

Noise Suppression

To obtain good noise suppression, you must suppress electrical interference at its source, so it does not reach the input of the receiver. Once it has been radiated, noise cannot be suppressed by bypassing, etc.

It is difficult to determine the source of various types of noise, particularly when several items are contributing to the noise. Follow the procedure outlined below to isolate and identify the various items that may be producing the major noise interference.

In most cases, one source of interference will mask others. Consequently, it will be necessary to suppress the strongest item first, and then continue with the other steps. Figure 4-3 (fold-out from Page 51) shows a typical ignition system and the suggested placement of noise suppression components.

1. Position the vehicle in an area that is free from other man-made electrical interference, such as power lines, manufacturing processes, and other automobiles.
2. With the Transceiver turned on, drive the automobile at medium speed. Then let up on the gas, and turn the ignition switch off and to the accessory position. Allow the vehicle to coast in gear. If the noise stops, the major source of interference is from the ignition system.
3. If the noise interference continues from step 2, but at a reduced level, both the ignition and generator systems are at fault.

4. If the noise has a "whine" characteristic, changes in pitch with varying engine speed, and is still present with the ignition off, then the generator is the major source of interference.
5. A distinct but irregular clicking noise, or "hash," that disappears with the engine idling, indicates the voltage regulator is at fault.
6. A steady popping noise that continues with ignition off indicates wheel or tire static interference. This is more pronounced on smooth roads.
7. The same type of interference as in step 6, but more irregular when on bumpy roads, particularly at slow speeds, indicates body static.

Refer to the Troubleshooting Chart on Page 49 and Figure 4-3 (fold-out from Page 51) to help determine how to suppress most noise interference. Naturally, not all vehicles will require suppression to the extent shown in Figure 4-3, but some stubborn cases may require all the suppression components shown, plus shielding of the ignition system.

Bonding of various parts of the automobile may also be necessary, starting from the hood and continuing to the trunk, even including bonding of the transmission line every few feet from the antenna.