The KLARION

Newsletter of the Keuka Lake Amateur Radio Association
Winter 2016

From Our Friends at the National Weather Service:

Winter is rapidly coming upon us over the next few weeks, and we'll need to be prepared for ice forming on our rivers and lakes.

Because the condition of iced over rivers can only be reliably determined by the human eye, the National Weather Service seeks out volunteers to report river ice conditions during the months of December through March each year.

Ice observers will provide information on type of ice, extent of ice cover, ice movement and ice break up dates and times. All observations will be conducted from safe, shoreline locations.

This information will be used by National Weather Service forecasters in the preparation of river forecasts, and also the Army Corps of Engineers Cold Regions Research Laboratory for research.

Ice observers are expected to:

1. **Be able to provide ice reports a minimum of once per week via a website (even if there is nothing significant to report) to document changes in the state of the river. Computer and internet access (or smart phone and cell service) is necessary.**
2. **Provide updates of any major changes at their location when ice cover conditions change.**

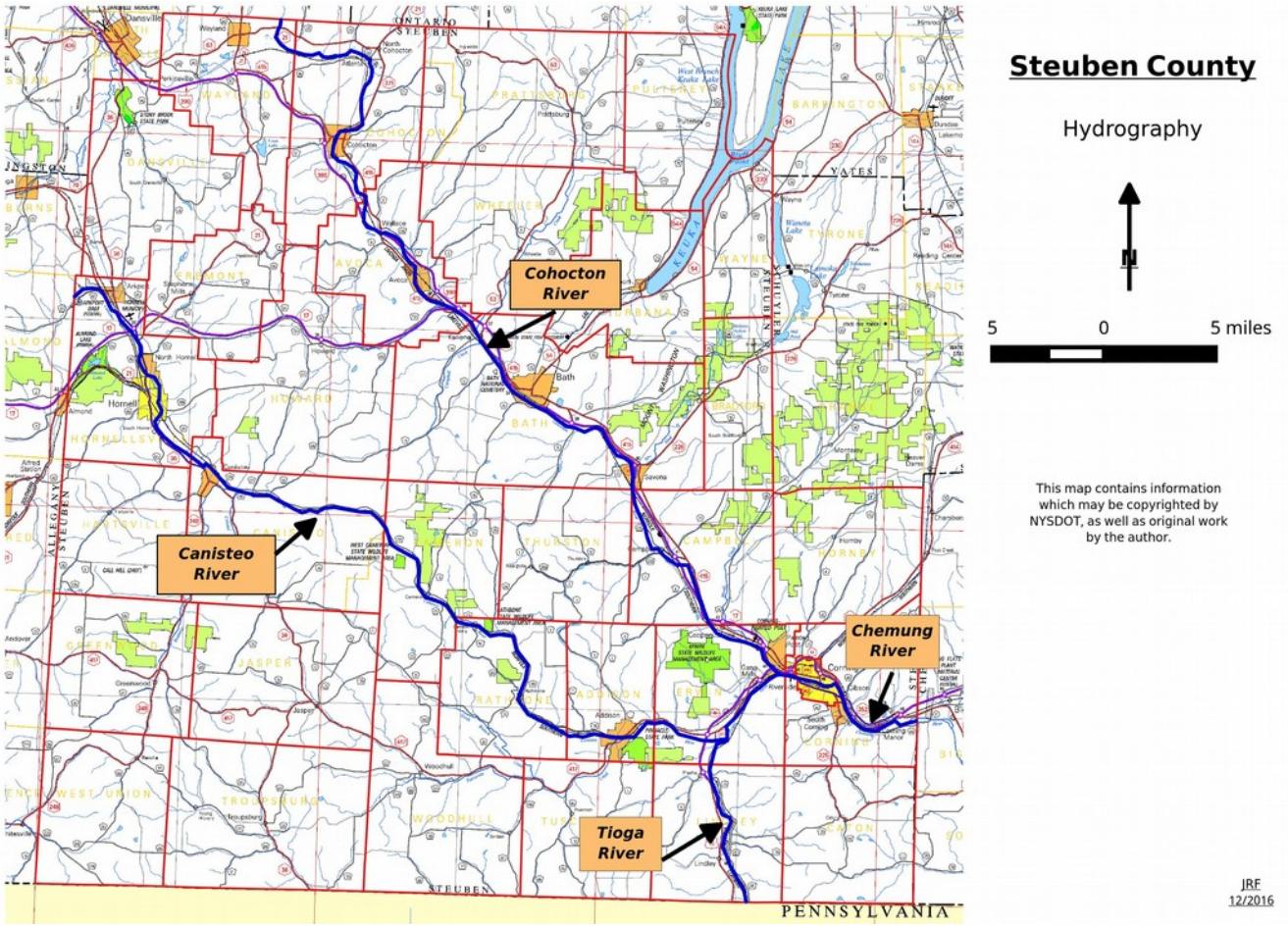
We have a need for observers on all main rivers, but in particular, the following are most in need:

- **Canisteo River**
- **Cohocton/Chemung River above Corning.**
- **Tioga River**

If interested, please send a note via e-mail to our Service Hydrologist: Jim Brewster (James.Brewster@NOAA.gov) with your contact information. You will be contacted to discuss an appropriate observing location and other information and training.

These positions do not require an amateur radio operator license, although, for some locations, that may be very handy. The upper portions of these rivers are, typically, rather sketchy in terms of cell phone coverage.

We are mainly focusing on our main stem rivers for routine ice monitoring. You can always report an ice jam to us on the smaller streams and tributaries through e-mail, Facebook and Twitter.



Ohms Law

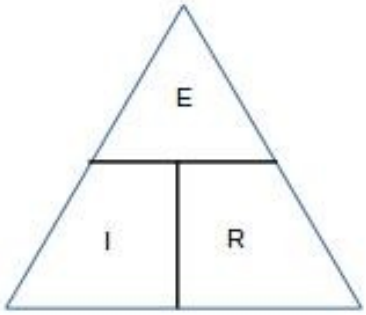
Ohms Law states that the current through a conductor between two points is directly proportional to the voltage across the two points.

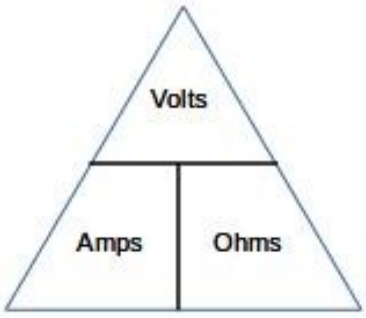
The law was named after physicist Georg Ohm who, in 1827, published his experimental results regarding applied voltage and current through simple electrical circuits containing various lengths of wire.

The law is often expressed as **E=IR,** where E = electromotive force (or voltage), I = current (in amperes), and R = the resistance of the conductor (in Ohms). I have always found it easier to remember by using the units, as **Volts = Amps x Ohms.**

We consider this law nearly obvious today, but when Dr. Ohm published his work, critics reacted with hostility! The German minister of education saying "a professor who preached such heresies is unworthy to teach science"! Thankfully, the value (and truth) of Ohm's work was well accepted during his lifetime.

The formula, above, is sometimes reduced to a figure called “Ohm's triangle”, as below:





This figure makes the calculations easy, and reminds us of the relationship expressed by Ohm's Law. By merely blocking out the quantity you wish to “solve for”, we see that:

Volts = Amps x Ohms

Amps = Volts / Ohms

Ohms = Volts / Amps

I know what you are thinking … “but what about Watts?”. That is another law and another formula … and that will be in the next newsletter!

KC2VAW (Joel) with a major assist from Georg Ohm!

Amateur Radio Etiquette

I am certain all of you have heard all of this previously, but it needs to be repeated from time to time. We need to remember who we are, and what we are doing. Remember that the scanners in the community can receive on the amateur frequencies, as well as the public service frequencies. Let's try to polish our image and be a little bit professional!

- **The International radio language is English … Plain English,** except in cases where you are licensed to speak in some other language.
- When using a two-way radio **you cannot speak and listen at the same time,** as you can with a telephone.
- **Don't interrupt** if you hear other people talking. Wait until their conversation is finished unless it is an emergency. If it is an emergency, inform the other parties that you have an emergency message (see "Emergency Calls" below).
- **Do not respond if you aren't sure the call is for you.** Wait until you hear your call sign to respond.
- **Never transmit sensitive, confidential, financial or military information.** Unless you are certain your conversations are secured with the proper level of encryption for the level of sensitivity, assume your conversations can be heard by others.
- **Perform radio checks to ensure your radio is in good working condition.**
    - Ensure the battery is charged and the power is on.
    - Keep the volume high enough to be able to hear calls.
    - Regularly make radio checks to make sure everything is working and that you are still in range to receive signals.
- **Memorize call signs and locations of persons and radio stations you communicate with regularly**.
    - In radio communication you are not called by your name. Everybody has their own unique call sign.
- **Think before you speak**.
    - Decide what you are going say and whom it is meant for.
    - Make your conversations as concise, precise, and clear as possible.
    - Avoid long and complicated sentences. If your message is long, divide it into separate shorter messages.
    - Do not use abbreviations unless they are well understood by your group.
    - Slow down … the Texas drawl is your friend.
    - In an emergency, slow down just a little more … usually the people involved are going at a million miles an hour. No reason for you to do the same! It really adds nothing to

clarity to try to go too fast-!

Follow these easy steps to make a call.

- First **<u>listen</u>** to ensure the channel is clear for you.
- **Press the PTT** (Push-To-Talk) button.
- After 2 seconds:
    - **Say** *"recipient's call sign"* **twice**
    - followed by **"THIS IS" and** *"your call sign***".**
- Once the person replies, **convey your message.**

Emergency Calls

If you have an emergency message and need to interrupt others' conversations:

- Wait and listen until you hear "Over".
- Press PTT and say "BREAK, BREAK, BREAK, *your call sign*, I have emergency message (or traffic) for *(recipient's call sign)*, Do you copy, Over".

Use the Phonetic Alphabet

If you need to spell something out to make it clear, use phonetics, and possibly the phrase "*I spell*", so the person on the other end knows what is coming. There are numerous "spelling alphabets". The international version is one of the most common:

A	Alpha
B	Bravo
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliett
K	Kilo
L	Lima
M	Mike
N	November
O	Oscar
P	Papa
Q	Quebec
R	Romeo
S	Sierra
T	Tango

U	Uniform
V	Victor
W	Whiskey
X	X-ray
Y	Yankee
Z	Zulu

You are, of course, free to use whatever version of this you like. However, please be sure it adds to clarity and does not detract from it.

Bottom line? Have fun, but try to be sure that under it all there is a little bit of professionalism. Remember, we are amateurs only in the sense that we are not paid, not in the sense that our skills are shabby.

Thanks, in advance!

KC2VAW (Joel Fiske)

Gain

The concept of “gain” in an antenna system is surrounded by more hype and false advertising than perhaps any other topic in amateur radio. Many amateurs do not understand what it means and are easily misled by flashy advertising.

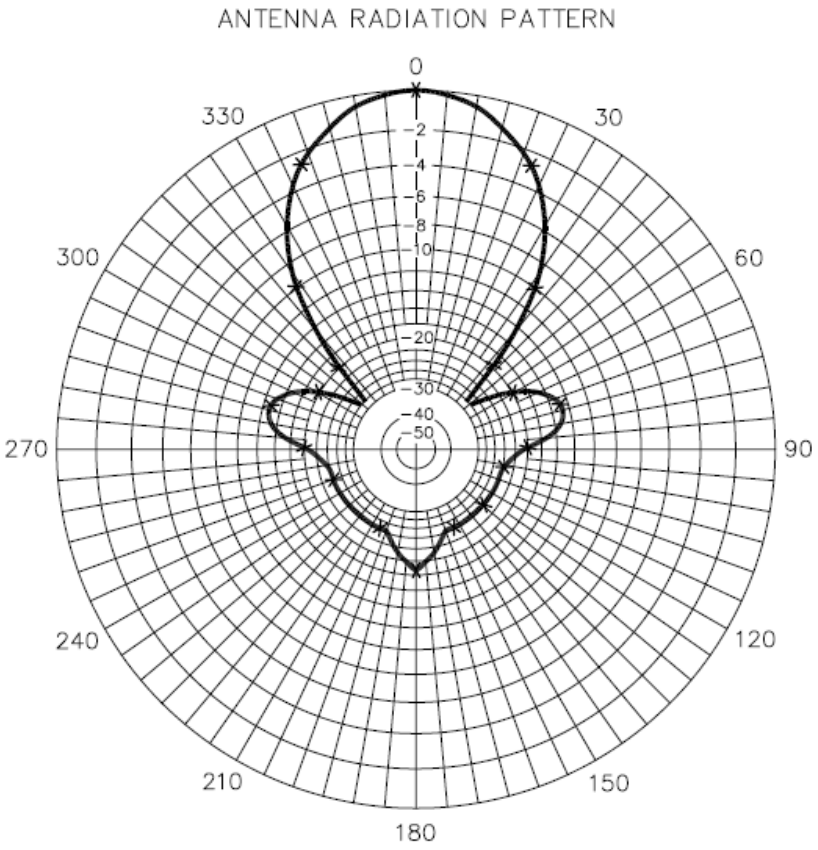
“Gain”, in a transmitting antenna system, is defined as how well the antenna converts input power into radio waves headed in a specific direction. As a receiving antenna “gain” is described as how well the antenna converts radio waves arriving from a specific direction into electrical energy.

Gain is usually described in terms of a ratio or in a unit-less quantity called a decibel (and usually symbolized as dB). In the case of an antenna the ratio is defined as either the ratio of your antenna vs. a hypothetical isotropic (i.e. radiates equally in all directions) radiator (and symbolized as *dBi*)

or

The ratio between your antenna and a half-wave lossless dipole (symbolized as *dBd*). When comparing two antennas make sure the decibel units refer to the same thing!

A plot of the “gain” as a function of direction is called a radiation plot, as below:



Note that this plot is only in **two** dimensions, and is usually specified in the direction of the azimuth. Your actual radiation pattern is **three** dimensional and far exceeds my ability to sketch!

So, when thinking about gain, remember:

- Gain refers to the ability to point the power your rig makes in a specific direction. It does **not** refer to an increase in power … that would be an amplifier!

- Gain is usually referenced to either:

  - A theoretical isotropic radiator (*dBi*)

  - A theoretical dipole radiator (*dBd*)

Remember, gain is only as good as your ability to accurately point the antenna in the intended direction!

Joel (KC2VAW)

2016 Christmas Party

And a Good Time was Had by All

Pierri's Central Hotel in Painted Post, NY

Thank you to John (WB2SQX) and Sue Babbitt (KD2AQR) for the photograph.

For Next Time

- **The Power Formula**
- **An Antenna article**
- **Social items**
- **Update on Field Day**

Even if we are in the “dip” between solar maxima, try to have some fun! It's a great time to experiment with some of the newer “digital” modes … if they work well for you during the current conditions they'll be awesome at the next peak!

Take good care of each other. Don't forget to leave time to “play radio”.

Joel (KC2VAW)