EVENTS and DATES

April P.O.T.A Fest
Saturday-APRIL 26th
After last months successful event, Kirk and Nick are up to it again. Come see and be seen!

QTH-Maud Williamson Park
22900 Wallace Rd NW, Salem, OR 97304
8am-12pm
45°05'43.0"N 123°04'01.8"W

SEA-PAC HAM CONVENTION
MAY 30th–JUNE 1st

QTH-Seaside, Oregon
Notheasts largest Ham Convention with exhibits, swapmeet, and workshops
Sea-Pac website link

AREDN IN THE PARK
JUNE 21st 8am-12pm

QTH-Maud Williamson Park
22900 Wallace Rd NW, Salem, OR 97304

This is the first of its kind and Brett KG7GDB will be present to demonstarte the use of Aredn and asnwer questions related to Mesh
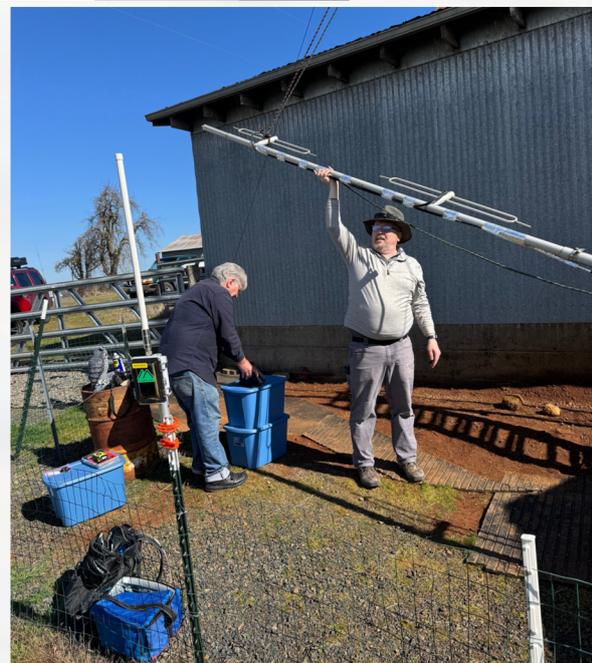

Nick NT3S services the antenna at the 529, It takes guts to get this job done!

"529" Crew Rally

Its been a wet, and windy winter here in the Central Valley of Oregon and each of these conditions play havoc on a repeater. As soon as the weather broke and the sun remembered its place in the sky, the crew jumped into action. Dan WA7ABU, Nick NT3S, and Micha KK7DVH needed not to be begged, they knew exactly what must be done to sure up the "529" repeater. Strong conditions during winter can take its toll on outdoor components and its important to take the opportunity for repairs when a nice day presents itself. It takes guts and expertise to climb yourself 50 feet into the air, secured to only a handful of 2 inch metal pipes by a nylon safety belt. Service to the "529" on this sunny day consisted of dropping the antenna to perform a thorough cleaning and inspection. Its important to occasionally look your antenna over from top to bottom, looking for any nuts and bolts that need to be tightened or replaced. Rain, ice, wind, and even sunshine over time will deteriorate components that make up your antenna system. Im proud of you for constantly keeping an eye on your SWR meter. Im proud of your 1:1 SWR reading,! What Im most proud of is the time you will take this spring to ensure the very best for your equipment. Before summer comes, and the contacts start pouring into your shack from Eastern Europe, Greenland, and the Galapagos Islands, make sure you are ready. I have a sneaky suspicion that this year is going to be a BIG one for amateur radio. Besides, that new Yaesu FTX-F1 all mode, all band radio deserves the very best. Do not try and service your equipment alone. Grab a friend, some tools and maybe a pizza and make a day of it. Remember, safety is of the highest priority in this hobby. Hit that PTT and ask for help, your not alone.

Willamette Valley Mesh News

The AREDN (Amateur Radio Emergency Data Network) community has continued to make major strides in both hardware compatibility and firmware updates. Recent firmware releases have expanded support for newer devices from MikroTik, Ubiquiti, and GL.iNet, allowing hams more flexibility in building resilient mesh networks. The addition of support for dual-core devices and improved memory management has significantly boosted performance and reliability, even on lower-end hardware. Additionally, automatic firmware update notifications and streamlined upgrade processes have made keeping nodes current much simpler.

One of the most exciting developments is the integration of native tunneling over WireGuard, which replaces older tunnel solutions with faster, more secure connections between distant nodes. This feature has greatly improved link stability and reduced overhead, allowing mesh users to maintain high-throughput connections across large geographic areas. Combined with recent enhancements in dynamic DNS and service advertisement, setting up cross-regional links and discovering remote services has become far more intuitive and robust.

On the user interface front, the AREDN team has revamped the node status pages with more detailed health metrics, spectrum analysis tools, and real-time link quality indicators. These changes make it much easier for operators to diagnose issues, optimize channel selection, and manage bandwidth allocations. Improvements to mesh map integration now allow real-time visualization of node connections and link quality directly from the node's web interface, reducing the need for external mapping tools.

Looking forward, the development team is actively working on expanded support for 802.11ax (Wi-Fi 6) devices, promising even greater bandwidth and lower latency for future deployments. There's also ongoing work to improve interoperability with other emergency communication platforms, including APRS and Winlink gateways. As AREDN continues to evolve, it's clear the focus remains on making mesh networking more accessible, more secure, and more reliable for both emergency response and everyday experimentation.

AREDN AT A GLANCE

- **Decentralized Network** – No reliance on centralized servers or internet infrastructure, making it resilient to outages.
- **Self-Healing Mesh** – Nodes automatically connect and reroute traffic if a link fails, ensuring continuous communication.
- **High-Speed Data Transmission** – Supports digital communications, including VoIP, video streaming, and file sharing.
- **Licensed Frequency Operation** – Uses amateur radio bands (2.4 GHz, 3.4 GHz, and 5.8 GHz) for increased power and reliability compared to standard Wi-Fi.
- **Long-Range Connectivity** – Capable of extending coverage over miles with high-gain antennas and proper positioning.
- **Scalable & Expandable** – Easily add more nodes to extend coverage as needed during an emergency.
- **Interoperability** – Can connect with other emergency communication systems such as Winlink, APRS, and traditional ham radio.
- **Supports Multiple Applications** – Enables text messaging, email, streaming video, real-time mapping, and resource tracking.
- **Rapid Deployment** – Can be quickly set up with portable nodes and battery/solar power for off-grid operation.
- **Community & Volunteer Support** – Built and maintained by the ham radio community, ensuring continuous improvements and local expertise.

FREE MESH PHONES

Did you know you can use your Aredn mesh network to make and receive telephone calls. You can also setup voicemail so you never miss a contact. If your interested in knowing more and would like a free phone, contact Brett <KG7GDB> and start taking advantage of this service, free of charge.

If you were there — you already know: it was an absolute success! The weather didn't make it easy — wet, cold, and definitely not for the faint of heart. But that didn't stop the diehards from showing up, gear in hand and smiles on their faces.

Many of you knocked out your 10 on-air contacts, and more importantly, we all made our 10 real-world contacts — face-to-face with voices we've only heard through the radio until now. And that's what makes these events so special: they pull us out of our warm, well-stocked shacks and into the field, to shake hands, swap stories, and truly connect. A contact is a contact — but a new friend or an old connection renewed! That's priceless.

We had no shortage of coffee or doughnuts to keep the energy high. And if you missed it, we had the please of working on a Quadplexer. What's that, you ask?

A quadplexer splits or combines signals across four distinct frequency ranges, using internal bandpass filters to isolate the bands from each other. Each port is "tuned" to a certain band, allowing signals to pass through only if they're in the correct range.

I saw everything from 100-watt rigs lighting up the airwaves to palm-sized QRP radios cranking out contacts like pros. I heard knuckles cracking as fingers raced to keep up with CW keyers. Overall a huge success!
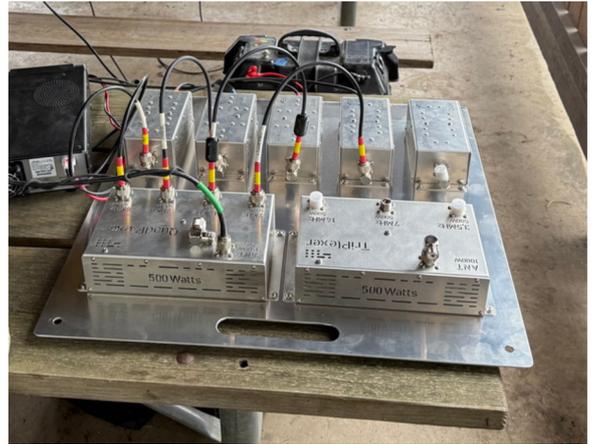
K7ATV REPEATERS

- 145.290 MHz FM ~ 930 feet -AllStar & Echolink 54326 - Silverton Hills
- 145.190 w/100 Hz tone - WA7ABU Repeater Site ~4000' near Gates
- 444.950 MHz Yaesu Fusion , Wires-X, & FM w/ 100 Hz tone - Newburg
- 444.600 MHz Yaesu Fusion & FM w/ 100 Hz tone - McCully Mtn, Lyons (no I-5 or Portland coverage) (Active & Under Development)
- 147.060 MHz FM -1720 Feet - Mc Cully Mtn, Lyons (Active & Under Development)

Other Repeaters in our area worth mentioning

- 441.100 FM w/100MHz tone - Yaesu Fusion c4FM -480 feet - Shaw K7GIB
- 440.725 MHz FM no tone Yaesu Fusion FM -700 Feet- Salem KB7PPM

DID YOU KNOW?

While we can't guarantee the 529 will be completely free from interference, during past issues, WA7ABU discovered that enabling a tone has proven helpful in mitigating the problem. If at any time you tune into the 145.290 and after you key up, you do not receive a reply, set a 100hz tone to your device and throw a call sign out. You may find that this will resolve your situation! of not being heard. We are working diligent to resolve this issue and we appreciate your patience and understanding.

Elmer's Insider

WHICH COAXIAL FOR THE PROJECT ?

Selecting the appropriate coaxial cable for a ham radio project is crucial for ensuring efficient signal transmission, minimizing loss, and maintaining reliable communication. Coaxial cables serve as the link between the transceiver and the antenna, carrying RF signals while shielding them from external interference. Various types of coaxial cables exist, each with different characteristics that affect performance, including impedance, attenuation, shielding, and flexibility. Understanding these factors helps in choosing the best cable for a given frequency range, power level, and installation environment.

One of the most critical considerations when selecting coaxial cable is attenuation, or signal loss over distance. Different coaxial cables have varying loss levels depending on their construction and frequency range. For example, RG-58 is a thinner, more flexible cable commonly used for short runs and low-power applications but has high loss at higher frequencies. In contrast, RG-213 or LMR-400 offer lower attenuation and are better suited for higher-power and longer cable runs. The choice of cable should be guided by the operating frequency, with higher frequencies requiring lower-loss cables to prevent excessive signal degradation.

Another important factor is impedance matching, which ensures efficient power transfer between the radio and antenna. Most ham radio equipment operates at 50-ohm impedance, meaning the coaxial cable should also have a 50-ohm rating to avoid signal reflection and power loss. Some cables, like RG-6, are designed for 75-ohm applications (such as television or satellite use) and should not be used in ham radio setups unless proper impedance matching devices, like baluns or tuners, are employed. Mismatched impedance can lead to standing wave ratio (SWR) issues, which reduce transmission efficiency and can potentially damage the radio.

The shielding and durability of the cable are also crucial considerations, especially for outdoor or high-interference environments. Cables with braided, foil, or double-shielded designs offer better protection against electromagnetic interference (EMI) and signal leakage, which is particularly important in urban areas with many electronic devices. Additionally, for outdoor installations, UV-resistant jackets and waterproof connectors are essential to protect the cable from weathering, moisture, and degradation over time. Some cables, like LMR-400, have polyethylene jackets that provide extra durability for extreme conditions.

Lastly, practical factors such as flexibility, cost, and ease of installation should be considered. Thicker cables like LMR-400 or Heliax have excellent low-loss properties but are rigid and difficult to work with in tight spaces. For mobile or temporary setups, a more flexible option like RG-8X might be preferable despite its slightly higher loss. Budget constraints also play a role, as higher-performance cables come at a premium, and for short runs, the added cost of a high-end cable might not be justified. By balancing these factors—attenuation, impedance, shielding, durability, and practicality—ham radio operators can select the most suitable coaxial cable for their specific needs, ensuring efficient and long-lasting performance.

1. Low-Loss Coaxial Cables (Best for HF, VHF, UHF, and Long Runs)

• LMR-400
 • 50-ohm impedance
 • Very low signal loss (~3.9 dB per 100 ft at 144 MHz)
 • Durable with a UV-resistant jacket
 • Ideal for HF, VHF, and UHF, especially for long cable runs
 • Stiff but can be used in fixed and mobile installations

• RG-213
 • 50-ohm impedance
 • Lower loss than RG-8 (~6 dB per 100 ft at 144 MHz)
 • Thick, durable, and resistant to moisture
 • Suitable for HF and VHF with medium-length runs

• LMR-600
 • 50-ohm impedance
 • Ultra-low loss (~2.3 dB per 100 ft at 144 MHz)
 • Used for long cable runs, high-power applications
 • Heavy and stiff, best for permanent installations

2. Medium-Loss Coaxial Cables (General-Purpose, Shorter Runs)

• RG-8X
 • 50-ohm impedance
 • Moderate loss (~7.5 dB per 100 ft at 144 MHz)
 • More flexible than RG-8 and RG-213
 • Suitable for HF and short VHF runs

• RG-8
 • 50-ohm impedance
 • Lower loss than RG-8X (~5.5 dB per 100 ft at 144 MHz)
 • Less flexible than RG-8X but better for higher power
 • Used in HF and short-to-medium VHF runs

• RG-58
 • 50-ohm impedance
 • High loss (~10.8 dB per 100 ft at 144 MHz)
 • Very flexible but not ideal for long runs
 • Suitable for short HF jumpers and low-power setups

3. High-Frequency and Specialized Coaxial Cables

• LMR-240
 • 50-ohm impedance
 • Lower loss than RG-8X (~6.6 dB per 100 ft at 144 MHz)
 • Lightweight and more flexible than LMR-400
 • Ideal for shorter VHF/UHF runs and mobile applications

• LMR-195
 • 50-ohm impedance
 • Higher loss (~9.4 dB per 100 ft at 144 MHz)
 • Very flexible, often used for short jumpers
 • Best for mobile and low-power applications

• RG-174
 • 50-ohm impedance
 • High loss (~27 dB per 100 ft at 144 MHz)
 • Very thin, lightweight, and flexible
 • Best for short jumper cables and lightweight applications

4. 75-Ohm Coaxial Cables (Not Standard for Ham Radio, but Sometimes Used)

• RG-6
 • 75-ohm impedance
 • Common in TV and satellite applications
 • Can be used for receive-only applications in ham radio
 • Low loss and widely available

• RG-11
 • 75-ohm impedance
 • Lower loss than RG-6 (~5 dB per 100 ft at 144 MHz)
 • Thicker and less flexible
 • Occasionally used for receive antennas

5. Heliax and Hardline (Best for Extreme Low Loss & High Power)

• 1/2" Heliax (LDF4-50A)
 • 50-ohm impedance
 • Extremely low loss (~1.3 dB per 100 ft at 144 MHz)
 • Rigid, requires special connectors
 • Used for high-power, long-distance HF/VHF/UHF

• 7/8" Heliax (LDF5-50A)
 • 50-ohm impedance
 • Even lower loss (~0.75 dB per 100 ft at 144 MHz)
 • Heavy-duty, professional-grade coax
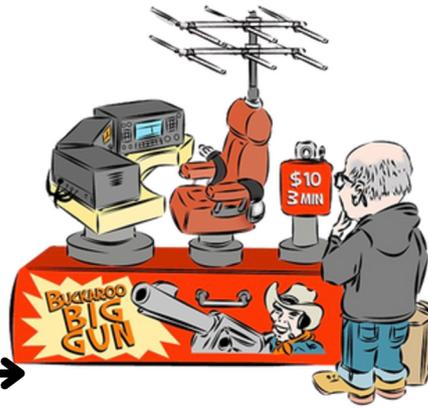 • Ideal for repeater stations and extreme high-power setups

P.O.T.A Event News

Kirk (K1RKS) and Nick (NT3S) are up to it again and April's P.O.T.A event is sure to be another great gathering after last months success! It will be held at the same covered pavilion at Maud Williamson Park, and fingers crossed the weather will be better this go around. Below is a list of items you may desire to bring if you intend to play radio and make contacts. Of course you can come just to socialize or to check out all the cool setups. Either way, we hope to see each of you at the event again, rain or shine.

P.O.T.A PACKING CHECK LIST

Favorite radio(s)
CW Keyer
Portable Power
Antenna
Coaxial
Headset
Pen & Paper
Computer
Tablet

Jacket
Doughnuts
Coffee Cup
Friends
Good Vibes
Curiosity

QTH

Maud Williamson Park
45°05'43.0"N 123°04'01.8"W
22900 Wallace Rd NW, Salem, OR 97304
8am-12pm
April 26th

IMPORTANT LINKS

WA7ABU - https://www.wa7abu.com/
ARCOM - https://www.arcomcontrollers.com/
ARRL - http://www.arrl.org/frequency-allocations
SEA-PAC - https://seapac.org/
HAM RADIO OUTLET - https://www.hamradio.com/
AREDN MESH - https://www.arednmesh.org/
WILLIAMETTE VALLEY MESH - https://willamettevalleymesh.net/news/

PRODUCT REVIEW CORNER

NanoVNA
Vector Network Analyzer

The NanoVNA is an impressive, budget-friendly Vector Network Analyzer that has become an essential tool for RF enthusiasts, ham radio operators, and engineers. Despite its small size and low cost, it offers powerful features like SWR measurement, impedance analysis, and Smith charts, making it perfect for antenna tuning and RF circuit testing. The touchscreen interface is functional, though a bit small, and its ability to connect to PC software significantly enhances its usability. With a wide frequency range (depending on the model), it provides accurate results when properly calibrated, rivaling much more expensive equipment.

While the NanoVNA is a fantastic tool, it does have some limitations. The dynamic range is lower than professional-grade VNAs, and the learning curve can be steep for beginners unfamiliar with network analyzers. However, for hobbyists and those looking for an affordable, portable, and highly functional VNA, this device is an incredible value. With regular firmware updates and strong community support, the NanoVNA remains a must-have for anyone working with RF circuits and antennas.

CONTRIBUTORS

DAN BATHURST-WA7ABU
MARY BATHURST-W7FIF
KRIS GOLDEN-K9CAN
PHIL WEBB-KK7NZG
KIRK SMITH-K1RKS
NICK SMITH-NT3S

Meet That Voice Beyond the Drip

Phil Webb-OUR NEWEST NET CONTROL-TUESDAY LUNCH BUNCH

"This is Kilo Kilo Seven, November, Zulu, Golf, Phil, from the back deck in Salem." So, who in their right mind spends all their time on the radio on a deck, and why? What gets somebody like that into amateur radio? Well, nearly twenty years ago, I became involved with a group of people who were working on disaster prep and were rather serious about it. Among the many requirements they had for inclusion in the group was a Technician License at a minimum. I bought a couple of books and somehow found out about a class and test session in Salem. I took the class and passed the test, and I remember meeting Nate, W7NAT, there. I had bought a Yaesu/Vertex VX-150 HT prior to the test, and after passing the test, I walked out to my vehicle, turned the HT on, and spun up and down the band until I found the 145.290 repeater, and I was on my way. Thankfully, the radio figured out the offset for the repeater on its own, and there wasn't a tone, or I don't know what I would have done. A week or so later, I got my call sign, KE7JNY.

Over the next few years, I remember learning about nets and meeting folks like Anita, KE7BJR (Who checked me into the Lunch Bunch for the first time if I remember correctly), Russell, KE7QXR, and others. If memory serves, Richard, W0EDF, checked me in once and assigned me the suffix "Just Not Yet" and of course Dan, WA7ABU. However, "Life happens," as they say, and my interest in amateur radio faded, along with my time to enjoy it.

Fast forward a few years, and the desire to get back into amateur radio returned. The Wife (Yes, her title is capitalized) gave me a Baofeng UV-5X3 that I had requested for Christmas, as my old Vertex had disappeared in a move, and I began studying to retake my Technician test out of a new pool of questions. A friend from church, KC7BKH, suggested some online resources, and along with a couple of books, I passed my Technician test with about two weeks of study. I immediately jumped back on the repeater.

It was like coming back to a family reunion but with a whole bunch of new family members as well. The list of names of people who have helped me, befriended me, encouraged me, and sometimes even tolerated me would read like a virtual list of 529 repeater users. A few names stand out, however. Brett, KG7GDB, put me on to the great ARRL "Operating Manual," Dan, who keeps the repeaters "Repeating,' and everyone who has answered a question for me on the technical nets. Kirk, K1RKS, Kris, K9CAN, James, KK7VEF, who has patiently been helping me resurrect an old radio, and so many more. A special thanks to W7JAL, John, another friend from church who has been a huge encouragement. And, finally, last but not least, my on-air nemesis Nick NT3S. Nick has helped me over the air and in person so much, not the least, by being a good friend and foil for my sometimes acerbic humor.

Aside from amateur radio, I am heavily involved in my church, serving in a leadership role there and helping out with music and related things each Sunday. I am also attending Liberty University online, pursuing a Bible & Theology degree with a minor in Church Leadership. Other hobbies include tinkering with electric guitars and basses and spending time with my family which includes, The Wife, The Daughter Unit, a dingbat Aussie Shepherd named Jazz, a headstrong Rottweiler named Griff (Short for "Sir Grifflet"), a fat, lazy, blind Burmese cat named Lincoln (Named after the character on "The 100", not the president) and a half-feral orange tabby named Clementine. She's orange. And tart. Do the math.
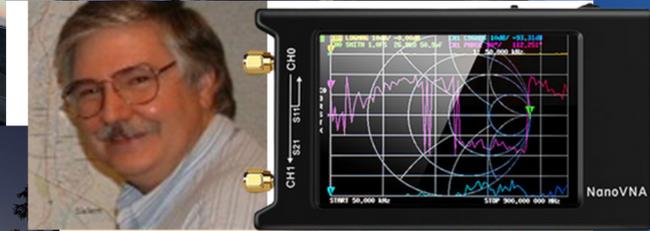
So there ya go, a little bit about me. I thank you all for your warm welcome to the amateur radio community and look forward to many more years of contacts. And with that, I believe it is about time for Nick to key up after work, so I'm gonna head out to the back deck, light up a pipe, and try to sort him out. Again.

73's to you and yours,

Phil Webb

KK7NZG

KK7NZG

AREDN
AMATEUR RADIO EMERGENCY DATA NETWORK

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HAM RADIO

Ham Radio

ONA

"529" Hall of the Greats

Richard Thomas W0EDF

Bruce Currier W7CCM