

6. Adjust receiver volume and RF gain (if adjustable) to mid-position.
7. On AM/SSB transceivers or receivers, select the AM mode.
8. Turn off all accessory mode switches on the transceiver or receiver.
9. Set the audio signal generator to 1000 Hz.
10. Set the RF generator for external modulation.
11. Adjust the audio signal generator level and the modulation adjustment of the RF generator for 30% modulation.
12. Adjust the RF generator for 1000 microvolts output level.
13. Tune the RF generator to the receiver frequency.
14. Adjust receiver volume for a convenient reference level on audio meter (1), such as 0 dB. Choose a volume well below the maximum capability of the receiver to minimize distortion. Change the RECEIVER FUNCTION switch (4) to the 1 WATT range if desired.
15. Tune the audio signal generator across the specified band of audio frequencies; that is, the transceiver or receiver manufacturer's frequency response specification. For example, if the manufacturer lists a 300 to 3000 Hz frequency response, tune from 300 to 3000 Hz.
16. Readjust modulation as required to maintain 30% modulation as the frequency of the audio signal generator is changed.
17. Read audio meter (1) as the frequency of the audio signal generator is changed. The meter reading should not change more than 3 dB over the entire range of the specified frequency response (unless the specification states a variation greater than 3 dB).

#### PA MODE CHECK (Refer to Fig. 21)

Many CB transceivers are equipped with a PA (public address) mode. In this mode, the microphone audio is amplified and applied to a separate PA speaker. This check confirms proper operation of the PA mode.

If desired, equipment may be left connected as for the basic set-up shown in Fig. 5. However, the RF generator, frequency counter and oscilloscope are not essential for the check.

1. Connect a shielded audio cable from the PA speaker jack of the transceiver to the RECEIVER AUDIO jacks (20).
2. Set LOAD switch (3) to match the normal speaker load of the PA speaker, 4 ohms, 8 ohms or 16 ohms.
3. Set RECEIVER FUNCTION switch (4) to 10 WATTS.
4. Set AUDIO SOURCE switch (9) to 1 kHz.

5. Set SPEAKER switch (11) to ON.
6. Set AUDIO GAIN control (10) for a clearly audible 1 kHz tone from speaker (12).
7. Select the PA mode on the transceiver.
8. Place the microphone of the transceiver over the speaker of the CB ServiceMaster, face down.
9. Close the push-to-talk switch on the microphone.
10. a. If microphone gain is adjustable, vary gain and note that audio power reading on audio meter (1) varies.  
b. If microphone gain is not adjustable, vary AUDIO GAIN control (10) and note that audio power on audio meter (1) varies.
11. Read audio power on meter (1) and adjust per step 10a or 10b for the manufacturer's rated audio output.
12. If desired, a distortion check can be made:
  - a. Set RECEIVER FUNCTION switch (4) to SET FULL SCALE.
  - b. Adjust SET FULL SCALE control (5) for full scale reference on audio meter (1).
  - c. Set RECEIVER FUNCTION switch (4) to ADJ FOR MIN.
  - d. Adjust NULL control (6) for minimum meter reading.
  - e. Read distortion on % DISTORTION scale of audio meter.

#### S METER/POWER METER CHECK

Many Citizen's Band transceivers are equipped with an S meter that indicates received carrier signal strength and a power meter that indicates transmitter RF output power. Most transceivers that are equipped with meters include a dual-purpose unit that operates as an S meter while receiving and as a power meter while transmitting. Normally, these meters give relative indications rather than specific values in microvolts and watts. The CB ServiceMaster can be used to check proper operation of S meters and power meters. It can also serve as a standard against which the meters can be calibrated, thus converting the relative indications to specific values in microvolts and watts.

The receiver S meter can be checked while performing the RECEIVER AGC CHECK. The S meter reading should vary as the RF generator output level is changed. However, the RF generator output signal need not be modulated, since the S meter responds to the carrier signal. If desired, note the RF signal level required (in microvolts) for each increment on the S meter scale. This information can be recorded or plotted on a graph and presented to the owner of the radio.

The transmitter power meter can be checked while performing the TRANSMITTER RF POWER CHECK. The power meter of the transceiver should indicate normal transmitter output power when the transmitter is keyed