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

FEEDBACK

JANUARY 2019

A room full of good cheer at the December JCRAC meeting.

*It turns out that "The Grinch" (**Chip Buckner, ACØYF**), couldn't stop Field Day from coming.*

Photos by Charlie Van Way, NØCVW

JANUARY MEETINGS

***January 11** -- Annual Program Selection meeting*

***January 25** – TBA - Something suggested at the January 11 meeting*

The Johnson County Radio Amateurs Club normally meets on the 2nd and 4th Fridays of each month at 7:30 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.

IN THIS ISSUE

>> THE FEEDBACK <<

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

* * *

Chip Buckner, ACØYF, Editor

Charlie Van Way, NØCVW, Photography

Deb Buckner, KDØRYE, Contributing Editor

All email addresses are available at w0erh.org

Resolution: Try Something New

While discussing something with a professional colleague in another part of the country, I mentioned that I had an amateur radio club meeting to attend on Friday night.

"Is that Ham radio?", the colleague asked. It turns out that, as a teen-ager, this fellow had desperately wanted to become a ham, but found the code requirement to be an insurmountable burden. He speculated that the Internet had likely killed the hobby.

In a latter email exchange, after checking the FCC ULS database, I observed that there were more than five hundred licensed hams in his suburb, sixteen hundred in the nearby city. He likely didn't see them because of neighborhood antenna restrictions. We continue to write articles about communicating to and via satellites, bouncing signals off the moon, helping in emergencies, making contacts in contests and the like, but nowadays "stealth" operation was a lively topic of conversation. I observed that poles for flags and birdhouses were sometimes more than poles for flags and birdhouses. There are so many antennas disguised as birdfeeders that there are youtube videos on how to squirrel-proof your birdfeeder antenna.

The points for my colleague we "we're here" and "you can do this". Later on, however, I asked myself how many of those things I had done. Not enough, was the answer.

With the abundance of personalities and interests in amateur radio, it's easy to find a niche. The risk of a niche, however, is that over time it may become a rut. This year, I resolve to take advantage of the broad diversity to meet someone--and to try something--new.

- Chip Buckner - ACØYF

PRESIDENT'S CORNER

The Club's Christmas party was December 14th. We were treated to the world premier of "How the Grinch Stole Field Day", by club member Deb Buckner, KDØRYE.

Thanks to everyone that could support Skywarn Recognition Day on December 1. The Central Region Headquarters, KCØNWS, made 899 contacts during the 24 hour operation.

I hope everyone had a good Christmas and New Year. The weather has been really mild so far in 2019. Hope that has allow you to get some outside work done. I did manage to repair my wire antenna that was brought down by a limb. The mild weather cannot last for the entire winter.

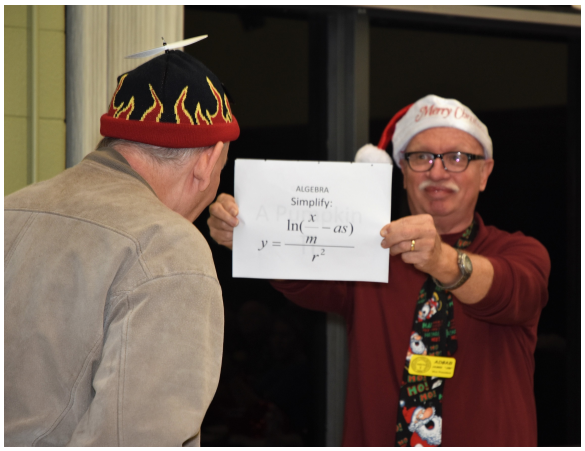
At the Christmas party I was officially informed of my acceptance in the JCRAC's breakfast club as of January 4, the first day of my retirement. I'm no longer in sales and will have to use other sources for my weather forecasts.

– Bill Gery – WA2FNK

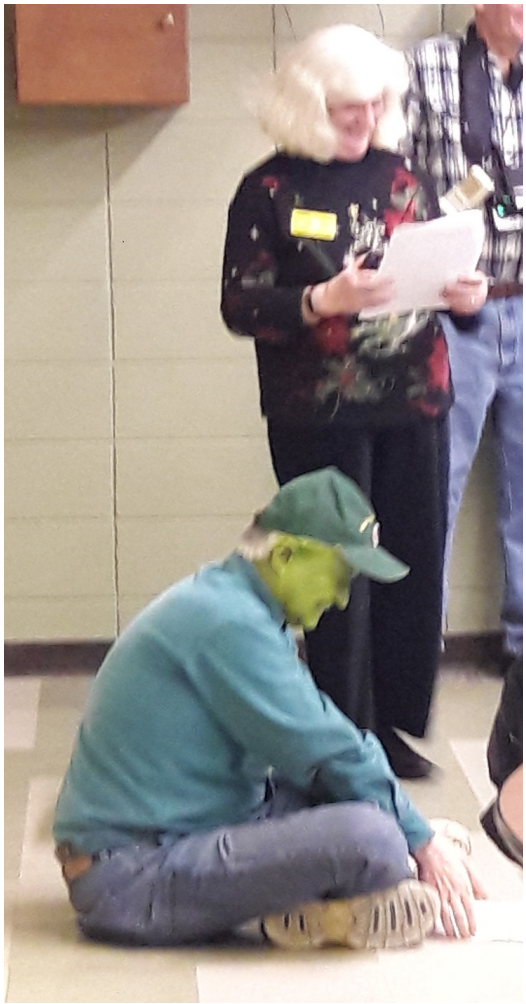
Johnson County Radio Amateurs Club - December 14, 2018

Meeting Date: Friday December 14, 2018. The meeting Started at 7:30PM.

Attendance: Self introduction with name and call sign. This was followed by the Pledge of Allegiance.



Left - **Tom Wheeler, NØGSG** and **Jamie Charlton, ADØAB** began the festivities with a set of holiday riddles for radio engineers.



Jamie followed with "Uncle Elmer's Story Hour" in which he narrated Deb Buckner's (KDØRYE's) short play "How the Grinch Stole Field Day".

Above - Tiny Tom (Tom Wheeler, NØGSG) is the first to encounter the Grinch (Chip Buckner, ACØYF) when he infiltrates Field Day. Uncle Elmer narrates.

Right - **Ray Ehrlichman (KØRSE**) used heretofore unsuspected CW skills to provide a simultaneous translation for those who prefer CW to phone communication. *Preceding photos by NØCVW.*

Left - Little Katie Pam Ham (**Deb Buckner, KDØRYE**) and her HT save the Grinch ... and the day. *Photo by Jordan Buckner (Just Jordan.)*

Hambone and the Snow Fire

A Hambone Story by Jaimie Charlton, ADØAB

"Hambone, what's going on? Why is mom's rosebush on fire? Did you do it?" shouted Dude as he came running out of their house and down the snow covered driveway where his brother, Hambone, was standing in a cloud of smoke and throwing snow on a flaming bush.

"Dude, we've got a big problem," screamed Hambone clearly panicking over what seemed to be a simple blazing bush fire.

"Whoa, bro! Not we, you have a problem. You're the one burning mom's favorite rosebush. I'm just the spectator who's gonna tell her about it," said Dude. "I thought you were supposed to be shoveling snow off the driveway. How did you manage to light that bush?"

"No time to explain now, we've got to find it!" screamed Hambone.

"Cool it, Hammy," said Dude. "Find what? The bush is right here, what's left of it, anyway. Oh, mom's going to be mad. It's gonna be great!"

"Not the bush, stupid, my robot snow remover. I don't know where it's gone!"

"Oh, you mean that big secret project you were building last month when you were out in the garage singing, 'Ain't gonna shovel snow no mo'?"

"Yeah, yeah, that's it. It's run away!" said Hambone. "And we gotta find it before it burns anything else."

Jumping into Hambone's old pickup and using its bald tires as skis, the boys skidded down their still snow-covered driveway, careened off a snowdrift next to the smouldering bush and spun out onto the road.

"Which way should we go? I don't know where it went. Which way should we go?" panted Hambone, hyperventilating and sweating in the twenty degree cold.

"I think we should go left," said Dude.

"Okay, why?"

"I see some more smoke and flames down there."

Dude was right. A neighbor's Christmas lawn display had attracted Hambone's snow removal robot. Already a small tree was ablaze and the robot was launching an attack on a defenseless blow-up snowman.

In a flash, the boys were out of the truck and chasing the robot. Although the robot was quick, it wasn't quick enough. Hambone grabbed it, killed its engine, and with Dude's help, muscled it onto the truck bed. Putting the pedal to the metal, the boys sped off confident that no one saw what happened or who they were.

Back home, their plan to hide the rogue bot in the garage was thwarted by their uncle Elmer whose presence was dramatically revealed as the overhead door rose like a stage curtain on opening night. He did not seem to be imbued with Christmas joy and goodwill towards men, or bots.

"So, boys, what are you going to do about that tree your thing here destroyed?" were Uncle Elmer's first words.

"That's a good question, Unck," said Dude stepping back and clearly distancing himself from his brother's project.

"I, I'm sorry about Mom's rosebush, I'll buy her another one in the spring when the ground has thawed," said Hambone.

"Of course you're going to replace that one. I mean that other tree and snowman your robot destroyed."

"You mean something happened to the neighbor's snowman?" asked Hambone, feigning innocence.

"Fess up, Hammy," said Elmer as he continued the interrogation. "The neighbors have enough footage from their video doorbells and surveillance cameras to make a TV miniseries. Guess what? It all stars you, Dude and your robot."

"But Unck, what can I do?" asked a contrite Hambone. "The damage is done."

"You could go and apologize and offer to pay for the tree and snowman and anything else caught in your robot's trail of destruction. Then figure out what went wrong and how to keep it from happening again. That'd be a start."

"Oh, okay, Unck," said Hambone. But can we find out what went wrong first? That way I can tell them why it won't happen again."

see HAMBONE on page 5

from HAMBONE on page 4

"Sure, why not," sighed Elmer realizing this was just Hammy's way of avoiding an unpleasant task.

"Bring the bot over to my shack this afternoon."

"Oh all right. C'mon Dude, let's go back and apologize and offer to replace the tree and snowman and whatever else the robot wrecked," groaned Hambone. "But, it's not all my fault."

"Not we, Bro," said Dude. "It's all you."

* * *

Later, we find the robot and the two boys relocated to Elmer's shack.

"So Hambone, how's this thing supposed to work?" asked Elmer.

"It's simple," said Hambone. "I really hate shoveling snow so, a couple of months ago I got the idea of using our small ride-around lawn mower to do it. It's not strong enough to just push the snow so, I made this microwave snow melter."

"A what?" asked Dude.

"A snow melter," replied Hambone. "I took the power supplies and magnetrons out of a couple of old microwave ovens and put horn antennas on them. That's those funnel-things on the front of the mower. Pretty cool, huh?

"I also added that generator I won at a hamfest to power the magnetrons. They take over 1,000 watts each and that was too much for the lawnmower to supply.

"The radio control system came from a toy drone. The only difficult part was adding a steering motor so I could control the robot remotely."

"If you had radio control, why did the robot go off on its own?" asked Elmer.

"Well, I tested the radio control part and found that it was fairly tedious to steer the robot accurately. So, I checked around on the 'net and found some optical sensors which I mounted on both sides and front of the lawnmower.

I used these sensors and a Raspberry Pi to detect snow and the edges of the sidewalk or driveway. That way, once I used the radio control to start the robot and point it in the right direction, it would stay on the driveway and find the snow itself.

I tested it last Fall. There wasn't any snow, so I used mom's white bed sheets and pillows as a substitute. She didn't like that, but the robot thought they were snow and worked fine.

"If it worked then, what went wrong today?" asked Elmer.

"I don't know. I made the radio runaway fail-safe by setting it so if it lost carrier the whole thing would stop. It would kill the motor and generator. The sensors were programmed so if they could not find snow, they would shut down everything, too. For some reason every safety device failed." moaned Hambone.

"Hammy's created a monster!" Dude hollered laughing maniacally. "We must drive a stake through its processor and bury it on a moonless night. Otherwise, it will rise again and no tree or plastic snowman will be safe!"

"On the other hand," offered Elmer. "We could just fix it."

"No! The monster must die!" Having said his piece, Dude helped himself to the coffee his uncle always kept ready and left.

"Let's try to fix it first," said Elmer as he examined the device in detail.

"I think I see at least one problem right here. It's your use of a drone remote controller for radio control."

"It worked on the drone so I thought it would be good on the lawn mower," said Hambone. "And it did when I tested it."

"Did you have your microwave snow melter operating when you tested the remote control?"

"No," replied Hambone. "That came later when I found the microwave ovens to take apart."

"That may be your problem. According to the label on the controller, this remote operator operates at about 2.4 GHz. That's roughly the magnetrons' frequency. Since the magnetrons are putting out over a kilowatt each, their signal swamps out anything your receiver might get from your remote control transmitter.

I bet that's why the thing did not stop when it ran out of range of your controller. It always had a signal provided by its own magnetrons."

"Let's try it, Unck. You may be right," said Hambone brightening up at the prospect of saving his creation. "I'll turn the microwave off and we'll see if the remote control fail-safe works. But this time, I'm going to ride on lawnmower so I can stop it if you're wrong."

see HAMBONE on page 6

from HAMBONE on page 5

Released from its garage prison, the robot and its remote control worked flawlessly. The remote operator precisely controlled the snow remover and stopped it when it got out of range. Making it work with the magnetrons energized was not so easy.

Heavy shielding of the radio antenna from the magnetrons helped, but the real fix came when Hambone got a unique idea. He arranged the magnetron power supply to turn off the magnetrons for a few milliseconds about once per second to see if the radio control signal was still there. If no control signal was detected, the entire system would shut down.

Next, Hambone and Elmer tested the optical sensors that work by detecting contrast between dark and light objects. They seemed to work fine.

Then Elmer observed that when Hambone tested the sensors last Fall, The ground was fairly dark with leaves and contrasted nicely with the simulated snow. But now, the ground is covered with snow and the overall light is much brighter.

The conclusion? The optical sensors were being blinded.

The fix? Hambone reduced their sensitivity and all was well.

"Well, Unck, maybe Dude was right. This thing was really a blind monster running out of control. But it's fixed now! Thanks to you.

One thing, though, I don't understand why it didn't seem to be able to melt snow very well but was able to light mom's bush on fire?"

"That's easy, Hammy, get a bucket of fresh snow and meet me in the kitchen."

Bucket of white fluffy snow in hand, Hambone finds his uncle already weighing ice cubes on his kitchen scale.

[Author's note: If you repeat this experiment, use only fresh fluffy snow. Avoid yellow snow.]

"Hammy, these three ice cubes weigh about 1.5 ounces. Now, take that plastic bowl and weigh out that same weight in snow."

"Wow Unck, 1.5 ounces is a lot of snow!" exclaimed Hambone

"Yes, you see, snow is mostly air and not very much water. That's why it's so light. On the other hand, these cubes are nearly all water." As he spoke, Uncle Elmer placed a small bowl containing the ice cubes in his microwave and cooked them for one minute.

"Notice," Elmer continued, "that after one minute the cubes are almost all melted. Now place the bowl of snow in the microwave and cook it for one minute."

Hambone followed his uncle's instructions and after one minute removed the snow bowl and examined it.

"Gee Unck, most of the snow is still, well, snow. Why didn't it melt like the cubes?"

"Because that snow is mostly air, the microwaves passed right through it without ever hitting any water molecules and heating them. On the other hand, the water molecules in the cubes are closely packed so the microwaves hit them and heated them. That's why the ice cubes melted, but the snow didn't."

"Oh!" exclaimed Hambone. "That explains why the tree caught fire! The microwaves passed right through the snow drift and hit the tree on the other side. The tree absorbed them and got hot enough to catch fire.

I guess I made a really good microwave gun."

"Before you start patting yourself on the back, you'd better go to the neighbor with the burned tree and offer to replace it and the snowman, too," said Elmer.

"Oh all right. C'mon Dude, let's go back and apologize and offer to replace the tree and snowman and whatever else the robot wrecked," groaned Hambone, as he slouched out of the shack.

"Not we, Bro," said Dude. "It's all you."

Later, a jubilant Hambone comes running into Elmer's shack.

"Well Hambone, did the neighbor accept your apology?" asked Elmer.

"He sure did!" said Hambone with a big smile. "It turns out he likes to tinker with stuff, too, and was interested in what went wrong. Not only did he accept my apology, he said I don't have to replace the tree or snowman. And, when I get the machine perfected, he wants to buy one! He said I should name it Snow Fire!"

>> JCRAC FEEDBACK <<