

SERVICING BY SIGNAL TRACING AND SIGNAL INJECTION

Servicing by signal tracing and signal injection are the most effective methods of locating defective stages in printed circuit transistor radios.

The Hickok Transistor Radio Tester, Model 810, will prove to be a valuable aid in servicing. With this instrument both signal tracing or signal injection methods can be employed. When signal tracing, the Model 810 is set up as a receiver and signals in the RF, IF, and audio stages are picked up with the probe, amplified and presented to the speaker of the tester.

When the signal injection method of servicing is employed the Tester is set up as an RF or Audio generator and signals are injected and the speaker in the receiver under test is utilized as an indicator. Both methods are satisfactory, the difference is in the procedure. When signal tracing, the procedure is to start with the antenna and work toward the speaker. With signal injection, the reverse is true. One starts with the speaker and works back toward the antenna.

Before attempting to troubleshoot a transistor radio, the battery should be checked for voltage under load, because with a dead battery, all troubleshooting would be in vain and a lot of valuable time wasted. If the battery is dead, check its polarity--it may have been put in the battery rack backwards accidentally. This would shorten its life considerably and would possibly cause damage to the transistors or electrolytic condensers in the radio. This should be investigated before installing a new battery.

Figure 1, a simplified typical transistor radio, shows the test points that can be used to locate defective stages. Each of these test points will be described in detail along with how the Transistor Radio Tester is applied to these points as a signal tracer or as a signal injector.

SIGNAL TRACING

Test Point 1

This point is the high side of the Antenna Coil or loop stick. The transistor radio tester is set up to receive the broadcast band (500-1600 KC REC). The tuning dial is set to a strong station in the middle of the band. Adjust Input Gain and Output Attenuator to maximum clockwise position.

A suitable ground should be connected between Tester and chassis.

The input probe is touched to this point #1. The transistor radio under test should be turned off for this check so that the local oscillator does not interfere.