MOBILE RELAY ASSOCIATES
dba Raycom

Instructions for Operating My Digital Simplex Mobile Radio

Simplex radios are the simplest form of radio communication. Radios talk direct from radio to radio without the help of any infrastructure. Therefore, the simplex radios will operate during an emergency such as an earthquake, tornado, tsunami or wildfire when all other forms of radio communications fail due to problems with the infrastructure.

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 CHANNEL UP or CHANNEL DOWN buttons to the right of the LCD display to the proper channel for operation if you have more than one channel in the radio. Some radios are programmed to select channels with the zone up and zone down buttons which can be programmed to the left and right arrows below the display.
3. Press the MONITOR button to listen for co-channel users. (The MONITOR button is programmable on most radios and is usually one of the buttons below the LCD display, 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. (Most radios monitor automatically when you remove the microphone from the microphone hanger clip.) If another party is using the frequency, you need to wait until they are finished before you talk on the radio.
4. If your radio is programmed for solely digital operation, you will only hear digital radio transmissions from NXDN (Kenwood and ICOM) type radios. You will not hear digital transmissions from DMR or MotoTrbo radios because their digital transmission is not compatible with your radio. Therefore, there can be other radio traffic on the frequency that you do not hear which can interfere with your transmission.
5. If your radio is programmed for mixed analog and digital mode, you will hear all digital and analog transmissions. Your radio will listen to NXDN (Kenwood and ICOM) digital transmissions and analog transmissions. You will hear the digital transmissions from DMR and MotoTrbo radios, but they will not be properly decoded and thus will not be understandable.
6. If the frequency is clear, press and hold the Push-To-Talk (PTT) button on the left side of the microphone 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.
7. The radio will normally display your group name. When you receive a call from another member of your group, the radio will display the “Caller ID” of the calling radio to assist you to identify the calling party if they do not identify themselves. The “Caller ID” will time out after 5-30 seconds depending upon the setting within your radio programming and return to your group name.

MOBILE RELAY ASSOCIATES

Mobile Relay Associates, LLC dba Raycom
15330 Vermont Avenue
Paramount, CA 90723

8. With simplex operation, each radio sends out its signal and the signal travels as far as it can directly to the other radios without the help from a repeater or any infrastructure. Therefore, when you talk, some people will hear it and some will not hear you, depending upon where they are located. Typically, the people closer to you will hear you and the people further away may or may not hear you depending upon the distance and the obstructions that are between you and them. As the signal continues to degrade, the signal may start to cut out at times and eventually the radio will no longer communicate. You will not get static in the reception of the digital radio signal, but you may get a digital / mechanical sound before it completely fails to communicate Typical range with portable radios is about 0.6 mile in the city and a mobile radio will be about 6 miles in the city. Typical range with a portable radio in rural areas is about 2.4 miles in the countryside and about 18 miles for a mobile radio in the same area. *Digital radios typically get about 20% better range than an analog radio with everything else being equal.*

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 far 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 range of the radio.
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 a 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.

MOBILE RELAY ASSOCIATES

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.

MOBILE RELAY ASSOCIATES

Mobile Relay Associates, LLC dba Raycom
15330 Vermont Avenue
Paramount, CA 90723