The Pickle Barrel Review

THE OFFICIAL NEWSLETTER OF THE WESTON MOUNTAIN DIGITAL RADIO ASSOCIATION

May 2025

Introduction

Greetings 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. 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 count as a coming 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

Bubba & Cletus's escort service:

Are you tired of having to spend a Saturday night at home because it's slim pick'ns in the dating stable? Well Ladies your luck is about to change thanks to Bubba & Cletus's escort service. Oh sure, nerdy guys are great when you need help with all them hard subjects like numbers, an science, and all that other smart stuff. But when you're ready to go out an paint the town red you want a man that not only fills out a pair of overalls, but can swing you around the dance floor with the smooth moves of a skilled calf roper, and also match you beer for beer!

And for all those formal dress up affairs, Bubba & Cletus even have a fresh set of Sunday go ta meet'n cloths at the ready, which even includes a tie that fits!

So, remember, the next time you're looking to get out on the town and impress the other girls with your new "arm band" say good bye to all those wimpy guys, and give Bubba & Cletus's escort service a call for a real man's man at your side. Honest, you won't regret it!

Repeater Updates

Given the recent transition of weather from the cold, wet, snow and ice of winter, to the warm temperatures, and sunshine of springtime, I decided to take full advantage of the situation. With that thought in mind, what better way to enjoy spring than with a trip up to the repeater sites in order to check things out, and make sure everything survived the wrath of old man winter.

Well, that's just what I did. I loaded up my trusty four-wheel drive truck and made the drive up to both Cabbage Hill, and Weston Mountain in order to have a look around, and perform a thorough inspection of the equipment, and the sites in general.

Although I managed to find a couple of things that needed attention, fortunately there was nothing major, and overall, the sites both were looking pretty good, and the items requiring attention have since been addressed.

It's worth mentioning that while I was up at the two sites - after having checked everything out- I took a moment to simply sit back and enjoy the view.

I've sure missed that…

Lynn, K7LW

Disaster Preparedness

How many times in the past has any one of us been sitting in our living room, watching the evening news, or any number of other favorite programs, when suddenly blasting over the television comes a sound that is beyond irritating. Along with that, a banner explaining that it's a test of the Emergency Broadcast System. Back in the 50's, 60's, and 70's during the Cold War this was considerably more common, especially since the threat of a nuclear attack was a very real possibility back then. I remember as a kid my cartoons would seem to get interrupted several times a day with these alerts. But nowadays, it's not nearly as common place. But occasionally it still does happen.

Typical 1960's test pattern during a test of the Emergency Broadcast System.

When I was working for the National Weather Service (NOAA) around 2002, we had a feature on our NOAA Weather Radio Transmitters that would allow emergency broadcasts priority in order to interrupt the usual weather broadcasts with that same irritating noise.

So, what's the story on all this, and where did it originate, and what's more why did it originate? Well, I'm glad you asked. Let's get right into it shall we?

For those of us old enough to remember the Cold War, back then there was a genuine fear of a nuclear attack taking place at any moment by the Soviet Union. Those of us growing up during those times remember Bert, the Civil Defense turtle on the television telling us all to “Duck and Cover.”

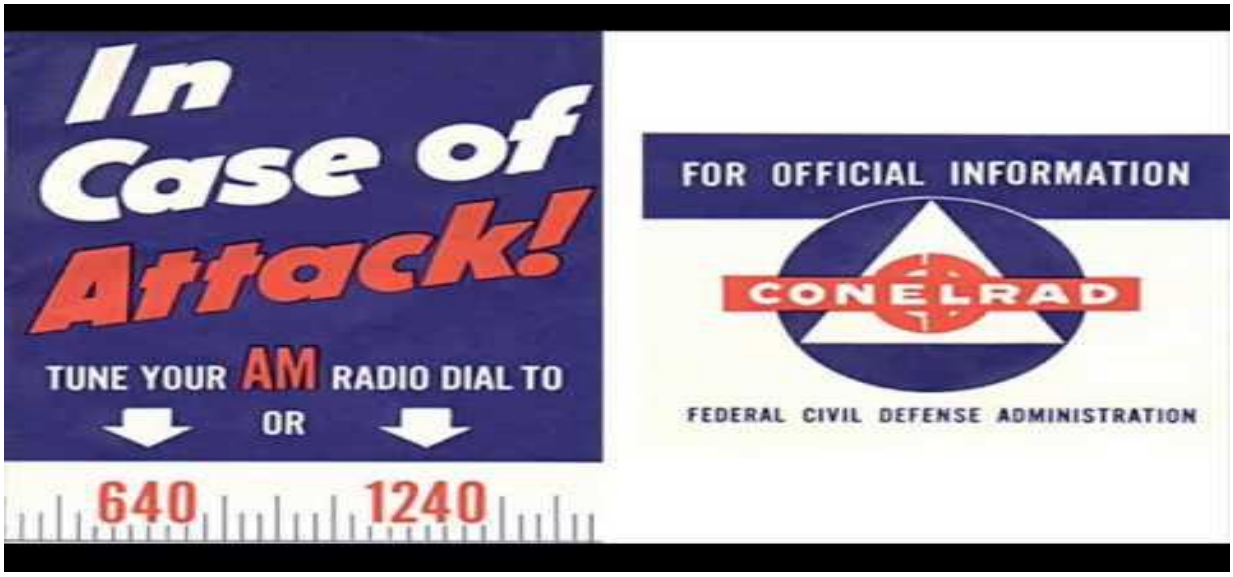
Bert the turtle in the original 1951 Civil Defense film “Duck and Cover.”

With today’s unstable world environment, and our adversaries becoming increasingly more aggressive, in addition to global climate change creating more unpredictable, and severe weather events, the importance of having a fully functional, and efficient early warning system is still a high priority.

History

Prior to 1951, there was no real systematic way for the U.S. government to communicate with the public during an emergency. However, broadcasters typically would interrupt normal programming to issue various emergency bulletins. Most notable was the attack on Pearl Harbor on December 7, 1941. Also, on March 25, 1948, the first tornado forecast was issued by two Air Force Officers at Tinker Air Force Base, in Oklahoma. This event was credited as being the first step in establishing the National Weather Service's organized watch and warning program that blankets and protects our nation to this very day.

There was also a little incident worth mentioning that took place on October 30, 1938 in which there was the infamous Orson Wells broadcast based on a dramatized adaptation of H.G. Wells' 1898 novel; "The War of the Worlds." The broadcast was aired on the CBS Radio Network, as part of the "Mercury Theatre on the Air" radio series. At the time it was broadcast, the radio players did such a great job that it managed to cause panic throughout the countryside, spreading fears of an actual alien invasion.



CONELRAD (Control of Electromagnetic Radiation) Civil Defense poster 1951.

The first real early warning system to be implemented in the US was called CONELRAD (Control of Electromagnetic Radiation), and was a form of public

emergency broadcasting to be used in the event of an enemy attack during the Cold War. It was originally established by then president Harry S. Truman in 1951. Its intended purpose was to allow the continuous broadcast of civil defense information to the public from the Air Defense Control Centers (ADCC), utilizing various phone circuits of the time. This civil defense information would ultimately be transmitted over various radio broadcast stations referred to as a "Key Station System." Additionally, other telephone circuits served as a direct line to various Toll Boards, and were located between "Basic Key Stations," along with various other stations, which were known as "Relay Key Stations." The signals broadcast from these key radio stations would be rapidly switched between the various stations in order to make the broadcasts unsuitable for Soviet bombers that might attempt to home in on the signals. This was a lesson learned during WWII when on December 7th, 1941 the Japanese used a Honolulu Hawaii radio station with the call sign KGU in order to navigate to Pearl Harbor. Also, in Europe when German radio stations, based in or near cities located close to primary targets, were used as beacons by allied bomber pilots.

CONELRAD wasn't without its problems. In the 1950's broadcast radio transmitter designs were primarily based upon vacuum tubes, and mechanical relays. Consequently, unlike today's digital technology, they couldn't stand up to the constant switching on and off of several thousand watts of AM transmitter power. So, when the CONELRAD process was initiated (switching the transmitter on and off), it was not only prone to numerous false alarms - especially during lightning storms- but transmitters could easily become damaged by the quick cycling. This switching later became known informally as the "EBS Stress Test" (due to the number of transmitters failing during the tests). Eventually this method was discontinued when broadcast technology became advanced enough to make intermittent switching unnecessary.

CONELRAD was eventually phased out all together after the development of intercontinental ballistic missiles reduced the likelihood of a bomber attack, and the development of superior navigation systems that weren't reliant upon radio direction finding were also developed.

Unlike EBS which came into service later on in 1963, CONELRAD was never really intended for use in local civil emergencies such as severe weather. However, by 1957 the system's alerting protocol was able to be used for the alerting of natural disasters.

For our part as Amateur Radio operators, beginning on January 2nd, 1957, U.S. Amateur Radio came under the CONELRAD rules. This meant that in the event of an alert, Amateur Radio stations were required to stop transmitting if commercial radio stations went off the air. There were even several companies that began marketing special receivers that monitored local broadcast stations, sounding an alarm and automatically deactivating the amateur's transmitter when the local broadcast station went off the air.

Throughout the 12 years CONELRAD's was active, it was plagued by not only various system failures, but numerous false alarms. Eventually, on August 5, 1963, CONELRAD was replaced by the Emergency Broadcast System (EBS).

Emergency Broadcast (EBS) banner displayed on household televisions during testing in 1963.

The Emergency Broadcast System (EBS), also referred to as the Emergency Action Notification System (EANS), was an emergency warning system used from 1963 to 1997 replacing the previous CONELRAD system. Up until 1997 it

was the most commonly used emergency alert system here in the US, along with the Emergency Override system.

The system was originally established in order to provide the president with an expeditious method of communicating with the general public in the event of war, threat of war, or grave national crisis.

EBS was originally modeled after an emergency warning system in Hawaii called Civ-Alert, which was active from 1960 to 1977. Civ-Alert was first established after a tsunami that was generated by the 1960 Valdivia earthquake on the Chilean coast devastated Hilo Hawaii. In later years, it was expanded for use during peacetime emergencies at Hawaiian state and local levels. Since effective emergency communications between the various Hawaiian Islands up until then wasn't all that effective. Civ-Alert became rebranded as "EBS" in May 1977.

The Emergency Override System, or Local Access System, was a system designed to provide warnings via radio stations, television stations, cable television broadcast feeds and even satellite signals, of impending dangers such as severe weather and other civil emergencies. Due to a gradual transition from analog cable to digital cable, the Local Access Alert system has since been phased out and largely replaced with the Emergency Alert System.

In 1978 in order to activate the EBS at the national level the order to activate would have first originated with the president. Once activated, the order to activate EBS would have been relayed through the White House Communications Agency duty officer to one of two points of origin – either the Aerospace Defense Command (ADC) or the Federal Preparedness Agency (FPA) - who would intern generate an Emergency Action Notification (EAN) over a dedicated teletypewriter network designed specifically for that purpose. After that, participating telecommunications common carriers, such as radio and television networks, along with select news outlets, would all receive and authenticate the EAN by means of code words. Lastly, upon successful authentication, these recipients would relay the EAN to their subscribers and affiliates.

Remember that annoying tone that would come over your television, or favorite radio station? That tone was annoying by design, I know your shocked, right? The Attention Signal, as it was formally called, that was most commonly associated with the EBS system consisting of a combination of the sine waves of 853 Hz and 960 Hz. The thought being that it was perfectly suited in order to attract attention due to, you guessed it, its unpleasantness.

Although the system was never used for a national emergency, it had been activated over 20,000 times between 1976 and 1996 for the purpose of broadcasting civil emergency messages and warnings of various severe weather hazards.

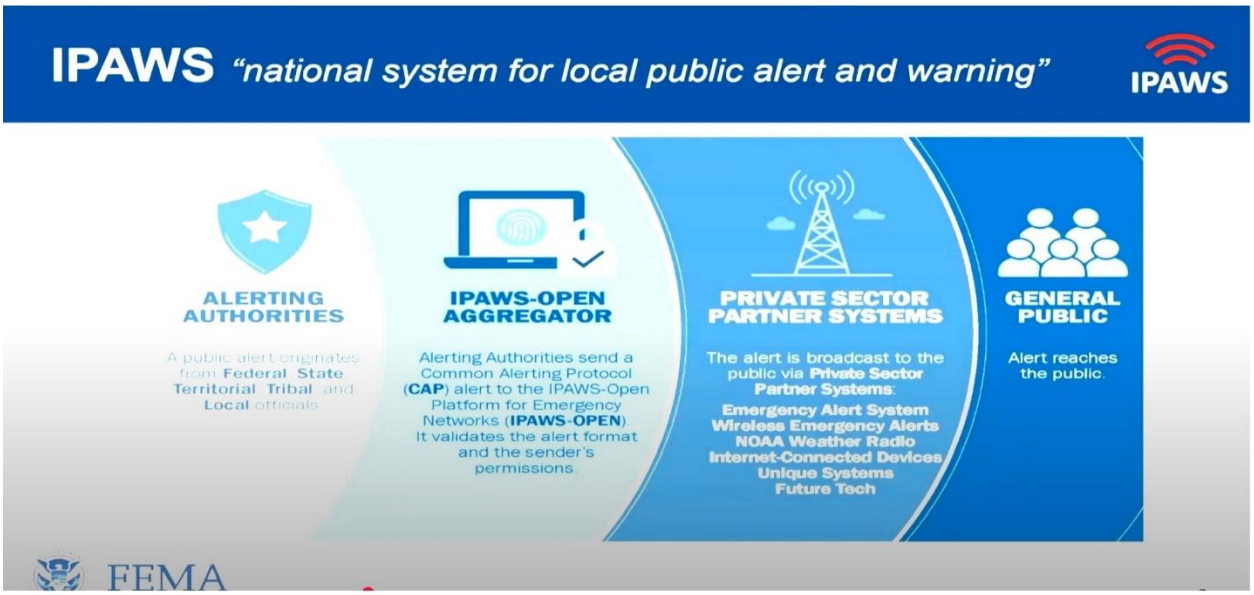
Eventually with the fall of the Berlin Wall in 1989, the reunification of Germany in 1990, and the dissolution of the Soviet Union in 1991, the cold war finally came to an end. So, with the threat of nuclear attack now greatly reduced, the need for warning procedures of such an attack under EBS began to change with time.

In 2024, the United States National Archives made available prerecorded messages dating back to 1972 that were originally intended to be played during a national activation of the Emergency Broadcast System. Here is an example of one such message:

"The United States Emergency Broadcast System has been activated by direction of the President of the United States because of a grave national emergency. The Emergency Broadcast System comprises all communications facilities designated and authorized by the Federal Communications Commission to operate during a period of national emergency."

The Emergency Alert System (EAS) became operational on January 1, 1997, after receiving approval by the Federal Communications Commission (FCC) in November 1994, thereby replacing the Emergency Broadcast System (EBS). As with the EBS system, EAS is a national warning system designed to allow officials to broadcast emergency alerts and warning messages to the public through various means, including; cable, satellite, broadcast television, AM, FM broadcast, and satellite radio. Unofficially, EAS is sometimes included with its mobile phone counterpart Wireless Emergency Alerts (WEA). However, both the EAS and WEA, among other systems, were all soon coordinated under the Integrated Public Alert and Warning System (IPAWS).

In 2006 an executive order issued by then president George W. Bush, directed the U.S. government to create; "An effective, reliable, integrated, flexible, and comprehensive" public warning system. This was accomplished through expansions to the existing National Public Warning System; “Primary Entry Point” (PEP), or simply; “The Stations.“ All of which eventually lead to the development of the Integrated Public Alert and Warning System (IPAWS). IPAWS, in combination with EAS, allowed federal, state, and local authorities to more efficiently broadcast emergency alert and warning messages over multiple resources, including Local Access Alert systems such as billboards, local radio stations, cell phones, etc.



Process flow of IPAWS Alert and Warning response

The main improvement over the EBS system, is IPAWS use of a digitally encoded audio signal known as “Specific Area Message Encoding” (SAME). The signal is basically composed of two parts. First is the "Header" which encodes the alert type and the *specific area* that should receive the message. The last portion marks the “End-of-message.” These signals are read by specialized encoder-decoder equipment, designed to provide automated station-to-station relay of alerts to the specific area the alert was intended for.

The FCC established that IPAWS is not intended as a full substitute for the SAME protocol, given its dependance on the internet, which makes it

vulnerable to situations that may make internet connectivity unavailable. So, with that in mind, as a backup, broadcasters must also convert “Common Alerting Protocol” (CAP) messages to SAME headers in order to enable backwards compatibility with the existing "daisy chain" method of EAS distribution.

Under an FCC order issued in 2007, EAS participants were required to migrate to digital equipment supporting CAP within 180 days of the specification's adoption by FEMA. Originally scheduled for September 30, 2010, the deadline was later pushed to June 30, 2012 at the request of broadcasters.

The primary advantage of IPAWS is that it taps a larger variety of communications channels including cell phones, various media, and a host of others. Unlike emergency alert systems of the past, IPAWS is as efficient as it is versatile, making it ideal for not only when it comes to the original purpose of Emergency Alert Systems of the Cold War, but for specific areas threatened by severe weather events.

Conclusion

The need for an efficient system with which to warn the public of impending disasters is paramount in its mission of saving property, and lives. Unfortunately, with recent cuts in various public services, and even more threatened, including FEMA, and public broadcast services such as PBS, and NPR, the future of the overall reliability of public warning systems comes into question. The cuts have even gone so far as to shut down a decades long American institution, the Voice of America. Along with that, mainstream network media has been threatened with cancelation of their FCC licenses simply because of their content. All of this means that distribution of emergency warnings for the public that we’ve come to rely upon is now under threat from the very government that has been tasked with protecting us by warning us of impending disasters so that we may take appropriate actions.

Although on the W7NEO analog repeaters we have an application called “Skywarn Plus,” which broadcasts voice alerts when the National Weather Service releases a warning, or alert. While researching this article, I was

thinking about additional ways in which to improve upon our W7NEO repeater system in order to better aid our local community by providing early warning in the event of an impending disaster. So, stay tuned, and hopefully we can come up with something that will not only be value added, but ultimately might just save a life one day.

In closing I would like to quote the Mission Statement of the National Weather Service (NOAA). Which, by the way, is currently listed on the chopping block for downsizing, and possible privatizing all together:

The National Weather Service's mission is to provide weather, water, and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and to enhance the national economy. This is accomplished through reliable, timely, and accurate analyses, guidance, forecasts, and warnings.

Well, once again we've reached the limit of our allotted space for our little newsletter. But there is MUCH more on this subject worth discussing. So, I will end this parade of acronyms, with the hope that I've managed to not only spark some curiosity among our readers, but also that the cold war will remain forever in the history books, never to return again…

Lynn Wilson, K7LW

For further information explaining IPAWS, click here.

For the 1951 Civil Defense Cartoon, with Bert the Turtle; "Duck and Cover," click here

Emergency Communications

Amateur Radio began in the early 1900's having transitioned from amateur telegraphy systems. The first actual radio communications were limited to a range of roughly about eight miles at best. Guglielmo Marconi in the late 19th and early 20th centuries, revolutionized maritime communication by using short wave communications. His Marconi Company sold systems to ships and lighthouses, enabling communication beyond the reach of existing cable

networks of the time. This service, initially using Morse code, allowed for ship-to-shore communication, news transmissions to ships, and eventually even transatlantic radio-telegraph services. It was in 1912 with the sinking of the Titanic that the need for emergency communications came to light. Of course, a couple of years prior to that, beginning around 1910 Amateur Radio was increasing exponentially in popularity. But with the use of spark gap transmitters, interference to other budding radio services, and even military communications, was common place.

Although Amateur Radio had been around since the early 1900's, it wasn't really officially recognized as a resource for emergency communications until World War 2. When the United States entered the Second World War, congress had suspended all Amateur Radio activity throughout the country under the War Powers Act of 1941. So, the War Emergency Radio Service (WERS) was established by the Federal Communications Commission in June of 1942. WERS was to provide communications in connection with air raid protection, and natural disasters. At the time, WERS licenses were given to communities, as appose to individuals. Ironically, one of the primary requirements in order for individuals to participate in the WERS program, was that they were required to hold an Amateur Radio license.

By the end of 1944, about five thousand radio transmitters were operating under approximately 250 licenses. WERS remained in operation through the end of the Second World War up until 1945.

The concept of a standby "Radio Amateur Civil Emergency Service" to replace the conventional "Amateur Radio Service" during wartime was developed in 1952 as a result of input from the Department of the Army's Office of Civil Defense and the Amateur Radio community itself. This was primarily to serve in civil defense emergencies, and as a result of the need to replace the vacancy left behind by WERS. Finally, the concept was eventually made official by the Federal Communications Commissions (FCC) authorization within Part 97.407 of the FCC rules and regulations governing Amateur Radio within the US. Today, the "Radio Amateur Civil Emergency Service" (RACES) is organized to provide emergency communications primarily for civil preparedness

purposes only. RACES is a special part of the Amateur Radio services sponsored by the Federal Emergency Management Agency (FEMA) and is conducted by Amateur Radio operators using their primary station licenses or by existing RACES stations. If the President were to invoke the War Emergency Powers Act today, Amateur Radio operators enrolled with their local emergency management offices would become limited to certain frequencies, while all other amateur operations would be silenced.

Part 97.407 of the FCC rules governing RACES is quite specific as to just who can participate, and where they can transmit.

No station may transmit in RACES unless it is an FCC-licensed primary, club, or military recreation station and it is certified by a civil defense organization as registered with that organization. No person may be the control operator of an amateur station transmitting in RACES unless that person holds a FCC-issued amateur operator license and is certified by a civil defense organization as enrolled in that organization.

The frequency bands and segments and emissions authorized to the control operator are available to stations transmitting communications in RACES on a shared basis with the amateur service. In the event of an emergency which necessitates invoking the President's War Emergency Powers under the provisions of section 706 of the Communications Act of 1934, as amended, 47 U.S.C. 606, amateur stations participating in RACES may only transmit on the frequency segments authorized pursuant to part 214 of this chapter.

Bare in mind, this is during times of national emergency when the president would invoke the War Powers Act, effectively shutting down all Amateur Radio activity. The last time that actually happened was during WWII.

Also, you'll see the rules refer to "the Primary Civil Defense organization" as being the one to authorize RACES stations. In this they are referring to FEMA as the primary federal agency responsible for coordinating disaster response and preparedness efforts.

Although there are some radical antigovernment groups attempting to promote themselves as emergency communications organizations, there are numerous, more legitimate Amateur Radio organizations that are officially recognized by local, state, and federal agencies that are providing emergency communications when the need arises. These organizations take the responsibility of caring for their local communities during times of need very seriously, and for the most part, they work well together between themselves, and with local emergency responders. During a natural, or man-made disaster, local Amateur Radio emergency communicators would be asked to supplement local communications based upon National Incident Management System (NIMS) protocols, and communications needs in general as would be determined by local authorities. As skilled, and highly experienced communications professionals, it's not uncommon that Amateur Radio Operators would be assigned to work various county, and/or state communications systems as RADO's (Radio Operator's). In such a position they would be responsible for managing radio communications, transmitting and receiving messages between personnel, and providing dispatch services during an incident. Several local Amateurs did just that during the wild fires taking place in Oregon in 2024.

Although I did do some digging, I wasn't able to come up with anything specific which addressed the GMRS community's response during an emergency. In talking with some of the local GMRS folks, basically they perceive their response during an emergency as more of a neighborhood watch type of function. So, in the event of an emergency, they would see themselves as taking care of their immediate neighbors and making sure their safe. Given that more and more Amateur Radio operators are becoming interested in GMRS, there are now more conversations taking place in order to formulate plans that would effectively bridge communications in an emergency between the two personal public radio services. But with GMRS still being relatively new, for the most part, it's just getting started, and essentially baby steps…

The Weston Mountain Digital Radio Association (W7NEO) on our website has a Comprehensive Emergency Operations Management Plan which outlines

how our system would be utilized, along with our overall response during an emergency. We strongly believe that it's up to all of us to pony up and help out our local communities during an emergency when they need us, and our abilities as communicators the most, in order to effectively communicate, and perhaps even save lives.

Lynn Wilson, K7LW/WRYF803

For the complete text of 47 CFR § 97.407 - Radio amateur civil emergency service. Click here

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Current events

This month marks the beginning of several annual pilgrimages to Radio Mecca here in the Pacific Northwest. One such event is SEAPAC, located in the beautiful coastal city of Seaside Oregon. It begins on Friday, May 30th, and ends Sunday June 1st.

Also, on May 10th in Kennewick Washington, the Spout Springs repeater group will be having their 5th annual tailgate and swap meet.

For more details on both events, check out the "Current Events" section of this website.

Hopefully see you there!

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.

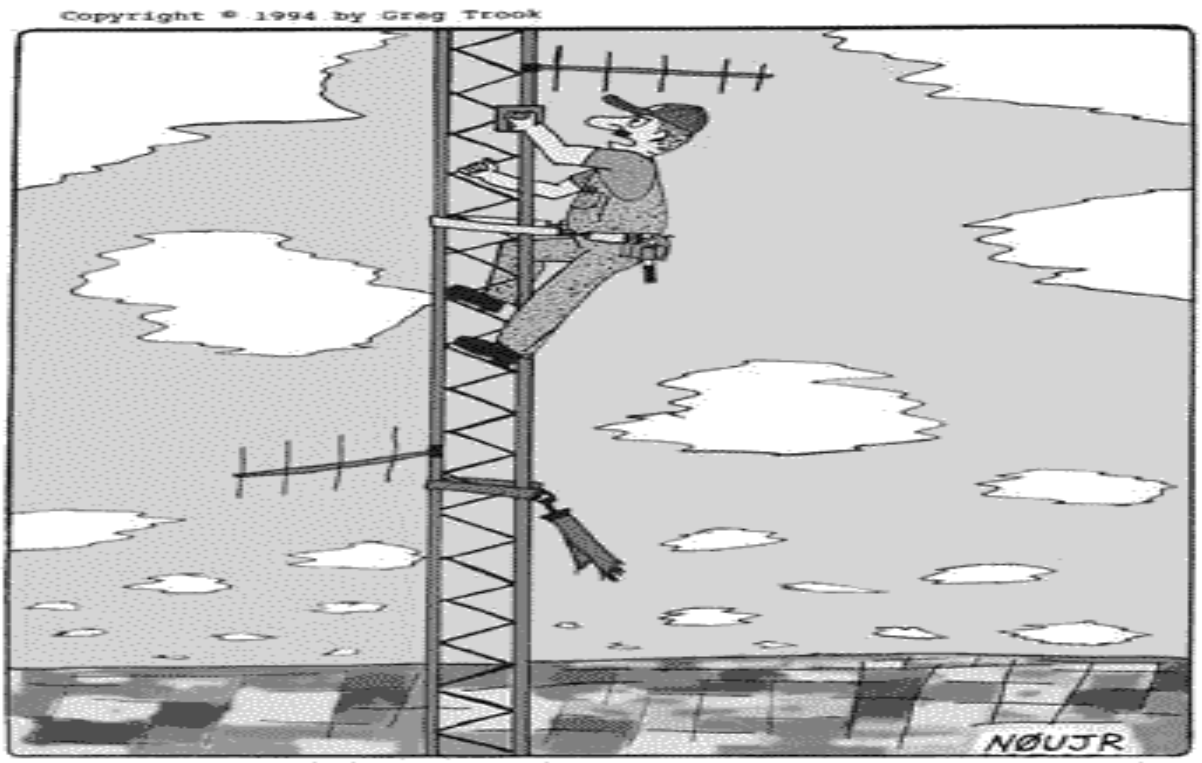
But in the meantime, if you do have a regular test session taking place, feel free to let us know, and we'll post it here in the next issue of the Pickle Barrel Review.

The End

Well, that's about it for this edition of the Pickle Barrel Review, I hope you enjoyed it. We'll continue to work to keep it informative, fun, and interesting. So, until next time, we here at the WMDRA (W7NEO) hope everyone is enjoying the warmth of spring. In the meantime, feel free to reach in the barrel, and grab another pickle, there's plenty to go around, along with plenty of great conversation!

73,

Weston Mountain Digital Radio Association,
W7NEO



"So Bob...why did your ex-wife give you a new climbing belt for Christmas?"

"You only live once, but if you do it right, once is enough."
— Mae West

One final request.

On May 26th, please take a moment to remember those who made the ultimate sacrifice for the preservation of our nations Democracy. They did this out of the strong belief that we as a nation all deserve the right to live free from tyranny, and fascism. Never take our Democracy, nor our Constitutional Freedoms for granted. Also, never forget just how fragile both are, and that every one of us needs to remain forever vigilant against those who would seek to take all that away. Honor those that so unselfishly sacrificed their lives for what they believed in, the preservation of both our Freedoms, and our Democracy...

"Thank You to those Veterans both past and present."

-Lynn Wilson, MSgt, USAF (Ret)