

**TYPE ON/K CARRIER — REPEATERED HIGH-FREQUENCY LINE  
TESTS AND ADJUSTMENTS — GENERAL  
TUBE TESTS**

In the ON/K amplifiers, V1 and V2 of both the transmitting and receiving amplifiers are checked. All tubes are measured on an in-service basis. V1 and V2 tubes of the receiving amplifier and the V1 tube of the transmitting amplifier are tested by using the space current history method. V2 tube of the transmitting amplifier is tested by setting limits for a cathode voltage measurement.

The purpose of this test is to check the tubes of the ON/K amplifiers.

**APPARATUS:**

1 — KS-14510 L1 or L5 Volt-Ohm-Milliammeter

| STEP          | PROCEDURE  |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |
|---------------|--|------|-------------------------------|--|---|---|--------------|---|---|----|---|---|---------------|---|---|
|               | <p><i>Space Current History Method — For V1, V2 Rec. Amp. and V1 Trsg. Amp.</i></p> <p><i>Note:</i> This method is based on the fact that, after an initial period of stabilization, the space current in a tube gradually decreases over a long period of time and then falls rapidly to the end of its useful life. An attempt is made using the space current history method to discard the tubes just before the space current begins the rapid fall.</p>  |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| 1             | <p>Read the voltage across the cathode resistor of the tube to be tested with the volt-ohmmeter not sooner than 4 days after applying voltages to the tube. Connect meter to jacks specified in Table 1.</p> <div style="text-align: center;"> <p><b>TABLE 1</b></p> <table border="1"> <thead> <tr> <th rowspan="2">TUBE</th> <th colspan="2">CONNECT VOLTMETER TO JACK NO.</th> </tr> <tr> <th style="text-align: center;">+</th> <th style="text-align: center;">-</th> </tr> </thead> <tbody> <tr> <td>Rec. Amp. V1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> </tr> <tr> <td>V2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Trsg. Amp. V1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> </tr> </tbody> </table> </div> | TUBE | CONNECT VOLTMETER TO JACK NO. |  | + | - | Rec. Amp. V1 | 4 | 2 | V2 | 3 | 1 | Trsg. Amp. V1 | 4 | 2 |
| TUBE          | CONNECT VOLTMETER TO JACK NO.  |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |
|               | +  | -    |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| Rec. Amp. V1  | 4  | 2    |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| V2            | 3  | 1    |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| Trsg. Amp. V1 | 4  | 2    |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| 2             | <p>Subtract 0.52 volt from the meter reading in Step 1 and record for use as a reject value.</p>   |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| 3             | <p>On subsequent tests of the tubes, measure the voltage as described in Step 1.</p> <p><i>Requirement:</i> If the voltage is equal to or smaller than the reject value, replace the tube with a new one. A new reject value must be obtained for the new tube.</p> <p><i>V2 of Trsg. Amp.</i></p>   |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |
| 4             | <p>Measure the cathode voltage at jacks 3 (+) and 1 (-) using the voltmeter.</p> <p><i>Requirement:</i> Voltage shall read a minimum of 2.0 volts and a maximum of 3.5 volts.</p> <p><i>Note:</i> If this requirement is not met, replace the tube.</p>  |      |                               |  |   |   |              |   |   |    |   |   |               |   |   |