

The Pickle Barrel Review



THE OFFICIAL NEWSLETTER OF THE WESTON MOUNTAIN DIGITAL RADIO ASSOCIATION

August 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!).

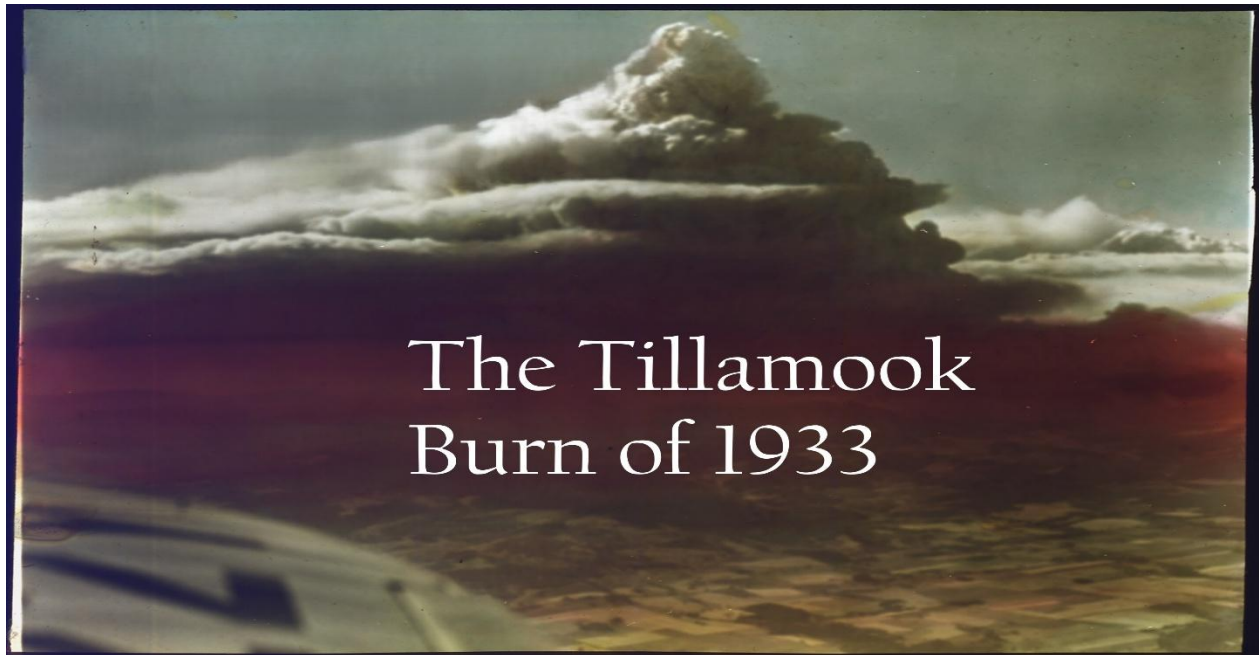
A word from our sponsor

Main Street Pawn Shop:

Have you recently found yourself standing there admiring those big new off-road tires in the window of the local off-road store thinking to yourself just how great they would look on your truck. But then as you look in your wallet you realize that along with your wallet, your tank is empty, and so is your fridge? All that and pay day isn't for another two weeks! Not to worry, because as the saying goes; "One man's junk is another man's treasure!" And that's where we come in! Whatever you've got laying around just bring it on down to the Main Street Pawn Shop, and let us turn your old junk into some quick cash!

While your down there, take a look through our extensive collection of VHS tapes, and your just about guaranteed to find a classic that's just right for Saturday's movie night. Or perhaps you're looking to impress that gal of yours with a fancy dress for a night out on the town. We've got a large selection of clothing to choose from that's bound to catch her eye. But if you can't find any dresses that fit, be sure to check out our extensive collection of fine costume jewelry that's sure to put a sparkle in your lady's eye.

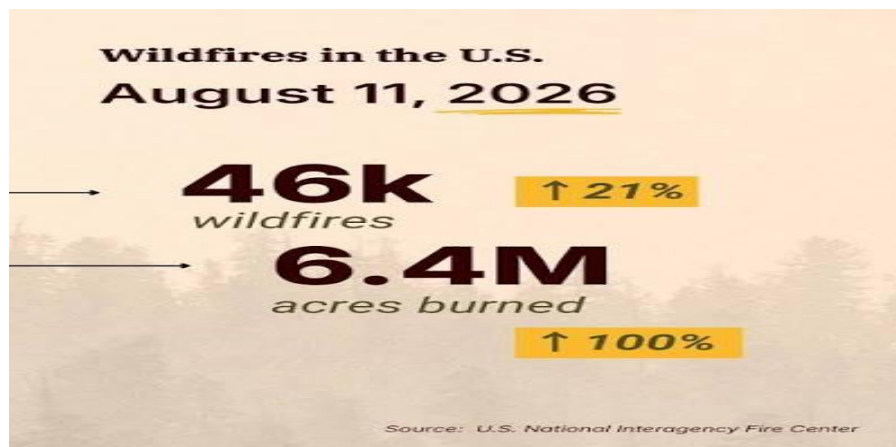
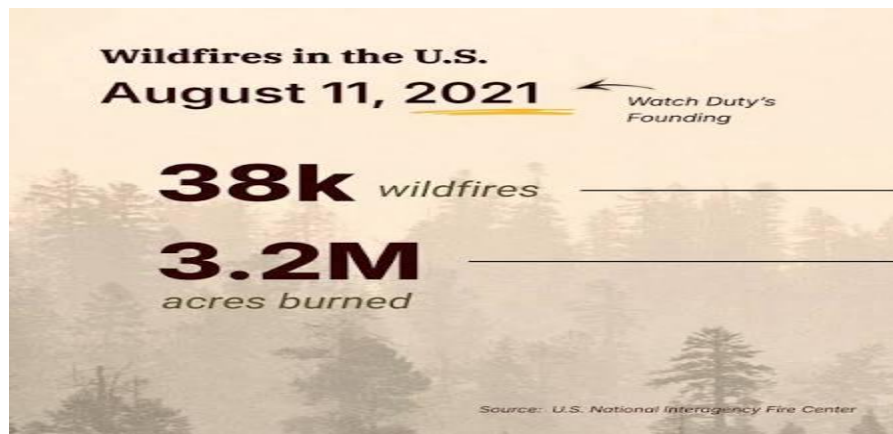
So, the next time you find yourself needing cash like yesterday, or are just looking for that special hard to find item, come on down to the Main Street Pawn Shop and check out our treasure chest, we're sure that you'll find "your" treasure just inside the door!



The Tillamook Burn of 1933

As many folks here in the Pacific Northwest are painfully aware, this year's fire season has been an exceptionally bad one. With 2,144,660 acres statewide here in Oregon burned, along with roughly 1,798,367 acres actively burning as part of 20 ongoing large wildfire complexes. With another 517,000 acres across Washington State as the result of fires currently burning statewide. As a result, most of the Pacific Northwest is currently at some level of evacuation, unsure of just what they might come back home to once this is all said and done (that is if there's even a home to come back too), and the evacuation notices are rescinded.

Jennifer James (KK7ZDX) of College Place Washington, is with the popular application; "Watch Duty." If you'll recall the PBR did an article on Watch Duty last summer, since then it's continued to explode in popularity. Jennifer recently shared some interesting statistics. In her posting she points out that since Watch Duty was first released five years ago now, wildfires have become a year-round problem. They are becoming more frequent, and in new geographies that have never experienced wildfires before now. All this has taken place just in the past five years. Take a moment to let that sink in.



US Wildfires from August of 2021 to 2026. (Courtesy of Jenniefer James of Watch Duty)

But in Tillamook Oregon, roughly about 87 years ago on August 14th, 1933 there was a massive fire that came to be known as the “Tillamook Burn.” The Tillamook Burn was actually a series of forest fires which took place in the Northern Coastal Range of Oregon near Tillamook that seemed to reignite every six years, becoming known as “the Six-year jinx.” These fires destroyed a total area of 350,000 acres of old growth timber in what is now known as the Tillamook State Forest. There was a total of four wildfires in this series, which spanned the years from 1933 to 1958.

The first fire began in a ravine at the headwaters of Gales Creek. The exact cause of the first fire is still unknown, however, one theory is that as logging crews were wrapping up operations early - ironically due to fire hazard restrictions - a steel cable being used to drag a fallen Douglas fir rubbed against the dry bark of a

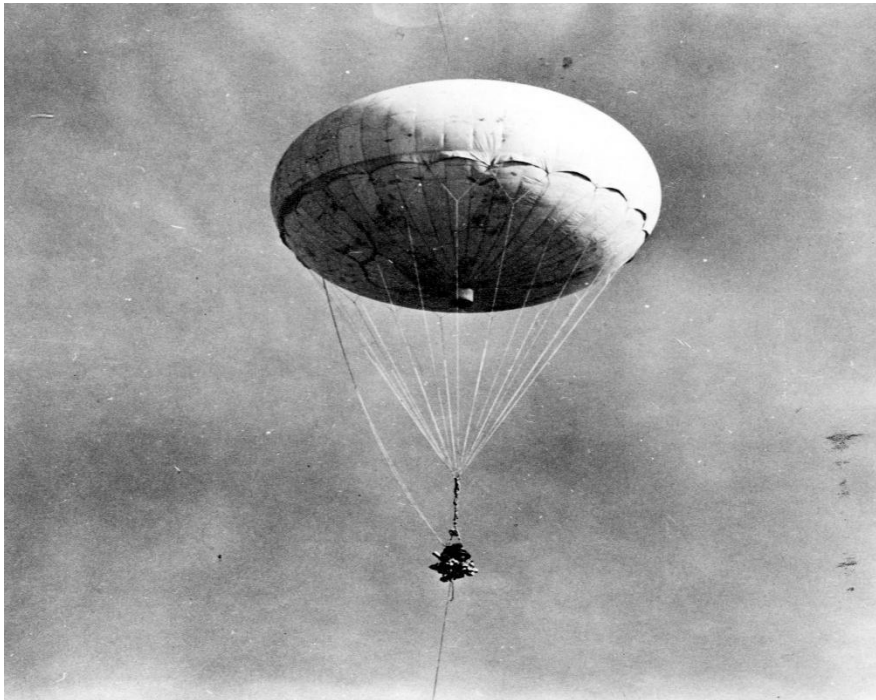
wind-fallen snag. Similar to rubbing two sticks together in order to start a camp fire. However, the more accepted scenario is that hot embers escaped from the firebox on a steam donkey, igniting nearby combustibles.



Steam Donkey commonly used in the logging industry during the 1930's.

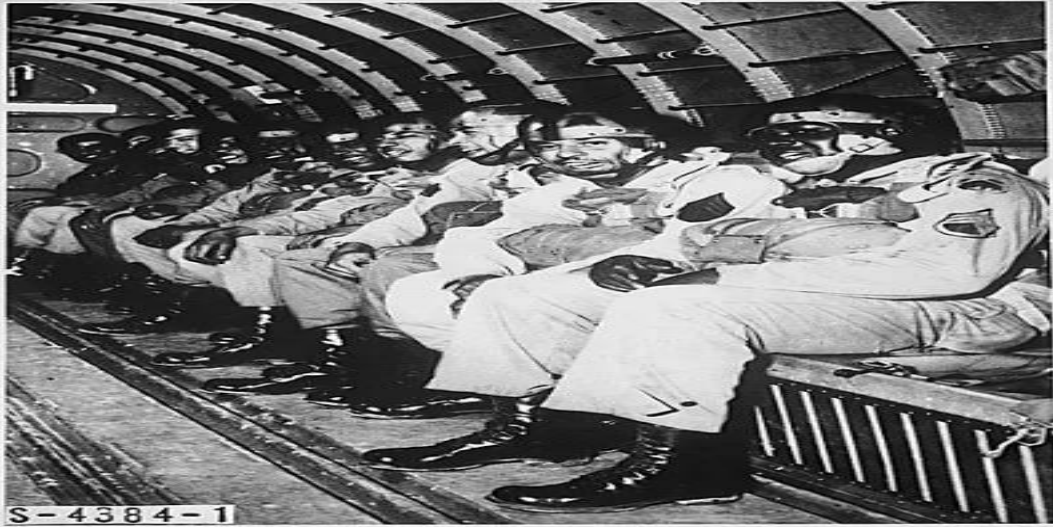
In either case, the wildfire that grew out of all this burned 350,000 acres before it was ultimately extinguished by seasonal rains on September 5th of that same year. But before it was eventually extinguished, an oppressive, acrid smoke filled the neighboring valleys, while ashes, cinders, and the charred needles of trees fell in the streets of Tillamook. Debris from the fire even reached ships as far as 500 miles out to sea. A Civilian Conservation Corps member was the only known human casualty resulting from firefighting efforts. The total loss in processed lumber was estimated to have been \$442.4 million in 1933 dollars. This represented not only a serious loss to the timber industry at the time, but also to a nation already struggling with the Great Depression, making the economic pain felt nationwide. A massive salvage operation was immediately begun to harvest usable portions of the burned wilderness. In spite of the efforts to remove the old burned-out timber, the fires kept igniting every six years up until 1958, primarily as a result of that same timber reigniting. Timber recovery was hard, dirty work and timber workers gained the nickname of “Tillamook Coal Miners,” due to having been covered by thick black ash.

Helping this six-year jinx along, in the 1940's during WWII, the Japanese launched over 9,000 hydrogen-filled paper balloon incendiary bombs known as *Fu-Go*, across the Pacific Ocean using the jet stream. This was specifically meant to target the Pacific Northwest. With their primary goal being to start massive forest fires, spread panic, and disrupt the U.S. war effort overall by focusing on the Pacific Northwest and it's thriving timber industry.



Hydrogen-filled paper balloon incendiary bombs known as Fu-Go.

To counter this secret threat, the U.S. military deployed the "Triple Nickles" (the 555th Parachute Infantry Battalion), America's first all-Black airborne unit, on a classified firefighting mission called *Operation Firefly*. In May 1945, the battalion was redeployed to Army Air Fields located in Pendleton Oregon (eventually renamed the Eastern Oregon Regional Airport), and the Army Airfield located in Chico California (later renamed Chico Regional Airport). Trained by U.S. Forest Service smokejumpers, and Army ordnance experts, they became America's first military smokejumpers. Today if you visit the Army National Guard unit located at the Pendleton Oregon Regional Airport, you'll see an entire room dedicated to the 555th Smoke Jumpers referred to as; "The Triple Nickle Room."



Triple Nickles Smoke Jumpers of WWII.

A prime example of speed, and sheer aggressive ferocity at which a forest fire can spread given an abundance of fuel, and taking place under the most favorable of conditions was well illustrated by the Tillamook Burn. From August 14 at 1 p.m. until the early morning hours of August 24 the fire had burned about 40,320 acres. By this time, it appeared that it just might be brought under control soon. But in the meantime, over the course of the 10 days it had burned at an average rate of about 3,840 acres a day. However, on August 24 luck ran out, and things went from bad to really bad. The humidity dropped rapidly to just 26 percent, and if that wasn't bad enough, hot gale-force winds from the east began to spring up. Over the course of the next 20 hours from August 24th and 25th the fire burned in excess of an additional 268,800 acres, at an unbelievable rate of 13,440 acres per hour along a 15-mile front. The one saving grace was when the fire was finally stopped, it was primarily thanks to the fact that the wind had finally ceased, allowing a thick, wet blanket of fog to settle, which had drifted in from the Pacific Ocean.

The second fire was started in 1939, allegedly by another logging operation. It burned 190,000 acres before being extinguished. A third fire started on the morning of July 9, 1945, near the Salmonberry River, and was joined two days later by a second blaze on the Wilson River, started by a discarded cigarette. This fire burned 180,000 acres before it was put out. The cause of the blaze on the Salmonberry River was mysterious, and many believed it had been set by an incendiary balloon launched by the Japanese (due to the fire occurring in the

waning days of World War II). The third fire was perhaps the best known, after the initial wildfire, because it affected much of the forested mountains along the popular highways between Portland and the recreational destinations of the ocean beaches. This devastation remained visible to any traveler through the area as late as the mid-1970s. Finally, the fourth and final fire was started in 1951, and burned only 32,000 acres. Fortunately, one of the main reasons for so little acreage burned was that firefighters were considerably better prepared by this time. This time they had made various fire breaks throughout the forest, which stopped the advance of this particular fire, as opposed to previous fires. In addition to that, early on throughout the subsequent years which followed the first fire, miles of roads and railroad lines had been built throughout the forest to the various logging camps providing not only more enhanced access, but miles of readymade fire breaks as well. This also made it easier for forestry restoration, maintenance, and fire prevention operations, allowing firefighters to eventually get a handle on the continued series of burns. Though it also created new issues with erosion in a terrain already known for landslides.

The repeated fires led some to think that large wildfires in the area were inevitable, and that the land was now too damaged from the intense heat to ever again sustain any sort of meaningful forests. But determined efforts by Oregonians comprised of private citizens, government officials, land owners, and many others, resulted in efforts to restore The Burn. Beginning with hearings during World War II under Judge H. D. Kerkman of Washington County, eventually resulting in a decades-long reforestation program. Much of the lands of the Tillamook burn had come to be owned by the counties of Tillamook, Yamhill, and Washington through foreclosures on unpaid property taxes. At the time of the forest fires, most of the land was owned by timber companies, who also paid the cost of fighting the fires. In 1948 a measure was submitted by the Legislative Assembly to the voters to float a bond meant to finance reforestation, which narrowly passed.

Reforestation was performed simultaneously with research by the forest industry into finding the best methods of growing and planting the young trees, including how to protect them from the ravages of deer, beavers, mice and other wildlife. Active youth, and school bus loads of students eager to participate in the plantings descended on the Tillamook burn from 1949 through the 1950s, and 1970s. School

children and high school youth groups alike helped reforest the Tillamook Burn through massive volunteer youth planting efforts commemorated at the Student Planters' Grove at Cedar Creek Flat, organized in part through the Tillamook Forest Center. As part of the restoration of the Tillamook Forest, students were bused in from as far away as Portland, Forest Grove, and Tillamook. Part of an overall state effort which resulted in the successful hand-planted planting of over 72 million Douglas-fir seedlings by citizens, school children, and conservation crews.



School Children in the late 1940's ~ 50's reforesting the Tillamook Forest.

Between 1949 and 1972, these volunteers planted about a million seedlings in all. Although this was a massive number, it was still only about 1 percent of the total of 72 million seedlings replanted by all means. Everything from state prisoners to newly designed helicopters played a part in the reseeding program over the years. Eventually the forest began to return, and in 1973 then Oregon Governor Tom McCall rededicated the Tillamook Burn as the; "Tillamook State Forest."

At the time the reforestation of the Tillamook Burn began, some assumed that the forest land would, when the trees were mature, be harvested for lumber. Current environmental beliefs have questioned this assumption, and both the proportions and specific parts of this land that will be logged, or conserved for wildlife, are to this day still in dispute. With conservation organizations arguing that the removal of hardwood from the forest would have a severe negative impact on the forest from an environmental standpoint, and BLM arguing that impeding

their ability to manage the forests would impact the local economies that depend upon logging, and raise the risk of future wildfires.

Both sides make good arguments, but to date the courts have ruled in favor of BLM, and the timber industry. But to date, the lawsuits are still making their way through the courts. So, this is far from over. But in the meantime, all those students back in the 40's 50's, all the way up through the 1970's that played an integral part of the reforestation of the "Tillamook State Forest," are now bringing their children, and grandchildren to enjoy the results of their contribution in saving one of Oregon's great national treasures.

Lynn Wilson, K7LW

Repeater Updates



Cabbage Hill, smokey sunset.

Well so far, it's been a busy summer for radio, but not exactly like what you would think with all the fires going on. Surprisingly, as far as I'm aware of, the Amateur Radio community hasn't been called upon to provide any emergency communications. However, I am aware of a couple of Ham's that did get requested to fill in as RADO's (Radio Operator's) for state agencies involved in firefighting efforts. I've only heard of one instance where local Hams were actually asked to provide a resource for emergency communications as it relates to the firefighting efforts. This was with the Spokane Repeater Group (SRG). For those that don't

remember, the SRG system used to belong to Pete Policani (K7PP). When Pete originally built the system, he incorporated his knowledge from years of working in the cell phone industry to create a repeater system covering both Eastern, and Western Washington state, with the ingenious incorporation of voting receivers. What he eventually created was nothing short of amazing. Anyway, one of the SRG folks was contacted by a representative from an Air Force refueling wing stationed at Fairchild AFB asking if they could utilize their repeater system during the firefighting efforts. Now you might ask yourself; “Is this even legal?” Yes, and no, but I’ll address that portion in more detail in our “Legal Corner” section. But either way, you can’t help but to admire this Airman’s having thought outside of the box. For the sake of clarity, to the best of my knowledge this is the only such request that I’m aware of so far that’s been made to any of the rest of the repeater groups here in the Pacific Northwest, including ours.

But other than that, we continue to watch and worry about the safety of our repeaters, along with our friends’ repeaters as the fires continue to force evacuations, and destroy homes. So, if you have the opportunity to lend a hand during these difficult times, think of how you’d feel if the tables were turned and it was you that was endanger of losing everything.

Lynn Wilson, K7LW



This summer has been somewhat of a challenge to say the least. In looking over the fire map, nearly the entire Pacific Northwest is ablaze, with firefighting

resources all stretched beyond their limit. There are even fire fighters joining in from as far away as Australia to help in the fight. With entire communities being evacuated, or told to be ready to evacuate. So, with all this chaos going on around us, you would think that Amateur Radio would be right in the middle of all of it doing our part to aid in communications, right? Well not so much as one would expect, which is what we're about to address. So, with that said, let's get right into it, shall we.

In order for Amateur Radio to be activated during a natural disaster, as you would expect, there's a process. This process begins with a request for federal disaster assistance. This is initiated with a state governor first declaring a state of emergency. Once that's placed in motion, local government responds first by tracking all costs and damages. With that, the governor proclaims a state of emergency, and activates the state's emergency response plan. State, local, and federal officials will perform a Joint Preliminary Damage Assessment (PDA) to estimate total costs and uninsured losses as well. The governor then sends a formal written request to the president of the United States, via the regional FEMA administrator, certifying that the magnitude of the disaster exceeds state and local capabilities. FEMA evaluates the request and advises the White House, in which the president approves or denies the major disaster, or emergency declaration.

So, once all this is complete, and FEMA agrees to help with the cost, what conditions do there have to be in order to start the process of the activation of Amateur Radio in an emergency? Well as you might guess, there is yet another process. It's important to note that Amateur Radio in general when it comes to emergency communications is NEVER supposed to self-deploy during an emergency. A structured chain of command through local Emergency Management authorities, utilizing pre-organized volunteer groups such as Radio Amateur Civil Emergency Service (RACES), or the Amateur Radio Emergency Communications (EMCOMM). Operations will then integrate directly into professional frameworks such as the Incident Command System (ICS).

Once an emergency has been officially declared by state and local authorities the process of activating these Amateur Radio groups can begin in earnest. Activation generally occurs after a localized or widespread emergency has been proclaimed by both federal and state authorities. Conditions warranting Amateur Radio

involvement such as the failure of standard communication infrastructure (cellular, landline, or digital trunking) makes up a large portion of the justification to activate Amateur Radio. This responsibility is first assigned to State Emergency communications coordinator, who then passes the responsibility down to individual Emergency Operating Centers (EOC) at the county levels.

First, through the Radio Amateur Civil Emergency Service (RACES), governed by FCC Rule 97.407, the local authority submits an official Government Request. Only authorized civil defense or emergency management officials (such as a county Emergency Management Director) have the legal authority to officially activate RACES or deploy auxiliary communicators for official agency support. It should be noted that in order for official government deployment under RACES protocol to take effect, standard criteria strictly require operators to be pre-registered, and certified within specific local civil defense or emergency jurisdiction for RACES. Governmental activation via RACES ensures that volunteers receive legal status, and more importantly disaster-response worker insurance coverage. In more recent years this same requirement has been getting applied to various AUXCOMM volunteers, by requiring the completion of FEMA's Incident Command System (ICS) courses.

Typically, the local Emergency Operations Center (EOC), or served agency (e.g., hospitals, Red Cross shelters) will identify a gap in communications. Once this is submitted, requests for amateur radio support are passed down to the local Radio Officer, or Emergency Coordinator. Next, volunteer radio operators report to their individual assigned posts—such as the EOC, hospitals, fire stations, or mass-care shelters—operating under specific tactical call signs, and assigned auxiliary frequencies. After arrival at their assigned posts, volunteers function under standard NIMS/ICS guidelines, using formal message passing formats (such as ICS-213 or standard radiograms) in order to ensure accurate logging and authentication of official traffic.

Once commercial power and public safety communication lines are fully restored, and verified as being stable, the civil defense director, or EOC commander issues an official deactivation order. After the order to deactivate is issued and received by the operators, RACES operations officially cease, hence returning the radio spectrum, and local groups back to standard Amateur Radio Service rules.

Official government activation of amateur radio during a disaster falls under [section 47 CFR Part 97, Subpart E](#). This is the section of the Federal Communications Commission (FCC) rules governing amateur radio during an emergency. It focuses entirely on providing emergency communications, outlining how amateur operators can legally use their equipment during disasters, threats to life and property, distress calls, and civil defense activities. More specifically, it includes the section governing emergency operations and the Radio Amateur Civil Emergency Service (RACES) as outlined in section [47 CFR § 97.407](#).

Responsibility for RACES is outlined within a specific segment of the Amateur Radio Service sponsored by the Federal Emergency Management Agency (FEMA) for civil defense. FEMA was originally established on April 1, 1979, when then U.S. President Jimmy Carter signed Executive Order 12127.

Transmissions must be specifically authorized by the activating civil defense organization. Which includes guidelines for the type of traffic to be handled by RACES operators. Once activated for an official government emergency, RACES stations may handle messages concerning:

- Conditions jeopardizing public safety
- The immediate safety of human life
- The immediate protection of property
- Maintenance of law and order

For an Amateur Radio operator to be able to take part in an official RACES activation, they must first hold a valid FCC-issued amateur license. Along with that, they will need to be officially certified and enrolled by a specific civil defense organization. In order to qualify, stations must be primary, club, or military recreation stations registered with the local civil defense authority.

One caveat to all this is contained within FCC rules section [47 § 97.403](#) which states that, irrespective of formal RACES structures, no regulation prevents an amateur station from using any available means of radiocommunication to meet essential communication needs during an immediate threat to life or property when normal systems fail. In other words, under [47 CFR § 97.405](#), any station in distress can use any tool available to them in order to call for help.

Speaking of completion of courses, given that state and federal radio communications systems have significantly improved in recent years, it's becoming more and more clear that the reliance on Amateur Radio is not as vital as it once was. However, the need for experienced radio operators is very much in demand, particularly during fire seasons such as what we're currently experiencing. This is where the Amateur Radio operator can truly shine by completing the courses to certify as a RADO (Radio Operator) for state and federal agencies involved in firefighting. A RADO course in Oregon trains individuals to manage incident dispatch, logging, and tactical communications for agencies such as the Oregon Department of Emergency Management, Wildland fire teams, and even in some cases local EMCOMM groups. For training to become a RADO, the All-Hazards Radio Operator training course is offered by the Cybersecurity and Infrastructure Security Agency (CISA), along with various local emergency management training divisions. You may need a sponsor in order to get into the program, so you might want to check with your local Emergency Operations Center (EOC) in order to find one within your local area.

So, what about the GMRS folks? Officially, the FCC doesn't include GMRS, but local Amateur Radio groups are beginning to reach out to various local GMRS groups in order to team up in the event of an emergency. For an excellent model of this, check out the Spokane ARES group. They've been working with GMRS radio operators for a couple of years now, successfully developing various emergency response plans. Basically, GMRS is viewed as an excellent resource for Search and Rescue (SAR), along with neighborhood safety in the event of an evacuation such as with the current wildfire situation we're experiencing now in the Pacific Northwest.

So, there you have it. In order to volunteer to be a radio operator during an emergency you can't just walk in, sit down, pick up a microphone and start talking. You need to first prove your knowledge by completing various certification courses. But when the need arises, Amateur Radio, and the Public Radio Service in general will more than prove to be a valuable asset.

Lynn Wilson, K7LW / WRYF803

Radio Nostalgia



When I first began my journey in the wonderful world of electronics back in the 1970's, although discrete components were widely in use, when it came to higher power requirements nearly everything was still using tubes - or as the British referred to them as "Thermionic Valves." This type of configuration of combining discrete electronic components with vacuum tubes was referred to as "Hybrid" circuits.

One of my all-time favorite transceivers which I spent many enjoyable hours making contacts on, was a Kenwood TS-520S. Although it was mostly constructed of discrete solid-state components, the heavy lifting in the RF section was comprised of a 12BY7A pentode vacuum tube driver, with a pair of 6146B which made up the final RF amplifier.

My first job working in electronics, prior to joining the Navy, was as a part-time helper to the radio station engineer for a small AM radio station in Northern California. Although we had a fairly new RCA transmitter which used mostly solid-state components, we still kept the old Collins transmitter on stand-by as a backup which used an array of electron tubes. Not only was the Collins our backup transmitter, it was also used it to heat the relatively small building in the winter by pulling air out of the transmitter room, and redistributing it throughout the building.

Even when I went through Electronics Training in the Navy back in 1977, they were still teaching tube theory. This came in handy, since much of the equipment

that I worked on during my time serving in the Navy, and well into my civilian career, included both shipboard, and long-range land-based RADAR systems, and microwave receiving systems, just to name a few. Most all of them at some point contained a great deal of tubes, including the early frequency displays which were composed of nixie tubes. Prior to the introduction of Light Emitting Diodes (LED's) the Nixie tube was an electronic gas-discharge display tube that used a cold cathode mechanism in order to show numbers or symbols with a bright orange glow.



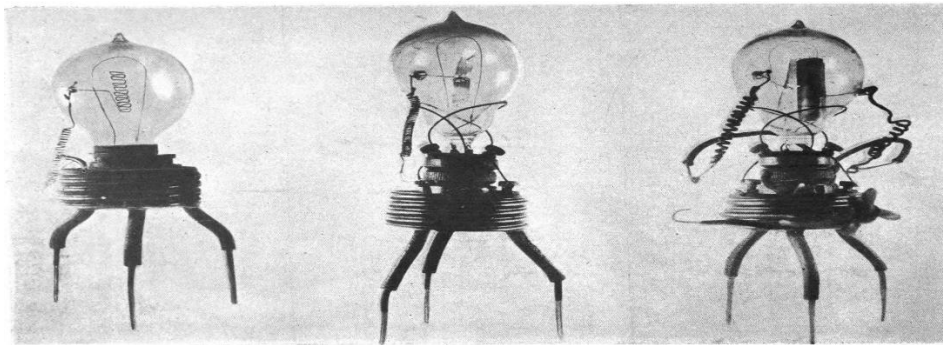
Typical Nixie tube display.

When I was first stationed aboard a nuclear submarine, we used a pair of McIntosh amplifiers which used electron tubes in order to better pick out weak sonar contacts. These amplifiers were the clear choice at the time due to their low noise figures, coupled with superior wide frequency response range as compared to other solid state audio amplifiers available at the time. Combined they made for some truly amazing sensitivity, and fidelity.



Inside view of a McIntosh model MC – 3500 audio amplifier, similar to what was used on American Submarines during the 1960's & 1970's.

The history of the vacuum tube spans from the late-19th-century light bulb experiments to 20th-century radio, television, and even digital computing. Some Key milestones included when Thomas Edison in 1883 made a historic observation when he noticed electrical current flowing through a vacuum from a heated filament to a metal plate inside a light bulb. This later became known as the “Edison Effect,” or *Thermionic Emission*. Later on in 1904, John Ambrose Fleming's invention of the first diode vacuum tube, was accredited as having been the first, and most simple true vacuum tube design—the diode (or "Fleming Valve")—which allowed current to flow in only one direction (hence the name "valve," as in a device that permitted the one-way flow of water). Later on, this same device would serve as a radio wave detector. A short time later, in 1906 Lee de Forest's creation of the amplifying triode came about by adding a third control grid to create the Audion, or triode.



John Ambrose Fleming's first diodes

By 1913 engineers such as Edwin Armstrong began to fully understand tube theory, and applied the triode's unique ability to amplify weak electrical, and radio signals over long distances in communications, telecommunications, and even some power grid protections systems.

As the years progressed, engineers continued to experiment adding more screen grids in order to better control not only the flow of current through the electron tube, but to also increase the tube's frequency response. Current can flow in only one direction through the device from the cathode to the anode. Adding one or more control grids within the tube, creating the triode, tetrode, etc., allows the current between the cathode and anode to be controlled by the voltage on the grids. This creates devices able to amplify as well as rectify electric signals. Multiple

grids (e.g., a heptode) allowing signals applied to different electrodes to be mixed. The addition of various gases such as neon in order to force the conduction of the tube to switch on and off automatically as in the case of the OB2WA, gas-filled cold-cathode voltage regulator tube. This provided the ability to control, or regulate the flow of current through a circuit.

The thermionic tube soon became a key component of electronic circuits all over the world for the first half of the twentieth century. They were soon a pivotal part of the development of radio, television, RADAR, both sound recording, and sound reproduction, long-distance telephone networks, and even both analog and early digital computers. Although some applications had used earlier technologies such as the spark gap transmitter and crystal detector for audio or mechanical and electromechanical computers, the invention of the thermionic vacuum tube made these technologies widespread and practical, and were a primary influence for the creating of the discipline of electronics in general.

In the 1940's Bell Lab's invented the semiconductor, which opened the door for smaller, more efficient devices that would not only run cooler, but consumed considerably less power to operate. Not only that, but since they typically ran on lower voltage levels, the chances of getting a nasty electrical shock was much less. Semiconductors overall were more efficient, reliable, durable, and economical than thermionic tubes. Beginning in the mid-1960s, thermionic tubes were being replaced by the transistor and solid-state semiconductor technology. However, up until recent years the cathode-ray tube (CRT), functionally an electron tube/valve though not usually so named, has been replaced by the Light Emitting Diode (LED) display. But for high power uses, tubes such as the Klystron, and Magnetron can still be found in RADAR systems, and microwave ovens. For Amateur Radio most of us are familiar with the high-mu power triodes such as the 3-500Z, or the rugged external-anode ceramic tetrodes such as the 4CX250B or 4CX1000A. Today we still incorporate the triode in the design of many popular high-power RF amplifiers.



Both rugged, and powerful the external-anode ceramic tetrode 4CX1000A.



My all-time favorite, the Eimac 3-500Z.

During the cold war, on September 6th, 1976, Soviet Lieutenant Viktor Belenko flew his secret MiG-25 interceptor out of formation during a routine training mission, and low-dived to evade radar. The Soviet pilot had defected, and landed his aircraft at a civilian airport in Hakodate, Japan, with almost empty fuel tanks. Once the United States and its allies were in possession of the aircraft, thru reverse engineering they were surprised to discover that the Soviet Mikoyan-Gurevich MiG-25 "Foxbat" front-line Soviet fighter aircraft utilized vacuum tubes for much of it's avionics. While the tubes seemed outdated, engineers soon realized they were rugged, resistant to thermal shock, and capable of generating immense raw power in case of a nuclear Electromagnetic Pulse (EMP).



The MiG-25 "Foxbat."

Eventually, the discovery of the Soviets employing advanced electron tubes on their military assets led to the United States Department of Defense introducing the Department of Defense Standard 1686 in May 1980. Later in 1995 it was further revised to Military Standard number 1686C. The title of this was; "*Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment.*" This was eventually established as the primary military standard and program framework to combat electrostatic discharge (ESD) and electrical shock damage in microelectronics. This was later accompanied by military handbook 263, which provided the technical guidelines and implementation methods for the overall control program. The primary goal was to set strict requirements for handling, design protection, personnel training, and protected work areas to prevent static electricity from frying sensitive solid-state components. This was particularly applicable given that the US Military at the time incorporated the use of Integrated Circuits (IC's) in most all of its electronics, which prior to any of these programs were exceptionally vulnerable to Electrostatic Discharge, as well as an EMP. The U.S. military later asked the commercial sector to transition and adopt these parameters, leading to modern standards like ANSI/ESD S20.20, which was nearly identical to Military Standards for ESD.

Although for the most part even though Electron tubes have been replaced by solid state devices, and Integrated Circuits, they still continue to evolve, and remain a mainstay in numerous sections of modern technology to this very day.

Lynn Wilson, K7LW

Security Alert



I just heard about this incident just prior to publishing this month's PBR from a good friend and fellow Ham, Paul Daniels (KB7PPM). Apparently our dearly beloved Ham Radio Outlet (AKA "The Toy Store") was recently hacked. I spoke with Norm at HRO Portland, and he confirmed to me that it was true, and that they had a cyber security company that had already placed a number of safeguards in place, and was investigating the incident. The target appears to be customers using credit cards, however those of us that use PayPal are still relatively safe. I know many of you such as myself, have been using HRO as a source for most all of our Ham Radio needs for many years now. So, it's sad to see such an icon of the hobby get hit by these bottom feeders. In the meantime, if you placed any recent orders with HRO, I would highly suggest that you check your credit card activity for any unusual activity, and if you see anything suspicious contact your credit card company, or financial institution that handles your credit card, immediately. Even if HRO hadn't been hacked, it's still a good idea to keep a close eye on your credit card activity. Unfortunately, these are the times we are currently live in.

Below is the statement from HRO's website:

Security Notice

August 8, 2026

To our valued customer,

Ham Radio Outlet is aware of reports of unauthorized activity involving customers' credit cards.

We have begun a thorough investigation and engaged cybersecurity specialists to review our systems. We have also implemented additional security measures out of an abundance of caution while our investigation continues. We are actively and meticulously monitoring all transactions.

Protecting our customer's information is a responsibility we do not take lightly. As part of our security practices, Ham Radio Outlet does not retain complete credit card numbers, cvv codes, or expiration dates on our systems. All card payments are processed through our PCI DSS compliant payment processor, and our systems have maintained PCI DSS compliance for years with regular audits.

Sincerely,
Ham Radio Outlet

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

Before I draw this month's issue to an end, I want to give a shout out to a couple of local Hams for they're great suggestions for this month's featured articles. Todd Terp (W7ILD) for suggesting the Tillamook Burn, and John Voucht (KA7DRE) for his idea of the History of Vacuum tubes for this month's Radio Nostalgia section. Thanks to you both!

Well, that's about it for this edition of the Pickle Barrel Review. But before we close out this month's edition, we here at the Weston Mountain Digital Radio Association would like to express our grateful appreciation to all of the brave firefighters currently fighting fires literally all over the Pacific Northwest. Along with that, our very best wishes to all those that have tragically been affected by this horrific fire season. During this time of need, we ask that everyone take a moment to lend a hand. Even if it's just dropping off a few rolls of paper towels, or perhaps a case of bottled water to a local shelter,

every little bit helps. If nothing else, think about if the tables were turned and it was you sitting in that shelter wondering just how you're going to get on with your life after having lost everything.

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



“War itself is, of course, a form of madness. It’s hardly a civilized pursuit. It’s amazing how we spend so much time inventing devices to kill each other and so little time working on how to achieve peace.” - Walter Cronkite

