

1. Unsquench the receiver and turn up the volume. If receiver noise or received signals are heard on the external speaker, it is operating.
2. If received signals are heard on the external speaker, but severe audio distortion is noted, as could be produced by a speaker with a torn cone, disconnect the external speaker and listen to the internal speaker (or connect a substitute external speaker). If no distortion is noted on the internal or substitute speaker, the external speaker is in fact the cause. If distortion is noted in both speakers, the trouble lies within the radio.
3. If nothing is heard from the external speaker, either the radio or the speaker could be the cause. Disconnect the external speaker and listen for receiver noise or received signals on the internal speaker. (If nothing is heard and you do not know whether or not the radio is equipped with an internal speaker, connect substitute speaker to the external speaker jack. Use the PA speaker if the vehicle is so equipped.) If noise or received signals are heard on the internal or substitute speaker, the trouble lies with the external speaker or its cable or connector. If nothing is heard on the internal or substitute speaker, it is unlikely that both speakers are defective. Assume that the trouble is within the radio set.

#### Antenna Check

This check cannot be completed unless there is transmitter power output. If any step reveals the need for troubleshooting the radio set, the antenna check should be delayed until the radio is returned to the vehicle.

1. If the transceiver is equipped with a transmitter power meter, key the transmitter and observe the meter indication. (If the transmitter cannot be keyed, skip to the "Microphone Check.") If abnormal power output is indicated, you can omit the "Antenna Check," because there is trouble within the radio.
2. If the transmitter power output reading is normal, or the transceiver is not equipped with a transmitter power output meter, connect the CB ServiceMaster as for an antenna SWR check.
3. Key the transmitter and check forward power. (If the transmitter cannot be keyed, skip to the "Microphone Check".) If abnormal power output is indicated, the trouble is within the radio.
4. Perform the Antenna SWR measurement.
  - a. If SWR is 2:1 or less, the antenna and antenna cable are okay.
  - b. A higher reading indicates a mismatched condition which may be due to a damaged antenna, corroded or improperly fitted connectors, or crushed antenna cable.
  - c. An extremely high reading indicates an open circuit or short circuit condition such as antenna cable cut in two or disconnected.

#### Microphone Check

A microphone check needs to be made only if one or more of the following symptoms is indicated:

- Transmitter cannot be keyed.
  - No transmitter modulation.
  - No output in PA mode.
1. Disconnect the microphone and connect a known-good substitute microphone in its place.
    - a. If no change in symptoms is noted, the trouble is within the radio set.
    - b. If the symptom is corrected when using the substitute microphone, the original microphone is defective.
    - c. If no substitute microphone is available, or the microphone is the wired-in type, remove both the radio and microphone from the vehicle for bench servicing.

#### PA Speaker Check

This check is applicable only if the installation includes a PA speaker and the transceiver includes a PA mode.

1. Operate the transceiver in the PA mode. If the PA announcement is heard on the PA speaker (without excessive distortion), the PA speaker is okay.
2. If there is excessive distortion in the PA speaker, such as could be produced by a torn cone, disconnect the PA speaker and connect a substitute speaker in its place. If there is no distortion in the substitute speaker, the PA speaker is defective. If there is distortion in both speakers, the trouble is within the radio.
3. If nothing is heard on the PA speaker, disconnect the PA speaker and connect a substitute speaker in its place. If PA announcements can be heard on the substitute speaker, the PA speaker is defective. If PA announcements cannot be heard on either speaker, the trouble is within the radio.

#### Conclusion of Test

- a. If all items external to the radio set are good, the fault is within the radio set; remove it from the vehicle for bench servicing.
- b. Whenever repairs have been completed and the transceiver is reinstalled in the vehicle, always perform an antenna SWR check. SWR must be below 2:1 by tuning the transmitter to match the antenna (or vice versa), or by finding and correcting the cause of the mismatch. A high SWR can cause burnout of the transmitter final RF amplifier.
- c. If bench checking indicates normal performance, yet the radio performs poorly in the vehicle, try checking the following items:
  - (1) Poor ground connection.