

DATE 6-29-61SH. 1 OF 9

COMPILED BY

## TMC SPECIFICATION NO. S-579

TITLE: CHG-1 ALDC MODIFICATION KIT (TMC NO. KIT-109)

JOB

APPROVED

I. EQUIPMENT AFFECTED

TMC Model CHG-1, (AM-2505/URA-31) Controlled Frequency Amplifier.

II. PURPOSE

To provide an ALDC line into the CHG-1.

III. MATERIALS SUPPLIED IN KITITEM NO.DESCRIPTION

- |    |  |
|----|--|
| 1  | One each, TMC No. CA-480-14-20, (Symbol No. W1106) Cable, Assembly, RF (consists of 20 inches of RG-174/U Coaxial cable and one Connector, TMC No. JJ-172, (Symbol No. J1108). |
| 2  | One each, TMC No. TE-102-2 Terminal, Turret.   |
| 3  | One each, TMC No. CL-240-120, (Symbol No. L1145) Coil, RF, Fixed, 120 uh.  |
| 4  | One each, TMC No. RC20GF474K, (Symbol No. R1150) Resistor, Fixed, Composition, 470K ohms.  |
| 5  | One each, TMC No. CB21QB102K, (Symbol No. C1199) Capacitor, Fixed, Mica, Button, 1000 uuf.   |
| 6  | One each, TMC No. TT-133, (Symbol No. T1120) Transformer, RF, Tuned.   |
| 7  | One each, TMC No. SCBS0440BN4 Screw, Machine.  |
| 8  | One each, TMC No. SCBS0348BN3 Screw, Machine.  |
| 9  | One each, TMC No. LWEO4MRN Lockwasher, External Tooth.   |
| 10 | One each, TMC No. LWEO3MRN Lockwasher, External Tooth.   |
| 11 | One each, TMC No. WL-100-7, (2 inches) Wire, Buss #22.   |
| 12 | One each, TMC No. PX-104-7-.034, (3 inches) Insulation. Sleeving.  |
| 13 | One each, Drill Bit, #33 (.113 inch)   |
| 14 | One each, Drill Bit, 1/4 inch (.250 dia)   |
| 15 | One each, Chassis Punch, (Round) 1/2 inch (.500 dia.)  |
| 16 | One each, TMC No. NP-362-2 Nameplate, Modification.  |
| 17 | One each, TMC No. NP-380-1 Nameplate, Instruction.   |

DATE 6-29-61

SH 2 OF 9

COMPILED BY

TMC

SPECIFICATION NO. S-579

TITLE: CHG-1 ALD REPLICATION KIT (TMC NO. KIT-109)

JOB

APPROVED

#### IV. TOOLS REQUIRED

To be provided by installing activity.

1. Pliers, 6 inch longnose.
2. Pliers, 6 inch diagonal cutting.
3. Screwdriver, 7 inch.
4. Soldering Iron.
5. Wrench, Open End, 5/8 inch.
6. Wrench, Open End, 7/16 inch.
7. Electric Hand Drill, 1/4 inch Chuck Capacity.
8. Alignment Tool.

#### V. PROCEDURE

A. With the CHG-1 on the bench and all power disconnected, the following procedure is to be followed.

1. Remove top and bottom dust covers.
2. Unsolder all leads to T1101, making sure they are sufficiently long enough for reassembly.
3. Remove can assembly T1101 by unscrewing the two mounting screws holding the can. Save the mounting hardware.
4. Mark appropriate spot on the chassis, for the drilling of the two holes used for mounting of the turret terminal and button capacitor (hole locating dimensions shown in Figure 1A).
5. Insert the #33 drill bit into the electric hand drill, and drill the two holes required.  
NOTE: It will be easier to drill the two holes required, from the bottom of the CHG-1.
6. Clean CHG-1 of all metal shavings resulting from the drilling. Be sure that nothing is shorting.
7. Mount the turret terminal (Item 2) by use of the 4-40 hardware (Items 7 & 9) as shown in figure 1B.
8. Mount the button capacitor (Item 5) by use of the 3-48 hardware (Items 8 & 10) as shown in figure 1B.
9. Mount the RF transformer (Item 6) in space vacated by T1101, as shown in figure 2.

DATE 6-29-61  
SH. 3 OF 9  
COMPILED BY

# TMC SPECIFICATION NO. S-579

TITLE: CHG-1 ALBC IDENTIFICATION KIT (TMC NO. KIT-109)

JOB

APPROVED

## PROCEDURE CONTINUED

10. Connect one end of buss wire (Item 11) to center terminal (white dot) of RF transformer (Item 6) and solder.
11. Slide the proper amount of insulation (Item 12) over the buss wire and connect the free end of the buss wire to the button capacitor (Item 5). Do not solder.
12. Make all connections to the RF transformer as follows.
  - a. Connect 39 ohm resistor (R1102) from pin 7 of V1101 to bottom left terminal (green dot) of RF transformer, as per figure 2. Next connect 3000 MMFD. capacitor (C1102) to junction of R1102 and RF transformer. Solder the junction point. Other end of (C1102) should still be connected to ground lug located where the RF transformer is mounted.
  - b. Connect 39 ohm resistor (R1101) from pin 2 of V1101 to bottom right terminal (green dot) of RF transformer, as per figure 2. Next connect 3000 MMFD. capacitor (C1101) to junction of R1101 and RF transformer. Solder the junction point. Other end of (C1101) should still be connected to ground lug located where the RF transformer is mounted.
  - c. Connect ground lead from ground lug to top left terminal (black dot) of RF transformer, as per figure 2. Solder connection.
  - d. Connect RC-174/U coax cable to top right terminal (yellow dot) of RF transformer as per figure 2. Solder connection. Shield lead of coax cable should still be connected to ground lug located where the RF transformer is mounted.
13. Mount the 470 K ohm resistor (Item 4) from the button capacitor (Item 5) to a convenient ground point. Use insulation (Item 12) on the end of the resistor connected to the button capacitor. Solder the ground side of the resistor only.
14. Mount the 120 uh RF choke (Item 3) between the button capacitor (Item 5) and the turret terminal (Item 2). Use insulation (Item 12) on the end of the coil connected to the button capacitor. Solder all connections on the button capacitor only.
15. Mark appropriate spot on rear of chassis for drilling of the hole used for mounting JJ-172, (p/o CA-480-14-20, (Item 1) as shown in figure 3.

DATE 6-29-61

SH. 4 OF 9

COMPILED BY

TMC SPECIFICATION NO. S-579

TITLE: CHG-1 ALIC MODIFICATION KIT (TMC NO. KIT-109)

JOB

APPROVED

PROCEDURE CONTINUED

16. Insert 1/4 inch drill bit into the electric hand drill and drill the one hole required.
17. Clean CHG-1 of all metal shavings resulting from the drilling. Be sure that nothing is shorting.
18. Mount the 1/2 chassis punch through the 1/4 inch hole and proceed to enlarge the hole to 1/2 inch diameter.
19. Mount the RF connector JJ-172 (p/o CA-480-14-20, (Item 1) from the inside of the chassis. Insert lockwasher and nut on the connector and tighten with the 5/8 inch open end wrench.
20. Affix instruction nameplate (Item 17) directly above the connector which has just been installed (refer to figure 3).
21. Thread RF cable attached to JJ-172 through grommet hole in plug shield. Keep the RF cable close to the chassis all the way to the turret terminal (Item 2).
22. Connect center conductor of RF cable to turret terminal and solder. Also solder shield of the RF cable to a convenient ground point.
23. Check modifications to see that everything conforms with figure 2.
24. See figure 4 for schematic diagram.
25. After the CHG-1 has been checked to see that all the modifications have been properly installed, replace the top dust cover.
26. Affix modification nameplate (Item 16) immediately to the right of the "BAND" switch knob.
27. Reinstall the CHG-1 into its rack. Connect all power and RF connections. Make sure that the following units are set to power ON.
  - a. CPP-1
  - b. CFP-2
  - c. CSS-1
  - d. CHG-1
  - e. CBE-1

DATE 6-29-61

SH 5 OF 9

COMPILED BY

# TMC SPECIFICATION NO. S-579

TITLE: CHG-1 ALDC MODIFICATION KIT (TMC NO. KIT-109)

JOB

APPROVED

## PROCEDURE CONTINUED

- B. With the CHG-1 properly installed in its rack, the following procedure is to be followed for correct alignment of T1120 which has been newly installed.
1. Set the CBE-1 in the following manner.
    - a. USB channel selector off.
    - b. LSB channel selector off.
    - c. Carrier insert control fully CW.
  2. Set the CMO-1 for any desired output frequency.
  3. Adjust the output of the CMO-1 to read approximately three or four on the CMO-1 tuning indicator.
  4. Observe the CHG-1 MF tuning indicator. At no time should the pointer be in the red.
  5. Tune the MCS control, MF tuning section, on the CHG-1 for a maximum indication of the MF tuning meter.  
NOTE: The MCS control on the CHG-1, corresponds directly with the master oscillator frequency counter on the CMO-1.
  6. To properly adjust T1120, pull the CHG-1 out of the rack as far as it will go and tilt it. This will enable the alignment of T1120 to be done from the bottom of the CHG-1.
  7. Tune T1120 for a maximum indication on the MF tuning meter and lock coil.
  8. The CHG-1 is now properly aligned and the ALDC modification is now complete.
  9. Replace bottom dust cover on the CHG-1.
  10. Push unit back into the rack.

DATE 6-29-61  
SH. 6 OF 9  
COMPILED BY

TMC SPECIFICATION NO. S-579

TITLE: CMG-1 AIDC MODIFICATION KIT

JOB

APPROVED

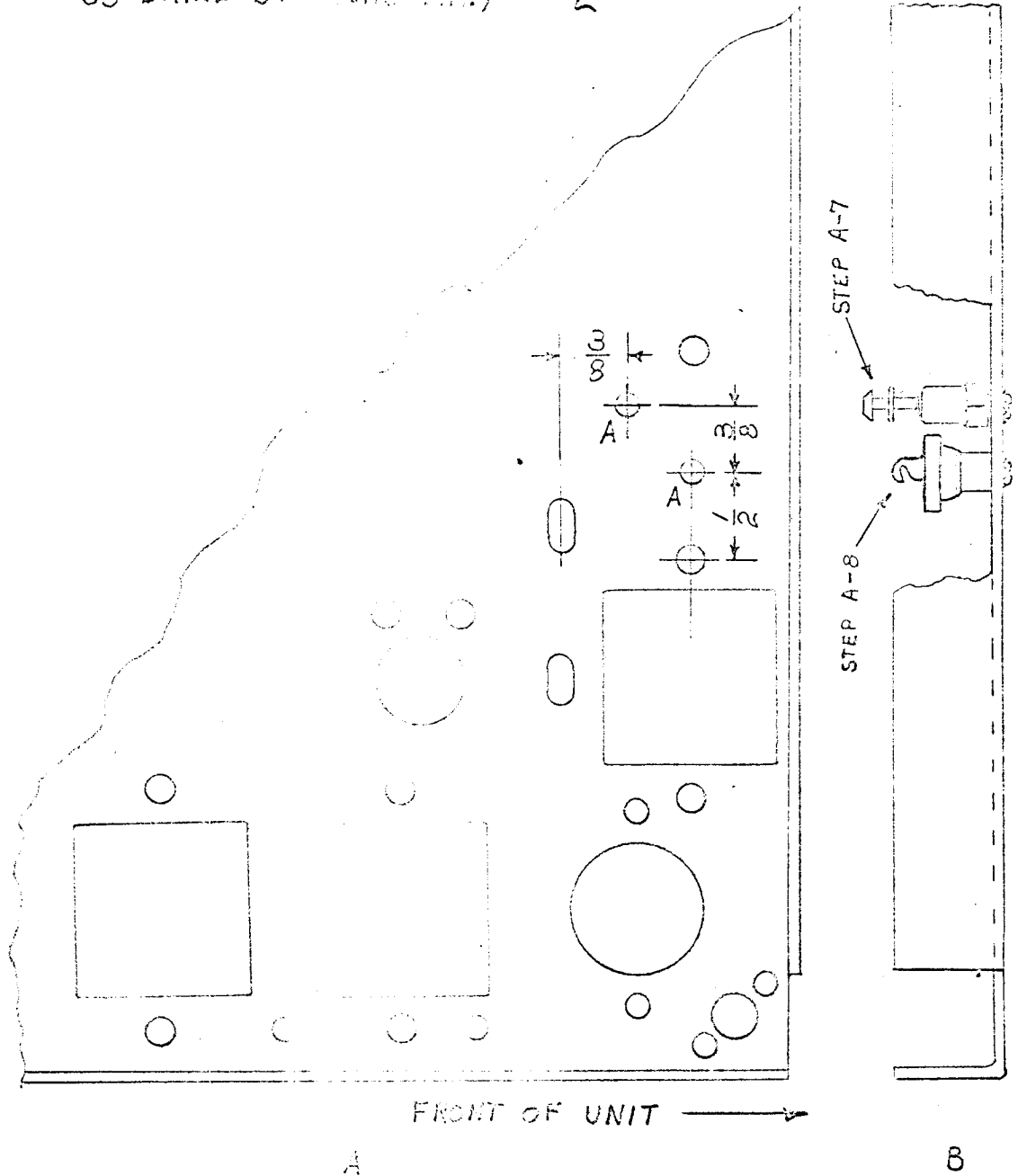
(TMC KIT O. - 100)

HOLES

REQ'D

A ~ #33 DRILL BIT (1/16" DIA.)

2



FRONT OF UNIT →

A

B

FIGURE 1

A-HOLE LOCATING DIMENSIONS  
B-ASSEMBLY DETAIL

\*BOTTOM VIEW OF UNIT 6.100

DATE 6-29-61

SH 7 OF 9

COMPILED BY

# TMC SPECIFICATION NO. S-579

TITLE: CHG-1 ALDC MODIFICATION KIT

JCD

APPROVED

(TMC NO. MKT-209)

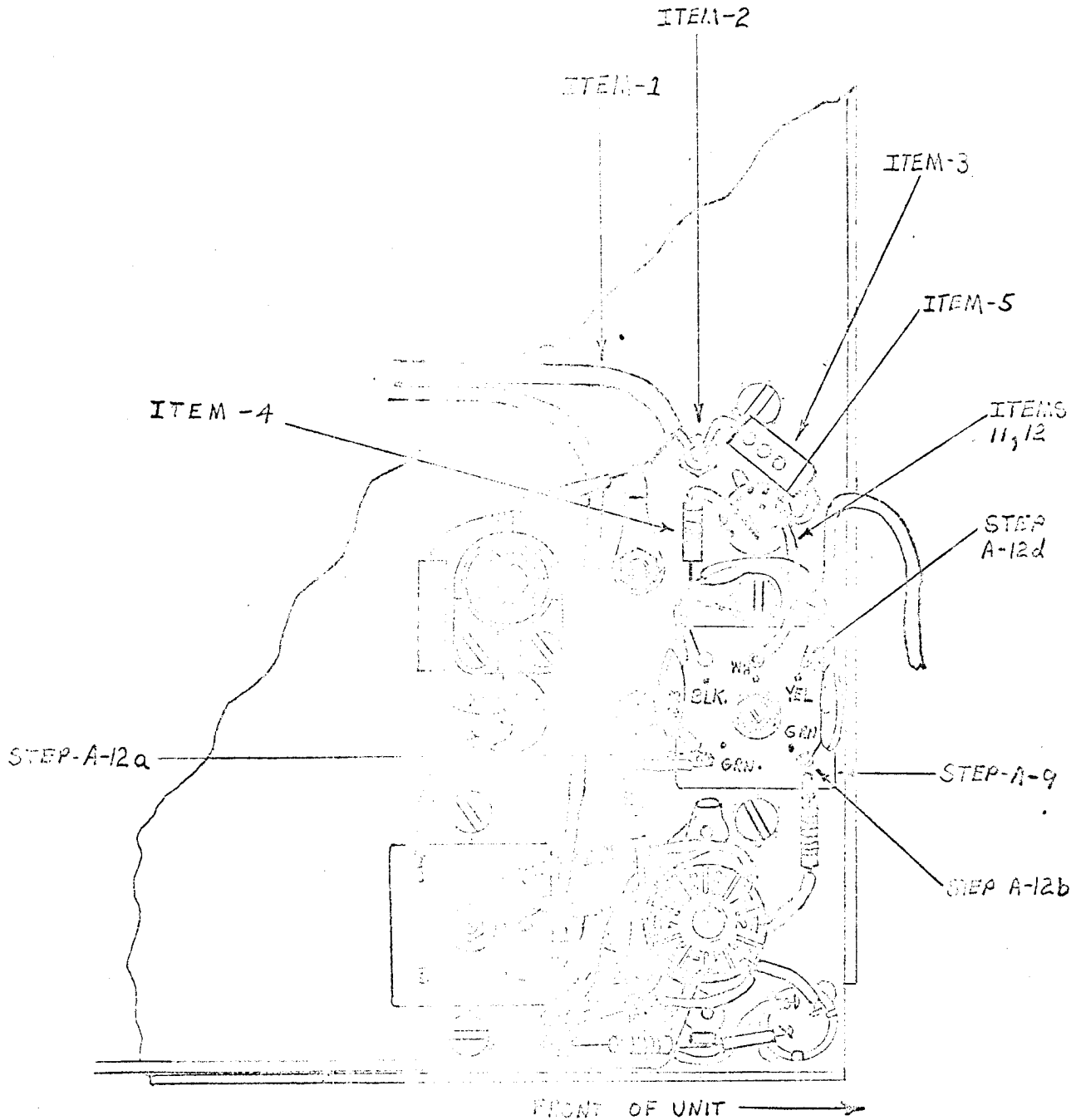


FIGURE 2

COMPONENT LAYOUT

DATE <u>6-29-61</u>	<b>TMC SPECIFICATION NO. S-579</b>
SH <u>8</u> OF <u>9</u>	
COMPILED BY	TITLE: <u>CEG-1 ALDC MODIFICATION KIT</u>
APPROVED	JOB
(TMC KIT NO. - 109)	

HOLES 1/2 INCH  
 A ~ 1/2 INCH (.500 DIA.)

REV. 17  
 STEP A-20

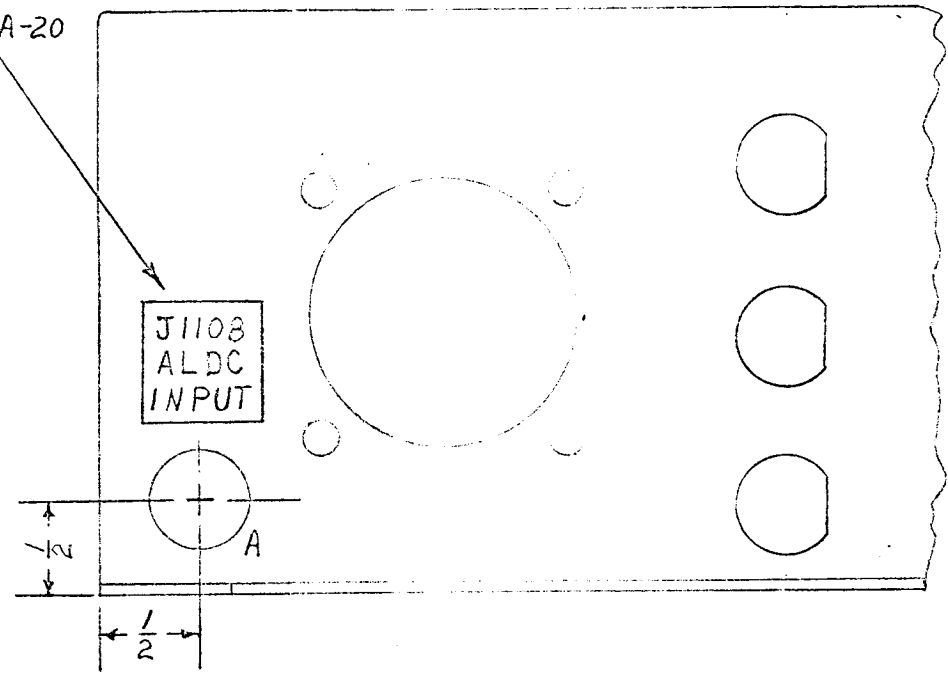


FIGURE 3\*

HOLE LOCATING DIMENSIONS

\* REAR LEFT OF UNIT SHOWN



APPROVED (TMC NO. KIT-100)

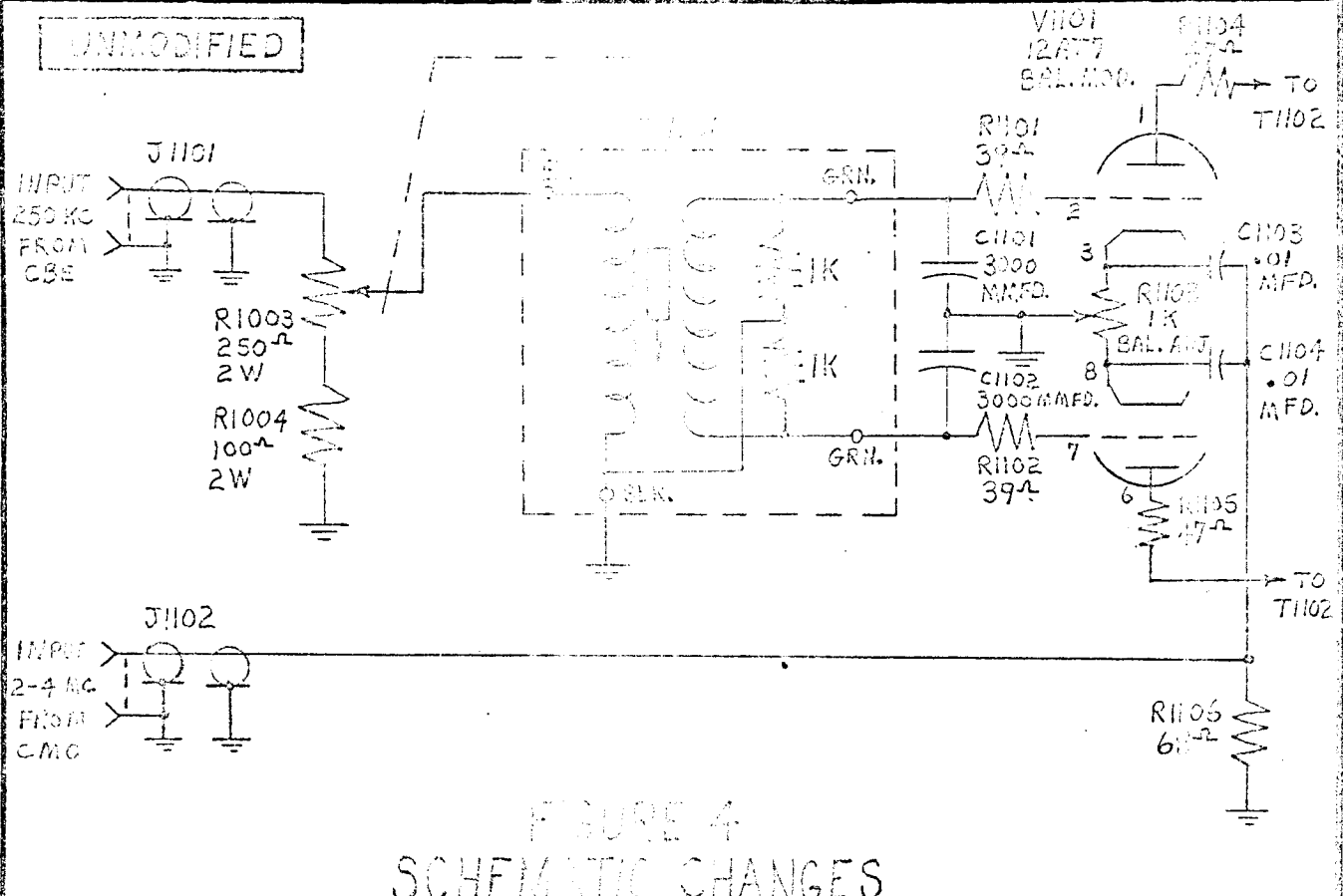


FIGURE 4  
SCHEMATIC CHANGES

