

The Pickle Barrel Review



THE OFFICIAL NEWSLETTER OF THE WESTON
MOUNTAIN DIGITAL RADIO ASSOCIATION

March 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

A&B Protection agency:

Today's world is not always the kindest, most gentle place to live in, and sometimes it helps to have a little something extra in your back pocket on your side. That's where the folks at A&B Protection agency can help. Having grown up in a tough world themselves, our staff has combined that with the experience, and the most comprehensive training available anywhere in the world as part of their time serving in the U.S. Marine Corp. All this combined to bring you the finest in personal protection available.

So, if you find yourself with an abusive ex-husband that keeps coming back, or some stranger you met in the local bar that just doesn't understand the word "NO," or maybe just a boyfriend that needs alittle sense knocked into him on just how to treat a Lady. Call on A&B and let Amy Lou, and Bobby Sue set things straight, or just plain take out the trash for you!

As a side note, A&B would like to dispel the rumors that Tank Johnson has been spreading lately in the local coffee shop that A&B's tactics are unfair, and that they fight dirty. So, if Tank doesn't apologize, and set the record straight soon, Amy Lou will be look'n to give him another beat down, only this time it'll be Pro Bono!

So, remember A&B Protection Agency the next time you find yourself in need of alittle extra mussel on your side.

Radio Tech



Over the course of my career in both the U.S. military, and with the Federal government, I was privileged to have worked with many diverse, and equally complex communications systems. But there is one system that stands out in my mind as having been one of the most remarkable technologies I had ever witnessed in operation. That was during my time in the Air Force reserves, while we employed the Troposcatter Field Communications System. This was designated the AN/TRC-170, or "Track 170," as we referred to it as. To me, this was nothing short of amazing in not only the theory in which it operated, but how efficient a system it was overall in its operation. I'll try and explain a little of that later on in this article. But before we dive into the magic of troposcatter, in order to better understand the overall theory of operation, first there needs to be a review of atmospheric propagation, and the theory behind just how it works in general. Hopefully, some of you that are relatively new to the hobby will get a bit clearer picture of just how it is that we're able to talk around the world with our radios. That said, let's get right into it shall we?

Our very own "Old Sol" has a direct effect on the behavior of the earth's atmosphere through various means, including the discharge of solar particles generated as the result of plasma ejections, or Solar Flares which intern can, at times, produce what is called "Coronal Mass Ejections" (CME). Along with this, we have sun spots, solar winds, etc. This all serves as a direct influence on our

Earth's atmosphere through ultraviolet radiation, creating ionized atmospheric layers (D, E, & F) which enable long-distance, high-frequency (HF) radio propagation by refracting signals back to Earth.



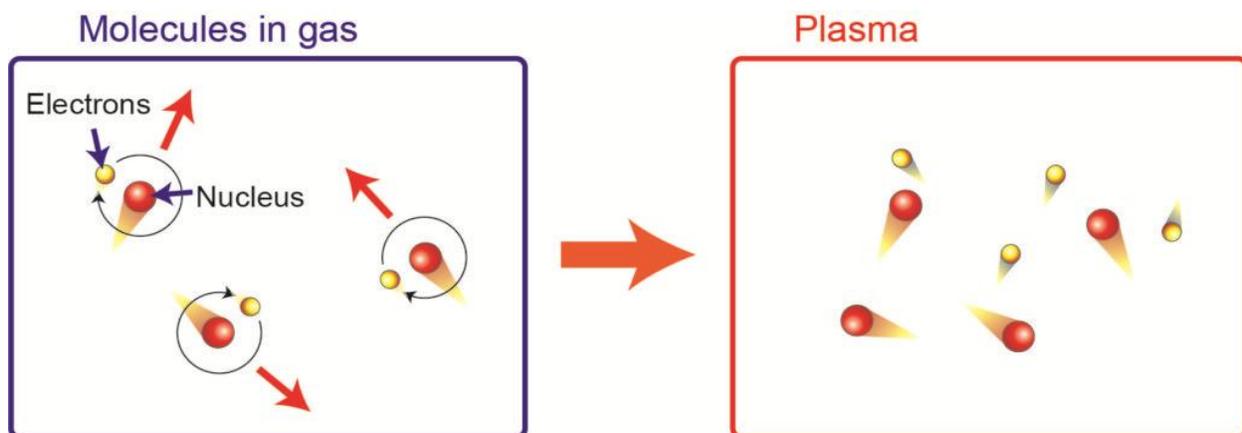
Typical solar flare.

Increased solar activity (flares, sunspots) boosts ionization, enhancing signal propagation but also sometimes when the effects are excessive these same conditions may reduce signal propagation, along with other negative effects. Typically, when directed toward Earth, a solar plasma ejection will cause a disturbance in the earth's magnetic field, referred to as a geomagnetic storm. When an exceptionally intense eruptions happens on the sun, it will produce a Coronal Mass Ejection(s), that can lead to effects such as radio blackouts, power outages, and even affecting our satellites with communications blackouts. Even going so far as to expose space crews to harmful levels of radiation. But as a tradeoff it produces some beautiful Aurora Borealis displays as a result. So at least we'll have something to enjoy watching as we sit in our back yards in the dark, waiting for the lights to come back on.

Historically, there have been CME's that have genuinely wreaked havoc with communications, along with various other electrical services. Most notable, was one event which took place in August of 1859, when British astronomer Richard Carrington first observed a massive bright white light from the sun. This historic event later came to be known as the "Carrington event," and was been credited as having been the most severe CME in recorded history.

So, what exactly is atmospheric ionization, and why is it so important when talking about radio propagation? First off, an ion is an atom or molecule with an unbalanced electric charge. Ionization occurs when ultraviolet (UV) light knocks electrons off atoms, or molecules, leading to the formation of plasma. Plasma is a state of matter that is similar to a gas but has some important differences. In plasma, some or all of the atoms are ionized, meaning they have lost or gained one or more electrons, leaving behind positively charged ions, and negatively charged free electrons. The presence of these free electrons makes plasma, an electrically conductive medium capable of responding to electromagnetic fields while generating fields of its own. Plasma can be found in a wide variety of natural and artificial settings, including lightning, flames, the Sun, along with other stars, and even with some types of laboratory experiments. It can also be used in a range of industrial applications, such as cutting, and welding metals, producing semiconductors, and generating energy through fusion reactions.

I know, that's a lot to digest. But to envision it in simpler, easier to digest terms, think of a room filled with tennis balls. Now some outside force begins to excite the tennis balls setting them in motion, not unlike our ultraviolet light. This causes the balls to move around more, becoming more and more active, bumping into one another. Each time they bump into each other they transfer that energy, and in our case, as with the atmospheric molecules when the sun's ultraviolet light strikes them, the gradual increase in the force acting on the tennis balls causes them to increase their own activity. Therefore, they become more "active," or "ionized," which increases the overall density of the mass as a whole, or in our case, the ionosphere.



Molecules as they lose electrons and become ionized into plasma.

Starting at about 50 miles above the Earth's surface, the atmosphere contains an ionized particle component, or atmospheric layer called the ionosphere. The upper ionosphere extends to a height of about 373 miles. It's the electromagnetic radiation from the Sun in the UV, and extreme UV range that provides the energy needed in order to ionize the gaseous molecules, and atoms present within this particular zone of the atmosphere. The degree of ionization increases with altitude. For example, at a height of 62 miles it's estimated that only one in 10 million atoms and molecules are ionized, whereas all particles are ionized higher up in the ionosphere.



Difference in atmospheric layers between day and night.

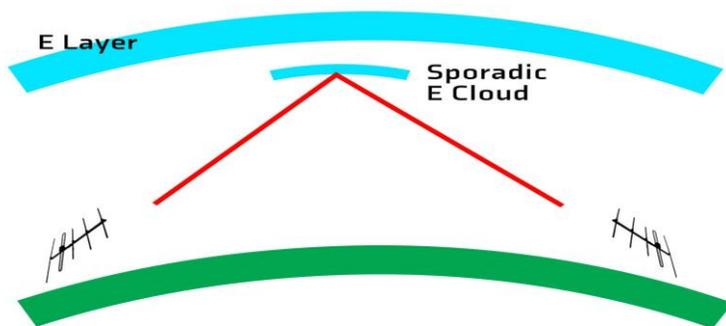
Several distinct layers of the ionosphere have been identified based upon their ionized, and electron densities. The outermost region – the F region – has the highest concentration of free electrons and ions. During daylight hours, as the solar radiation becomes more intense this region splits in two – F₂ being the outer layer, and F₁ the inner layer. The F₂ region is the principal reflecting layer for high-frequency (HF) radio communications during both day and night. You sometimes hear the hardcore DX'ers refer to “chasing the Grey line.” What they're referring to is the area of the ionosphere located at the precise region of dawn and dusk where the F regions are expanding and collapsing due to the sun's ultraviolet radiation. This is where you get the best propagation paths into Europe and Asia depending upon the time of day, and is commonly referred to as the “Grey Line” because of its

proximity between morning and daytime, and evening, and nightfall, which is when the F layers are expanding and collapsing.



Greyline propagation.

At a height of between 56 ~ 93 miles lies the E region. Here, the degree of ionization is lower than in the F region, with about one electron present for every 10^8 neutral particles. Occasionally we get what we Ham's refer to as "Sporadic E propagation." Sporadic E propagation is caused by the sudden formation of intensely ionized, thin patches, or "clouds" within the ionosphere's E-region (roughly 60 ~ 90 miles up). These patches, often formed by high-altitude wind shear, or meteoric debris trails, both of which act as a kind of RF mirror, refracting VHF and high-HF signals back to Earth, allowing for long-distance communication (up to 1,400 miles) that otherwise would be impossible on the upper HF, and VHF frequencies.



Sporadic E propagation.

Below the E layer is the D layer located at between 50 ~ 62 miles with an even smaller electron content. During the night-time periods, regions E and D disappear, leaving only the F region as a fully ionized layer.

Now that you have an idea of the different layers of the ionosphere, and how they interact with one another, let's get right into the primary focus of this article, the troposphere. The troposphere is the lowest layer of Earth's atmosphere, extending directly from the earth's surface upward to about 6 ~ 10 miles. It is thinnest at the poles, at just 3 ~ 5 miles above the earth, and thickest at the equator at 11 ~ 13 miles above the earth. The troposphere contains 75 ~ 80% of the atmosphere's mass, and 99% of its water vapor, and is where nearly all weather occurs. So, as you can see, the troposphere is a very busy place when compared to the other layers of our atmosphere.

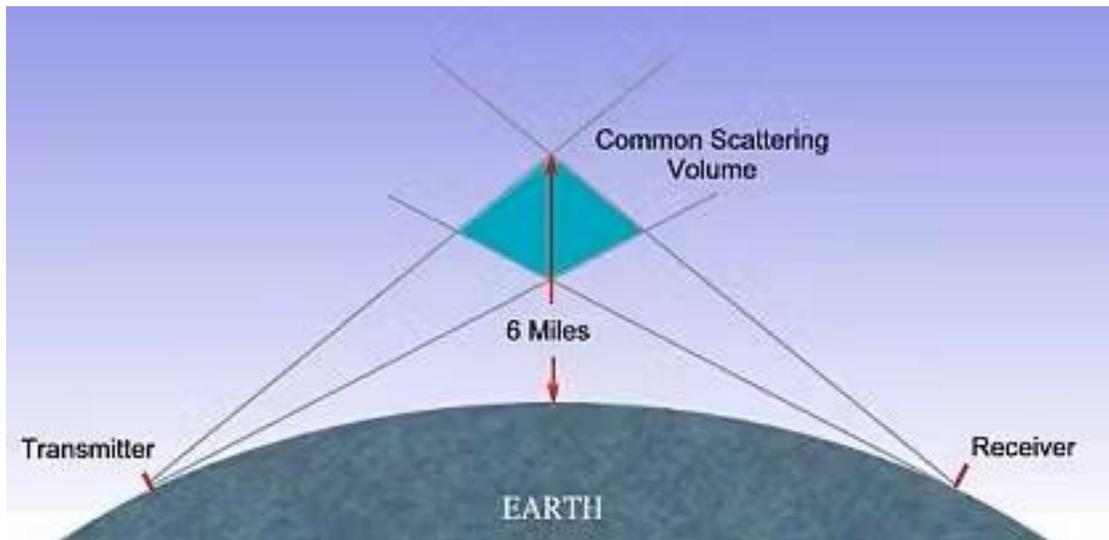


The troposphere where the majority of moisture resides, along with the earth's weather.

Troposcatter (tropospheric scatter) is a method of communicating beyond the radio horizon (18 ~ 311+ miles) by aiming high-power microwave signals at the upper troposphere. The signals scatter off atmospheric turbulence, moisture, and temperature fluctuations, allowing a small fraction of the energy to return to Earth and be captured by a distant, sensitive receiver.

In order to capitalize on this process two directional antennas located at two different locations are pointed so that their beams intersect midway between them, above the horizon. If one of these is a UHF transmitting antenna, and the other a UHF receiving antenna, sufficient radio energy will be directed toward the

receiving antenna resulting in a viable path being created in order to make this a useful communication system.



Typical diagram of tropospheric scatter system theory.

Admittedly, the reasons for the scattering are not fully understood, but there are two theories. One suggests reflections from “blobs” in the atmosphere, similar to the scattering of a searchlight beam by dust particles, and the other suggests reflection from atmospheric layers. Either way, this is a fairly reliable, and permanent state of affairs, not just a sporadic, happenstance phenomenon.

The best frequencies, which are also the most often used, are centered on 900MHz, 2, and 5GHz. Even here the actual proportion of forward scatter to signals incident on the scatter volume is very tiny, somewhere between 60 and 90 dB, or one-millionth to one-billionth of the incident power. High transmitting power of up to 10 kilowatts, depending upon the system, are obviously required in order to make the entire process work as planned. Although forward scatter is subject to fading, with little signal scattered forward, it nevertheless forms a very reliable method of over-the-horizon communication. It's not affected by any of the abnormal phenomena normally afflicting HF sky-wave propagation. Accordingly, this method of propagation is often used to provide a more stable median for circuits such as long-distance telephone, along with other communications links. This, as an alternative to microwave links, or coaxial cables over rough or inaccessible terrain. With path links typically extending over distances from 186 to 310 miles long.

However, tropospheric scatter propagation is not entirely free from the effects of atmospheric interference, and is sometimes subject to one of two forms of fading. The first is fast, occurring several times per minute at its worst, with maximum signal strength variations in excess of 20 dB. We often refer to it as *Rayleigh fading*, and it's caused by multi path propagation. For those unfamiliar with multi path fade, it takes place when multiple signals arrive at a single location from different paths, such as sky wave, ground wave, and direct line of sight (LOS). Or for you techy types, scattering is from a volume, not a point, so that several paths for propagation exist within the scatter volume. The second form of fading is very much slower and is caused by variations in atmospheric conditions along the path. Similar to watching an AM signal on the low bands slowly fade in and out.

In practice it's been found that the best results are obtained from Tropospheric Scatter Propagation if the antennas are elevated, and then directed down toward the horizon. Also, because of the fading problems, diversity systems are invariably employed, with spatial diversity being more common than frequency diversity. On a personal note, when I was working on long range microwave telecommunications systems we employed both spatial (multiple microwave antennas at different heights on the tower), and frequency diversity (two different frequencies in a single microwave receiver switching between one another depending upon signal strength) in order to maintain good path stability. In the case of military communications systems, quadruple diversity systems are generally employed, with two antennas at either end of the link (all used for transmission and reception) separated by distances typically in excess of 30 wavelengths.

Some of you die hard six-meter operators are probably thinking about the effects of tropo ducting, which occurs quite often on the six-meter band. Ducting is a characteristic in tropospheric propagation, and can occasionally extend the range of communications to over 950 miles. But that is a distinct phenomenon when working troposcatter, so it's not really all that common an occurrence. However, back in the 80's, while I was in the Navy operating shipboard RADAR systems in the 8GHz range, we would experience ducting. Especially during rainy, or foggy conditions, we would occasionally get surprised by a contact such as a fishing boat simply because our signal had ducted right over the top of the contact.

The AN/TRC-170, which I was familiar with during my time in the Air Force back in the 90's, is a transportable, long-range Tropospheric Scatter Microwave Radio Terminal. Believe it or not, it's currently still in use by the U.S. Marine Corps since the 1980s for secure, beyond-line-of-sight voice, and data communication.



AN/TRC-170, or “Track 170” such as what we used in the Air Force reserves

However, as of 2019 its gradually being phased out, and replaced with a newer, more compact system called Next Generation Troposcatter, or NGT. The NGT system is currently being phased in as a more compact and mobile Next Generation Troposcatter system.



The Next Generation Troposcatter (NGT).

It's currently being produced by a company called Cubic Mission and Performance Solutions (CMPS) in partnership with Comtech System. It's being billed as being

able to provide reliable, high-capacity, full-duplex digital links up to 100 ~ 150 miles.

While satellites (SATCOM) are still the primary long-distance communication method, the vulnerability of satellite communication, and the increasingly congested space environment is requiring more reliable, and secure backup systems. Thereby continuing to make troposcatter a valuable, sovereign, and "ground-based" alternative. Although the equipment will eventually be replaced by newer, and more efficient systems, the concept of troposcatter, fortunately is here to stay.

Lynn Wilson, K7LW

Legal Corner



Beacons VS Repeaters regarding Automated Announcements, and how the FCC views each.

Recently I was asked the question; “Just what are the legal limits to automated messages being broadcast over repeaters, and is it the same as beacons?” Just to clarify the difference, a beacon is a transmitter that sends a continuous signal identifying itself, and its location is primarily to monitor current propagation conditions from that locations, and on that particular frequency. Whereas an automated announcement on a repeater typically identifies the repeater, it’s location, along with any other pertinent information such as club meetings,

scheduled nets, etc. In both cases, the stations are required by the FCC to identify with the owners assigned callsign when making the announcements. So, I did some digging, and learned a little something myself about the subject. It should be noted that although these two situations are similar, there are some distinct differences in how the FCC addresses each, as we will find out.

As a side note, fortunately, our repeaters within the W7NEO system are all above board when it comes to this. But it was such a good question, I thought I would share my answer with you, the readers of the PBR. That said, here's what I found out.

Beacons:

Beacons are a specific type of station in the Amateur Radio Service, and they must comply with all general Part 97 rules, including station identification.

FCC Section 47 CFR, §97.203 defines a Beacon Station as; “*An amateur station transmitting for propagation study or other experimental activities.*” Beacons may be operated by Technician or higher-class licensees, limited to a maximum of 100W PEP transmitter power, and must not transmit on more than one channel per band from the same location.

(a) Any amateur station licensed to a holder of a Technician, General, Advanced or Amateur Extra Class operator license may be a beacon. A holder of a Technician, General, Advanced or Amateur Extra Class operator license may be the control operator of a beacon, subject to the privileges of the class of operator license held.

(b) A beacon must not concurrently transmit on more than 1 channel in the same amateur service frequency band, from the same station location.

(d) A beacon may be automatically controlled while it is transmitting. With regards to the automatically controlled digital stations (a type of beacon/automated station) are permitted on specific, narrow segments of bands (e.g., 6m, 10m, 12m, 15m, 17m, 20m, 30m, 40m) under strict bandwidth rules (typically 500 Hz or less). Or on the 33 cm and shorter wavelength bands.

This caught my eye with regards to the question regarding packet stations/nodes, and how they periodically transmit their “Stations Heard” list. My interpretation of this part of the rule as it pertains to packet nodes is a little of both repeaters, and beacons. But in looking it over, and talking with a few folks more familiar with

packet than I am, it appears to fall more on the repeater side of the fence rather than the beacon side. If someone is more familiar with this, and can offer more insight, I'm all ears.

(e) Before establishing an automatically controlled beacon in the National Radio Quiet Zone (This is referring to the area along both the Canadian, and Mexican borders where the rules differ as far as frequency use) or before changing the transmitting frequency, transmitter power, antenna height or directivity, the station licensee must give written notification thereof to the Interference Office, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, WV 24944.

(1) The notification must include the geographical coordinates of the antenna, antenna ground elevation above mean sea level (AMSL), antenna center of radiation above ground level (AGL), antenna directivity, proposed frequency, type of emission, and transmitter power.

(2) If an objection to the proposed operation is received by the FCC from the National Radio Astronomy Observatory at Green Bank, Pocahontas County, WV, for itself or on behalf of the Naval Research Laboratory at Sugar Grove, Pendleton County, WV, within 20 days from the date of notification, the FCC will consider all aspects of the problem and take whatever action is deemed appropriate.

(f) A beacon must cease transmissions upon notification by an FCC Regional Director that the station is operating improperly or causing undue interference to other operations. The beacon may not resume transmitting without prior approval of the Regional Director.

Here's one restriction in particular that caught my attention:

(g) A beacon may transmit one-way communications, but must not cause harmful interference to other stations.

This comes under FCC Section 47 CFR, § 97.101(d), which states that; "*No amateur operator shall willfully, or maliciously interfere with, or cause interference to any radio communication or signal.*" What gives this rule in particular some genuine teeth, is that IAW RCS 333 (The communications act of 1934) PARA 104 ~ 106 basically states that punishment for violations of this rule

can range from a hefty fine, to confiscation of equipment, revoking of license, and even imprisonment. Or all of the above.

I'm sure in the case of a beacon, the FCC would just send the licensee a nasty letter telling them to apply for another frequency, or shut it down all together.

Repeaters:

This is the part that caught my attention with regards to the question regarding announcements on repeaters, and falls under FCC section 47 CFR § 97.205 which refers to repeater station operation. This seems to me to address repeater operation more specifically in that broadcasting an announcement over a repeater, such as for scheduled nets, club meetings, etc. would not meet the definition of a beacon. But when compared to beacons, in the case of repeaters, although there are some similarities, it's still somewhat of a different animal.

FCC 47 CFR § 97.205 rules with regards to Amateur Radio repeaters allow automatic, computer-generated, or pre-recorded announcements on ham radio repeaters, provided they are non-commercial, identify the station with a call sign, and do not cause interference. These announcements must conform to rules regarding station identification and prohibited content, such as business communications or music.

Here are a few key rules under FCC Part 97 relating to Automated Announcements:

- **Station Identification:** The station must be properly identified, typically via a CW or voice ID, which can be automated.
- **Automatic Control:** Repeaters often operate under automatic control, meaning a control operator does not need to be physically present to trigger every transmission.
- **Prohibited Content:** Automated messages cannot include business, commercial, or pecuniary (monetary) interest content.
- **Emergency Situations:** Automatic announcements must not interfere with emergency communications.

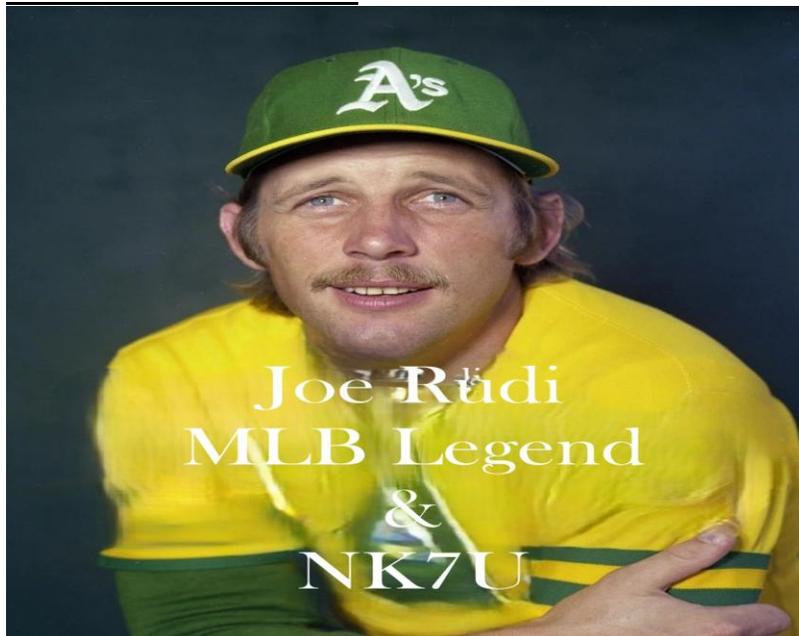
So, it looks as though when it comes to automated announcements over Amateur Radio systems, "repeaters" aren't exactly looked at by the FCC the same as

“beacons.” Although a lot of the same rules apply, such as interference, commercial content, obscenity, etc. Automatic announcements are commonly used for station identification, weather alerts, announcing scheduled events, or repeater status updates. The licensee is ultimately responsible for all transmissions, even if generated automatically. You’ll recall that our W7NEO analog machines all transmit automated voice messages when there is severe weather, or any other sort of warning, or simply to announce a timed event (i.e. Newslines every Saturday night). Also, there are automated messages on our analog machines indicating repeater location, loss of commercial power, an emergency taking place, etc. In all cases the messages are non-commercial, and include a repeater ID in either voice or CW.

So, there you have it, straight from the source (FCC). I hope this clarifies things for all of you regarding just what can, and cannot be broadcast on Amateur Radio systems when it comes to automated announcements. For the sake of clarification, GMRS repeaters are required to follow the same exact rules in FCC part 95 for automated announcements as the rules for Amateur Radio repeaters listed in FCC part 97. The only exception I can see is that with Amateur Radio identification is every 10 minutes, whereas GMRS is required to identify every 15 minutes.

Lynn Wilson, K7LW

Celebrities of Ham Radio



This month's Amateur Radio personality is a particularly special one. He was suggested to me by a longtime friend of mine, and fellow Ham from La Grande Oregon who remembered this particular Ham when he was still living in Baker City, Oregon.

Joe Rudi (NK7U) formally of Baker City Oregon was known not only for his successful MLB career, but also among the Amateur Radio community for his massive contest station. While living in Baker City, he was also known for his contributions to the local community by promoting youth baseball.

He eventually moved off his ranch, and is now retired, and living in a gated community with his longtime wife Sharon, in Florida surrounded by every Ham's nemesis, the dreaded HOA's. His antenna farm nowadays consists of hidden verticals, which, as with most verticals, torments him with a constant noise level. But even with all that to contend with, Joe is still able pursue his passion in Ham Radio by participating in numerous contests.

Joseph Oden Rudi was born on September 7, 1946 in Modesto California. From there he went on to play in Major League Baseball as a left fielder between 1967 and 1982, most prominently as an integral member of the Oakland Athletics dynasty, winning three consecutive World Series championships between 1972 and 1974. During Joe's time in professional baseball, he made quite a name for himself. But probably what he is most famous for is a spectacular game-saving, wall-climbing catch in Game 2 of the 1972 World Series against the Cincinnati Reds.

Joe excelled as both an offensive and as a defensive player, winning three Gold Glove Awards, and was the 1972 American League leader in hits with 181. Although primarily known for his time with the Oakland Athletics, he also played for the California Angels, and the Boston Red Sox. Joe's Athletics became the first team since the 1949–1953 New York Yankees to win three straight World Series titles. In 2022, Joe was inducted into the Athletics Hall of Fame. He eventually ended up leaving the A's as a free agent, and signed with the California Angels for the 1977 season. However, Joe's tenure with the Angels was mostly injury-plagued, even though he posted respectable home run and RBI totals over his four seasons. His best year with the Angels was 1978, when he played in 133 games and hit .256 with 17 home runs and 79 RBIs. He missed the Angels' 1979 post-season run due to an injury. After the 1980 season, Joe was

traded by the Angels to the Red Sox. After one injury-filled season, he closed his career back with the A's in 1982 and hit a home run in his last professional at-bat.

Over the course of his sixteen-year major league career, Joe played in 1,547 games, compiling a .264 batting average with 684 runs scored, 287 doubles, 39 triples, 179 home runs, 810 RBI and 369 walks. Strong defensively, he recorded a career .991 fielding percentage at all three outfield positions. In 38 post-season games, covering five American League Championship Series, and three World Series from 1971 to 1975, he handled 124 total chances without an error.

Not only known for his impressive baseball career, Joe is also known in the Amateur Radio community for being an avid contester, and his power house of a contest station when he lived in Baker City Oregon. Joe is still very active in the hobby, in spite of the restrictions, and high noise level at his current home in Florida, with the call sign NK7U. Having been licensed in the mid-1970s, he built an extensive antenna farm at his ranch in Baker City, specializing in contesting, particularly on 80 and 160-meter bands.

Joe ended up in Baker City quite by happenstance. Originally scheduled for a tourist trip to Seattle, due to the Seattle airport being fogged in, their flight was diverted to Portland. While in Portland, rather than drive up to Seattle, it was decided to head east to visit a long-time friend in Baker City to do some bird hunting. Once in Baker City, Rudi and his wife thought Baker would be an ideal place to raise their children, and decided to make it their home. To this day they still consider Baker City as their second home.

While their oldest son, Mike, was attending Baker City High School, Joe was disappointed to learn that the school didn't have a baseball team. So, in order to correct that, Joe started a fund-raising campaign which raised just over \$20,000 dollars in order to revive the Bulldogs' baseball program, and get things started. With the help of BHS Principal Jerry Peacock, and Superintendent Arnold Coe both having endorsed the project — provided the district didn't have to pay for it, that is- Joe spearheaded a project to build a baseball field for the community. Fortunately, the school already owned 28 acres of undeveloped land large enough to accommodate two baseball fields on the east side, and two softball fields on the west side, with walkways and a concession stand/announcer's booth in the center, as well as an indoor batting facility — this would eventually become the Baker Sports Complex. Joe once commented that he was amazed by the generosity of local residents, companies, and philanthropic foundations that made the Complex

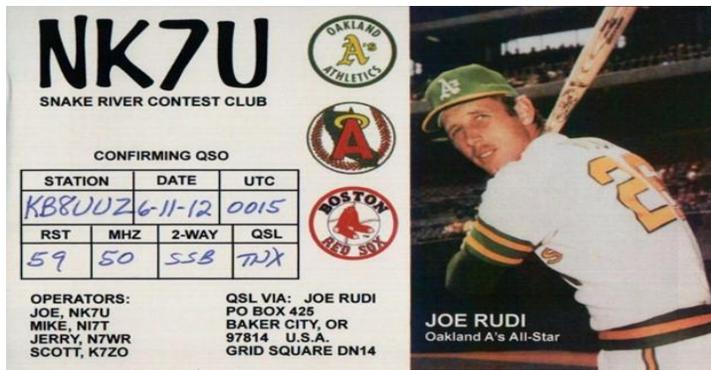
possible. “It was way beyond our wildest dreams, an unbelievable community thing that everybody got behind.” he said. Eventually the initial \$2.3 million project included donations of \$560,000 from the estate of Herman and Blanche Steiger, longtime Baker City residents. Along with the Leo Adler Foundation having donated \$350,000.

While living in Baker City Oregon, on his ranch just outside of town, he gradually grew his Amateur Radio station to include 10 towers. Before moving to Florida, his setup consisted of three 150-foot towers, a 70-foot crank-up tower, 80-meter and 160-meter four-square arrays, and high-band monobanders aimed at Europe and Japan. It’s obvious that Joe is heavily involved in contesting, preferring to work in multi-operator configurations. He also enjoys the technical challenges aspect of the hobby.



Tim Duffy (K3LR) with Ham Nation interviewing Joe Rudi (NK7U).

Since having retired from professional baseball, Joe and his wife Sharon have been living the retired life in Florida. But Joe is still very active in the hobby, and Ham radio has provided a perfect post-baseball hobby, allowing him to focus on station improvements and strategies. Unfortunately, where he’s currently living in Florida, is a gated community, which along with that comes strict HOA rules. As you can imagine, in order to remain off the HOA’s RADAR, he is forced to severely limit his station, thereby downsizing from the massive station he once had, to something considerably more scaled back. What antennas he is able to erect nowadays are limited primarily to vertical Flag Pole antennas.



NK7U QSL card.

And as anyone knows that has erected a vertical in suburbia, they tend to have very high noise levels, which Joe says he has at least a constant S-5~7+ noise level at his current station.



Joe Rudi, right, his wife, Sharon, left, with their daughter, Heather, who is a lieutenant colonel in the U.S. Air Force.

Joe Rudi not only left his mark on Baker City as a professional baseball player, but along with that, he also put Baker City on the map of Amateur Radio with his impressive contest station. If all that wasn't enough, his contributions to the local community are still helping to shape young people by providing opportunities to experience competitive sports where there might not otherwise have been such opportunities.

Lynn Wilson, K7LW

Repeater Updates



Backup power junction, Weston Mt site.

With winter slowly giving way to spring, we here at the WMDRA have been eyeing up the mountain tops, anxiously waiting for the snow to clear off, and the mud to dry up, so we can get back to work on the system. So, with that said, here is what we currently have on our plates.

We have a replacement controller for the 146.88 machine, in the way of an ARCOM RC210 in order to replace the SCOMM-7330. It's not that the SCOMM has failed, or is inferior to the ARCOM. It's more of a situation of the SCOMM not being 100% compatible with the newer Kenwood repeaters, and as a result the audio levels are not up to an acceptable level coming out of the controller into the repeater. So, since we're still running the older Kenwood repeaters on GMRS, the plan is to move the 7330's over to the GMRS repeaters, which will give us more control over those repeaters, and pair up the RC210's with the newer Kenwood repeaters. With the many features of the 7330's this might prove to be fun for the folks using our GMRS repeaters as well. If this all works out as we hope it will, we'll be ordering more RC-210 controllers in the future for the remaining of our newer Kenwood repeaters.

We're still working on acquiring a couple of more sites which (hopefully) we'll be installing new repeaters on before the end of summer. It's just been real slow going. So, fingers crossed!

We are currently working with the folks in Spokane in order to help them in pairing up a WiresX node with a Fusion repeater, and getting that up and going in

the near future. With any luck we've managed to convince them that all the cool kids in the Pacific Northwest are gathering in the NE-OREGON WiresX room.

We've also been helping the HARC folks in programming their newly acquired ARCOM RC-210 controller for their 147.020 repeater. They've expressed a desire to be able to link into our Allstar network occasionally (not fulltime). So, we've been helping them to get there as well. It would be nice to have the coverage their Silusi Butte machine would add to the system.

We're also looking into the possibility of installing a packet node on Cabbage Hill in order to provide a backup in the event the Spout Springs packet node was to fail. Since we're looking into installing internet at the Cabbage Hill site, we might be able to do something more with this in the future. So, stay tuned!

Lastly, it looks as though the batteries in the MESHTastic repeaters aren't holding up as expected. But from the sounds of it, this is a fairly common failure. So, the plan now is that once we're able to access the repeater sites, to replace the batteries with newer, more resilient batteries, and reprogram the repeaters to a more robust software, MESHCom.

That's about it for this month. As always, we here at the WMDRA (W7NEO) are constantly looking for ways in which to improve the system, and make it more value added for you, our users. In the meantime, stay warm, and keep the faith, spring is coming!

Lynn Wilson, K7LW

Ham Radio Nostalgia



The National HRO-50T1 receiver.

Since there are some Old Timers that read this newsletter, I thought it would be fun to start featuring some vintage gear each month. So, this month, the featured rig is the National HRO-50T1 receiver.

Back in 1951 for the base sum of around \$384.00 you could own one of these now classic receivers, which also had many assorted options. Like most all of National's receivers, and others of the time, the 50T1 was built like a tank. It was capable of both AM, and CW, and as an option, you could even have FM. The receiver consisted of a single conversion superheterodyne circuit, with a standard 455 KHz IF. One thing that set this receiver apart from many receivers of the time was the removable band coils. This included up to 9 options for a large variety (at the time) of frequency bands to choose from. In order to change bands, the operator would simply unlatch the installed coil, slide it out of the front main cabinet, and replace it with one of the coils gently nestled in a velvet lined cedar box. Coils consisted of 9 coils covering from .05 to 30 MHz, but as an option you could order additional coils thereby expanding your coverage.

The HRO-50T1 was produced by the National Manufacturing company from 1951 until 1952, and covered Amateur bands, with options to include the broadcast bands as well. When this receiver was first introduced with its removable coils covering a wide range of frequencies, it was a true leap in technology for its time.

Lynn Wilson, K7LW

Solar Interference

Twice-yearly solar radio blackouts, often called sun outages, occur during the spring and fall equinoxes when the Sun aligns directly behind geostationary satellites, overloading receivers with solar radiation. These predictable events last minutes to hours, causing temporary static, or signal loss all together for satellite TV and radio.

They occur around the vernal (spring) and autumnal (fall) equinoxes, roughly early March and early October. The Sun, Earth, and orbiting satellites all align in a

straight line. What happens is the Sun's massive energy output (radio frequency noise) overwhelms the satellite signal, causing reception issues.

Users may experience, or notice, a "quick blip" of static, frozen pictures, or total signal loss for a few minutes each day, typically for several days during the peak alignment period. While these biannual events are due to orbital alignment, they are distinct from solar flare interference. However, in 2025/2026 coincided with, highly active X-class solar flares that cause intense ionospheric disruption.

Stronger solar flares (X-class) trigger radio blackouts by ionizing the lower layers of the ionosphere, absorbing High-Frequency (HF) signals, and affecting maritime/aviation communication. As the Sun approaches the peak of its 11-year cycle, strong solar activity has caused repeated, significant disruptions across different regions. Intense flares in Nov 2025 and Feb 2026 caused widespread R3-level (strong) radio blackouts across Europe, Africa, Asia, and the Pacific. So, in other words, don't call your cable, or streaming provider. This one gets blamed on our dear Old Sole.

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

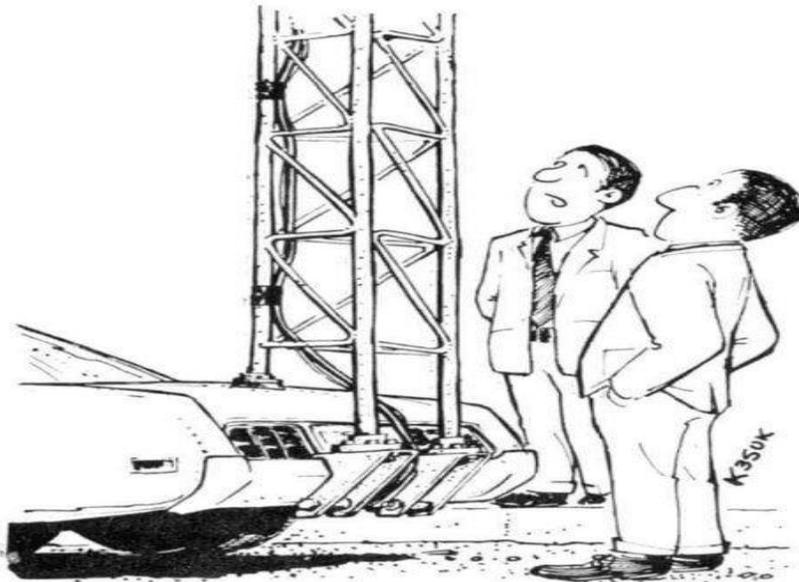
Before I end this issue of the Pickle Barrel Review, I want to send a big shout out to my longtime friend Tyson Brooks (W7BL) of the Grand Rhonde Radio Amateurs Club (W7GRA). You may have noticed a change in our logo, which is thanks to Tyson and his skills using AI. Along with that, the PBR is now featured in part on their club's website as well.

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 interesting as the previous issues. So, until next time, we here at the WMDRA (W7NEO) hope everyone is still enjoying the winter band conditions, and staying safe in spite of the hazardous road conditions. Also, don't forget to set your clocks forward this Sunday, March 8th!

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



"I'll betcha a steak dinner
that he's not married."

"It is better to die for an idea that will live, than to die for an idea that will die..."

- *Steve Biko*