



SERVICE BULLETIN

SERVICE BULLETIN NO. 1

EQUIPMENT SERIES: 30L-1

August 21, 1961
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Revised 8-21-67

EQUIPMENT TYPE: 30L-1 R-F LINEAR AMPLIFIER

SUBJECT: WIRING CHANGE REQUIRED BEFORE CONVERSION FROM 115 TO 230-VOLT OPERATION IS MADE, USE OF 8-AMPERE LINE FUSES, AND CORRECTION TO INSTRUCTION BOOK DRAWINGS.

This bulletin is to call attention to a wiring change required before conversion from 115 to 230-volt operation is made, use of 8-ampere line fuses, and a correction to figures 3-2 and 7-1 in the instruction book. Following is a brief description of each change.

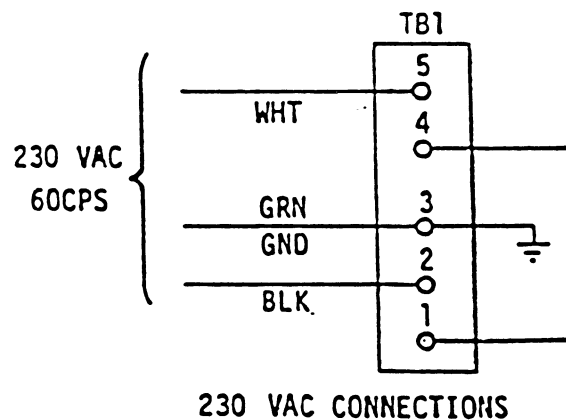
The procedure and schematic for converting operation of the unit from 115 to 230-volts, as detailed in the 5th edition of the 30L-1 R-F Linear Amplifier Instruction Book, dated 15 June 1962, is in error. These errors are corrected in the 6th edition of the above referenced instruction book, dated 15 June 1964. Before conversion is attempted the wiring changes detailed below must be made. After these changes have been made, the conversion can be made by changing the jumper wires on TB1 as shown in figure 1.

Eight-ampere fuses can be substituted for the 6-ampere line fuses, F1 and F2. These fuses will afford the necessary protection and eliminate the frequent replacement of the fuses that have been required in some units. It is not necessary that the 8-ampere fuses be substituted unless frequent replacement of the other fuses has been required. The Collins part number of the 8-ampere fuse is 264-4110-00.

Figures 3-2 and 7-1 in the instruction book (up to and including the 5th edition) are in error and should be corrected as shown in figure 2. This correction applies only to the instruction book and does not involve changes to the equipment itself.

Procedure for correcting TB1 wiring to allow conversion from 115 to 230-volt operation:

1. Remove a-c power cord from the primary power source.
2. Lift the cabinet lid and remove the two Phillips-head screws located on the front panel rim.
3. Remove the four feet and the Phillips-head screw that is located between the rear feet.
4. Remove amplifier chassis from cabinet. The easiest way to do this is to place amplifier panel down on a padded surface.
5. Remove the screws from the bottom panel and both end panels of the amplifier. Lift out the bottom shield.
6. Move the white wire from the power cord from terminal 1 to terminal 2 on terminal strip TB1.
7. Move the lead of capacitor C4 from terminal 1 to terminal 2 of TB1.
8. Reassemble unit and return to operation. (Conversion from 115 to 230-volt operation and vice versa now can be made by connecting the jumper units on terminal strip TB1 as shown in figure 1.)



Termination of AC Power Cord at Terminal Strip TB1

Figure 1



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EQUIPMENT TYPE: LINEAR AMPLIFIER 30L-1

SUBJECT: BACKWARD DEFLECTION OF ALC METER

The 1N252 diode, in the 30L-1 metering circuit, may develop a reverse leakage which will permit some of the positive delay bias to appear in the exciter alc circuit. This will cause the exciter meter to deflect to the left when the 30L-1 is on and the PTT is actuated.

The new 1N458 diode has a much higher voltage capability and will block the delay bias completely.

This modification need be made only if the meter displays the off-scale indication.

MODIFICATION PROCEDURE:

1. Remove cord from a-c source.
2. Remove the four feet and Phillips-head screws located between the rear feet.
3. Set unit upright, open top lid and remove the two bright Phillips-head screws in the panel rim.
4. Set unit face down on padded surface to facilitate removal of cabinet. Slide cabinet off unit.
5. Remove all screws from rear panel including the one on top which goes through the power supply compartment cover. Loosen the two smaller screws which fasten the r-f compartment cover to the top rear panel.
6. Remove rear panel to expose bases of tubes.
7. With the amplifier viewed from rear in its normal upright position, locate the five-terminal tie strip which is oriented vertically and located just to the left of antenna relay K1. Diode CR19 is soldered between the second terminal from the bottom of the tie strip and the center terminal of ALC adjust potentiometer R16. Clip off the anode lead of CR19 as close to the solder terminal (on the tie strip) as possible. Remove the insulated sleeving from this end and save it.
8. Clip the cathode lead of the diode about one inch from the potentiometer terminal. Remove the sleeving from this lead, cut about 1/4-inch off, and replace sleeving over the bare one-inch lead. Discard 1N252 diode.

9. Slip the insulated sleeving (which was removed from CR19 lead) over the anode lead of the new diode. Solder this lead to the same terminal of the tie strip, holding the lead tightly with a pair of pliers to protect the diode from the heat.
10. Splice the cathode lead to the wire which goes to the potentiometer (note that diode lead itself is too short to reach). Again, use pair of pliers as a heat sink.
11. Reassemble unit. No tuning or adjustments should be required.

PARTS REQUIRED:

| <u>Qty</u> | <u>Description</u> | | <u>Collins Part Number</u> | <u>Price</u> |
|------------|--------------------|------|----------------------------|--------------|
| 1 | Diode, 1N458 | CR19 | 353-0205-00 | \$1.68 |

The diode may be obtained free of charge from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa for a period of four months from the date of this bulletin. All orders for this diode should specify the Collins part number and make reference to 30L-1 Service Bulletin No. 2. Price does not include postage or applicable State or local sales taxes. Shipping Weight: 11 ounces.



SERVICE BULLETIN

EQUIPMENT SERIES: 30L

BULLETIN NO. 3

DATE: 4-2-62

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EQUIPMENT TYPE: R-F LINEAR AMPLIFIER 30L-1

SUBJECT A: TO LOWER OPERATING TEMPERATURE OF PA TUBES

SUBJECT B: TO ELIMINATE PILOT LIGHT FLUCTUATION WITH R-F EXCITATION

SUBJECT A: TO LOWER OPERATING TEMPERATURE OF PA TUBES

This modification will reduce the operating temperature of the PA tubes by reducing the idling current from 130 to approximately 110 milliamperes. This is accomplished by changing the value of resistors R12 and R28 to 2K and 39 ohms, respectively, to increase the bias voltage to approximately 3 volts. These changes in resistance values increase the load on the bias supply so that resistor R9 also must be changed from 82 to 47 ohms.

MODIFICATION PROCEDURE:

1. Remove a-c cord from power source and disconnect all other external leads.
2. Remove the four feet and the screw centered between the rear feet.
3. Place the unit in an upright position with panel toward operator. Lift lid and remove the two bright flat-head screws in panel rim.
4. Remove unit from cabinet. This is most easily accomplished by placing unit face down on a well padded surface and sliding cabinet off.
5. Remove PA and power supply top covers.
6. Turn unit and remove eight screws from rear panel. Remove panel.
7. Remove the two screws that hold the antenna connector mounting bracket in place.
8. Carefully turn bracket so that inner parts are exposed. Use care so that attaching wires are not broken.
9. Carefully unsolder and remove resistor R28 from insulated standoff terminals near antenna coaxial connector. Replace it with new 39-ohm resistor (745-1293-00).
10. Remount bracket to its original position.
11. Carefully remove the resistors or resistor across coil terminals of relay K1.

NOTE: In some units, the resistance across the coil of relay K1 consists of three 8.2K, 2-watt resistors in parallel (R12, R13, and R14). In other units R13 and R14 have been deleted and R12 changed to a 3K, 7-watt resistor.

12. Install new 2K resistor R12 (710-9010-00) between the relay coil terminals. Mount this resistor to allow about 1/4-inch clearance above relay armature.
13. Remove bottom cover from unit.
14. Locate the five-terminal terminal strip to which R9, R15, CR20, and C10 are connected. (Reference may be made to figure 6-1 in the 30L-1 Instruction Book.)
15. Clip leads of 82-ohm resistor R9 close to the solder terminals and remove resistor. Install new 47-ohm resistor R9 (745-5596-00) in its place. With a pair of pliers clamp the cathode lead of CR20 while soldering to protect diode from heat.
16. Replace bottom cover, PA and power supply top covers to places from which removed.
17. Replace cabinet and feet to unit chassis. Reconnect a-c cord and other external leads that may have been disconnected.

PARTS REQUIRED:

Price, postpaid: \$.91

Modification kit 553-2435-00 which consists of the following items:

| <u>Qty</u> | <u>Description</u> | <u>Collins Part Number</u> |
|------------|----------------------------|----------------------------|
| 1 | Resistor, 39 ohm, 1/2 watt | 745-1293-00 |
| 1 | Resistor, 2000 ohm, 7 watt | 710-9010-00 |
| 1 | Resistor, 47 ohm, 2 watt | 745-5596-00 |

The above parts may be obtained from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa at the price indicated. Price does not include state or other local taxes.

SUBJECT B: TO ELIMINATE PILOT LIGHT FLUCTUATION WITH R-F EXCITATION

The purpose of this modification is to eliminate pilot light fluctuations with r-f excitation of the amplifier. The pilot light, in some amplifiers, may increase in brilliance when the amplifier is driven by the exciter, especially when operating in the lower frequency bands. These fluctuations are caused by r-f voltage on the filament transformer leads.

The modification essentially consists of adding two 0.01-uf capacitors C30 and C74 across the 1000-pf filament feed-through capacitors C71 and C42. (These feed-through capacitors are denoted as C71 and C43 in the 3rd and later editions of the 30L-1 Instruction Book.)

MODIFICATION PROCEDURE:

1. Remove a-c cord from power source and disconnect all other external leads.
2. Remove four feet and the screw centered between the rear feet.
3. Place unit in an upright position with panel toward operator. Lift lid and remove the two bright flat-head screws in panel rim.
4. Slide unit from cabinet.
5. Locate large filament choke L8. Note that two leads (no. 12 enamel wire) connect to 811A filament terminals and the other two leads connect to the two 1000-pf, feed-through capacitors. Reference may be made to figure 6-2 in 30L-1 Instruction Book.
6. Install new 0.01-uf capacitor C30 (913-3013-00) from one of these feed-through capacitors to adjacent ground lug (some shields are terminated at this lug).
7. Install new 0.01-uf capacitor C74 (913-3013-00) from the other feed-through capacitor to the adjacent ground lug.
8. Reassemble unit and return to operation.

PARTS REQUIRED:

| <u>Qty</u> | <u>Description</u> | <u>Collins Part Number</u> | <u>Unit Price, Postpaid</u> |
|------------|--------------------|----------------------------|-----------------------------|
| 2 | Capacitor, 0.01-uf | 913-3013-00 | \$.17 |

The above parts may be obtained from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa at the price indicated. All orders should specify the Collins part number and make reference to 30L Service Bulletin No. 3. The price does not include state or other local taxes.



30L-1 RF LINEAR AMPLIFIER (522-2375-000)

SERVICE BULLETIN NO 4

OPERATION FROM 230 V AC POWER SOURCE

This service bulletin is applicable to all 30L-1 (522-2375-000) units.

The 30L-1 is designed to operate from either 115 or 230 V ac by using applicable TB1 strapping. Following production, the units are tested using 115-V ac input voltage. When TB1 is field strapped for 230-V ac operation, fuse F2 may blow in some units when power is applied. This is caused by the leads to on-off switch S2 being reversed. The wiring error places 230-V ac across the white-brown and white-brown-red (115 V ac) winding of the power transformer.

When the 30L-1 has been strapped for 230 V ac, the dc resistance through the power plug with power switch S2 on should be measured before applying power. If the resistance is near two ohms, the wiring is correct. If the resistance is on or near one ohm, the wiring will need to be corrected as described in the MODIFICATION PROCEDURE section of this bulletin.

Estimated time required is 0.5 man-hour.

No parts are required to perform this modification.

No special tools or equipments are required.

This service bulletin references 30L-1 RF Linear Amplifier instruction book, Collins part number 523-0122000.

The instruction book is not affected by this bulletin.

MODIFICATION PROCEDURE

NOTE: Do not attempt to expose power switch S2.

The schematic diagram in the instruction book, CPN 523-0122000, shows the proper wiring and TB1 strapping for both 115 and 230 V ac operation. Refer to the schematic while performing this modification.

Refer to the 30L-1 instruction book for disassembly/assembly procedures.

- A. Disconnect primary power.
- B. Remove the outside cabinet.

- C. Remove the bottom plate.
- D. Refer to the instruction book parts list section for location of fuseholders XF1 and XF2.
- E. Transpose the wires at the tips of the fuseholders. The service loops in the wires permit the transposition with very little difficulty.
- F. Reassemble the unit in the reverse of steps B and C.
- G. The 30L-1 may now be operated from either 115 or 230 V ac by selecting the applicable strapping shown on the schematic diagram.

MATERIAL INFORMATION

No parts are required.



product line

INFORMATION BULLETIN

COLLINS RADIO COMPANY

Updated

AMATEUR PRODUCT LINE INFORMATION LETTER #26

TO: ALL COLLINS AMATEUR RADIO SERVICE AGENCIES

DATE 7 July 1970

SUBJECT: 30L-1 PARASITIC OSCILLATION

SHOP COPY
SHOP USE ONLY!
DO NOT GIVE AWAY!

Some 30L-1 Linear Amplifiers from a recent build exhibited a parasitic oscillation with the following symptoms:

1. Burning of the two paralleled 10 ohm resistors in the B+ line with no apparent cause,
2. Erratic indications of the TUNE meter,
3. Exciter ALC meter pegs when transmission begins and takes approximately two seconds to recover; transmission is normal otherwise.

This condition can be corrected by changing L3, the 39 uh grid choke to 22 uh, CPN 240-0186-000.

DHH/dv