ted Knapp, NØTEK (below) to be Secretary and Cal Lewandowski, KCØCL (lower left) to be Treasurer for the 2019-20 year.

JULY MEETINGS

July 9 *-- Field Day debriefing*
July 23 *– Field Day video*

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. PIZZA SHOPPE IS JUST PAST THE SONIC ON YOUR LEFT.

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A publication of the
Johnson County Radio Amateur Club, Inc.

Bill Gery, KA2FNK, President

Jaimie Charlton, ADØAB, Vice President

Ted Knapp, NØTEK, Secretary

Cal Lewandowski, KCØCL,Treasurer / FEEDBACK distribution

* * *

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All email addresses are available at w0erh.org

If You Weren't There ... You Missed It

Your Editor is rarely at a loss for words, but he has nothing to add to what you can see in these pages.

Which is precisely what your Editor said at this point last year.

The soggy aftermath - Photo by KØIZ

PRESIDENT'S CORNER

Field Day 2019 is now in the log--a soggy log, at that. We were able to work for about 6 hours, but had to shutdown when thunderstorms started to develop south and southwest of our Field Day location. We were on a very good pace making contacts. CW made 107, the two phone stations made 554 and the digital station cruised along, making 166 contacts. Contacts gave us 1000 QSO points. Bonus points, for things like public official visits and use of solar power pushed us to a total claimed score of 2,024 points.

Weather challenged us throughout the weekend. Club members set up the site before, during and after the Friday morning rain, which meant that the club could have its meeting Friday evening. Showers Friday night were not an issue. On Saturday we watched carefully as storms developed west of our location. Most of the day these storms passed north of us. After dinner, however, storms started to developing south and southwest of us. Both weather radar and lightning detection devices showed us that we had to shutdown.

Another great job coordinating by Jay Greenough (WJØX). Bill Warrington (KC4TKL) had the network up and running with his improved solar power for the networking equipment. Twelve persons visited Norma in the license testing tent. Brian Short (KCØBS) manned the GOTA station. He presented a "contact certificate" to GOTA operators who made a contact. All the stations teams did a great job setting up and quickly shutting down due to weather. All the teams did a great job of breaking down Sunday.

– Bill Gery – WA2FNK

Johnson County Radio Amateurs Club - June 14, 2019

Attendance: Self introduction with name and call sign. 40 signed the check in sheet. This was followed be the Pledge of Allegiance.

The Minutes from the May 24, 2019 meeting were read and accepted with 1 opposed vote.

The Treasurer's report, as follows, was read and accepted unanimously.

Cash on Hand	$ 110.00	Repeater Operating Reserve	$ 1,343.83
Checking Account	$ 663.04	Memorial Fund	$ 310.00
Savings Account	$ 11,393.62	Active Members	144
PayPal Account	$ 201.44		
Total	$ 12,368.10		

Old Business:

- We welcomed all 1st time visitors to the meeting.
- Repeater Update – All are working well. Bill Brinker, WA0CBW suggested everyone take a look at the Repeater Usage Guidelines on the Club's website under the "Club Documents" Tab.
- Field Day 2019 – Things are in place and we are all set to go.
- Ensor Museum volunteers $50 Gift Certificate drawing – Congratulations to Joe Krout, KRØUT.

New Business:

- Annual Elections were held. Because the current president can't run this portion of the meeting, Herb Fiddick, NZØF was volunteered to do so. A nomination was made to retain the current slate of elected officers. This motion received a second. A vote was taken and all nominated positions received unanimous approval.
- JCRAC Elected Officers are: Bill Gery KA2FNK – President, Jaimie Charlton ADØAB – Vice President, Cal Lewandowski – KCØCL, and Ted Knapp NØTEK – Secretary. Elected officers will take office on August 1.
- Ted Knapp, N0TEK as an employee of Hallmark Cards, Inc. has the opportunity to participate in Hallmark's Volunteer Program. The purpose of the Volunteer Program is to recognize Hallmark employees who have volunteered a minimum of 50 hours of service to a non-profit organization in a one year period. As the club's Secretary and having met the non-profit qualification, the Hallmark Corporate Foundation has made a contribution of $400 to the Club.

Reports:

- 6 m – NR. Note JoCo ARES Net is on 52.54 MHz Tuesdays at 7:45 pm.
- 10 m SSB Roundtable – 10 participated on June 13.
- 40m SSB Roundtable – 3 participated on June 12.
- Fusion Digital 440 net – 16 Check-ins on June 12 and 13 Check-ins on June 5.
- 2m Wheat Shocker net – 19 Check-ins on June 13 and 12 Check-ins on June 6.
- HF Activity – Japan on 40m CW, Johannesburg, Japan, Australia, Poland, Russia on FT8.

Announcements:

- WW1USA on July 6 – 7.
- See Larry's List for upcoming Events.
- Stew Perry Topband Contest 160m CW – June 15.

Business meeting adjourned at 7:35 PM.

Program:

- The Program for this evening was "Raspberry Pie Set-up and Application for Ham Radio" by Bill Gery, KA2FNK.

Johnson County Radio Amateurs Club - June 21, 2019

The pre-Field Day meeting was held at the Field Day site (Old Hutton Farm at Shawnee Mission Park).

A Hambone Story - Jaimie Charlton, ADØAB

Hambone Discovers Dipole Tricks

"'Why the long faces?' asked the bartender, as the team of horses cantered into the bar and ordered a round of drinks," said Elmer when he saw his nephews, Hambone and Dude, and some frat brother friends moping on the frat house steps and looking none too happy.

"Unck, that summer class 'Practical Radio' that Old Man Early is putting on as extra credit has suddenly gotten ugly," moaned Hambone.

"Yeah, ugly," added Dude, the youngest and non-ham, non-frat member of the group.

At this point Elmer knew he should smile, say something encouraging and walk away. Instead, he said, "It's really disrespectful to refer to my good friend, Professor Erlenmeyer Flask, as Old Man Early. You should refer to him as Mister, or Professor Flask."

"Sorry, Unck."

"Anyway," continued Elmer, "What did Earl… I mean Professor Flask do to upset you guys?"

"He made what was a fun class unfun," blurted one of the frat boys.

"It's a summer class and he gave us homework!" added Dude for emphasis.

Now, fully drawn into the situation, Elmer mistakenly asked, "Is that so bad?"

"Yeah it is," said another frat boy. "Summer classes are supposed to be easy and fun. Summer equals fun, get it? Homework is NOT fun."

Ignoring the outburst, Elmer continued, "Actually, Professor Flask asked me about that class before offering it. He realized that most of his prospective students are hams or almost-hams so, he didn't want to offer just another memorize-your-way-to-a-license class. Instead, he wanted to offer a class explaining how radio really works.

He said he would start with transmitters and amplifiers since everybody likes them because they're powerful. He would cover the uses of the alphabet soup of types A, B, C and even D and how modulate them. He would do hands-on exercises on how to measure power, distortion and modulation percentage. All practical stuff.

Once he had his students 'hooked', he said he would move up in complexity by covering transmitting antennas, receivers and finally receiving antennas. Everything would be discussed from the point of view of how it works, how to build it and how to test it. The hams who go through this class would actually learn some radio.

I thought it would be a great class, what went wrong?"

"Well," said Hambone, "The class started out as you said. We even built some little one-transistor transmitters and used them in class. Professor Flask brought in some of his own equipment and showed us how to set up and troubleshoot larger transmitters. It was great!"

"So, what's causing your problem?"

"Hambone's stupid question caused the problem," snarled Dude.

"It was not a stupid question!" shouted Hambone. "And I still don't know the answer!"

"Calm down boys," soothed Elmer. "What's the question?"

"Unck, you know I mostly operate CW so my antennas, separate wire dipoles up in trees, are all tuned to have an SWR of 1.5 or so at the bottom end of each ham band. Each is fed by its own 50 ohm coax."

"Okay," said Elmer. "What's the problem?"

"You also know that we have an informal single sideband 'afterglow' following our club's regular Wednesday night UHF net. That afterglow is around 7.273 MHz lower sideband. It is unorganized and you never know who will join in."

"Okay," repeated Elmer. "What's the problem?"

"The problem is I can't join the afterglow because that frequency is so far above what my 40 meter antenna is tuned for that the SWR is over 2:1 and my amp trips off."

"Oh, that is a problem."

see HAMBONE on page 5

from HAMBONE on page 4

"That's not the problem," continued Hambone. "In class, I explained the problem and asked Professor Flask if there was some way to reduce my SWR without using and expensive tuner. He said he would think about it and get back to me the next class."

"Okay," repeated Elmer. "In that case, I'm still waiting to hear the problem."

"I'm getting there," said Hambone. "In the next class he described my issue in more scientific terms and said that he thought there was a very cheap way to operate that antenna without a tuner. He said finding that way would make an excellent class project…"

"And he assigned it to everyone as homework!" shouted one of the frat boys.

"So, you guys have brains, use them to figure it out," said Elmer.

"That's just it, Unck. We can't. We've tried everything on that antenna we can think of. We lengthened and shortened the legs, we moved the feed point, we bent it, we even replaced the wire," said Hambone. "Nothing worked."

"We even put it up higher and lower," added Dude trying to stay part of the frat boy group.

"I said use your brains. You guys are using your brawn. All that raising and lowering, cutting and splicing and climbing trees must have worn you guys out. Now it's time to think like the engineers you may someday become and actually figure out a solution."

"Aw Unck, we don't even know how to start," moaned Hambone.

"Well," continued Elmer, "You could start by modeling your antenna in that antenna modeling program you have."

"But Mister Elmer," whined one of the frat boys, "We don't know how to use it. You have to do everything in three dimensions and it's complicated." We'd have to learn how to program it and this project is due next week."

"Then, I think you'd better get started," added Elmer. "Of course, you could always go back outside, climb trees and randomly mess with your antenna. You might get lucky and stumble onto the answer. But I doubt it."

Feeling those comments were a bit harsh, Elmer added as he turned to leave the group, "You guys go and model your antenna in that program. If you still haven't found a solution, bring the model over to my shack tomorrow afternoon and I'll take a look at it. Maybe we can figure something out together."

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The next afternoon at Elmer's house

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"Okay, Unck, here's the model of our antenna. We are stuck. I think it's a trick problem. There's NO WAY to operate that antenna on both frequencies." challenged Hambone as he and Dude and a growing entourage of stumped students marched into Elmer's shack and plopped an open laptop bearing a drawing of a dipole on Elmer's spotlessly clean workbench.

Elmer glanced at the drawing on the glowing screen and replied, "Way," and walked away from the group to refill his coffee mug.

"What the…" One of the frat boys in the entourage started to say when Dude interrupted,

"Don't piss my uncle off or he won't tell us the answer."

"I bet there isn't an answer," the boy whispered.

"There's an answer and mister Elmer knows it," whispered another frat boy. "I've seen that guy work. In fact, he probably knew it yesterday. He's just playing with us. Go along with him."

"Show me the problem," said Elmer returning with a fresh cup.

Hambone quickly brought up the SWR curve on the modeling program. It clearly showed that the minimum SWR of about 1.6:1 occurred very near 7.05 MHz, but exceeded 2.5:1 at the desired 7.273 MHz.

"It's a small point, but your transmitter doesn't trip off due to high SWR, it trips off due to too much reflected power. So, the easiest fix is simply to turn down your transmitter power until it stops tripping off," observed Elmer trying to conceal a smile.

"But Unck, nobody will be able to hear me," replied Hambone.

"Well, that is a side-effect," mused Elmer. "But there is another solution and it is right in front of you."

"I don't see it," said Dude.

"It's very simple," said Elmer in his best professorial voice. "First trim your antenna so the minimum SWR occurs more or less between your two frequencies. I don't know exactly how much to take off each end, but let's start with one foot."

see HAMBONE on page 6

from HAMBONE on page 5

Taking over the laptop, Elmer pulled up the table where the boys had entered the dimensions of their dipole and subtracted one foot off each end. He then ran the SWR scan on the shortened antenna.

"That was a pretty good guess," said Elmer congratulating himself. "Notice that the SWR at the high frequency is lower. It's still above 2:1, but lower."

"Yeah, but now the SWR at the bottom of the band is higher, almost 2:1 and that's not good," observed Hambone.

"Be still and learn. Here's where the magic comes in." Elmer said as he slid his finger over the laptop's scratch pad moving the cursor to the little box in the upper left corner of the SWR plot and clicked the 'Alt 75 ohms' button.

Like magic the SWR curve dropped down to where the lowest point showed an SWR of about 1.1:1 and the SWR at both the desired frequencies was below 2:1.

"Awesome!" Exclaimed on of the frat boys. What did you just do?"

"I simply simulated what would happen if you fed your antenna with 75 ohm coax. You see, the radiation resistance of a center-fed half-wave dipole is about 73 ohms. That makes 75 ohm cable a much better match. The better match means less reflected power to trip off your amp. That should fix the problem. But when you try it, start out at a low power to be sure your amp can drive a 75 ohm load."

"You're awesome Mister Elmer!" shouted one of the boys as they pushed and shoved their way out of the shack. "Let's try this out and surprise old man Early with our project."

"Hey! Start out at low power to be sure your transmitter can drive that 75 ohm load. You will get an awesome surprise if it can't," shouted Elmer.

"And don't forget your laptop and don't forget to use your brains to solve problems. Remember that old saying, work smarter, not harder, it's easier." Added Elmer, his shack now occupied only by himself and the still glowing laptop.

>> JCRAC FEEDBACK <<

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The club welcomed first-timer Clay Hoelting, WØSMF (below)

After the formal business meeting, Bill Gery, KA2FNK presented ideas for using the Raspberry Pi single board computer for Ham radio applications, notably fldigi.

Bill introduced club members to the "Canakit" which (as demonstrated by Bill--other versions contain more or fewer accessories) includes the Raspberry Pi 4 B+, a 2.5A USB power supply, cable and noise filter, dual band 2.4 GHz and 5 GHz wireless LAN dongle, a pair of heat sinks and a quick start guide.

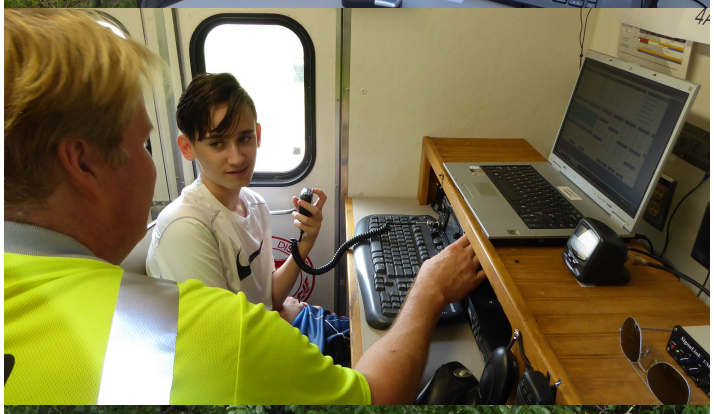
>> JCRAC FEEDBACK <<

Norma Libby-Hatfield ran the "testing" tent at the JCRAC Field Day site.. Photo by NØCVW

FIELD DAY PHOTOS
BY
CHARLIE VAN WAY, NØCVW








FIELD DAY PHOTOS BY JOHN RAYDO, KØIZ