

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

FEEDBACK

DECEMBER 2017/JANUARY 2018

MEETINGS

Dec 8 - Holiday Party

Jan 12 - Planning for 2017

Jan 26 – TBA.

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.



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-> FEEDBACK <-

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

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Skywarn 2017

PRESIDENT'S CORNER

Thanks to everyone that could support Skywarn Recognition Day on December 2. We made 445 contacts



during the 24 hours. That included 46 states and 35 National Weather Service offices.

Field Day 2017 showed a lot of team work that resulted in a great

event. This year results were the best since I joined the club. The new location was part of this. We will see if we can use the same location for 2018. Jay Greenough, WJØX, the coordinator, as well as the station teams leads need to take a bow. Bill Warrington (KC4TKL) once again made sure that the logging network ran with out any issues.

Thanks to all who worked on the Ensor auction. David Schulman, WDØERU, was the auctioneer again this year. Diana Fiddick, KDØOBP, Cal Lewandowski, KCØCL, and John Hochscheid, WØBBQ, did a huge amount of work to make the auction a success.

The Club's pitch in Christmas party was December 8th. It was our privilege attend the first performance of "A Christmas Contact", an updated Charles Dickens' "Christmas Carol" with an Amateur Radio twist. Author Deb Buckner, KDØRYE, did a great job.

Hope all had a safe and enjoyable holidays. Snow on the ground for Christmas set the mood, but the temperatures after Christmas and in the new year did not have to be that low.

- Bill Gery - WA2FNK

Johnson County Radio Amateurs Club - November 10, 2017

Meeting Date: Friday November 10, 2017. The meeting Started at 7:30PM.

Attendance: Self introduction with name and call sign. 28 signed the check in sheet. This was followed by the Pledge of Allegiance.

The Minutes from the September 22, 2017 meeting were read and accepted with 1 opposed vote.

The Treasurer's Report – NR. The Ensor Auction funds are still coming in and Cal, KCØCL is working through the “ledger”.

Old Business:

- We welcomed all 1st time visitors to the meeting.
- Repeater Update – All are working well..
- Ensor Museum volunteers - Thanks to all that volunteered during the month of October. The winner of the \$50 Gift Certificate drawing to Associated Radio was Joe Krout, KRØUT!
- Ensor Auction - Thanks to all that helped make this event a successful. FYI, the donated items from Jim Lasseter N8FN's estate brought in roughly \$1,300 as reported by Bill Brinker, WAØCBW.
- Herb Fiddick, NZ0F reported the Club's results for Field Day 2017. They were:
 - Finished 12th out of 133 class 4A stations.
 - Finished 2nd out of the class 4A stations in Kansas (7734 points). Kaw Valley ARC, WØCET finished first (8948 points).
 - Finished 95th out of all Field Day participants (2964).
 - Finished 4th in the Midwest Division.

New Business:

- None.

Reports:

- 6 m – NR
- 10 m SSB Roundtable – NR
- 40m SSB Roundtable – NR
- Fusion Digital 440 net – 15 Check-ins on November 8 and 14 Check-ins on November 1.
- 2m Wheat Shocker net – 17 Check-ins on November 9 and 19 Check-ins on November 2.
- HF Activity – NR

Announcements:

- Skywarn Recognition Day – Friday and Saturday December 1 and 2 from 6pm to 6pm.

Business meeting adjourned at 7:51 PM

Program:

- The Program for this evening was a presentation on the newest Weather Satellite GOES-R (NOAA-16) by Chad Gravelle - GOES-R Satellite Liaison and Science Coordinator for the National Weather Service Operations Service Operations Proving Ground in Kansas City, MO.

Hambone Gets the Bird

“Boy, that ham station we set up at the frat house is really catching on,” said Hambone enthusiastically to his Uncle Elmer. “One of the guys even bought an old Drake tube amp with a wire antenna at the hamfest.

The guy selling it said it didn’t work. He said he got it about 40 years ago. It had been working fine until it suddenly went ‘zap’ and stopped. It seemed to be too much bother to fix the old boat anchor so he

decided to sell it as is. That’s why it was so cheap. He even threw in the antenna to sweeten the deal.

Last weekend we fixed that amp at the frat house and strung the antenna up in the trees. Everybody helped. It was a party.

The antenna’s not as good as Dill’s, but it seems to work. It’s made of bare copper wire that I thought would be a problem when it touched the leaves, but I guess not. That little station is now a blowtorch on the HF bands!”

“That’s wonderful,” added Elmer. “You should tell Dill, he’ll be glad to hear his efforts are really appreciated.”

“I will. I gotta go, Unck. I just thought you’d like to know that ham radio is alive and well at Kappa Epsilon Epsilon frat house – also known as the KEE club.”

Later at the KEE frat house

“Hey Hammy, forty meters was hot last night. I worked 33 states in only two hours. I used that old amp

and antenna. I thought tubes died away with the dinosaurs, but they really work. That was fun.”

“Yeah, Charlie. I said you’d like working HF. DXing is fun and you can get awards,” added Hambone.



“You’re pretty close to a WAS, Worked All States, award already.

You might try that rig on twenty or

fifteen meters, there’s a lot of international stuff there. If you keep at it, our frat will have a WAS and a DXCC in no time.”

“Hey Hammy, look what I found!” hollered Dude, Hambone’s younger brother, from the front yard of the frat house.

“Dude, what are you doing here?

“Just passin’ by on the way to school. That new amp must really be smoking’, I found this dead blue jay out here. It looks pretty fried to me.”

“That amp’s pretty good, but I don’t think its signal is strong enough to cook birds. Especially with just a wire dipole antenna.”

“I don’t know Hammy. How about turning it on when some of those geese are flying over? You might just cook yourself a Christmas goose with that rig. Gotta go, bye.”

“Hammy,” said Charlie, after Dude was out of earshot, “your brother may have a point. One of the guys found a dead squirrel out there

yesterday. I thought there might be a stray cat around catching dinner, but now, I’m not so sure. We never had any dead animals before we hooked up that amp. How much power does it take to cook a squirrel?

“I don’t know. I’ll ask my uncle, he knows everything.”

*** Later In Uncle Elmer’s ham shack, Hambone describes the situation ***

“I know it sounds weird, Unck. But ever since we hooked up that amp we’ve been finding dead animals in the yard. How much power does it take to cook a blue jay or a squirrel?”

Elmer sipping his coffee, thought for a minute and replied, “I don’t think you’re cooking the wildlife with RF. Think for a minute, a microwave oven runs around 1000-1200 watts of RF concentrated in a very small space. Even then, it takes several minutes to just heat up a bowl of soup, let alone cook meat.

If you’ve ruled out the possibility of stray cats, something else must be going on.

By the way, how did you fix that amplifier so quickly?”

“It was so simple, Unck. The problem was no high voltage. There was a schematic taped to the inside cover and it showed about

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from **HAMBONE** on page 4

2000 volts from the power supply, but there was zero. We poked around and found a burned out resistor. It was a little 0.82 ohm two-watt wire-wound in series with the high voltage lead. I guess it was there to drop the high voltage a little.

We didn't have that exact value, so we replaced it with a 1 ohm, 10 watt resistor from our junk box. I figured if somehow 2 watts lasted this long, 10 watts would never burn out.

Anyway, the high voltage came on. There was a kind of a pop, but that was the parts just getting used to seeing power again. We hooked up the dipole and the amp seemed to work great."

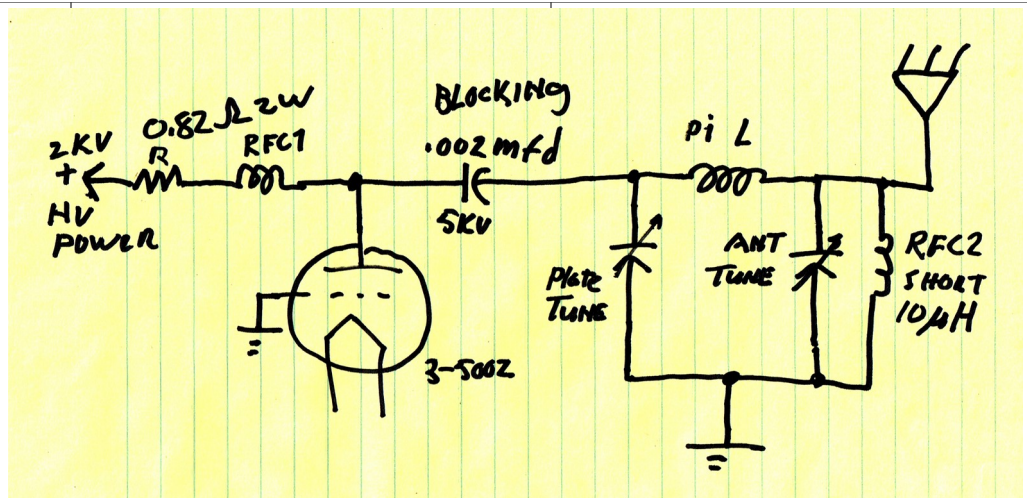
"Did you notice any other problems?" asked Elmer.

"Well, when we were operating, we noticed a jump in the SWR once in a while. I figured it was leaves touching the bare wire antenna."

"I think you've got a much bigger problem than you think, Hammy," said Elmer. "You should call the frat house and tell anyone there to disconnect the amp and not touch anything. It could kill more than birds."

"Don't worry Unck, everybody's gone home for the weekend. Nobody's there until Monday. But, what do you mean?"

"I don't know the details of your amp, but nearly all amps of that era were more or less designed in the same way. I bet the output stage looks something like this," continued Elmer whipping out his yellow pad.



"Wow Unck, it does! Except it has two tubes."

"This basic linear amplifier design has been around for decades. Most amps have different input circuits and various ways of switching output caps and inductors for operation on different bands, but they all look like this when stripped down. Putting two tubes in parallel just raises the power, it doesn't change the operation."

"So, Unck, what's the problem?"

"I don't know how many times I've told you, before you mess with any circuit, be sure you understand what the circuit is supposed to do. You didn't do that here and you've created a very dangerous problem."

"Yes, yes, I know what you've said. But I know how this old amp works. It's dirt simple."

Taking a deep breath, Elmer continued, "As I was saying, start by understanding how the amp works. Your two tubes in parallel need about 2000 volts DC at half an amp to function properly. They get it from the power supply through that little 0.82 ohm resistor and choke RFC1. The choke is there to keep the amplified RF power from going back into the power supply.

"Instead, the RF, but not the DC, passes through the blocking capacitor to the pi network that matches the high output impedance of the tubes to the lower impedance of the antenna. If the blocking capacitor weren't there, the high voltage DC would appear on the antenna. That's why its called a blocking capacitor, it blocks DC."

"I know all that, Unck."

"I hope so, Hammy, that's the basic operation."

"Okay then, what part don't you think I understand?"

Smiling smugly, Elmer asked, "What do you suppose the RF choke RFC2 is for?"

Trying desperately to keep his cool, Hambone replied, "Is it to help match the antenna?"

"Wrong!" said Elmer. "It's there to save your life! But you've defeated it."

"You're kidding me, Unck. We didn't touch that part. And how can that little choke save anybody?"

"When you finished 'fixing' the amp, did you test it on a dummy load or just carelessly put it on the air?"

see **HAMBONE** on page 6

from HAMBONE on page 5

“We only have a 100 watt dummy load, so we tested it by putting it on the air with that wire dipole. But we weren’t careless. We listened to be sure we wouldn’t interfere with anyone. We’re not stupid, you know.”

“No, but you are very lucky. Here’s what really happened and why you are murdering the wildlife,” continued Elmer adopting his very familiar professorial speaking style.

“Remember that 0.82 ohm, two watt resistor that you said was bad and you replaced with a one ohm ten watt unit? Well, you didn’t realize that it was not there to drop voltage or something like that, it was there to protect you if that blocking capacitor should short.

Look at the drawing. If that blocking cap shorts – which is how capacitors under stress sometimes fail – the full output of the power supply can pass through the pi network and appear on the antenna. Since the other side of the antenna is earth grounded, anyone touching the antenna would receive a 2000 volt shock which is often fatal.”

“Gee, Unck, I didn’t know that,” replied a subdued Hambone. But where does RFC2 come in?”

“Again, look at the schematic,” said Elmer. “The choke has a fairly high reactance at the ham radio frequencies so it is pretty much an open circuit to them. But, like all chokes, it has very low DC resistance. That means it will short any DC that appears on the antenna to ground. Its purpose is to pass enough current, in the event the blocking capacitor shorts, to burn open the 0.82 ohm resistor and block the high voltage from

reaching the antenna. That resistor is actually a fuse.

But, in your carelessness, you didn’t find out why the 0.82 ohm resistor blew, you just replaced it with a much stronger 10 watt unit that didn’t blow open. Remember the pop you heard? That was the protective choke blowing out and allowing full power supply voltage to appear on the antenna. The little jumps in the SWR, they were probably due to leaves or even birds getting zapped.”

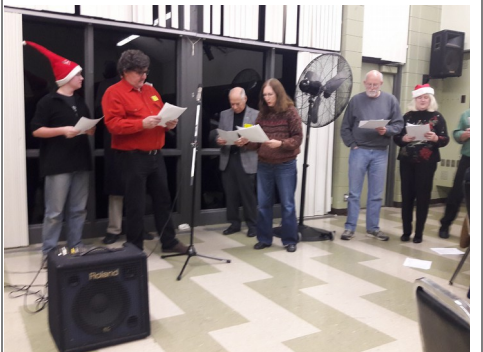
“Oh, I didn’t know,” said Hambone.

“And, to make matters worse,” continued Elmer, “You didn’t even properly test the amp on a dummy load resistor after you ‘fixed’ it. If you had, even your 10 watt resistor would have blown and you would know something was still wrong.”

“Gee, Unck, I didn’t know,” said Hambone. “I’m going to the frat house right now and disconnect that amp before anyone gets hurt. This time we’ll fix it right.”

“Not so fast, Hammy.” Piped up Dude, who always liked to see his older brother get taken down a peg or two. “So, your amp wasn’t simply roasting birds with its awesome RF power, it was electrocuting them like flies in a bug zapper. This needs to be reported. Does anyone have the phone number for the SPCA?”

>> JCRAC FEEDBACK <<



Christmas Party photos by Chip (ACØYF), Deb (KDØRYE) and Jordan (compelled to attend) Buckner.