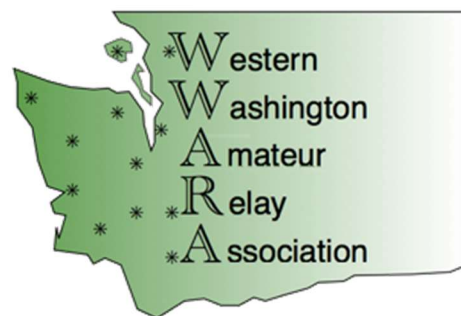


Repeater Etiquette

Western Washington Amateur Relay Association (WWARA) provides two important documents on their website at <http://www.wwara.org>.

There is a list of coordinated repeaters that is updated nightly and a band plan for the VHF/UHF spectrum. These are the ultimate local reference materials. The repeater directory is the most complete and accurate version available and the band plan can help determine appropriate frequencies that can be used for other applications. This document will focus on proper repeater operation.



No one owns specific frequencies but the repeater owners do own the hardware and can specify who uses it and for what purpose. This is clearly spelled out in the FCC rules part 97.205(e), "Limiting the use of a repeater to only certain user stations is permissible." Here is a short list of other Do's and Don'ts.

- **Do** respect the owner and their intention for the machine.
- **Do** support any system you use. Repeaters are technically free to use but they are expensive to operate and maintain.
- **Do** listen before talking. Make sure the repeater is available and there isn't simply a lull in an existing conversation. Asking if the repeater is in use or available is helpful.
- **Do** press PTT and pause briefly **before** talking to ensure the repeater is engaged.
- **Do** leave gaps in conversation to allow other users to break in as necessary. The repeater doesn't have to drop the transmission but do wait for the courtesy tone (if it has one). This allows the reset of the timeout timer.
- **Do not** connect to Echolink or other resources without permission from the repeater owner.
- **Do not** use for an event, net or other busy activity without permission from the repeater owner.
- **Do** leave the machine in the condition you found it. If it was linked or unlinked during your operation, it should be returned to the original configuration.
- **No** kerchunking without ID. If you need to test, you need to ID.
- Use low level repeaters for simplex for ragchewing. High level repeaters are a scarce resource with wide coverage and lots of people are listening. This is a corollary to using the minimum necessary power.
- Digital modes like DSTAR¹, DMR² and System Fusion³ have their own best practices. Connect with that community to understand how to operate these modes effectively.

Starting a conversation (QSO) via a directed call - There are two main ways a contact can begin, one is via a directed call and one is via monitoring. A directed call is where one amateur calls another amateur individually, such as "N7XYZ from K7ABC". In such a case, K7ABC is looking for one particular individual, N7XYZ. It generally is not an invitation for anyone other than N7XYZ to return the call. If N7XYZ doesn't answer the call, K7ABC may just clear off by saying "K7ABC clear", or may clear and listen for other calls by saying "K7ABC clear and listening". The "and listening" or "and monitoring" implies they are interested in hanging around to QSO with anyone else who might be listening at that time. "Listening" and "monitoring" don't mean you are listening to somebody else's conversation, they mean you are listening for other people who may want to call you to start a new QSO. Similarly, someone may just give their callsign, "K7ABC". This is generally a way of letting others know they are monitoring and are potentially available for a contact.

Starting a conversation (QSO) via a monitoring call - If the repeater is not in use, simply stating your callsign followed by "listening" or "monitoring" implies that you are listening to the repeater and are interested in having a QSO with anyone else. Calling CQ on a repeater is generally not common, a simple "N7XYZ listening" will suffice. There is no need to repeat the "listening" message over and over again as you might do when calling CQ on HF. Once every few minutes should be more than sufficient and if someone hasn't answered after a few tries, it probably means there is nobody around. If someone is listening and wants to QSO, they will respond.

Joining a conversation (QSO) in progress - If there is a conversation taking place which you would like to join, simply state your callsign when one user unkeys. This is the reason for having a courtesy tone: to allow other users to break into the conversation. One of the stations in QSO, usually the station that was about to begin his transmission, will invite you to join, either before making his own transmission. Don't interrupt a QSO unless you have something to add to the topic at hand. Interrupting a conversation is no more polite on a repeater than it is in person.

Interrupting a conversation (QSO) to make a call - If you need to make a directed call to another amateur but there is already another QSO going on, break into the conversation during the courtesy tone interval by just saying your call sign. One of the stations will pause and you can request making a quick call. If the station you are calling returns your call, you should quickly pass traffic to them and relinquish the frequency to the stations who were already in a conversation; don't get into a full QSO in the middle of someone else's conversation. If you need to speak with the party you call for a significant length of time (say, more than 15 seconds), ask them to either wait until the current operators have cleared, or ask them to move to another repeater or simplex channel to continue the conversation.

ID Requirements – Repeaters are required to ID just like operators. It is easy to take a cue from the repeater as to when it's necessary to ID. The FCC only requires you to ID every 10 minutes and at the END of a conversation. They do not require any more frequently or that you ID for anyone else in the conversation.

No unnecessary noises - Don't cough, clear your throat, sneeze, etc., on the air. Unkey your microphone first. Similarly, the "roger beep" feature and Yaesu WIRES tones can be annoying to other users. When activated the WIRES feature will cause a beep to go over the air and cut off the start of the transmission. If you have a Yaesu radio and don't use WIRES, a quick Google/Bing search for "Disable Yaesu Wires" will keep you from activating it accidentally.

Use a timeout timer – Most radios have a timeout timer feature to ensure the transmitter shuts down if the PTT is pressed too long (stuck mike). Using a proper mike hanger can ensure the mike doesn't get wedged somewhere that would cause a continuous transmission that will make the repeater unavailable. Many radios also have a busy channel lockout (BCLO) feature that can help reduce stepping on another signal (doubling).

Emergencies - If there is a conversation going on, break into a conversation with the word "Break" or "Break for priority traffic." Do not use the word "Break" to join a conversation unless there is an emergency. All stations should give immediate priority any station with emergency traffic.

Malicious Interference - If there is malicious interference, such as kerchunking, touch tones, rude comments, etc. DO NOT ACKNOWLEDGE IT! Continue the conversation in a normal fashion. If the

interference gets to the level where it is impossible to carry on the conversation, simply end the contact as you normally would.

Power - We all know it is good amateur practice to use the minimum power necessary to complete a QSO. However, the minimum power necessary doesn't just mean you are barely tickling the repeater receiver squelch. Just because you can hear the high power mountaintop repeater clearly, does not mean your handheld is making it in cleanly. If someone says that you are noisy, increase power or relocate or take whatever measures you can to improve your signal. Continuing to make transmissions after being told your signal is noisy is inconsiderate to those listening. The amateur radio manufacturers continue to come up with newer, smaller handheld radios, many with power levels well under a watt. Without a good external antenna, operating a handheld radio indoors or inside a car is going to result in a lot of bad signal reports.

Audio Quality – Poor audio is hard to hear. Talking across the mike (rather than into it) about 2" away reduces hissing and popping. Test this by holding your hand in front of your mouth while talking, then along side. You can feel the airflow. Additionally, each radio will have an ideal speaking volume. Listening to a conversation with one loud station and one quiet station is annoying because there is no good listening volume. Identify the best speaking volume for your radio and try to maintain it regardless of ambient noise. Some radios have a mike gain adjustment that can help match the radio to your speaking voice.

Signal Reports - If you are unsure how well you are making it into the repeater, DO NOT kerchunk the repeater. A kerchunk will not determine if your signal is actually usable on the repeater so is of limited value and annoys listeners. Any time you key up the repeater, you should identify, even if you are just testing to see if you are making the machine. "N7ABC test" is sufficient. Do not use the repeater as a "target" for tuning or aiming antennas, checking your transmitter power, etc. Use a dummy load where appropriate, or test on a simplex frequency. If you need someone to verify that you are making the repeater cleanly or testing audio, ask for a signal report such as "N7ABC, can someone give me a signal report?". The best practice is to offer the signal report in nice clear English, rather than the more ambiguous RST or "Charlie Mike" systems.

Demonstrations - From time to time, an amateur may want to demonstrate the capabilities of amateur radio to another non-amateur. Anyone who is listening to the repeater can answer them back. Usually telling the calling party your name, callsign, and location is what they are looking for, not a lengthy conversation. Someone doing a demo may ask for stations in a particular area to show the range of amateur radio communications, which is more interesting than demonstrating that they can talk to someone in the same town as they are in.

The Western Washington Amateur Relay Association (WWARA) is THE repeater coordination body for Western Washington State. In addition to coordinating Amateur Repeaters, the WWARA publishes band plans for Western Washington, works with neighboring Repeater Coordinating bodies to resolve interference issues, as well as repeater owners in Western Washington. WWARA publishes the authoritative coordinated repeater list nightly in multiple formats including PDF, CSV and CHIRP. Repeater coordination is offered at no charge and WWARA membership is open to ALL amateur radio operators for a modest fee. Find further whitepapers, repeater lists, band plans and become a member on the WWARA website at <https://www.wwara.org>.

¹ DSTAR user information can be found at <http://www.dstarinfo.com/home.aspx> and <http://dstarusers.org/>

² Pacific Northwest DMR information can be found at <http://www.pnwdigital.net/welcome.html>

³ System Fusion has a community on Groups.io at <https://groups.io/g/YaesuSystemFusion>