THE NEWSLETTER OF
THE KINGS COUNTY RADIO CLUB

KCRC

December 2019 "NULLUM BENEFICIUM IMPUNITUM" Volume 6, Issue 12[A]

Minutes of the December 4th 2019 KCRC Meeting

Our December "Pre-Meeting Question and Answer Session" was a bit chaotic, with preparation for our annual Holiday Party happening all around us!

The monthly meeting was called to order at 8 PM, by our President, Joseph AC2AE. Also present at tonight's meeting were Vice President Simon K2FH, Treasurer Richard KA2KDQ, General Secretary Roy AC2GS, Executive Board Member-At-Large Mitch N2RGA and Berlotte KD2HYF, Howard N2GOT, Frank KD2QPU, Bob KD2NVB, Lloyd K2JVX, Jason KD2LRX, Al KD2QME, Andre KD2SOK, Jacobo KK6RKA, Bob W2ZF, Raymond W2DEA, his wife Melanie KC2LYV, and his daughters Jacqueline K2NBA, and Kristen KC2QCC, Dan KC2TRX, Marty W2MPR, Jason WF2N, and a brand new member Katherine! (This is probably a partial list, pieced together by a partially completed attendance sheet, and your Editor's best recollections.)

The vote to accept the minutes of the November meeting was passed unanimously.

After re-introducing each of us to the group, our President Joseph AC2AE issued our State of The Club message: This year our Club has broken many recent records. We are 86 members strong (87 after Katherine joined our Club later, during this meeting). We had a successful Special Event Station commemorating the U.S.S. Missouri, run by Lloyd K2JVX. We had a successful Field Day this year and plans are in order to have a Winter Field Day in January, a presence at Ham Radio University, and a series of technical sessions and social get-togethers in the 2020! year A Club is more than the sum of its membership and to commemorate all that our Club members have done this past year to make this Club shine, Joe AC2AE presented a series of framed Awards of Excellence to Club members:

Mitch N2RGA—Adviser, Executive Board-At-Large member, Repeater Maintenance Wizard, Field Day Organizer, and many more—Mitch also received a commemorative mug to thank him for all that he has done for the club!

Roy AC2GS—Adviser, Secretary, Editor, Graphic Designer, Net Control Operator (the 10 Meter Net, the KCRC TechNet), Volunteer Exam Session Committee member—Roy also received a commemorative mug as well!

Simon K2FH—Vice President, VE Team Member
Howard N2GOT—Advisor, Club Repeater Trustee, Member of the VE Team
Richard KA2KDQ—Treasurer, Net Control Operator (the InfoNet)

Jason KD2LRX—Net Control Operator (The FusionNet)
Berlotte KD2MYF—Executive Board member-At-Large
Howard KD2MSU—Net Control Operator (the 10 Meter Net), Club Meteorologist
Jason WF2N—Net Control Operator (the Fusion Net, co-host of the TechNet)
Matt K2ACD—Field Support
James KB2FMH—VE Liaison Office, VE Committee Chairman
Lloyd K2JVX—U.S.S. Missouri Special Event
Ryan W4EAE—Official Club Linux Guru, and Club High Wizard, when it comes to configuring all of our Internet repeater links
Bob KD2PPV—Volunteer Exam Committee Member, generously donating hardware to the Club
Joe K2OL—Net Control Operator
Milen KG2C/LZ1AMA—Volunteer Exam Committee, Net Control Operator

Executive Board member-At-Large Mitch N2RGA, on behalf of the Executive Board of the Club, presented a beautiful personalized commemorative mug, to our President Joseph AC2AE for his exemplary work this year as President of our Club!

Mitch N2RGA also presented a similar personalized commemorative mug to your humble Editor, and Secretary General, Roy AC2GS for all of his services on behalf of the Club!

The 2020 Club Executive Board nominees ran unopposed and were elected unanimously by the General Membership present at the December meeting:

President Joseph AC2AE
Vice President Mitch N2RGA
Treasurer Frank KD2QPU
Secretary Roy AC2GS
Executive-at-large Berlotte KD2HYF, Jason KD2LRX

Treasurer Report—Richard KA2KDQ, reported that our Treasury currently has $1,248.76 in our bank account as well as $306.07 in our PayPal account for a total of $1,554.83 in assets.

Repeater status was discussed by Joseph AC2AE and Mitch N2RGA - Work progresses on our options for network routes to our Repeater, the pre-recorded professional announcements will need to be tweaked to have better audio clarity. It will require another visit to the repeater site, planned for the near future.

2 Meter Report—Richard KA2KDQ reported nothing new.

10 Meter Report—Roy AC2GS reported that the 10 Meter Net is going well. We still need more Net Control Operators to rotate in this position, each Sunday. Perfect reception or a very strong signal is not necessarily needed. The participants of the Net are available to relay messages back and forth, as needed. Please consider volunteering for this position. The Club executive committee will try to cover the Net Control Operator post

until a more permanent replacement is found.

KCRC TechNet —Our Net Control Operator and Host, Roy AC2GS, reported that the TechNet is alive but suffering from a bout of non-participation. The TechNet will live or die, based upon active participation from listeners. The TechNet isn't a TV show documentary. It requires participants to make it a success.

KC2RC FusionNet—The FusionNet continues to go strong, both locally and through its Wires-X room, its YSF Server, and its XLX Server!

Old Business: Our most recent VE exam was Sunday, November 17th. Eight examinees attended. Two people started with no amateur radio license, and left with Extra class licenses. One person came in without a license and left with a General class license, one club member upgraded from a General class license to an Extra Class license, and two people earned their Technician class licenses. For ANY individuals interested in joining our VE Team, please contact any Executive Member of the Club or the return email address for these emails of our Club Meeting's minutes. People took time out of their busy lives to help get you licensed – pass on the favor!

Our Club presently has 86 members, our new members for November are Steve W2SDL, Max AC2ZW, and Ed.

We are still selling Club patches at $5 a piece and $1 shipping and handling. You can save the shipping and handling fee by buying them at our monthly meetings.

Winter Field Day 2020 was discussed. Joseph AC2AE mentioned that work progresses on planning it, and he requests that anyone interested in attending and helping contact him.

The Club will have a Ham Radio University presence this January 4th, 2020. Mitch N2RGA ordered a Club desk skirt, as well as some promotional pencils, and will print some club promotional brochures written by Roy AC2GS. If anyone is interested in manning the KCRC table at the HRU please notify Joe AC2AE.

At 8:40 PM the meeting was adjourned for the Annual Holiday Party.

See you January 8th for our next meeting!

These minutes were respectfully recorded and submitted by Roy AC2GS on this day, December 4th, in the two thousandth and nineteenth year of our Lord of Propagation…

Tube vs. Solid State? What are the Advantages/ Disadvantages?

Well, the list of advantages for solid-state has grown longer and longer through the years, as vacuum tubes become more of a niche device or an exercise in nostalgic remembrance of the good old days.

Some old-timers would never consider giving up on their vacuum tube devices, and some audiophiles have grown to love the particular audio characteristic coloration that vacuum tubes impart, rather than the coloration perceived in solid-state amplification circuits.

Solid-state devices, such as transistors and integrated circuits, are smaller, lighter, more durable, with a longer lifespan. They are capable of much higher levels of amplification, and they do it more efficiently than vacuum tubes and dissipate much less waste heat.

In the earlier days of solid-state devices, you could say that vacuum tubes benefitted by being a high impedance input device, where bipolar transistors are low impedance input devices, but Metal Oxide Semiconductor Field Effect Transistors (MOSFET) have input impedances that can match a vacuum tube's impedance.

For most hams, the most commonplace to find a vacuum tube is in the final stage of their linear amplifiers. Vacuum tubes could handle more raw power than solid-state RF devices.

Linear amplifiers benefitted from the bullet-proof nature of vacuum tubes. Early on, it wasn't too hard to burn out expensive power transistors.

But this too is changing. Modern Laterally Diffused Metal-Oxide Semiconductors, or LDMOS's are replacing the final amplification stages in tube-based linear amplifiers, allowing for much higher efficiencies, smaller, lighter amplifiers that no longer require a warm-up period, and the need for a dedicated 240-volt outlet is less necessary. There are many YouTubes that show that these modern solid-state power transistors can tolerate fully open as well as fully shorted outputs with no damage at all.

Right now, many vacuum tube-based linear amplifiers can bet bought for a little less money, but most likely, as the solid-state foundries scale up, the cost of these LDMOS will become very competitive.

There is still a place in modern technology for the really beefy power vacuum tubes in final amplification stages of linear amplifiers, and for those audiophiles who yearn for the 'warmth' that vacuum tube audio amplifiers impart.
Some Hams suggest that they like vacuum tubes because, should the fertilizer hit the fan, and we get attacked with Electromagnetic Pulse weapons, vacuum tubes will tolerate this assault better than the usual solid-state device. This is true, but you can always throw a Baofeng or something similar in a thick Faraday Cage to protect it from such disasters, and still have a lightweight, portable option after everything went ‘kaboom’ (assuming that you didn’t go ‘kaboom’ along with everything else, in which this will all be quite moot).

But the writing appears to be on the wall. One of these days, vacuum tubes might only be found in radio museums next to spark-gap transmitters and Coherer receivers.

73,

Roy AC2GS

(This article is based on a presentation that was made on a KCRC FusionNet/TechNet. If you are interest-

ed in science and technology (and why would you still be reading this if you aren't), check out my Technical Net on KC2RC 146.730, at 9 PM on the second and fourth Wednesdays of every month, or the KCRC Fusion Net, every Thursday at 9 PM – if you don't have a Yaesu Fusion radio for the latter Net, you can always use a YSF or XLX link from a Hotspot, or listen to the audio stream via http://stream.KC2RC.com)