THE NEWSLETTER OF
THE KINGS COUNTY RADIO CLUB

KCRC

May 2020 "NULLUM BENEFICIUM IMPUNITUM" Volume 7, Issue 5A

Minutes of the May 6th 2020 KCRC Meeting

Our May "Pre-Meeting Question and Answer Session" tabled for WebEx small talk.

The monthly meeting was called to order at 8 PM, by our President, Joseph AC2AE. Also present at tonight's meeting were Vice President Mitch N2RGA, Treasurer Frank KD2QPU, Executive-At-Large Board Members Berlotte KD2MYF, and Jason KD2LRX, Howard N2GOT, Richard KA2KDQ, William AC2ZV, Howie KD2MSU, Lloyd K2JVX, Maxime AC2ZW, Marty W2MPR, Bob KD2NVB, Joe K2MLY, Paul KD2TJV, and Robert AB2LO,

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

Treasurer Report—Frank KD2QPU reported that our Treasury currently has $1737.94 in our bank account as well as $236.46 in our PayPal account for a total of $1,974.40 in assets.

Repeater status was discussed by Joseph AC2AE and Mitch N2RGA - The voice announcements still need to be optimized for the controller's speech synthesis circuits—this is planned for the next routine maintenance visit to the repeater site. There was some discussion about obtaining more 'seasonal' announcements for the repeater, options to enhance interoperability between its analog and digital sides, and options regarding a second repeater and/or eliminating the repeater's control device. These will be discussed further on future club meetings.

2 Meter Net Report—Joseph AC2AE reported consistent activity on the Net, with 8 check-ins this week, and 20 check-ins the previous week. Glenn N4ESU has been rotating into the position of Control Operator for the 2 Meter Net.

10 Meter Report—Joe AC2AE and Mitch N2RGA mentioned that the most recent 10 Meter Net seemed a little shorter than usual. Roy AC2GS is having hardware problems and the Net Control is presently Howie KD2MSU. Repair parts are being shipped to him and he should be back on the air on the HF band soon.

KCRC TechNet—Joe AC2AE mentioned that activity was improving on the TechNet. We still need people to join in with either questions, topics, or their own observations. As mentioned previously this isn't a podcast, or a radio show—it is a technical Net, and requires participation in order to thrive.

Fusion Net Report—Jason KDULRX informed us that the Fusion Net is receiving a lot of national and international attention. He is looking for suggestions that might entice listeners to email suggestions for future FusionNet episodes.

Old Business: Our VE Sessions were discussed. Due to social distancing it has been impossible to arrange for VE Sessions. Some clubs were instituting exams with participants staying in their cars, wheile others have become affiliated with the Anchorage Alaska VE group that allows for testing with only one proctor physically in the same location as the examinees. Joe read an email from a local member of the NY ARES groups that offered to proctor exams for people interested. It is hoped that our own VE liaison officer James KB2FMH will be able to report directly abut the VE team and possible contingency plans he has investigated.

Our Club presently has 94 members, our new members for April are Eric KD2TUL and Adam KD2TTR . 69 members have paid their 2020 dues (a 73% compliance rate).

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 (when they are re-established).

Field Day 2020 was discussed. Due to social distancing Floyd Bennet Field will most likely not be available to us. The ARRL is still considering temporary changes to the Field Day regulations. Joe AC2AE advised members that he might know of an are nearby his home, where a small Field Day can be put together. Stay tuned to the club's website, regarding Field Day news.

New Business: Paul KD2TJV offered to get a promotional video from the actor Joseph Perrino, promoting our club. He also offered to make an animated GIF promoting the KCRC FusionNet including the email address for it, that can be placed on social media.

Bob KD2NVB mentioned that LIMARC would be having a Memorial 'Radio Wake' in memory of Dick Knadle, K2RIW who passed away April 26th 2020, and was the host of what became the LIMARC TechNet, for which he received an award for Technical Excellence form the ARRL. It will begin May 29th at 9 PM and continue to the early moring hours. Roy AC2GS will be the Net Control Operator for that net, and an audo archive will be available for download.

The meeting was concluded.

Stay Safe!

Disclaimer: The views and opinions expressed in this publication are those of the author and do not necessarily reflect the official policies or positions of the Kings County Radio Club, its Executive Board, nor its General Membership.

These minutes were respectfully recorded and submitted by Roy AC2GS on this day, June 1st, in the two thousandth and twentieth year of our Lord of Propagation, based upon a video recording of the Webex session, provided by Joe AC2AE.

An Overview of Battery Technology

Without electricity, all of our modern age gadgets are shiny, expensive paperweights.

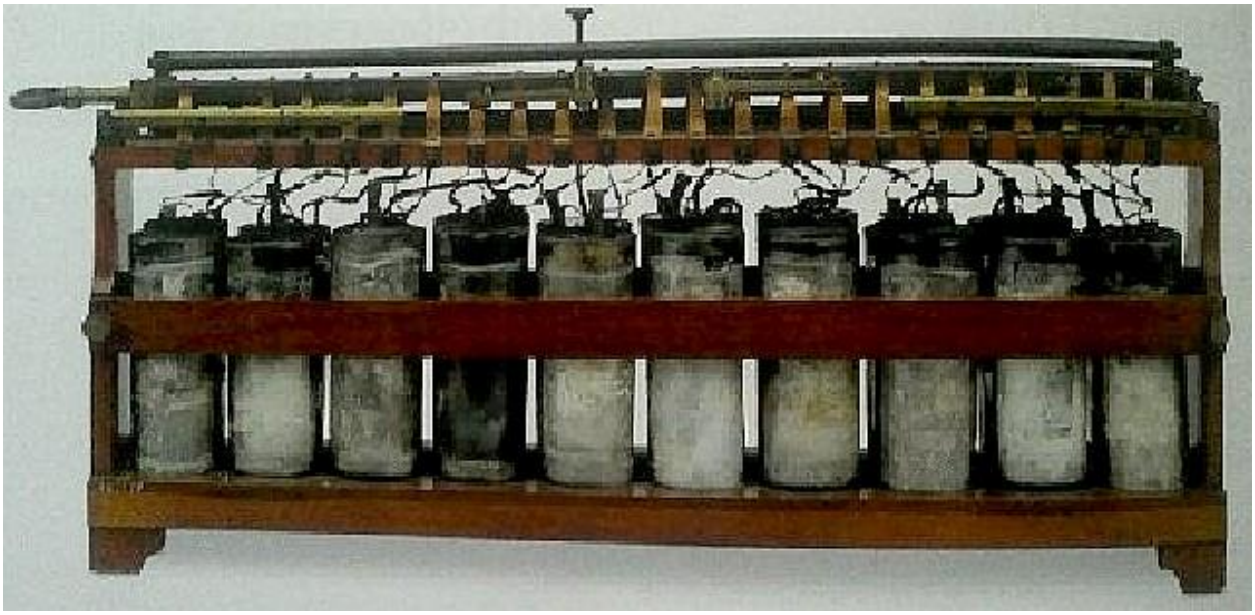
You can plug them into a wall outlet, but this a wireless era for ‘on the go’ gadget freaks.

And for that, we'll need some way to store and use our electricity portably.

Alessandro Giuseppe Antonio Anastasio Volta, born 1745, is credited with the invention of the first electric battery, as well as discovering Methane!

Model of The Original Volta Battery

Gaston Plante developed the first rechargeable battery, a lead-acid based one, in 1859. The lead-acid cell battery has been tweaked and improved over the past 150 years and is still in common use today.



Model of The Original Plante Lead-Acid Battery

The search for higher energy capacity, lightweight, inexpensive, longer-lived rechargeable batteries continues to this day.

Nickel Cadmium batteries were very popular for a time, but they suffered from a bad 'memory effect' - if you kept topping them off, they would lose their ability to discharge energy long before their chemistry required them to. They were supplanted by Nickel Metal Hydride batteries, which are still used today.

This year the Nobel Prize in Chemistry was awarded to three scientists that were important in the development of a safe and effective Lithium-Ion battery technology.

Most of you will; no doubt find a lithium-ion or lithium-polymer type battery powering their HTs, their computers, and their cell phones.

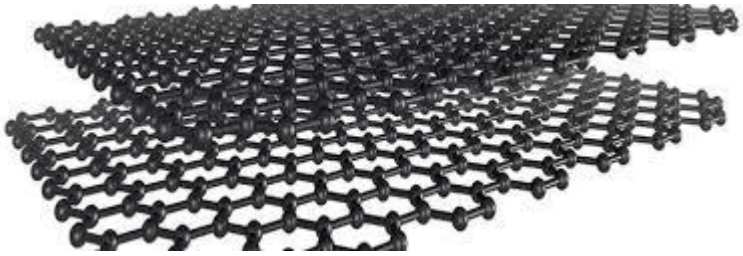
But what appears in our crystal ball as the next big battery technology?

And what are next week's Lotto numbers?

Many people are using Lithium Iron Phosphate or LiFePO4 batteries. They offer many benefits seen in Lithium-Ion, with a bit more safety from the odd explosion. They have good energy capacity, recycle life, tolerate a deeper discharge, and maintain a higher voltage output than good old Lead-Acid. The downside is that they are much more expensive, costing as much as $10/AH for a 13.8 Volt LiFePO4 battery, and their optimum charging characteristics are different than those of Lead-Acid cell charging, so they may require a different kind of charger and possibly load balancing safety features.

But what about the future of battery technology.

All kinds of new materials are being investigated for a future wonder-battery, especially graphene - a two-dimensional sheet of carbon atoms that have some intriguing characteristics if only we can figure out how to manufacturer larger samples of this material. There are similar types of compounds that have drawn battery chemist's interests, like molybdenum disulfide.



Graphene

Battery chemists are investigating chemicals that have higher and higher bonding energies to increase a battery's energy density, as well as increasing its available surface area to improve maximum power output and while trying to keep it safe from thermal runaway and going BOOM!

There is ongoing work on classic battery chemistry, called oxidation-reduction reactions, as well as so-called 'super-capacitors,' which simply act as capacitors with fast charge and discharge times and ever-increasing charge capacity.

Every week papers are written, and the science of battery chemistry is improved in tiny little steps.

Battery technology has not kept up with the rapid improvements in solid-state electronics - there is no Moore's Law for batteries.

Who knows what will be discovered in some lab in a week, or a month, or a year that might spur a revolution in battery technology?

Who knows?

73,
Roy AC2GS

(This article is based on a presentation that was made on a KCRC FusionNet/TechNet. If you are interested in science and technology (and why would you still be reading this if you aren't), stop by the LIMARC TechNet every Sunday night at 8 PM, and bring questions, or answers, or email your questions to mailbag@AC2GS.com! Or check out my other 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)