

The Pickle Barrel Review



THE OFFICIAL NEWSLETTER OF THE WESTON
MOUNTAIN DIGITAL RADIO ASSOCIATION

April 2026

Introduction

Greetings to one and all, and once again welcome to the Pickle Barrel Review! As in the previous issues, you'll find this issue filled with the latest happenings not only of the W7NEO system, and the NE-OREGON room, but System Fusion, Allstar, along with GMRS, from not only our system, but our partners here in the Pacific Northwest as well. All that said, as always, we invite others to contribute with articles, or if your club or organization is having an event such as a tailgate, swap meet, VE testing, or whatever, you can list it here as well. The only thing we ask is that your contribution be nonpolitical (unless it's a government action that directly affects Ham, or GMRS Radio), respectful of

others (no personal attacks), and relatively family friendly. We realize your pretty darn proud of it, but we really don't want to hear about your new tattoo, let alone just where exactly it's located on your body. And just to be clear, we apologize, but unfortunately your brother-in-law's bachelor party still doesn't qualify as an upcoming event. So, all that said, feel free to reach in the barrel, grab yourself a pickle, pull up a chair and have ah sit for a spell as we discuss the latest happenings in Fusion, Allstar, GMRS, and Personal Radio Communications in general. And for the record, you can rest assured that every line of the PBR is a 100% AI free zone, and will remain so (As proof just look at all the mistakes!).

A word from our sponsor

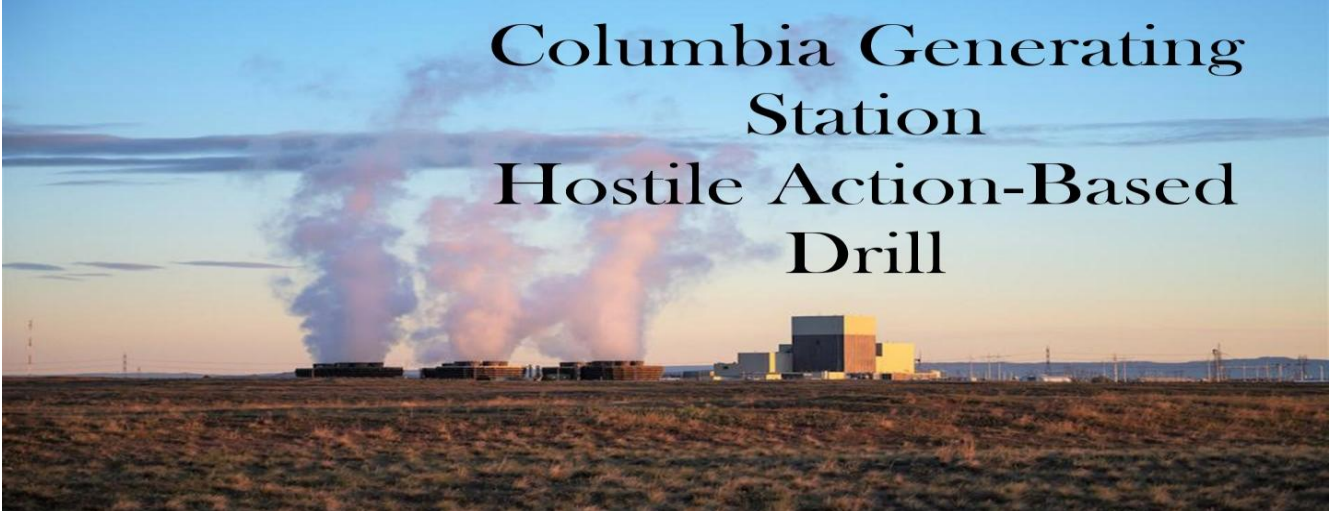
Big John's Livestock Dental Service:

Is your favorite bovine keeping the rest of the girls in the barn up all night with a menacing molar that's become well past it's prime from eating too much sweet grass? Or does that prize Mare of yours seem to be attracting a few more flies than usual with each breath he exhales? Then give John a call and he'll be right out to your place to tend to all your livestock dental needs.

John has been taking care of animal oral health needs since he was boy on his daddy's farm, and is proud to point out that even as a young farm hand, his hunting dog was the first in his neighborhood to have a shiny new set of false teeth!

John would like to make mention that he regrets not having been available on weekends lately, but assures us that rodeo season is nearing an end, and as soon as the bull wrestling and tractor pull events are finished, he'll once again be able to serve the livestock dental needs of the local community on most weekends.

So, remember Big John, not only the next time your beloved bovine has a bad bicuspid in need of removal, but for a nominal fee while he's out at your place anyway, John will gladly take a look at any family members in need of dental care as well.



Columbia Generating Station Hostile Action-Based Drill

Imagine for a moment if you will, you're sitting at home one evening, like any other evening, watching the evening news with your family. You see on the news that due to the war going on in the middle east the threat level here in the United States is at an all-time high, and there is a very real possibility of sabotage taking place. You think to yourself; "That sort of thing always happens somewhere else, surely not here." But ironically, the power decides to go off right about then. Still in denial, you once again think to yourself; "This can't be happening, must be a squirrel that decided to end it all by jumping into a power transformer, or possibly some drunk driver ran into a power pole somewhere along the highway." Once again, you think to yourself; "No problem, whatever it is the power company will have it back up and going in an hour or so." The hour passes, two hours pass. Finally, nearing bed time, after having fumbled around in the dark for a few minutes, you turn in thinking the lights will come on sometime during the night. The next day comes, and still no power. You begin to panic, thinking that there's no coffee to be had! So, you hop in your car and decide to drive to the nearest Starbucks thinking they might have power. While on your way, you decide to flip on the news. You tune to your favorite local station, and instead of the usual newscasters you get the Emergency Broadcast Network telling everyone that the nuclear power plant just north of you has been attacked by terrorists, and their advising everyone to seek shelter immediately. Now it begins to really sink in, and you realize that this has all suddenly become very real.

Seems kind of farfetched, doesn't it? Well not when you think about it, and look a little deeper into the big picture. Our country is currently in a war with a country that is not only known to support various terrorist groups, but is very capable of not only striking back, but with known sleeper cells scattered all over the US, disaster could strike at any time, and anywhere in the country could be a likely

target. To make matters worse, they've been committing hostile terrorist actions in other countries, including our own, for years, and since the start of the war, they've openly threatening the United States and our allies. So now you have capability, and all motivated by sheer fanatical anger, and all working together against us. Still think it's a little farfetched?

The Columbia Generating Station, located just north of Richland Washington on the Hanford reservation was first granted a forty-year license on December 20th, 1983. That original license was supposed to expire on December 20, 2025. It has since been extended up until December of 2043. Currently the Columbia Generating Station provides more than 8% of Washington States power, which works out to about 1 million plus homes being supplied with power every day, and it does this reliably day in and day out 24/7. The Generating Station itself is a boiling-water reactor located on a 1,089-acre site bordering the Columbia River. This feeds into the power grid, which is managed by the Bonneville Power Administration, providing just over 32% of power overall here in the Pacific Northwest. Although the Columbia Generating Station is cleared to operate up until 2043, they're currently considering future expansion by installing modular power plants around the current plant in order to be able to better meet future power needs not only to accommodate an exponential population growth, but other anticipated expansions such as AI server farms as well. Think about it for a moment, and just how much our reliance on AI is currently beginning to take off. Now consider just what our reliance on AI could be in five, or ten years down the road. Once it's thoroughly woven into our daily lives, consider the possibility of it suddenly going dark, along with everything else we rely upon. I've got your attention now don't I.



Columbia Generating Station, located just north of Richland WA

Washington State Emergency Management typically conducts regular training exercises, including Hostile Action-Based (HAB) scenarios, focusing on numerous threats to critical infrastructure, such as the Columbia Generating Station nuclear plant. These drills typically involve federal, state, and local partners, testing responses to simulated attacks, and more broadly, cyberattacks or physical attacks on power substations. These simulations test emergency preparedness against terrorist attacks, active assailants, and security breaches at various power stations. HAB exercises must be thoroughly critiqued to identify weaknesses, which are then entered into the relevant site's corrective action process. This involves monitoring for unique considerations, such as operating in an unknown security state where a "secure" status is not immediately reestablished. In order to present opportunities for demonstration of certain HAB exercise objectives, it becomes necessary for the scenario to employ an adversary force in excess of that defined by the Design Basis Threat (DBT). In addition, exercise exigencies will often require that certain events, consequences or response actions be embellished or presented in a time-compressed fashion. In order for the Columbia Generator Station to maintain their license to operate, every two years they are required to conduct a comprehensive drill, such as these. All of these organizations have a stake in these drills not only being successful, but exposing weaknesses, and providing knowledge necessary for everyone to improve upon the overall response. In other words, drill participants need to be on their toes for just about any possibility.

No doubt you've seen the recent real-world threats that have targeted Washington, and Oregon state power substations with vandalism and even gunfire. These attacks have led to enhanced, and more frequent preparedness drills. Evaluations of the attacks on substations have shown that the attackers knew exactly where to target, and why. This makes the validity of these drills all the more relevant. Typically, these drills include coordination with the FBI, local law enforcement, Energy Northwest, and state agencies, just to name a few in order to protect key assets. HAB evaluations specifically focus on coordination among the incident command, and utility personnel, rather than focusing specifically on the evaluation of tactical law enforcement actions, although law enforcement does play a crucial role. Exercises often simulate regional outages requiring Amateur Radio operators to operate without internet or power, using battery power and solar charging. As shown in scenarios involving VHF/HF setups operating in excess of 24-hour operational periods. HAB scenarios are highly complex and often require RACES/ARES and AUXCOMM operators to work with Incident Command Posts (ICP), Unified Area Commands (UAC), and staging areas in order to support personnel accountability, and report damage.



Typical Power Substation operated by Bonnaville Power, located in Richland WA.

Now some of you might be asking; “What about the National Incident Management System (NIMS), isn’t that the guidelines we as emergency responders are supposed to use as our guide when responding to emergencies?” For a normal natural disaster type of emergency this would be true, but in this case the attack will require activation, and operation of an on-site, or near-site Incident Command Post (ICP), and depending upon State and local protocols, other facilities as defined by the National Incident Management System (NIMS). Performance in these exercises is not considered to be a demonstration of physical security plan capabilities, or implementation. It is recognized that State and local jurisdictions surrounding different nuclear power plant sites have varying protocols concerning the implementation of NIMS. With respect to participation by NIMS-related facilities, at a minimum, it is expected that an ICP will be established to direct a response to an attack on a nuclear power plant. The ICP should be taken to mean that not only the ICP, but also any additional NIMS-related facilities, which State or local officials would establish to support an attack-related response for a given site (e.g., a separate Area Command, or Unified Command facility). In other words, recommendations and actions directed towards the ICP should also be considered for applicability to other NIMS-related facilities that are not normally activated in response to an accident at a given site. So, as you can see, it’s actually a mutual coordination of both ICP and NIMS working together in their specific areas of expertise depending upon if it’s the actual attack, or the collateral effects of the attack. This is what will dictate just which facility is going to direct the response, either ICP or NIMS.

On the afternoon of Sunday, March 29th, 2026, a Washington state wide drill, which primarily involved NRC, CGS, and the Washington State EOC located on Camp Murry near Tacoma Washington, along with various emergency response organizations located in Oregon, was conducted. It was designated as a Hostile Action-Based (HAB) scenario. Hostile Action Based (HAB) exercises in the context of Ham Radio and Emergency Management, particularly near critical infrastructure such as nuclear power plants, are designed to test communications resilience during a simulated security incident, such as an armed attack, sabotage, or other acts of terrorism. These exercises involve following the FEMA, and Homeland Security Exercise and Evaluation Program (HSEEP) guidelines. This, while assessing the ability of Amateur Radio Auxiliary Communications (AUXCOMM), Amateur Radio Emergency Service (ARES), and Radio Amateur Civil Emergency Service (RACES) ability to provide effective backup communications in the event regular communications channels fail.

The Washington State Emergency Operating Center (EOC) located on Camp Murry is somewhat unique in its design. Designed to survive and be operational during, and in the aftermath of a major earthquake, the steel-braced and framed building has a base isolation foundation that quite literally acts as shock absorbers.



Side view of Washington EOC building showing steel-braced resting on framed base isolation foundation. Photo courtesy of Craig Johnson (NG7N).

With its own emergency power, and auxiliary communications systems consisting of an impressive array of both SHARES, and Amateur Radio positions, the facility is a showcase for preparedness, and hazard mitigation.



*Communications Positions showing both Amateur & Shares equipment.
Photo curtesy of Craig Johnson (NG7N).*

During long-term emergencies, Camp Murray would provide support for lodging, feeding, emergency water supply, and sanitation services for EOC responders. Within the building is a ready room where the Washington State Governor, along with the rest of the management staff would provide direction for disaster response. The building itself is capable of being completely self-contained in the event of a statewide emergency. During an emergency, or simulated emergency such as the HAB exercise, there is also a control room where the various agencies would perform their individual responsibilities during the emergency.



Main control room Washington State EOC. Photo curtesy of Craig Johnson (NG7N).

One such agency is the Emergency Support Function (ESF). These are divided into several ESF entities, one of which is ESF-13 in which Washington State Patrol (WSP) is the lead organization in that ESF. Their primary function is to provide Public Safety and Security Annex through state and federal law enforcement, along with security assistance to state, tribal, and local authorities when their resources are overwhelmed during disasters, or emergencies. Led by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), it supports, protects, and manages security for, incidents, evacuations, and critical infrastructure.

The ESF that concerns us, as Amateur Radio operators is Emergency Support Function #2. ESF-2 Communications provides a coordinated federal, state, or local response to restore essential telecommunications infrastructure, support incident management communications, and protect cyber security during disasters. It connects government agencies with private-sector partners to repair networks and ensure interoperability for first responders. This is the group that provided communications to the CGS during the drill.

ESF-2 was in communications with the 3Rivers-AUXCOMM group in Washington's Benton and Franklin Counties, who were participating in the emergency response exercise from the two Emergency Operations Centers, located in Richland and Pasco, Washington. The AUXCOMM group operated from radio rooms setup in each of the EOCs. Within each EOC are two HF radios and at least two VHF radios, along with PACTOR and Packet TNCs. This arrangement provided the ability to conduct voice and data communications throughout the Pacific Northwest. More importantly, this provided the ability to communicate directly not only with the Washington State Emergency Operations Center, but also with the Washington state capital located in Olympia should telephone and Internet communications be disrupted.

The operational priorities are telnet first, VHF packet or VARA FM second, and HF PACTOR third. This is done in order to avoid adding to the somewhat inevitable airwave congestion in the event of an emergency. So, the practice is to test all available circuits once the radio rooms are manned, and then periodically recheck as propagation on HF inevitably begins to change throughout the course of the day. Additionally, the practice of feeding traffic from one EOC through its counterpart is also performed. This is done in the event that access to another EOC might not be reliably available, necessitating utilization of an alternate path via a team member's home station. Kind of like passing a garden hose through a bathroom window, and out the front door in order to water the plants in the front yard.

During the exercise, the communications teams in each of the two Eastern Washington EOC's were tasked with passing resource requests to the State EOC. This was typically carried out by the Ops Section Chief passing a hand-written draft to the radio supervisor who then passed it to an operator for transcription into Winlink. Each of the shacks has two work stations, with one operator entering data into Winlink, and the other operating radios and handling voice traffic. Once the message has been transcribed, it's either sent directly, or dropped as a saved form into a shared folder, and into a queue for sending by the other operator. Experience has proven this to be an exceptionally efficient way in which to pass traffic, even in the event of having just one operator available.

This exercise also provided a great opportunity to test a concept the 3RIVERS group had been thinking about for some time, but up until now had not had the opportunity to actually test in a live scenario. The team in Benton County was tasked with finding operators who could provide communications at two vehicle traffic control points in the field. Once the call went out, they were able to quickly assemble a team of Ham Radio operators who could go mobile in order to help out. As expected, additional operators soon stepped up to the task indicating their availability. So, they, along with personnel who could be pulled from the EOCs for remote duty, were able to fulfill the request.

Another new feature for the group was the ability to utilize the 60-meter band for this exercise. This proved to be invaluable since propagation throughout that day was ideal for passing traffic between the two EOC's located in the Tri-Cities area, to Camp Murry, and back. Although there were some upgrades that were required before hand, such as the Benton County EOC shack required having one radio MARS modded in order to be able to operate on the 60-meter band. As well as the Franklin County EOC shack needing a new antenna for the band. During past exercises, operators struggled with QRM on both 40 and 80m. So, the relative quiet on 60-meters was a welcome change from past years. During the entire exercise the team had good signal reports from both the state EOC, as well as between each county EOC.

I might add that afterwards Mark Hunn (KS7SI), Mark Breakey (KB7RHI), and they're 3RIVERS-AUXCOMM team members were officially recognized by not only both the Renton County Emergency Services group, and the Washington State Emergency Management Division Disaster Emergency Communications. But also, the FEMA Evaluators at Benton County EOC for exemplary demonstration of capabilities, and overall superior performance during the HAB exercise, and

presented with the Golden Plume award. Great job to you both, and your fellow teammates!



The Golden Plume award presented to the 3RIVERS-AUXCOMM for outstanding performance during the 2026 HAB drill.

For anyone interested in becoming a part of a great group of dedicated emergency radio operators, the 3Rivers-AUXCOMM group conducts weekly nets in the Tri-Cities area of Eastern Washington on the WA7BC repeater (147.34/123) Monday nights at 1800 local, and routinely practices voice and Winlink traffic handling. They also shift the net to 146.50 simplex at least once a month, and do a field exercise once a quarter, weather permitting. Additionally, they also conduct a weekly FLDIGI net on 146.50 at 1930 Tuesdays to give operators the opportunity to practice with the NBEMS suite as well. So, as you can see, they are a VERY active group, and new members and visitors are always welcome in each net. It is strongly felt by the WMDRA that in times of need, it's all of our responsibility as skilled radio operators to pony up, and apply our vastly diverse skills as experienced radio operators towards helping our community in times of need. I hope this has given some of you an insight into the possibilities, and opportunities available in order to step up and volunteer when the need arises.

Lynn Wilson, K7LW

*A very special thanks goes out to both Craig Johnson (NG7N), Sgt Washington State Patrol, and Mark Hunn (KI7SI) President 3RIVERS-AUXCOMM for their invaluable contributions to this article.

Solar Phenomenon

I ran across this the other day on [Space Weather](#), and thought others might find it interesting as well.

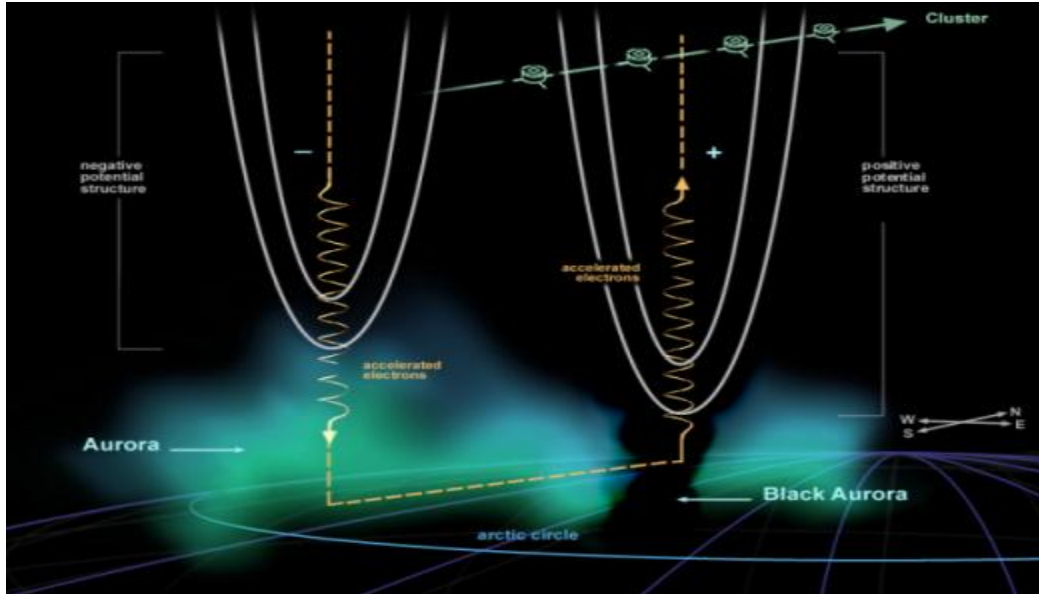
POTENTIAL 'BLACK AURORAS' OVER ICELAND: On March 15th, a bright display of auroras exploded over Iceland. Near the shore of lake Pingvallavatn, photographer Ian McCaskill witnessed expanses of pink, green, and black.



Photographer Ian McCaskill's photo of a Black Aurora taking place over Iceland.

McCaskill may have captured a rare episode of 'black auroras.' They are dark swirls or black blobs that sometimes appear in an otherwise ordinary expanse of auroral light. Some researchers call them "anti-auroras."

Ordinary auroras are caused by electrons raining down from space. Black auroras are the opposite. Instead of electrons raining down, electrons are propelled upwards back into space. Europe's fleet of Cluster spacecraft flew over a black aurora on Jan. 14, 2001, and saw the process in action:



Normal Aurora fields as compared to Black Aurora fields.

Sensors onboard the spacecraft detected strong positive electric fields in the black aurora zone. These fields reversed the normal downward rain of aurora-causing electrons.

The study of black auroras is still in its infancy, and forecasters cannot yet predict when or where they might appear. Aurora watchers, the next time a geomagnetic storm erupts, be alert for black.

Original article posted on Space Weather March 16th, 2026

Legal Corner



Back in the late 70's I was stationed at Naval Training Center Corry Station, in Pensacola FL, attending Navel Technical training. While there, I spent allot of my spare time at the base Amateur Radio station, WA4ECY. In fact, while the rest of the students were standing fire watches in the barracks, and school buildings, I was standing MARS watches once a week surrounded by Ham Radio equipment. Yes, I was indeed in nerd heaven.

Before entering into military service, I never really thought about letting anyone know when I communicated with any (at the time) countries at the time to be consider "hostile adversaries." Okay, so I may have bragged just alittle to my buddies. However, when I was stationed in Pensacola it was a standing order at WA4ECY that we were required to contact the duty officer when we had made contact with any stations that were within a communist country, and they would intern log it. Bear in mind that this was a U.S. military base in the 1970's during the Cold War. So, to say the least world tensions at the time were pretty high.

I remember one evening in particular I was working an opening into Asia that was absolutely phenomenal. After about the fifth time in less than 30 minutes I had called the duty officer to let him know I had made (yet another) contact with a communist country, he finally asked me if I was at the MARS station. I said yes, and he then told me not to call them anymore, that they would just assume this was going to be an all-night thing, which it pretty much ended up being.

Fortunately, the cold war has long since ended, and that rule has never quite been applied to Amateur Radio in general. However, it does come close. FCC SECTION 47, CFR § 97.117 is the regulation that governs International Communications for Amateur Radio stations. It dictates that international transmissions must be limited to technical investigations, personal remarks, or communications incidental to the amateur service's purpose, provided such communications are permitted by the foreign country involved. In other words, you might not want to mention on the radio to a foreign station that you had just witnessed a U2 taking off not far from you on its way to <FILL IN THE BLANK>.

So, what about the passing of traffic? Current regulations, such as FCC Section 47 CFR § 97.115 which regulates third-party communications in amateur radio, allows licensed operators to transmit messages for non-licensed individuals if the control operator is present, and monitoring. It also restricts foreign third-party

traffic to countries with specific third-party agreements, but prohibits third-party messages during automatic control (except for data/RTTY), and ensures live operator responsibility. Generally speaking, what this all means is that it prohibits the transmitting of messages originating from third parties who are within the jurisdiction of a foreign government that has not reached an agreement with the U.S. regarding third party communications. In the Amateur Radio community, we normally refer to this simply as “third party traffic rules,” or “third party agreements.”

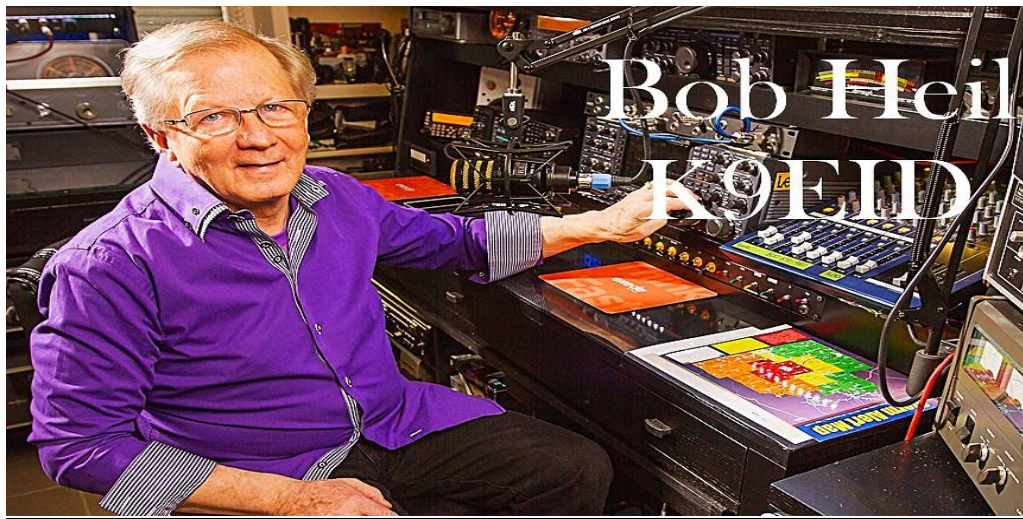
So why is the ARRL seeking to enact an exemption from its foreign adversary reporting requirements for Amateur Radio operators? Simple really, and it makes perfect sense when you step back, and examine the big picture. This rule actually applies more to commercial broadcast stations, carriers, and infrastructure holders, that could potentially be owned by a foreign national, such as China, or Russia, and other countries considered foreign adversaries by the United States. This typically doesn't involve individual hobbyist licensees, such as Amateur Radio, and the Personal Radio Service in general.

The ARRL has recently reported that the Federal Communications Commission is expected to enact an exemption from its foreign adversary reporting requirements for Amateur Radio operators. According to an article posted in mid-January on the ARRL website, the FCC will soon vote to adopt a Report, and Order that will exempt Amateur Radio from reporting requirements for those Amateur Radio operators who are “subject to the jurisdiction or direction of a foreign adversary,” which is basically none of us. The Report and Order specify foreign adversaries, in a list that includes China, Cuba, Iran, North Korea, and the Russian Federation. More specifically, the ARRL reminded the Commission that “Amateur Radio licensees not only do not sell or provide any communications service, network, or equipment to the public, but in fact they are prohibited from doing so by both international and domestic law.” Therefore, “the risk to national security of Foreign Adversary Control over these licenses is minimal due to the lack of connection to any of the nation's communications networks used by the public.” Basically, this separates the Amateur Radio community from the Commercial folks by stating the obvious differences. We are a purely non-profit, hobbyist group, whereas the commercial folks are a professional, and fully profit driven group.

So, there you have it. From reading over it a couple of times, it seems that by exempting the Ham Radio community from the commercial community's requirement to report any foreign business associations, it releases Hams from the burden of having to declare what's essentially not there to declare.

Lynn Wilson, K7LW

Famous Ham's



Bob Heil, K9EID (SK), legendary sound innovator, and passionate Ham Radio operator.

Anyone that's been in the hobby for any length of time has experienced, or at least heard of the legendary Heil microphones and headsets. I myself have several of Bob Heils products in my shack, and over the years I've received countless compliments on the quality of my audio. But where Bob Heil really made his mark was with powerful, high fidelity sound systems for rock bands of the 60's and 70's.

Born Robert Gene Heil in St Louis, MO on October 5, 1940. Bob Heil showed an aptitude for music at the age of just ten years old by becoming proficient at the accordion. Eventually taking his knowledge of musical sounds and putting it to good use, he went on to become an American audio and radio engineer accredited as being the first to have created the template for modern rock sound systems. As I mentioned earlier, Bob began learning the basics of sound early in life through music, and by the age of ten he was playing the accordion. A short time later, he

became a proficient theater organ musician, performing at various local restaurants from the age of just 14. At 15, he became the house player for the Wurlitzer theater organ in the Fox Theater in St. Louis. While still in his teens, he learned how to tune, and voice the thousands of pipes in the Wurlitzer, which intern taught him how to listen and dissect discrete tones. At one time Heil commented; “That's where I learned to listen — listening is a real art.” This proved to be an important skill throughout several of his many careers in audio reproduction. By the time he was in his early twenties, Heil began designing and building theater pipe organ installations in the Holiday Inn North restaurant in St. Louis, while also playing the instruments six nights a week.

In 1966, at the age of 26 he opened up; “Ye Olde Music Shop.” Later on, after realizing that the sound systems bands of the time were using were terrible, primarily due to them using little speaker columns while playing twenty-thousand seat halls. As a result, the music shop eventually developed into “Heil Sound.” With that he began experimenting with live sound systems and became the principal technician at venues all around the St. Louis area, from auditoriums to bowling alleys. Large sound systems at the time were comparatively weak and primitive. Even big bands of the time such as the Beatles were using only make shift systems such as the Shure Vocal Master PA system plugged into an announcement system. Which inevitably fell far short of being suitable for the full range of music being demanded by other professional bands of the time.



Bob Heil with mixer from “Ye Olde Music Shop.”

On February 2, 1970, Bob got the big break that would change his life forever. The Grateful Dead were scheduled to play a concert at the Fox Theater in St. Louis. At the time they had been using a sound system originally designed by their sound engineer, Augustus Owsley Stanley II, or simply

"Bear." Unfortunately, at the time, Augustus had gotten himself into a bit of trouble with the state of California on drug charges, and wasn't allowed to leave the state. To make matters worse, on February 1 he was detained for leaving the state to be at a Grateful Dead show in New Orleans. To make matters even worse yet, not only was he arrested and detained, but along with that most of the Grateful Dead's sound system was detained as well. Fortunately, George Bales, a stage hand at Fox Theater, gave Jerry Garcia Heil's phone number. Jerry contacted Heil, and arranged for him to provide the band with the necessary sound equipment. With that, Heil immediately went to work, and designed a sound system with numerous improvements over conventional sound systems of the time that greatly improved the bands presentation. The show was a big success which resulted in the Grateful Dead asking Heil, his crew, and his sound system to join them on the road. That experience made Heil realize that there was a need to package sound gear, which Heil was the first to do so. Heil's setup eventually became a template for all other modern concert touring sound systems, and the 'Heil' brand became ubiquitous in venues across the US. In 1978, Heil eventually published a "Practical Guide for Concert Sound" which ultimately became a field guide for techies and roadies worldwide. Heil went on to work with various other rock artists such as The Who, Peter Frampton, Joe Walsh, Jeff Beck, and many others.

Another invention of Heils was the Heil Talk Box, which became famous after being used by Joe Walsh in 1973 for his Barnstorm Tour, and later by Peter Frampton, and Richie Sambora. The first of its kind, the device reliably blended the sound of voice and guitar, and could also be used on high-level rock stages. Although the first prototype Talk Box was made for Joe Walsh, and was packaged up in a paper bag with surgical tubing sticking out of the top. On stage during Walsh's performance, it looked more like a bottle of booze hidden in a paper sack.



Original Talk Box used by Peter Frampton.

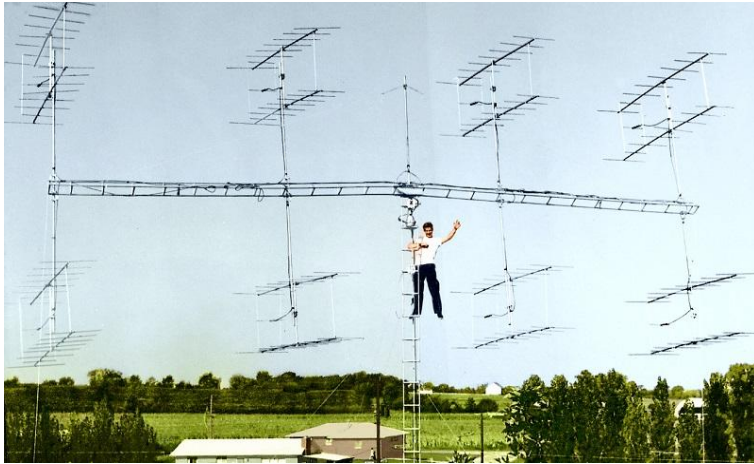
If all that wasn't enough, in the late 1980s, Heil Sound entered the home theater movement that was becoming popular in the United States. His company was credited as being one of the first to design and install Custom Home theater systems, with over 3,000 audio/video systems installed as of 2010. He was also on the original test team for the RCA DirecTV dish system.

The legendary Heil large diaphragm microphones resulted from a conversation with Joe Walsh, one day while working at Walsh's house. Walsh said to Heil; "You know Bob, the bigger things are the better they sound. You need to build me a big microphone." So, as a joke, Heil began working on big diaphragms. Heil had a friend that used to work at one of the major microphone companies in research and Development. Heil called him and asked; "What is your experience with large diaphragms?" His response was; "They don't ever work," Explaining that; "Because the transient response is going to be awful, because, like big wings, you can't move it." Walsh and Heil eventually figured out how to 'tame the monster' so to speak, and make it work.

From the 1980s, Heil won several awards and honors. He was the "International Amateur Radio Operator of the Year" in 1982. He was later awarded the 1989 "USA Satellite Dealer of the Year" by the Satellite Broadcasting and Communications Association in Las Vegas. In 1995, he received the very first "Live Sound Pioneer Award" at the Audio Engineering Society Convention" in San Francisco. Heil went on to win the Parnelli Award for Innovator of the Year in 2007. Also in 2007, he was invited into the Rock and Roll Hall of Fame to put up a display of his historically important gear, which included the first modular mixing console (the Mavis), his custom quadrasonic mixer (originally used on the Quadrophonia tour), and the very first Heil Talk Box. He was the first manufacturer to be invited into the Hall. On December 20, 2014, Heil was awarded an Honorary Doctoral Degree in Music and Technology from the University of Missouri. After all that you can just imagine the wall in his den.

Bob was first licensed as a Ham Radio operator in 1956 at the age of 16, during a peak solar cycle. He credits Amateur Radio as having been the foundation of his careers in the sound reinforcement industry, as well as bringing high quality, articulate audio to Amateur Radio. Heil designed and built one of the first VHF SSB KW stations. Heil went on to design many antennas, from the 128 element two meter 'J' Beam array in 1960, experimenting with early moon bounce. This, along with building phased arrays for 40 and 75 meters. Bob Heil enjoyed

operating 160 meters through two meters, working not only his many friends, but especially newcomers to Amateur Radio.



Bob Heil, K9IED, 128 element 2 meter array.

Bob credits his mentor, Larry K0DGE, Chief Engineer at KMOX-CBS radio in St Louis who taught him how to build starting with several small 6 meter transmitters, converters, and antennas followed by building a Wes Schum Central Electronics 10B and then a 20A kit with home brew 6 and 2 meter transverters driving a Johnson 6N2 Thunderbolt built from their kit. Heil accredits having learned so much from all of his early days in Amateur Radio, which became the center piece of many of his lifelong activities. Heil credited Ham Radio as having taught him how to build and design at the same time during the time he was developing the sound systems he's now famous for.

Bob Heil was also the co-host of the popular Ham Radio podcast "Ham Nation." The man who defined the sound of live rock 'n' roll music and brought audio engineering principals into mainstream Amateur radio use, Dr. Bob Heil, K9EID, passed away peacefully the age of 83 surrounded by family consisting of his wife, Sarah Benton, along with their two daughters, and one stepson. Up until his passing he continued to play the Wurlitzer Organ at the Fox Theater in St Louis, and had a classic car collection, chiefly made up of 50s Thunderbirds.

Bob Heil will always be remembered for not only his many contributions to making not only Rock and Roll, but also Ham Radio sound more like broadcast signals. Farewell Bob, I'm sure heavens harps are sounding just that much better now that your once again in charge of the sound system.

Lynn Wilson, K7LW

Repeater Updates



Weston Mt site, main antenna tower showing GMRS antenna.

I have been getting a lot of questions lately regarding upgrading of the NE-OREGON WiresX room to the new v2.0 software. To be honest, I wasn't even aware that there was a v2.0 out. So, I decided to do some digging and find out more about it before upgrading the NE-OREGON room to the new software.

What I found out was interesting.

First off, here are the new features of v2.0, according to John Kruk (N9UPC) of Yeasu. Specifically, two new features have been added to the WiresX terminal software.

- 1) The ability to "mute" users if the need arises. Not to be confused with "blocking" users.
- 2) The ability to kick individual users out of the room if need be. Again, not to be confused with "blocking" users, and/or nodes for whatever reason.
- 3) No more need for port forwarding.

In the case of the NE-OREGON room I really didn't see the advantage to either of these new features really applying to us, given that we as a group, for the most part anyway, tend to do an exceptional job of following "The Three Don'ts," (Although there is one user in Athena OR that I keep having to remind of that...).

Additionally, together we also do a pretty good job of “taking out the trash,” in general, so to speak. Although in the past I have had to block the occasional problem, fortunately the frequency of such events in this room have been VERY few, and far between.

Also, this new version of WiresX was develop to be compatible with the Yeasu FTX-1, which currently goes for anywhere from \$1,300 to \$1,900. Although I’ve invested quite abit over the years in this system, \$1,900 for a “node radio” is just alittle too rich for my blood.

When I first watched John Kruks video, particularly the installation of v2.0, I thought to myself; “This is never gonna fly.” Apparently, I wasn’t the only one, since Yeasu came out with an update to v2.0 within about a day or two of the email I had originally sent out. When they said that v2.0 “required” IPv6 in order to install correctly they really managed to kick a hornet’s nest. As a result, Yeasu was flooded with users upset that there was going to be a potential divide between users with legacy editions of WiresX, and users with more current versions. The good news is that Yeasu quickly realized their mistake, and updated the release in order to accommodate installations for those of us whose ISP’s didn’t accommodate IPv6. So, the version that is currently posted to their website (still v2.0 but with an upgrade) actually will load with IPv4, and without the need to have a IPv6 connection.

Some of you are familiar with the difference between network protocols IPv4, and IPv6. But for those that aren’t, basically, IPv6 was created due IP addresses starting to run out. By using IPv6, in general, it allows for an entirely new group of IP addresses to be able to be used. The trouble is, that it’s not downwardly compatible with IPv4. So, in other words, if you’re running v2.0 not in compatibility mode, when you bring up a list of available WiresX rooms, you’ll only see the rooms using v2.0 (IPv6). So, if you’re running v2.0 you won’t even be able to connect to any rooms not running v2.0, regardless if you attempt a direct entry of the room number. So, what Yeasu has done is to now make v2.0 compatible with BOTH IPv4 and IPv6 during the initial installation.

As far as compatibility, all you have to do is “after” you’ve installed the software, go ahead and switch to IPv4 using the “VER” option located on the “File” pull-

down menu, along with selecting “Older Ver Compatible, (Located just below the “Ver” selection). Afterwards, your node will play nice with BOTH IPv6 & IPv4.

Once you’ve got v2.0 installed, and you’ve run out of profanity, there’s an easy way to tell who’s running what version. Simply take a look at the WiresX dashboard, on the left side, and it will tell you who's running what version:

IPv6 – The room is running v2.0, and is only compatible with other v2.0 rooms.

IPv4 – The room is running v1.57 and is only compatible with other v1.57 rooms.

+IPv6 – The room is running v2.0, but is configured to be compatible with BOTH IPv6 and IPv4.

One last item worth mentioning. Some of you are running Starlink on your sites. Starlink runs IPv6, and doesn’t allow port forwarding. This is something worth considering, especially if you’re wanting to keep everything located at your repeater site, and have decided that Starlink is going to be your internet provider at the site. It’s worth noting that our group is currently planning on installing a Starlink internet access point at our Cabbage Hill Oregon site. With that in mind, I’ve been kicking around the idea of installing a second HRI-200 on that site, and making that node (W7NEO-RPT2) a v2.0 node. I’ll let you know if that ever comes to fruition.

There are currently no plans to upgrade the NE-OREGON room to WiresX v2.0, at least not for now. I prefer to wait until the dust settles, after that, any and all updates will be on the table. The main fear is that some folks would get unnecessarily bumped out of the room for incompatibility. This is especially applicable after a couple of the folks just recently managed to get their systems back working after having switched their node computers to the Windows 11 operating system. We’re just not inclined to put any of you through that sort of frustration once again. So, for all the above reasons, for now anyway, the NE-OREGON room has been upgraded to v1.57, but NOT to v2.0. I hope this answers some question for a few of you? I’m going to be doing some more digging as time goes by with regards to WiresX v2.0, which I’ll try and pass along what I find out to folks as I learn more.

One final note, this is not meant to discourage anyone from loading up v2.0 on your node. I'm just giving you a heads up on what's going on with NE-OREGON room since, as I said at the beginning, I've been getting a lot of questions on this subject.

Lynn Wilson, K7LW

*For more information, check out [this](#) video by John Kruk (N9UPC) Regional Sales Manager for Yeasu US.

Ham Radio Nostalgia



Collins 51J Receiver

When I passed my Novice exam, I was a young teenager, whose income consisted of whatever money I could earn from mowing lawns, along with assorted other odd jobs. Needless to say, the purchase of new Ham radio equipment at the time was a major financial undertaking that was pretty much out of reach for a young teenager. A lot of the equipment I did manage to obtain was hand-me-downs, that were in need of repair, hence my first taste of electronic troubleshooting. I recall on numerous occasions myself, and a small group of close friends spent many afternoons trying to repair old radios so we could get on the air. Fortunately, one of those friends of mine's dad was a Ham, and allowed us to use his equipment after we were licensed. That was back in the early 1970's, so there were still a lot of "boat anchors" around to be had. His station at the time consisted of a Johnson-Viking II paired up with a Collins 51J receiver, coupled with a J-38 striate key, and

an old Heathkit VFO. Back then as a Novice licensee we were legally limited to just CW operation, and 75 watts. I managed to make my first contact using that very station. Of course, my friend's dad has long since become a silent key, and that entire station is now a classic. Although nowadays such equipment presents a challenge to find in good condition, but if your patient, and know just where to look, you can still find some of these classic old boat anchors for sale at a reasonable price. I was fortunate in that I happen to found a Viking II for sale listed on a bulletin board on a 3X5 card years ago. The guy selling it really had no idea what it was, let alone what it was worth, and just wanted to get his money back from an old roommate that had left it behind while still owing him money. So needless to say, I was able to get it for a very good price.



The Johnson Viking II.

Years later I received a phone call from one of my childhood buddies who had been storing the very same Collins 51J I had originally operated back in the 70's in a back room in his shop, and wanted to make room for other things. So, when he offered to ship the receiver to me just to get it off his hands, needless to say I accepted his offer without hesitation. I told him about the Johnson-Viking II I had picked up years earlier, and how I wanted to put together the same station we had operated as young teenagers. Since then, I've acquired a second Collins 51J receiver for a more than fair price, and have been gradually building up a classic station of my own. My step father used to be really into restoring old cars. So once when I explained to him that restoring old radio equipment wasn't all that different for me than him and his classic cars, he understood completely.

First introduced in 1949, the Collins 51J receiver was originally intended for commercial-professional users that required a very stable, and extremely accurate

frequency readout, all packaged up within a drift-free receiver that was especially suited for use in RTTY. But it could also provide excellent performance while operating in AM or CW. During that time period the 51J was also the perfect receiver for a then wealthy ham, or SWL enthusiast - if he could afford its nearly \$900 price tag that is. Two years earlier, after the end of WWII, the Collins Radio Company had entered into the ham radio receiver market with their "Ham bands only" receiver, the 75A. But, according to Collins Radio, they originally began development of a precision general coverage receiver towards the end of WWII, in 1944. The project lead was Roy Olson, an Electrical Engineer hired in May of 1934. From 1944 up until 1946 another Electrical Engineer by the name of Lou Cuillard, took over until completion. Cuillard would later go on to design the famous R-390 Collins receiver, which was still in use by the military when I first joined the Navy in 1976. The new receiver was designated the 51J and the intended market was post-WWII commercial-professional users that could afford an expensive but advanced-design receiver. The number of 51J-1 receivers produced from 1947 through early-1948 was an extremely small quantity and was probably only for testing and possibly for samples that were provided to the Signal Corps for their testing and evaluation. Most of the 51J-1 production, small as it was, happened from mid-1948 through all of 1949, and into very early 1950. The 51J would provide commercial, and possibly military users with general coverage reception from .5mc up to 30.5mc using thirty, 1.0mc wide tuning ranges, and with its crystal oscillator and permeability-tuned oscillator conversions providing better than 1kc dial accuracy and drift-free stability. The receiver itself featured performance that was literally years ahead of the competition.

During this time period, the U.S. Army Signal Corps was trying to use some of the WWII vintage receivers for RTTY and were finding the drift to be excessive. Also, the dial accuracy, along with the rapid tuning rates fell far short of the mark for their purposes. As the story goes, Collins sent an early 51J receiver to the Signal Corps to try out before the 51J was commercially released. The Signal Corps' response was very positive since the receiver was extremely accurate in its frequency readout, its tuning rate allowed easy tuning of very narrow signals. Add to that, there was essentially "no drift" in its stock form. The Signal Corps was so impressed with the 51J that word got back to Collins that they; "Had to have 'em!"

Soon Collins was providing the Signal Corps with the R-381/URR and the R-381A/URR, those receivers being the military versions of the 51J-1 and 51J-2 respectively. However, there were some non-military aspects to these initial 51J designs that the Signal Corps wanted changed. The initial 51J had a 300-ohm antenna impedance that really didn't fit well with many of the military antenna types of the time. Most military wire antenna systems back then were roughly 100 to 600-ohm impedance for wire antennas, or balanced dipole systems. Years later they converted to the standard 50-ohm input impedance we know today. The receivers also had the ham bands highlighted in green on the MC tuning dial, implying a civilian market which didn't set well with the Signal Corps either. Although the initial 51J receiver as the R-381 and R-381A provided the Signal Corps with a thoroughly modern design that had most of the RTTY specifications the military wanted, some minor "tweaking" was necessary for the receiver to become the final evolution that the Signal Corps, along with other military users, needed. That version eventually became the R-388/URR. Many thousands of R-388/URR receivers were built by Collins from 1950 up to about 1962.

Collins now had a receiver designed not only for commercial users, or maybe a few wealthy hams, but also had the precision tuning and stability of the design that would easily meet the military requirements necessary for reliable RTTY as well. Needless to say, they were spot on with that one in both cases.

I can tell you first hand that the 51J is still a remarkable receiver, and every bit the legend it came to be back in the day.

Lynn Wilson, K7LW

VE Testing

There is no VE testing going on that we're aware of, but if you check the Links section of our website, there may be information on some of our friend's websites as to where you might find a test session going on near you. But in the meantime, if you do have a regular test session taking place, feel free to let us know, and we'll post it here in the next issue of the Pickle Barrel Review.

The End

Well, that's about it for this edition of the Pickle Barrel Review, I hope you enjoyed it. In the meantime, we'll continue to work hard to keep each and every issue as informative, fun, and at least as interesting as the previous issues.

So, until next time, we here at the WMDRA (W7NEO) hope everyone is enjoying the warmer weather of spring, and getting out working on those antenna projects you've been thinking about all winter.

As always, in the meantime, feel free to reach in the barrel and grab another pickle. There's plenty to go around, along with plenty more great conversation, and maybe even a touch of rhetoric here and there!

73!

Weston Mountain Digital Radio Association,
W7NEO



“HAPPY EASTER”

"Your time is limited, don't waste it living someone else's life." – Steve Jobs

