

EQUIPMENT SERIES: 30L-1

BULLETIN No. 5C/Revised

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SUBJECT: CORRECT POWER DISSIPATION RATING OF R15 AFTER SB-3A CHANGE

Aggravated by today's ever increasing power line voltage, the resting voltage on the C10/R15 filter node (amplifier not keyed) has now increased to between 165 and 170 volts. The power dissipation in the bias supply bleeder resistor R15 can approach three watts and is typically 2.7 watts. R15 is currently specified as 2 watts.

R15 should be changed to a 5 watt wire wound 10K Ω resistor.

MODIFICATION PROCEDURE:

- 1. Remove a-c power cord from the source and disconnect all other external leads.
- 2. Remove the four feet and also the screw centered between the rear feet.
- 3. Place the unit in an upright position (Lid up) with the panel facing the operator. Lift the lid and remove the two bright flat-head Phillips screws on the rim (under the lid). It is not necessary to remove the painted screws that hold the trim-ring to the case itself.
- 4. Remove unit from the cabinet. This is most easily accomplished by placing the unit in your lap with the large center tuning knobs between your legs and the amplifier lid facing you. Hold the chassis in place firmly in the case with your fingers while tipping the case vertical. Then, slide the cabinet up and off the amplifier while having someone help and guide the cord though the access hole in the case.
- 5. Remove only the bottom cover from the unit.
- 6. Locate the five-terminal terminal strip where R9, R15, C10 and CR-20 are located. Refer to figure 6-1 in the 30L-1 Instruction Book.





- 7. Carefully clip the leads of the existing R15 10K Ω 2 watt resistor leaving as much lead as you need for your preferred new resistor installation.
- 8. Prepare the new R15 5 watt resistor by forming the leads attaching them to the same terminals where the 2 watt carbon resistor was removed. Install the resistor in the same location close to the chassis and so that the value is visible when the cover is removed.
- 9. Replace the bottom cover.
- 10. Reversing the above removal process, replace the cabinet and feet on the unit chassis.
- 11. Reconnect the a-c cord and other external leads as required.
- 12. Check unit for 110 to 120 mA idle current when keyed but no drive. Be sure and terminate the amplifier with a 50 Ohm load while running this check. Then, check the resting bias voltage at the rear ANT RELAY RCA jack. It should be approximately negative 165 Vdc (Amplifier unkeyed).

CAUTION NEEDED:

Be very aware that if, in any way, this procedure is not done correctly and competently, and this results in the bias voltage not being correct – or being missing completely, that just turning the amplifier back on in standby mode can destroy the tubes, or even the amplifier/transformer itself. This is why accomplishing this Service Bulletin, heeding this CAUTION, and doing it correctly, is so important.

Replacement of the R15 resistor following the above instructions should be <u>followed by removal of the tubes</u> <u>temporarily</u>, and then thorough checkout of the bias voltage under UNKEYED and KEYED conditions as follows:.

- The unkeyed bias voltage as read at the ANT RELAY *RCA* jack should be in the vicinity of *minus 165 to 170 Volts DC*.
- When the amp is keyed (by grounding the ANT RELAY jack), the magnitude of the voltage on C10 to ground should drop approximately 5 volts to -160 or -165 Volts DC. - or about 5 volts less negative than what you read at the ANT RELAY *RCA* jack.
- The Bias Voltage under KEYED condition or (ANT RELAY *RCA* jack grounded) - should be about *minus 3.1 Volts DC* on the Grids of the PA tubes.
- If, after checking all of these above voltages, they all look good * you can safely return the tubes to their sockets and button up the amp.
- Finally, with the tubes back in their sockets, the idle current should set up at about 120 mA on the Plate Current meter.

* Note that changes in line voltage can make about a maximum of 10 Volts difference in the measured UNKEYED bias on C10/R15 but the KEYED Bias Voltage on the Grids should not vary by more than a couple of tenths of a volt negative



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PARTS REQUIRED:

Approximate cost of replacement \$2.75

Modification component must be purchased by the owner/operator

<u>Qty</u>	Description	Mouser Part Number
1.	Resistor, 10K Ω , 5 watt wirewound	588-25J10KE

This part cannot be obtained from Collins Radio. The recommended source is Mouser Electronics. See:

https://www.mouser.com/Passive-Components/Resistors/Wirewound-Resistors/

It is recommend that while installing this SB, you consult "The care and Feeding of Your 30L-1 on the CCA website at: <u>http://collinsradio.org/Signal/newsletters/Issue%2057%201st%20Quarter%20of%2010.pdf</u>

Particularly you should make sure that the Bidirectional clamp diode has been installed on the C2 node of the Grid Bias line as covered by this article. This Clamp Diode modification is highly recommended.

