SECTION 5. SERVICE AND TEST DATA

5.1 General

5.11 Even though all component parts of the receiver have an ample factor of safety, failure may occur in certain individual cases. Of these failures, the most common will probably be due to some defect in one of the tubes. Measurement of voltages and cathode currents, in accordance with the data of Par. 5.23, will show which tube is bad. If the failure is a short in either the plate or screen circuits, the filter resistors associated with the circuit in question should be checked for possible burnout. Similarly, should any by-pass capacitor fail, any filter or voltage divider resistors which are connected in series with it should be checked for any change in resistance which may result from the overload.

5.12 Other possible failures, such as open circuits caused by poor connections, can likewise be located by current and voltage tests, in accordance with the tabulation of Par. 5.23. Open by-pass capacitors are apt to cause either a loss of sensitivity or oscillation in some portion of the circuit. In such cases, the fault can be easily located by temporarily connecting a good capacitor in parallel with each unit that is under suspicion.

5.13 Intermittent or noisy operation of the receiver is usually caused by a poor connection in either the wiring or in one of the tubes. Such a fault is often rather difficult to find but can usually be located by lightly tapping each circuit element or component with a piece of insulating material.

5.2 Tube Socket Voltages and Cathode Currents

5.21 The TUBE SOCKET VOLTAGES AND CATHODE CURRENTS table 5.23 must not be considered as a list of the actual operating voltages and currents in the various circuits of the Radio Receiver. The resistance of the measuring instruments, together with capacitive and resistive loading effects, will disturb many of the circuits to such an extent that they become inoperative, thus altering normal voltage and current distribution.

5.22 The only currents listed in table 5.23 are those in the various cathode circuits. This listing is a desirable simplification, inasmuch as measurement of cathode current constitutes a definite check on all circuits directly associated with the vacuum tube in question.