# The KLARION

Newsletter of the Keuka Lake Amateur Radio Association
Spring 2016


Most club members will remember the author of the “No Nonsense Study Guide for Technicians”, Dan Romanchick. We have used his study guide as free material during our one day “ham cram” session for many years. Dan also offers a free monthly column for clubs to re-print in their newsletters, should they so desire. I thought the April column was EXTRA good, so I am passing it on to all of you:

## I'm EXTRA Ignorant

On Sunday, I received the following e-mail from a reader:

"Just wanted to let you know I passed the General exam using your study guide. It was very helpful. I am now generally ignorant whereas before I was only technically ignorant. HI, HI!"

My reply to him was:

"Well, if you're generally ignorant, I guess that makes me EXTRA ignorant!"

This isn't just a joke--being ignorant is part of the hobby. Amateur radio operators will always be ignorant about something or other. Even if you could master every facet of the hobby at some point in time, your mastery would be short-lived as the technology continued to advance.

Over the course of my amateur radio career, we've gone from equipment that primarily used vacuum tubes, to solid-state gear that first used discrete transistors and then integrated circuits, to software-defined radios. I could have, at some point, simply given up on the new technology and still enjoyed amateur radio. Some guys do that, and that's OK. It is only a hobby after all.

I'm not one of those guys, though, and if you're not one of those guys, then you have to resign yourself to being ignorant. But, that's a good thing, as long as you realize that you're ignorant. Realizing that you're ignorant will spur you on to learn new things and accept new challenges.

Recently, I realized that I'm mostly ignorant about satellite operation. I know some of the basics from having read articles and writing about the topic in my study guides, but I have never made a contact using a satellite. I think that might be one of my next challenges. With the advent of CubeSat, there are many new satellites up in the air and many more opportunities to have interesting contacts.

So, what are you ignorant about? By that I mean, of course, what's going to be your next challenge in amateur radio?

# The Baofeng Radio
# How to optimize with some “good kit”


Many of us own a Baofeng (or other) Chinese radio. At $40 - $60 they are an excellent communication tool for the money, and come ready to play, straight out of the box.

Of course, being amateur operators, we are driven to tinker. How do we optimize these little radios to get the biggest “bang for our buck”?

Here are a few suggestions:

- **An antenna upgrade**

  As shipped, with a standard “rubber duck” antenna, these little radios are pretty good communicators. By adding a better antenna, they can be truly awesome.

  1. If you are trying to operate one of these from your car, consider using a mag mount antenna on the roof. Yes, you will need to “adapt” the standard coax connector to SMA female. I would strongly encourage you to do this with a “pigtail”, rather than a rigidly mounted adapter, as this is much easier on the radio's internal connector

  2. If you are operating portable, the Nagoya 701 or Nagoya 771, offer a good balance between size, portability, and price. The 771 **is** a bit long, but still functions pretty well as a portable antenna. Buyer beware; I have heard about fake / counterfeit Nagoya antennas. If you are buying these at a hamfest, have a look at the antenna base. The real ones will specify the frequency range in MHz. Many of the fakes will specify “NHz”. Hmm … Negahertz? Not really familiar with that term ... I would take a pass on one of these!

  3. Make your own from a piece of 300 ohm twin lead. See back issues of this newsletter for plans. This has the advantage of being able to be hoisted up into a handy tree branch, giving your radio a “better look at the world”.

One other thought; antennas are a semi-consumable item. They tend to get knocked around, stepped on, dropped, and otherwise suffer wear out of proportion to the rest of the radio. If you find a good source for replacement antennas, it's not a bad idea to get a spare.

- **A programing cable and software**

  Check your packing list before you buy. A lot of these radios are being shipped with the necessary cable supplied. However, if it isn't, get one! It is much easier to program one of these from a computer (watch out, crabby old man alert …) which has a nice large screen you can actually read and a keyboard your fingers fit on, than from the front panel of the radio.

  A programing cable is more than just a cable, it does have some electronics built in, and so, is susceptible to failure. As with antennas, if you have a good trustworthy source, get two.

  For software, just one word - **"CHIRP"**. The software supplied with these radios is hopeless, chuck it and get CHIRP. You can find it here: http://chirp.danplanet.com/projects/chirp/wiki/Home.

  This runs on Windows (although some of the older versions of Windows may "squeak" a bit), Mac, or Linux, it's open source, and it's free. What more could the frugal amateur operator want?

  The other advantage behind software programing is reproducibility … you can program a number of radios all exactly the same way … as long as the initial set up works correctly, this is a significant advantage!

- **A better manual**

  As with many other products coming out of the Far East, the manual for these radios tends to be written in "chinglish" … kind of tough to follow.

  Not to worry, as real amateur operators never read the manual anyway. No, no, not really, just kidding …

  Lenart Lidberg and Jim Unroe have created a manual in American english, which is free to download. http://www.miklor.com/uv5r/pdf/uv-5r_v1.0-annotated_by_KC9HI.pdf It's a great resource. Go get yourself a copy!

- **Spare batteries**

  I have heard reports of up to 12 hours of battery life. I think this is based on a 90% duty cycle … 90% of the time monitoring nothing at all, 5% of the time monitoring actual transmissions, 5% of the time transmitting.

  Truthfully, these little units get excellent battery life. However, there are several avenues to explore in this topic.

1. If you are operating from your car, think about a battery eliminator. This will snap onto the back of the radio, in place of the battery, and has a coiled cord which plugs into the power tap on your car. Pretty handy … however, you may want to check to see if the power tap goes on and off with the key!

2. Extra original equipment batteries. These are not particularly expensive. I would not buy a larger or "extended life" battery … just an extra original equipment battery. Make sure you seal it in a plastic zip lock bag before you drop it in your pocket or pack … shorting a fully charged battery is never a fun time!

3. A clamshell which will allow you to power the radio with AA batteries, which you can get at the neighborhood "gas and gulp". Very nice if you're on an extended deployment …

- **External speaker microphone**

  Yup, these little guys do ship with an earbud and a throat mic. (warning … crabby old man alert). However, some of us would just rather not stick things in our ears! The speaker mic with a nice long cord also works to your advantage if you are operating from a car … sort of like a "poor mans" remote head for the radio.

  On a more serious note, there could be issues with RF exposure, particularly with the higher powered versions of this radio … some of which put out up to 8 watts. It's probably a good idea to carry this thing on your belt or in an external pocket of a backpack, just to be safe.

- **A protective case**

  Again,these are not particularly expensive. If you carry the radio on your belt, you will occasionally bash it into things and / or drop it on the ground. A protective case is not a bad idea.

  On the other hand, carrying your radio in the external pocket of a backpack or in a purpose built pocket on your emergency vest; will, probably, negate the need for this.

  By the way, if you are using the longer Nagoya antenna, a strap on your emergency vest to help "tame" the antenna and keep it from intruding up your left nostril is also a good idea … or so I'm told.

*Joel (KC2VAW)*

# National Parks on the Air
# (NPOTA)

Throughout 2016, Amateur Radio will be helping the National Park Service celebrate their 100th anniversary. Amateur operators from across the country will “activate” National Park Service units, promote the National Park Service and showcase Amateur Radio to the public.

How do you “activate” a National Park Service unit? Glad you asked!

1. Choose a park – Have a park you always wanted to visit?

2. Make contact with the National Park Service staff for your chosen park to discuss the logistics involved.

    1. Where will it be permissible to set up your equipment and are there any restrictions on the type of equipment which may be used?

    2. Are any special permits required?

    3. What hours of operation are permissible?

    4. Are there any restrictions on the type of amateur radio promotional material you can distribute?

3. Pack the radio and go!

Where are the closest National Parks to you?

Check here for a complete list: http://www.arrl.org/npota-activator-tips. This list will also let you know if “your” park has already been activated. If someone else has already “activated” your park, but you still want to operate from there … **go for it!**

The closest National Park Service unit, in our area, is the North Country National Scenic Trail, which runs right through the center of KLARA's service area. Many (most, actually) of the Finger Lakes Trail segments which are on public lands have been certified by the Park Service as part of the North Country National Scenic Trail.

You can check the website here to see the location: https://www.nps.gov/noco/index.htm. Click on “explore by state”, then click on New York.

The other good possibility is the Womens Rights National Historic Park in Seneca Falls.

This is an activity which looks like fun. Anyone wish to play?

# FCC Invites Comments on Petition to Eliminate 15 dB Gain Limit on Amateur Amplifiers

The FCC has put on public notice and invited comments on a Petition for Rule Making (RM-11767), filed on behalf of an amateur amplifier distributor, which seeks to revise the Amateur Service rules regarding maximum permissible amplifier gain.

Expert Linears America LLC of Magnolia, Texas, which distributes linears manufactured by SPE in Italy, wants the FCC to eliminate the 15 dB gain limitation on amateur amplifiers, spelled out in Part 97.317(a)(2). Expert asserts that there should be no gain limitation at all on amplifiers sold or used in the Amateur Service.

RM-11767 can be found on the web at, http://apps.fcc.gov/ecfs/comment/view?id=60001536394 .

“There is no technical or regulatory reason [that] an amplifier capable of being driven to full legal output by even a fraction of a watt should not be available to Amateur Radio operators in the United States,” Expert said in its Petition.

Expert maintains that the 15 dB gain limitation is an unneeded holdover from the days when amplifiers were less efficient and the FCC was attempting to rein in the use of Amateur Service amplifiers by Citizens Band operators. While the FCC proposed in its 2004 Notice of Proposed Rulemaking and Order in WT Docket 04-140 to delete the requirement that amplifiers be designed to use a minimum of 50 W of drive power and subsequently did so, it did not further discuss the 15 dB amplification limit in the subsequent Report and Order in the docket.

The R&O is in PDF format at, https://apps.fcc.gov/edocs_public/attachmatch/FCC-06-149A1.pdf.

“Although no party advocated retention of the 15 dB limit, it remains in place today,” Expert pointed out in its filing. “In the intervening years, advancements in Amateur Radio transmitter technology have led to the availability of highly compact, sophisticated low-power transmitters that require more than 15 dB of amplification to achieve maximum legal power output. Therefore, Expert seeks to remove the 15 dB limit from Part 97.317 so that Amateur Radio manufacturers and distributors will not be forced to needlessly cripple their amplifiers for sale in the United States.”

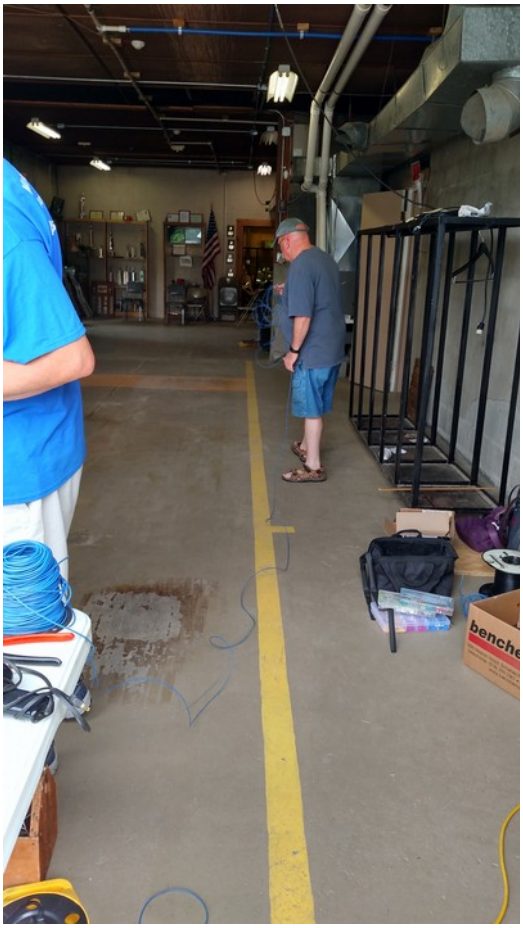
Expert pointed to its Model 1.3K FA amplifier as an example of a linear “inherently capable of considerably more than 15 dB of amplification,” which would make it a suitable match for low-power transceivers now on the market having output power on the order of 10 W.

This is what all the fuss is about. This is the SPE Expert 1.3K-FA. Fully solid state, built in power supply, operates to the full 1.3 KW at less than 15 amps (on 120 volts) and also has an automatic antenna tuner.

This amplifier is very popular with European DX expeditions. It looks like an excellent piece of gear, but is very likely to be illegal until the above “report and order” is adopted.

*ARRL.com, KB6NU.com, with edits and extra text by Joel Fiske (KC2VAW)*

**A Few Scenes from the**
**Antenna Building Workshop**



**Peeling wire off the coil**

**Ruth works with**
**a right angle PL 259**

**Belinda and Dick**
**work with the crimp tool**

**Belinda works with the**
**“alternate” soldering gun**

**Harold and Dick run the Weller Soldering Pistol**

# SSB - What is Single Side band?

Single sideband is not a band!

It is not a frequency!

It is not a portion of a band!

It is not a rock group!

It is not.....what you may have thought!

Single sideband is more properly called a "mode" like AM or FM. It is a very efficient method of superimposing your voice or other information on a radio wave and the transmission of that radio wave.

The method by which audio, (information), is impressed on a radio signal is called modulation. To modulate a radio wave is to add information to it that can be received on a receiver for some useful purpose.

There are two types of modulation that most people are familiar with, AM (amplitude modulation), and FM, (frequency modulation), for which the AM and FM broadcast bands were named. You have used FM modulation on the 2 meter ham band and most likely used AM modulation when you were a kid using toy walkie talkies. You may also have used single sideband on other occasions also, but since you are reading this, you want to know more.

When you are in the AM mode, your voice modulates, (is superimposed), on a carrier wave at a certain frequency in your transmitter and is transmitted over the air waves.

The carrier wave is used to "carry" the audio information to the AM receiver where it is detected and transformed back to an audio signal that we can hear representing the original information (voice) that was spoken into the microphone.

In an AM modulated radio signal, the carrier, is continuously transmitted. Due to the nature of the way AM is produced in the transmitter, two identical modulating signals are attached to the carrier wave, called the sidebands. They are a mirror image of each other, identical in every way.

Any audio that you hear on an AM receiver is from the two sidebands. When the radio transmitter you are tuned to is not transmitting any sound, you can still hear from the speaker and see on your S meter that a signal is present due to the background noise being quieter than either side of that frequency. This is the carrier you are hearing being detected by your receiver.

These two modulating (audio) sidebands are located on either side of the carrier wave, one just above it and the other just below.

The audio sidebands that form an AM broadcast signal are quite important. They contain the "information" or “audio" intended for the receive station. Although AM signals were transmitted almost exclusively for decades, it was discovered with experimentation that the AM signal could be modified yielding much better results!

Many methods were experimented with and ham radio operators often used both sidebands without the carrier using special circuits in the transmitter to eliminate the carrier wave while still leaving the modulation to be transmitted.

This is known as double sideband (DSB) without the carrier. DSB was typically used in the earlier experiments because it was much easier to filter out just the carrier than to filter out the carrier and one of the sidebands. Soon the experimenters were able to filter out the carrier and either of the sidebands to yield what we now know and use as Single Sideband. We are using a single side band....meaning one side band.

Using special circuits and filters, single sideband transmissions can consist of either the lower sideband (LSB) or the upper sideband (USB). If you listen to an SSB signal on an AM receiver, the voices are altered and sound very muffled, garbled and distorted. Some people even say "Donal Duck" sounding when tuned improperly in the sideband mode.

## Enter the SSB receiver.

Since the receiver still needs the original carrier to “demodulate” or decode the signal, you must have a special SSB receiver to listen to these transmissions. This is accomplished in the SSB receiver by circuits that re-insert a very low level carrier wave back into the receiver with the lower or upper sideband signal and magically, the audio that was transmitted is restored in the receiver with almost identical reproduction of the original voice. Tuning the SSB receiver is very touchy and critical to make the voices sound natural. If you are tuned off the transmitter frequency, depending on which way you go up frequency or down, the voices will be higher or lower pitched, resulting in that "Donald Duck" sound with the voices either higher pitched or lower pitched. You will tune with ease with some practice. You tune up or down until the voice sounds more "natural".

Your receiver MUST be in the same "mode" as the transmitted signal or the whole process does not work. It the transmitter of the other station is in the USB mode, your receiver MUST be in the USB mode and vice versa.

## How do you know which "mode" to use?

On HF (and remember that this requires a General license) and by agreements worldwide, all stations transmitting SSB use lower side band on 160 meters through 75 meters, upper side band on 60 meters, back to lower side band on 40 meters and then all bands above 40 meters use upper side band. This agreement makes life easy when switching bands. Every one knows which modes are used on which bands.

## For our technician friends

On VHF, the 2 meter SSB portion of the band runs from 144.100 to 144.275 and uses upper side band. The nationwide 2 meter SSB calling frequency is 144.200, so that will be the first place to look for activity or call CQ. Antenna polarization will be critical. Most of the 2 meter SSB work is done with a horizontally polarized antenna (and very often the antenna will be a “directional” or “beam” antenna)

The 1.25 meter SSB portion of the band runs from 222.0 to 222.15 with a nationwide calling frequency of 222.1. Note that, in this part of the country any 1.25 meter signals (and the equipment to produce them) are **not** common. Signals in the SSB portion of the band are even more rare. Again, antenna polarization is critical.

On UHF, the 70 centimeter SSB portion of the band runs from 432.10 to 432.30 and from 432.40 to 433, again on upper side band. And once more, antenna polarization is critical.

## Fidelity?

Since the fidelity of the SSB voice transmission has been altered somewhat through various filters in the process of producing a sideband of the desired shape, usually only the most important portions or characteristics of the voice frequencies needed to communicate are allowed through. This causes the lack of true AM or FM fidelity in the transmission, but the communication (or understandable), portions of the voice characteristics remain, which is all that is needed.

**Single side band is a "communications" mode, not wide band HI FI commercial broadcast FM radio or CD quality mode!**

The information contained in the average human voice needed to understand the voice is contained within about the first 3000Hz of the human hearing range. Frequencies of the human voice beyond this range are not needed for communication purposes and are filtered out in the modulation process. So the average bandwidth of a SSB signal is about 3000Hz wide with all of the voice characteristics needed within that range to be understandable.

## The Power Ratio factor

Back to AM for a bit. When producing that AM signal we were talking about, it was discovered that approximately half of the transmitter power is "wasted" on the carrier and the rest of the power is divided between the two sidebands. As a result, the actual audio output from a 1000 watt AM transmitter (500 watts of carrier + 250 watts on each sideband) would be the same as a 250 watt SSB transmitter in it's effectiveness.  In effect, that is a 4 to 1 ratio. But as you will see in the next paragraph, there is much more to it than that!

As only one sideband is transmitted and received, the receiver's needed bandwidth is reduced by one half, effectively reducing the required power by the transmitter another 50% (-3dBm (+) - 3dBm (+) -3dBm = -9dBm).

So.....in theory, the ratio has now doubled from 4 to 1 to become 8 to 1!

So a ham radio station running 1000 Watts AM, would sound no better than another ham running 125 Watts PEP (Peak Envelope Power) on SSB.

## The Efficiency of SSB Transmitters

In the above, we learned that it would take 1000 watts of AM to be as effective as 125 watts SSB. This is an 8 to 1 radio. The reason for the efficiency of SSB, is that all of that power that was used to produce both sidebands and the carrier (1000 watts AM), are now used in only one sideband at the transmitter, and when you account for the receiver re-adding only a very, very tiny portion of that power back into the equation, you are increasing the efficiency about 8 times better than the standard AM transmitter! It is one reason why long distances can be covered effectively with SSB using much less power than AM.

## SSB surprises for the new user!

When you tune around a ham band where single sideband is used, one thing may startle you compared to listening to AM or FM. Two stations occupying the same frequency can talk at the same time without those terrible squeals and tones caused by two carriers beating together! Since there are no carriers transmitted....no tones. If you are familiar with the terms, "Pileups" or "Double"....you will understand what this means.

So as not to get too technical, those tones are caused by the differences in the two AM station frequencies that fall within the audible range when added or subtracted from each other creating the difference heard as an audio tone.

Here is an example:
Station 1 transmits on 7.200000mhz exactly using AM.
Station 2 transmits on 7.201000mhz exactly using AM
Station 3 is your receiver tuned to 7.200000 exactly on AM.

When you subtract the difference between the two frequencies of station 1 and station 2, you get 1000hz which is an audio tone that you hear from the receiver. If one of the two stations adjusted their frequency by a tiny amount, you would hear the difference change in the frequency of the audio tone.

When you are in either sideband mode and you're just setting there listing to the background noise and all of a sudden you hear a tone in the background, you are hearing the "carrier" that is being re-inserted in your receiver beating against the carrier of another station that is transmitting no information on his carrier and this is producing the difference frequency if he is slightly off of the frequency you are tuned to. If you tune your receiver on top and exactly on his transmit frequency...the tone will simply vanish because the difference frequency between your receiver and his transmit frequency are so close or exact that you can not hear the low audio frequency. Most ham transceivers do not reproduce audio frequencies below about 100hz or so, so even if your ears could hear that frequency, the radio is simply just not producing it.

One more thing that may surprise you....When you key your mic in the SSB mode....watch your watt meter.....no output! Remember, there is no carrier produced in the transmitter when using the sideband mode, so no carrier will be registered on the meter. If you scratch your finger across the face of the mic or speak into it, you will then see the meter register the "modulation".

The instant you "modulate" the transmitter with your voice, you will see that the meter deflects showing you that now you have output....this is normal so don't worry that your transmitter is not operating....it is...and very effectively!

Many new hams using SSB seem to forget that they are NOT transmitting a carrier when they key their mic with no modulation. So remember that when checking swr (or using your antenna tuner), you MUST  have your transmitter in the AM or CW mode with the transmitter keyed (on) in order for the swr meter to detect the signal, or for the tuner to operate correctly!

YOU CAN NOT CHECK SWR (OR USE AN ANTENNA TUNER) IN ANY SSB MODE!

THESE OPERATIONS REQUIRE A CARRIER!

Now that you have learned more about how SSB works, remember that the SSB mode of transmission is the predominant mode of transmission used by most hams to effectively and efficiently work the world!

NOAA and the National Weather Radio System Announcing Voices

# “The Voice of The National Weather Service”

Prior to 1997, the bulk of national weather radio programming was conducted by a meteorologist recording each message and setting up a looping broadcast cycle. As the National Weather Service added more transmitters to provide broader radio coverage, local weather forecast offices had difficulty keeping broadcast cycles updated in a timely fashion, especially during major severe weather outbreaks.

The National Weather Service then introduced a synthesized voice to read text announcements. This male voice was named "NOAA's Perfect Paul" or simply "Paul", although it quickly acquired several nicknames for its mechanically awkward pronunciation and intonation, including "Imperfect Paul", "Igor", "Sven", "Arnold" and “Mr. Roboto”. Other National Weather Service offices, including those in Seattle, Oxnard, Fort Worth and Las Vegas, used a low-tone version of Paul, known as "Harry".

In 2002, the National Weather Service decided to introduce improved, more natural voices. The improvements involved one male voice ("Craig"), and one female voice ("Donna"). Additional upgrades in 2003 produced a greatly improved male voice nicknamed "Tom", which can change intonation based on the urgency of a product; "Donna" was altered as well.

Due to the superior quality of the "Tom" voice, most NWS offices use it for the majority of products broadcast by their national weather radio stations. Occasionally, "Donna" can be heard voicing a few products, and the original "Paul" or "Harry" voice usually announces the current local time, some river warnings and in some forecast offices the station identification (for example, "Station KEC55, serving the Dallas/Fort Worth listening area"). Full statements will occasionally be heard in the "Paul" voice if the voice processor gets overloaded with products or a failure occurs.

A few forecast offices have staged contests whereby their listeners can choose a name for their synthesized voices. The Wichita, KS Weather Office, for example, gave the "Paul" voice the name "Chance Storm"; when the other voices came along, the Wichita office chose the "Donna" voice to broadcast routine products and gave her the name "Misty Dawn." Incidentally, the Wichita office has never had such a contest for "Craig" or "Tom", whom it uses for urgent products.

Human voices are still heard on occasion, but very sparingly, mainly during station identifications, public forecasts, National Marine Fisheries Service messages, public information statements, public service announcements, required weekly tests, and severe weather events. The capability exists for a meteorologist to broadcast live on any transmitter if computer problems occur or added emphasis is desired, or to notify listeners who are concerned about a silent station on another frequency whether that station is dark due to technical errors, prolonged power outage, or a weather event has forced it off the air.

Four forecast offices broadcast weather information entirely in Spanish on a separate station from the English broadcasts:

San Diego (WNG712 in Coachella/Riverside)

El Paso (WNG652)

Miami (WZ2531 in Hialeah, since 2012)

Brownsville (WZ2541 in Pharr and WZ2542 in Harlingen, since 2014)

These stations use a male Spanish synthesized voice named "Javier" for all broadcasts. The Albuquerque forecast office uses "Javier" for repeating weather alerts in Spanish after their initial dissemination in English. WXJ69 in San Juan, Puerto Rico broadcasts all information, including forecasts, in the same manner.

Starting January 2016, six sites across the nation were selected to begin testing a new system which features a new voice. These six test sites include offices at

Greenville-Spartanburg, SC

Brownsville, TX

Omaha, NE

Portland, OR

Anchorage, AK

Tiyan, GU

A gradual nationwide implementation of the new system began in April 2016, and will last through the end of 2016. As of May 15, the forecast offices at Spokane, WA; Boulder, CO; and Huntsville, AL have implemented the new system. The name of the new voice being used on national weather radio is "Paul" , and some weather radio enthusiasts have dubbed it 'Paul II' or 'Paul Jr' to avoid confusing it with 'Perfect Paul'.

NOAA weather radio operates on the following frequencies:

1=162.400

2=162.425

3=162.450

4=162.475

5=162.500

6=162.525

7=162.550

Almost all of the amateur hand-held radios currently on the market can be programmed to receive these frequencies (but **not** to transmit on them!).

Here at home, in Steuben and surrounding counties, we have weather radio transmitters as follows:

Call Hill (WXN29) – a 300 watt transmitter operating on 162.425, which covers western Steuben, eastern Allegany, and provides "spotty" coverage into Livingston, Ontario, Yates, and Schuyler counties.

Mount Washington (WXN55) – a 300 watt transmitter operating on 162.450 which covers all of Steuben county and most of Yates and Schuyler counties, with "spotty" coverage into most of the surrounding counties.

There are also transmitters located in Ithaca and Elmira which may be heard when "dialing through" the frequency range.

You can check county coverage, other station locations, and station status here:

http://www.nws.noaa.gov/nwr/coverage/county_coverage.html

Currently the only New York transmitter which is "down" is in Walton, NY. This is a 100 watt transmitter, formerly operating as WWH34 on 162.425. This station has had a failure of transmitter components. It is older equipment, and parts are hard to find. It has been down for nearly a year. It is unclear, at this time, if it can be repaired, or if it will need to be replaced. It is co-located on a Department of Transportation (NYSDOT) tower in a somewhat inaccessible area.

Check back issues of the newsletter for a full explanation of the system.

# For Next Time

- Field Day 2016 (can someone send pictures?)
- Wine Country Classic Boat Regatta (pictures?)
- Hamfest
- Antenna article
- Hamcram (September 17th!)

## Hope to see you then!

## And remember -

Operate in public

Explain what you are doing

Be a ham radio ambassador!