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Instructions for Operating My Analog Conventional Repeater Portable Radio

Conventional analog repeater radios are the simplest form of repeater operation. Radios talk direct to the repeater and the repeater transmits to the other subscriber radios. Therefore, if the repeater infrastructure fails, no one can speak to anyone else because all transmissions are repeated by the repeater and there isn't any direct communications from one user radio to another user radio.

The following describes the use of a portable radio. The mobile radio is the same except that the controls are in different positions. To operate the radio:

1. Turn on the ON-OFF VOLUME control on top of the radio clockwise to turn on the radio and adjust the receive volume control to be the appropriate volume for your ambient noise condition. The volume has no effect on transmitting.
2. Turn the channel select knob on top of the radio to the proper channel for operation if you have more than one channel in the radio.
3. Press the MONITOR button to listen for co-channel users. (The MONITOR button is programmable on most radios and is usually the button below the PTT button, but it can be anywhere on the radio.) Most radios have an icon on the display that will light up to indicate you are in monitor which is typically an outline of a speaker or it will say MON. (Some radios are in monitor as long as you hold the button and some radios are PRESS to monitor and PRESS again to turn off the monitor.) If another party is using the frequency, you need to wait until they are finished before you talk on the radio.
4. Your radio will listen only to analog transmissions. You will hear the digital transmissions from NXDN (Kenwood and Icom digital transmissions), DMR and MotoTrbo radios, but they will not be properly decoded and thus will not be understandable.
5. If the frequency is clear, press and hold the Push-To-Talk (PTT) button on the left side of the radio, wait approximately 0.3 seconds before speaking and speak in a normal voice from about 1 inch from the microphone. Release the PTT button to hear a response from the party you have called. Do not yell or scream as it will only degrade your intelligibility.
6. When you release the button, if you are in range of the repeater, you will hear the response from the repeater (often referred to as a "kickback") which lasts typically from 0.5-5 seconds from when you release the button. This is the repeater transmitter continuing to transmit after you release the PTT button.
7. With repeater operation, all transmissions go through the repeater. Therefore, when you talk, all the users (that are in range of the repeater) will hear your transmission with the same clarity if you are in range of the repeater. If you are not in range of the repeater, no one will hear you speaking. If you have a good signal into the repeater, everyone will hear you clearly. As the signal gets weaker, all other users will start to hear a background hiss on your transmission. As the signal continues to degrade, all other users will hear static mixed in with your transmit audio and eventually as the signal gets weaker, there will not enough signal to understand your transmission and the repeater may stop entirely retransmitting (otherwise known as

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dropping out of the repeater) your signal. Typical range is dependent upon the location of the repeater and how high the repeater antenna is located above ground.

Battery and charger information for portable (hand-held) radios:

1. Some radios have a battery icon on the display to let you know the condition of the battery. If you do not have a battery icon, the radio will typically have a LED flash red whenever the battery is low. Some radios will have a different method of signaling a low battery which varies by radio model.
2. If your radio does not have a battery condition icon on the display, you need to pay more attention to how much you use the radio to have an idea of when to charge (or change) the battery.
3. Batteries that are very low can cause the radio to "reboot" whenever you press the PTT button or reboot continuously. Some radios will act very strangely and do things abnormally until the battery is charged or replaced.
4. When you are finished using the radio, turn it off and place it in the battery charger to recharge the battery. When the battery is fully charged, remove the radio from the charger if it will not be used for an extended period of time. Leaving the radio in the charger over night or over a weekend should not be a problem.
5. Most radios have small, medium and/or large batteries which will determine the battery life for a particular radio. Typical numbers for small batteries are 8 hours use at 5-5-90 while large batteries are typically 12 hours at 10-10-80 which means 10% of the time you are transmitting, 10% of the time you are receiving a signal and 80% of the time your radio is in standby, meaning that it is turned on and awaiting for you to transmit or someone to call.
6. Transmitting takes the most power from the battery by a significant margin, so if you do not talk often, your battery will last significantly longer. Conversely, if you talk often, your battery will discharge more quickly.
7. If the radio has a HI / LOW power button, switching the radio to low power will extend the battery life, but it will reduce the range of your transmission.

The following are tips for getting the most from your portable radio:

1. Keep the radio vertical to maximize the radio reception. The radio signal is vertically polarized, so a vertical antenna will perform better.
2. Using an audio accessory such as a speaker-microphone, lapel microphone, headset with boom microphone, etc. will decrease the range of the radio due to the radio antenna being so close to the human body which will absorb a portion of the radio signal. If you are in a very strong signal area, you may not perceive any difference in performance, but you will see the difference in a weak signal area.
3. If the signal quality is poor as indicated on the signal strength indicator, try moving a few inches to a few feet for better signal.
4. Signal quality maps indicate the signal strength outside the building. The signal will be considerably weaker inside a structure.
5. If inside a building, try moving to a window, moving to a higher floor or exiting the building.
6. Hold the radio by the radio body. The antenna is NOT a carrying handle and neither are audio accessory attachments such as a speaker-microphone or a headset. If you hold the antenna, it will decrease the range of the radio.
7. Do not bend the antenna into a loop it so that it is shorter. This will have an adverse effect to the range of the radio and can damage the radio.
8. Shorter antennas are available for most portables, but they will normally compromise the range of the radio.

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The following are tips for passing messages using any radio:

1. Keep transmissions brief and to the point so everyone can use the radio.
2. Call the individual to whom you wish to speak and wait for their acknowledgement before you state the message. Talking to someone who is not listening only delays getting your message to its intended destination.
3. Break long messages into smaller "chunks" and verify the listener's receipt of the message portion before proceeding with the next part of the message.
4. Clearly identify the person to whom you are calling as well as yourself or your location/job. i.e. "Jane Doe to John Doe" or "Unit 3 to base" or "Dispatch to Station 3".
5. After receiving a message, acknowledge receipt of the message by saying OK, 10-4, "got it", etc.. so that they know that you properly received the message.

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