

THE NEWSLETTER OF THE KINGS COUNTY RADIO CLUB

October 2014

Volume 1, Issue 1

Next Club Meeting:

November 11th, 2014 at 7:30PM (nominations for the 2015 Club officers will be discussed)

Our weekly Nets meet on Sunday at 11 AM on 28.380 (10 meters) and Tuesday on 146.730 PL 88.5 (2 Meters)

Next Club Activities:

The December Holiday Party (exact time and details have not yet been fully determined) – keep up to date at www.KC2RC.com for the latest information.

Our neighboring Amateur Radio Club, the Long Island Mobile Amateur Radio Club is once again sponsoring its indoor fall Hamfair and Electronics Show on Sunday, October 26, 2014 at Levittown Hall (201 Levittown Parkway, Hicksville, NY 11801).

LIMARC HAMFAIR

Doors will open at 9:00 AM



Admission is \$6.00

There will be a VE Test Examination at 10:00 AM

VE Exam Session: November – Exact date has yet to be determined. Tell your friends who are interested in finally getting that license they always wanted, and perhaps consider upgrading your license to one with greater band access!

Perhaps some KCRC club members might arrange a carpool and show our neighboring club that we support their efforts?

For more information see: <http://www.limarc.org/fest.htm>

Further details will be posted on www.KC2RC.com as they develop.

Have You Heard about HR-4969?

HR-4969 is The Amateur Radio Parity Act of 2014. It is designed to bring some rational flexibility when it comes to Amateur Radio Antenna restrictions that are spreading though our country, and allow us the ability to erect reasonable structures as we help establish a secondary communication infrastructure in case of emergencies.

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- It's that time of the year again for the LIMARC Hamfair
- HR-4969 needs your help!
- Hudson Division Award Luncheon
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It is being spearheaded by our ARRL Hudson Division Director, Mike Lisenco, N2YYB and the ARRL staff. Although Brooklyn is not yet a victim to these radio-phobic aesthetic conformists, you never know when our paternalistic local government might decide that all those scary antennas must not be good for people!

Your (polite) support is urged!

To find out more about it, go to: <http://www.arrl.org/hr-4969>

The Kings County Radio Club is at www.KC2RC.com or www.KingsCountyRadioClub.com

KCRC is an ARRL affiliated club (see: www.ARRL.org)

The 2014 Hudson Division Awards Luncheon

The 2014 Hudson Division Awards Luncheon will be celebrating the achievements of our local fellow Amateur Radio Operators:

Amateur of the Year Karen Smith KS2O

Grand Ol' Ham Bill Hellman NA2M

Technical Achievement Joe Gomez W2BMP

Public Service Pete Cecere N2YJZ

It will be held on November 8, 2014 from 12 noon to 4:00 pm at Towers on the Green. See www.hudson.arrl.org for further details.

Minutes of the October 2014 KCRC Meeting, October 14th, 2014

The 10 Meter weekly Net was discussed. There were problems regarding the proper protocol involving participants not going through the Net Control Operator at times. Other Net protocols were discussed, but our present protocols were determined to be satisfactory and will be enforced by the Net Control Operator. Anyone unhappy with that rules will be advised of their need to maintain an orderly Net. Instituting a SwapFest on the 10 Meter Net was discussed and approved. Apparently W2EKG is taking a respite from the hobby and has decided to sell off his equipment. Those interested can contact him directly or be available for the Net Swap session. It was also discussed that as soon as we firm down the details of the upcoming Holiday Party and VE Exam session this will be mentioned prominently on our Nets.

The 2 Meter Net was discussed. Attendance seems to be picking up lately (but everyone is always welcome), and the "propagation gods" have been kind to our Repeater's signal. Coverage details for our Net Control Operator's absence due to his upcoming travel vacation (enjoy Richard!) were discussed and the never ending QRM situation has effects all of UHF/VHF bands these days. When the details of upcoming club events are finalized these details will be promoted on the 2 Meter Net as well.

Our Treasurer reported on our present Club finances, which are good, and setting up a PayPal account to facilitate a more efficient option to obtain annual membership dues should be imminent.

Our President opened the floor to old and new business:

Time for nominating and electing the new 2015 Club Officers were discussed. The nominating policy was decided to be left flexible and the final election was chosen to be held at the same time as our annual Holiday Party/meeting since Club attendance is always well represented for this occasion.

It was suggested that calls for 2015 membership dues be requested early. The hope is that by January 1st most members will pay the 2015 dues and no one will need to have issued notices that they failed to remember. Adding a PayPal option for membership dues should make the activity quick easier for all involved.

(continued from page 2)

Our club website, www.kingscountyradioclub.com or www.kc2rc.com was discussed. A general call for articles, photo essays, and valuable web links will be made to the membership - the website is the membership's responsibility to make as good as we all can!

Club sponsored activities that go beyond our traditional activities of Field Day, a fall Picnic, and a holiday party were discussed and ideas were requested from the general membership.

A VE session to offer the community an opportunity to obtain a license or upgrade their present license was discussed. The exact date has not yet been determined yet. Announcements regarding this will be mentioned on upcoming weekly net meetings as well as on our website.

Plans for the upcoming December Holiday Party/Meeting/Annual Elections were discussed. A platter selection was thought the best approach with volunteers bringing incidental desserts. Admission fee has not yet been determined. Announcements regarding this will be mentioned on upcoming weekly net meetings as well as being posted on our website. A raffle for a prize was discussed, details are yet to be determined.

The Repeater was discussed. The ID chip still needs to be replaced to properly identify it as KC2RC rather than KB2NQT. Also The Metrocor Frequency Allocation Alliance will need to be notified of our club Repeater's present call sign so that it can be properly documented in Repeater Databases and Handbooks. These two items should be performed before winter sets in. Upgrade/replacement of the Repeater was discussed it was decided that professionals in the field, friends of the Club, would be contacted to discuss our options.

Different methods to interest new Amateurs into the club, as well as coaxing previous members back "into the fold" were suggested, and these efforts will be finalized soon. Ideas and opinions from the general membership are requested and would be appreciated.

The somewhat fractional communication lines of the membership were discussed - Facebook, Yahoo Group, Email, KC2RC.com/KingsCountyRadioClub.com Website, 2 meters, 10 meters and perhaps smoke signals, and a general consensus was that the club website should act as a clearing house of important club notices. Please keep your email addresses up to date and make sure your spam filters won't block Kings County Radio Club (KCRC) notices (from KingsCountyRadioClub.com and KC2RC.com). If anyone has any better idea regarding a uniformed means of club announcements/requests/pleadings let the executive board know.

A general request was made personally by our President. Our club membership is presently at an all time high from the past few years as well as having available funds for improving the Club, but we still have the same very small number of members that show up to the monthly meetings. We realize that this is a hobby and "real life" takes precedent, but with greater representation from the membership we would have a greater pool of ideas from people with diverse experience and knowledge and might be able to improve the club and make it a more enriching experience for everyone involved! Your involvement is desired and would be greatly valued - you are this club, make it the best club it can be!

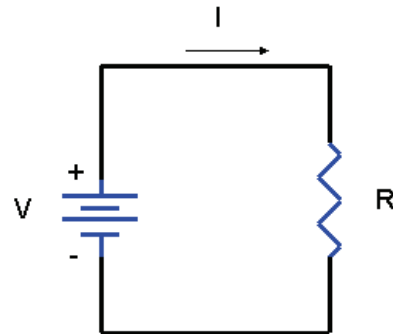
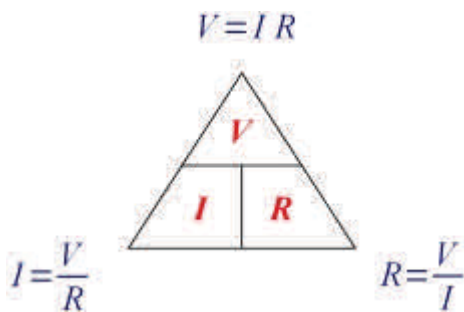
With this, the session was closed and the regular friendly "bravo sierra" ensued.

Antenna Basics for Fun (and no profit at all)

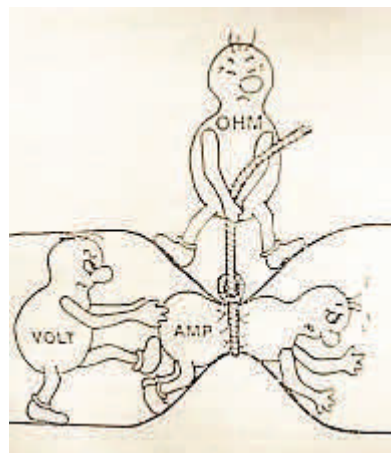
(Part One—Back to Basics)

Let's begin at the REAL basics. I realize that most people understand this already, or don't really care, but I thought a few might have just memorized this stuff for their exam and really didn't take any time to "roll it around in their heads". It's surprisingly simple common sense stuff! You electrical engineers out there feel free to "fast forward" through this!

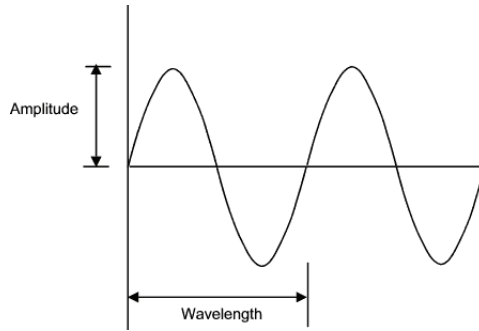
What is Voltage? It is the "the electromotive force" due to different electromotive potentials on either side of a given circuit, measured in Volts, sometimes abbreviated "E" or "V". You can think of it as "electric pressure", not unlike the pressure at the end of your garden hose. Increase the "pressure" (voltage) and you increase the flow of the water through your hose (current). Current is just the flow of electric charge, measured in Amps, abbreviated as "I". Resistance is the opposition of electric current through a conductor, measured in Ohms, abbreviated as "R". You can think of it like the diameter of your garden hose - if you use a narrow garden hose you get less water out of it, regardless of the pressure in the pipes! How do they all relate to each other? Well, that would be Ohm's Law, that you might have felt forced to remember for the exam, but it's very simple and very useful:



Or if you enjoy silly pictures to get the point across:



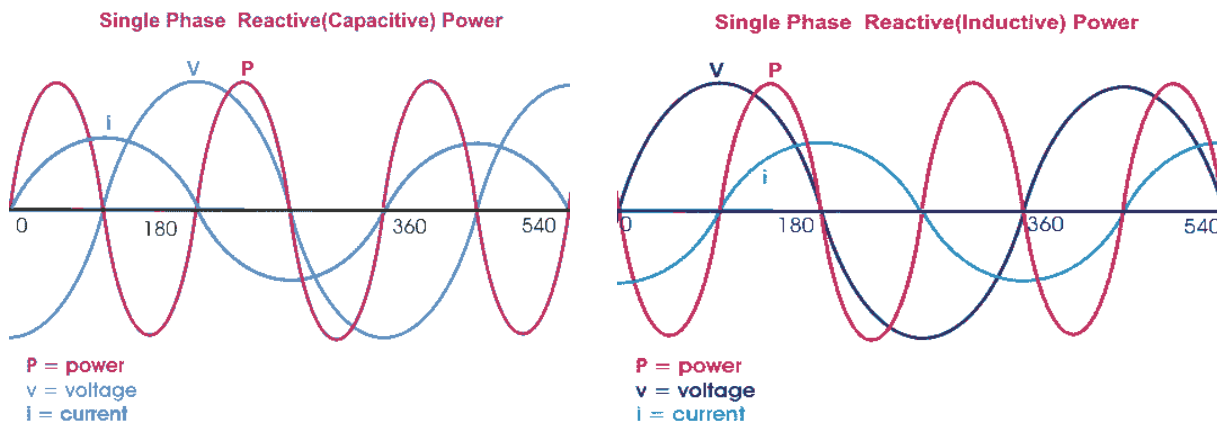
Resistance is relatively easy, in that it is not affected if the current is not constant (i.e. “Direct Current” DC) but fluctuating. The most usual form of fluctuating electrical current is one that changes with a very consistent pattern - a “Sine Wave”!



Everything from the 60 cycle Alternating Cycle (AC) that supplies electrical power throughout your house, to the electrical radio frequency power feeding your Amateur Radio Antenna, to those terahertz imagers that take nudie pictures of you as part of Airport Security are all sine waves - the rate that the “cycle” repeats are just different.

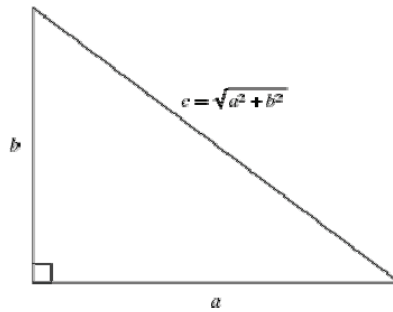
As I mentioned, the property of resistance doesn’t care if your current is steady or always changing, it supplies the same resistance to current no matter what, but there are some electrical components that are not that “accepting”...

Capacitors, usually made up of a series of conducting plates store electric charge. An Inductor, usually made from a coil of wire can be thought of as storing a magnetic field. They both respond in the exact opposite to alternating current. If you place a capacitor in the path of alternating current you will find that the sine waves of the voltage and the currents no longer line up perfectly - current LEADS the voltage, in the case of a circuit with an inductor in it, it is the current that LAGS the voltage.



This opposition to flow is called “Reactance” and is also measured in Ohms -it come in two polarities - Inductive Reactance (from an inductor) is considered positive, while Capacitive Reactance is considered negative. What’s all this talk then about Impedance, that any antenna topic seems to keep mentioning? Well that’s just the way Reactances and Resistances combine together. Unfortunately Impedance isn’t calculated by simply adding everything together. You can sum the different Reactances and get a “Sum of Reactance” but in order to

combine Reactance with Resistance you have to take a little memory trip back to Junior High School Geometry - remember The Pythagorean' Theorem, that the hypotenuse of a right triangle was equal to the square root of the sum of the other two legs "squared"?



So, as an example, a circuit that has 3 ohm of resistance and 4 ohms of reactance has:

$$\sqrt{3^2 \times 4^2} = \sqrt{(3 \times 3)(4 \times 4)} = \sqrt{25} = 5$$

5 ohms of Impedance!

That wasn't so hard, was it? And this is the kind of stuff on the Extra exam that seems to scare everyone!

Why did I spend all this time and blank space to hammer the idea of Impedance? Because it is the one singular, solitary thing that every Ham seems most interested in - give him a light bulb that has a nominal 50 ohm impedance and a Standing Wave Ratio (SWR) of 1:1 on their meters and they are happy as a lark. Unfortunately Impedance matching or a 1:1 SWR by another name is only PART of what makes a good antenna! Also, an antenna is a just a tuned circuit with a given resistance, reactance, and impedance which also determines its bandwidth (Q factor) and resonant frequency. All these factors determine the characteristics of every antenna that has ever been built.

There are a few more factors you should be aware of that determines whether an antenna design will suit your needs.

Gain can be very important - some people misinterpret this as something like an amplifier's gain, but antennas are passive devices and their total output power is always less than the power you put into them - the loss is usually dissipated in heat. Antennas don't work like a simple incandescent light bulb, shining its light all around (in "Physics talk" that's called an Isotropic pattern of emission). Antennas are directional to one degree or another and "gain" refers to the directionality of its reception and transmission patterns (which should be the same - Engineer types call this the "Reciprocity Theorem"). The lower the transmitted signal flying off of its back, the more of the available power is radiating from the front, the higher the dB gain that the manufacturers can boast of! Directionality is usually a good thing because of the nature of radio wave propagation which favors more steerable directed emissions. Some antenna designs are optimized for "shooting" most of your RF straight up! Some people call them "Cloud Burners" while others have been known to call them "Near Vertical Incidence

Skywave” (NVIS) Antennas. They are great for short distance, emergency local communication but not so useful if you are interested in distance (DX) communications. That is not to say it is impossible to DX with a NVIS Antenna - it just is VERY difficult to accomplish and a lot of luck is required. When most people talk about the angle that their antenna signal goes off to the horizon they use the term “Elevation Angle” (or in Engineer-speak “Elevation Plane Pattern”) most antennas also have a specific direct of peak energy in the North, South, East or West directions depending on the orientation of your antenna (or in Engineer-speak “Azimuth Plane Pattern”). It would all make better sense if I could “cut and paste” a holographic 3D image right here! There is Antenna Efficiency to consider - how much of your power will go into heat due to a given antenna’s resistive losses, any insertion losses, ground coupling/absorption or transmission line losses.

Well, I guess that covers the “Basics”! No doubt other useful basics will rear their ugly faces in future parts of this tutorial. Next time we will take up one of the most basic of antenna designs, which was around from the very beginning, and is still extremely popular for good reasons, the good olde half wave dipole.

Feel free to comment, question or even dispute! Apathy is the one thing that will not be permitted. If there is interest in this first part of a planned series, there will probably be more in the series. If it elicits a collective yawn of disinterest, then this effort “...will diminish and go into the west...” (guess that quote in three guesses - cheating is NOT allowed!)

And if you’re all naughty, then we shall review the concept of decibels - dB! (there are more than a few questions about dB on the Ham exams.)

Until the next time...

73,

The Editor (I can be contacted at TheEditor@KC2RC.com)

The 2014 KCRC Picnic

Well October 5th, 2014 was KCRC's annual Club Picnic and it was a fun time for all participants. Howie, N2GOT brought his trusty Icom 706 and Juan KC2QNK added some more call signs to his logbook!



Closing statements (from the Editor):

Well, I hope you found this entertaining or informative (or both). It is meant as a “proof of concept” of what might be available to the membership. A work in progress that MIGHT grow into something of value IF we all pitch in and help. We are all Hams, with interesting yet diverse interests and experiences. Doesn't anyone want to tell the rest of us about something that the rest of us aren't yet aware of? This Newsletter has become perceived as the “Albatross around the neck” of past Presidents because “no one else will do it”.

This is the general membership's chance to vote with their actions and not their silent apathy. If you see this and either read or dismiss it and place it in your waste bin and go on with your life, then this will probably be the first and last of its kind. Unless you know someone with a lot of free time and who's also into self-abuse, this Newsletter project has to be a group project, not one man's self indulgence.

Is anyone interested in writing (or even reading) a serialized presentation of simple antenna theory, or any other theory for that matter. Anyone interested in the “The Joys of CW”? The new Digital technologies exploding onto the scene (voice and data). Perhaps a book report, or a product review? It's not like we Hams have a dearth of topics to educate and inform each other about.

I believe I have opened a door for the general membership—they can either go through that door or use it to store manure for the next spring.

The choice has always been and will always be YOURS.

Anyone want to show up this amateurish attempt with some real skills? You are more than welcome...

For your ideas, your thoughts, your dreams, your kind words or even your epithets, I can be contacted at TheEditor@KC2RC.com .

Good luck to us all...

-The Editor -