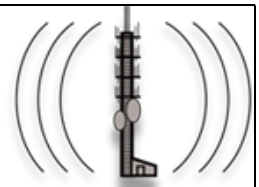


MOBILE RELAY



A S S O C I A T E S

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Instructions for Operating My Analog LTR Trunked Mobile Radio with Multiple Sites

Trunked analog repeater radios are a more sophisticated form of repeater operation than conventional repeaters. Radios talk direct to the repeater and the repeater transmits to the other user radios. Trunked repeater systems contain multiple repeaters at the same location and your radio can automatically select the use any of them. If the repeater infrastructure fails, no one can speak to anyone else through the system that failed because all transmissions are repeated by the repeater and there isn't any direct communications from one user radio to another user radio. However, if another repeater site provides the required coverage, you can switch to that site in lieu of the site you were previously using for your communications.

The following describes the use of a mobile (vehicle mounted) radio. To operate the radio:

1. Press and hold for one second the ON-OFF button in the upper left corner of the radio to turn on the radio. Use the VOLUME UP and the VOLUME DOWN arrow buttons to the left of the LCD display adjust the receive volume control to be the appropriate volume for your ambient noise condition. The volume has no effect on transmitting.
2. Press the TALK GROUP UP or TALK GROUP DOWN buttons to the right of the LCD display to the proper talk group for operation if you have more than one talk group in the radio. Some radios are programmed to select talk groups with the zone up and zone down buttons which can be programmed to the left and right arrows below the display.
3. The radio monitors its "home channel" in the repeater system to hear a transmission from another user from your talk group. If *your* home channel repeater fails, your radios will not function at all. If any other channel fails in the repeater system, it will result in a reduction in traffic capacity, thus increasing the chance that you will receive a busy signal when you attempt to talk.
4. Press and hold the Push-To-Talk (PTT) button on the left side of the mobile microphone. The radio will briefly transmit a request to talk to the repeater. The repeater will respond with either a denial (low series of beeps) otherwise known as a "busy signal" which indicated that all channels are in use or it will respond with a channel assignment at which time your radio will give you a proceed tone (chirp sound). This process takes approximately 0.5 seconds. 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.
5. If you are receiving a transmission from someone in your talk group, your radio is inhibited from transmitting. When you press the PTT button, you will get an error tone until the transmission ceases at which time you will be able to transmit.
6. All user radios from the same talk group that are turned on and in range of the trunked repeater system will switch to the same repeater in the trunked repeater system as your radio for the period of the transmission. They will then revert to the home channel after the transmission is finished.

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7. Before you reach a poor signal area for the repeater you are using, you should notify the other users that you are switching to another repeater site and tell them which site you plan to use. Once you drop out of range of the repeater, you cannot tell anyone where you are and now the other users will be required to guess what has happened to you.
8. You can only communicate with another user who is using the same repeater system. Therefore, if you switch to another repeater, you will not be able to talk to anyone on other repeater system. If they cannot switch to the new repeater system you are now using, you will not be able to communicate.
9. Some radios are programmed with SYSTEM SCAN. When you hang up the microphone in the microphone clip, the radio will scan multiple tower sites. If your radio hears a signal from another user, the radio will lock on the same repeater for several seconds (typically 10 seconds) to allow you to respond to the transmission using the same repeater. If you attempt to transmit without first hearing a transmission from another user, the radio will transmit using the repeater site that was last selected manually by the operator of the radio.
10. Many repeater sites have overlapping coverage, so it is possible in many situations to use more than one repeater for the area in which you are located. Typically, you choose the repeater that gives the best overall coverage for your area of operation that you travel. However, if you are trying to talk with another user who is in range of only one repeater, you need to use the same repeater as the other user because you both must be using the same repeater in order to communicate.
11. With trunked 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 strong 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 be enough signal to understand your transmission and the repeater may stop entirely retransmitting (otherwise known as 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.

Some people operate their radio while the vehicle ignition is turned off. The following information applies to the vehicle battery for mobile (vehicle mounted) radios:

1. Vehicle 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. If this happens, you will need to start the ignition on your vehicle to properly operate the radio.
2. When you are finished using the radio, turn it off unless you have the radio hooked to the ignition so that it turns itself off after the prescribed time.
3. 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.
4. If the radio has a HI / LOW power button, switching the radio to low power will extend the battery life of your vehicle battery when operating the radio with the ignition turned off, but it will reduce the ability of the radio to access the network with your transmissions. If you can reach the network with a good signal on low power, the higher power does nothing to help.
5. If your vehicle battery is low enough to have problems with the radio, there is a good chance that your vehicle will not start unless you have a dual battery system.

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

1. Keep the radio antenna on the vehicle in the vertical position to maximize the radio reception. The radio signal is vertically polarized, so a vertical antenna will perform better.
2. If the signal quality is poor as indicated on the signal strength indicator, try moving the vehicle a few inches to a few feet for better signal.
3. Signal quality maps indicate the signal strength outside the building. The signal will be considerably weaker inside a structure, especially underground.
4. If inside a building such as a parking structure, try moving to a window, moving to a higher floor or exiting the building for better reception.
5. Do not bend the antenna to loop it so that it is shorter. This will have adverse effect to the range of the radio and can damage the radio.
6. Shorter antennas are available for most mobile installations, but they will often compromise the range of the radio.

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.