COLLINS RADIO COMPANY
Field Service Department *Cedar Rapids, Iowa*
COLLINS SERVICE BULLETIN

EQUIPMENT SERIES: 30S BULLETIN NO. 1 DATE: 6-21-61

EQUIPMENT TYPE: LINEAR POWER AMPLIFIER 30S-1

SUBJECT: TO INCREASE OPERATING LIFE OF PA TUBE

The modification described in this service bulletin is to increase the operating life of the PA tube. This modification provides a low impedance path to ground to minimize the effects of secondary emission. A resistive network also is added to eliminate the need for the grid overload relay.

The GRID CURRENT circuitry of the multimeter switch is changed slightly to allow for the possibility of more grid current. Adequate equipment protection will be maintained.

This modification will be incorporated into production.

The approximate time required to complete this modification is 60 minutes.

MODIFICATION PROCEDURES:

1. Disconnect external primary power.

2. Remove front door of power supply compartment.

3. Remove shelf in power supply compartment as follows:

   a. Remove the two rectifier tubes V201 and V202 from bottom of equipment chassis.

   b. Remove 3-ampere fuse F201.

   c. Remove two screws from back and five screws from front which hold shelf to equipment chassis.

4. Disconnect the four wires from relay K206 on shelf and remove relay, and its mounting hardware. Since the hardware is secured with Blue Glyptal, the ceramic standoffs may have to be broken to remove them. Discard relay and 10-uuf capacitor C220.

5. In either of the holes vacated by removal of K206, mount two-lug terminal strip (306-0168-00) with 6-32 screw (343-0168-00), nut (313-0045-00), and split-lock washer (310-0071-00). Solder wires that previously were removed from relay to terminal strip. Connect white-blue and white-orange wires to one lug, and white-red-green-blue and white-black-red wires to other lug.

6. Replace shelf, its mounting hardware, and other components that were removed in step 2.

7. Remove TUNING, LOADING, and BANDSWITCH control knobs from front panel.

8. Remove the three screws on top and four screws on bottom that hold front panel to equipment chassis.

9. On the inside of front panel, locate the two-lug terminal strip located between the CW-SSB switch and the POWER-OFF switch. Carefully unsolder connections to this strip. Connected are a 56-ohm resistor R225, a 200K-ohm resistor R217, a white wire and a white-black-orange wire. Remove and discard strip. Install four-lug terminal (306-9032-00) in its place.

10. From the MULTIMETER switch S207 remove and discard 1K-ohm resistor R221 (located between front and rear wafers). At the same time, disconnect the white-black-red wire from terminal to which R221 is attached. Tack solder one end of the new two-foot white-black-green wire (439-7040-00) to the end of the white-black-red wire. Carefully pull this wire back through cable to the major break-out near new terminal strip. This will feed the white-black-green wire into cable. If lacing is too tight, tie wire onto outside of cable. Replace R221 with 110-ohm resistor (705-7050-00) and solder new wire to terminal from which white-black-green wire was removed.

11. Mentally number the lugs on the new terminal strip in consecutive order with the grounded lug as no. 2. Attach wire and components as follows:

    a. Lug no. 1 - 200K-ohm resistor R218 and white-black-orange wire.

    b. Lug no. 2 (Gnd.) - 56-ohm resistor R225 and white wire.

    c. Lug no. 3 - Anode (wedge) end of 1N1492 diode CR216 (353-1661-00), 4,700-ohm resistor R235 (745-3300-00), and the white-black-red wire that was removed from cable.

    d. Lug no. 4 - The other end of R235 and the new white-black-green wire added to cable.

12. Sleeve other lead of new diode CR216 with insulation (152-1888-00) and connect to terminal of SSB-CW switch to which 200K-ohm resistor R217 and 47K-ohm resistor R231 are connected.

13. Replace front panel and control knobs to equipment chassis. Close front door.

14. Reconnect primary power and check that amplifier operates normally. (The GRID CURRENT meter will now indicate 5 ma full scale.)

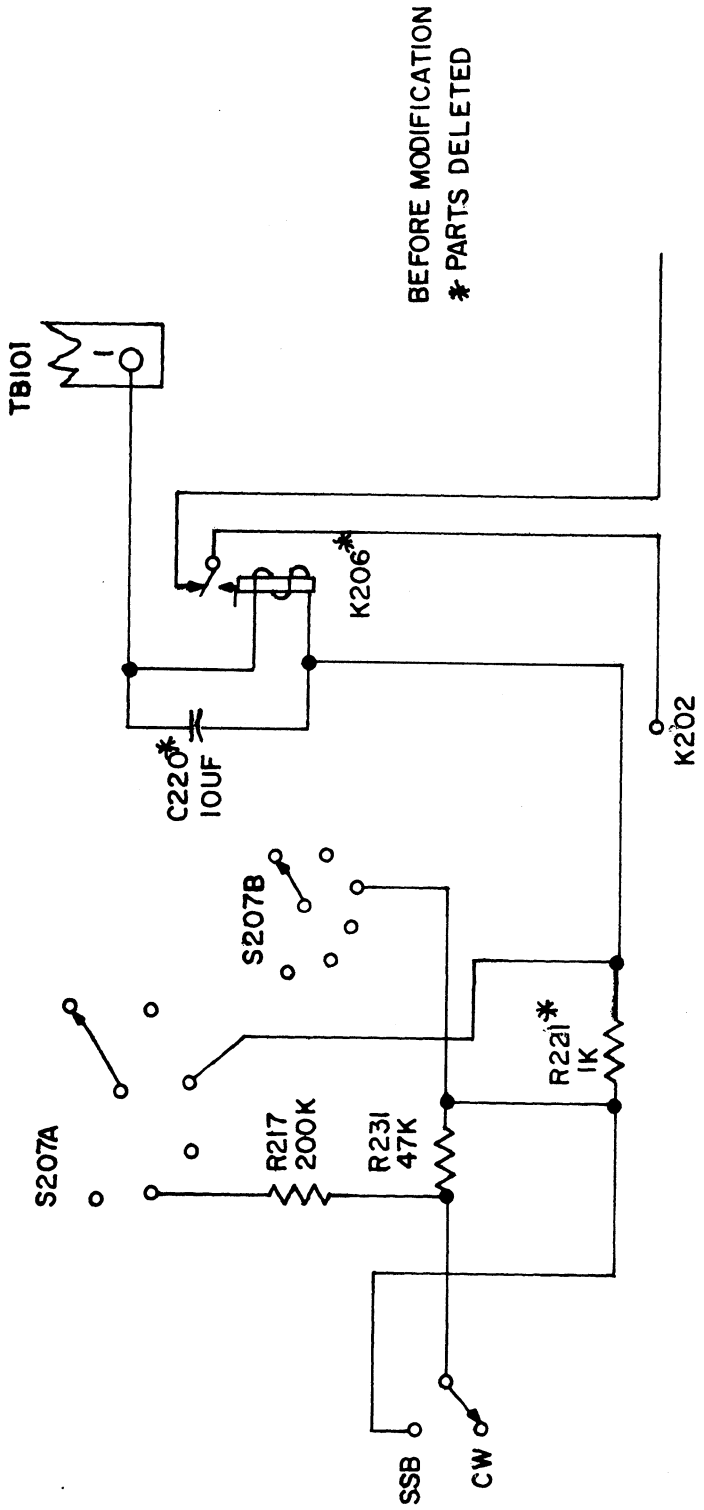
NOTE: Refer to attached diagram for circuit changes schematically depicted.

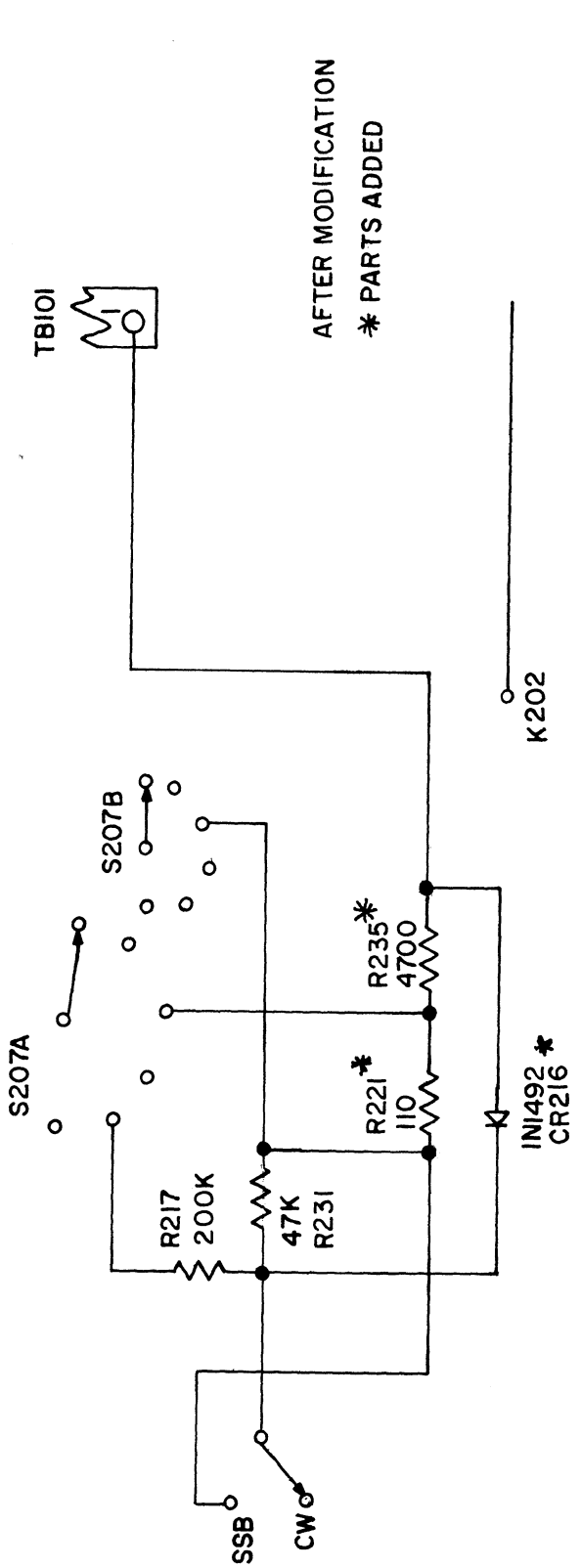
PARTS REQUIRED: Price: $7.80

Modification kit 548-8228-00 which is comprised of the following items:

Qty	Description	Collins Part Number
1	Resistor, 110 ohms ± 1%, 800 wvdc, ½ watt	705-7050-00
1	Resistor, 4700 ohms ± 10%, 1 watt fixed composition	745-3380-00
1	Diode, 1N1492 silicon power rectifier	353-1661-00
1	Terminal strip, 4 lug	306-9032-00
1	Terminal strip, 2 lug	306-0168-00
1	Screw, 6-32	343-0168-00
1	Nut, 6-32	313-0045-00
1	Washer, lock	310-0071-00
2 (ft)	Wire, no. 22 AWG standard white-black-green polyvinyl chloride insulated	439-7040-00
0.1 (ft)	Insulation, sleeving	152-1888-00

The above parts may be obtained from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa at no charge for six months after the date of this service bulletin. All orders should specify modification kit 548-8228-00 and make reference to 30S Service Bulletin no. 1.





Circuit Changes Resulting from the Modification Described in this Service Bulletin