

ELECTRONICS FIELD CHANGE BULLETIN
 NAVAL SHIP ENGINEERING CENTER, NAVY DEPARTMENT
 WASHINGTON, D. C.

23-AN/URC-32
 9-AN/URC-32A
 14-KWT-6(8)

MODIFICATION OF FREQUENCY GENERATOR CV-731/URC
 TO ACCEPT FREQUENCY CONVERTER CV-1749()/UR

FSN F5820-933-5157

TYPE I, CLASS A
 ESTIMATED MAN HOURS - 8

OPERATIONAL CHANGE (X)
 NON-OPERATIONAL CHANGE ()

Prepared by

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 NORFOLK, VIRGINIA 23511

AUTHORIZATION NOTICE: Naval shipyards, tenders, and repair facilities shall accomplish this field change at the earliest opportunity on ship- or training activity-installed equipments without reference to the Naval Ship Engineering Center.

EQUIPMENT AFFECTED: AN/URC-32, all serial numbers
 AN/URC-32A, Serial Nos. 1 through 681
 KWT-6(8), all serial numbers

PURPOSE: To modify the Frequency Generator CV-731/URC to accept the Frequency Converter CV-1749/UR. This will permit the Radio Set AN/URC-32() to be tuned in .1 KC increments.

PREVIOUS FIELD CHANGES: None.

EFFECT ON NOMENCLATURE: None.

COMBAT SUPPORT CENTER
 U. S. NAVAL STATION, NORFOLK, VIRGINIA, S. C.

IDENTIFICATION OF ACCOMPLISHMENT: Presence of jack (J8) installed on the upper right side of Frequency Generator CV-731/URC, main chassis.

31 OCT 1966

LIST OF MATERIAL REQUIRED:

Supplied with Field Change Kit

<u>Item</u>	<u>REF. DESIG.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1		11	Rivets, Semi-Tublar, Oval Head, size 3/32" Ø X 1/8"
2		1	Template
3		1	Adaptor, Connector
4	J8	1	Base, Mounting, Tuning Unit (includes attached applicable piece parts)
5		1	Insert, Dust Cover Modification
6		2	8-32 X 3/8" Flathead Phillips Screws
		2	8-32 X 3/8" Binder Head Phillips Screws
		2	#8 Split Lock Washers
7		1	Field Installation Notification of Completion
8		2	Field Change Bulletins, NAVSHIPS 0967-066-7300

TOOLS AND TEST EQUIPMENT:

Required by Installing Activity

Screwdriver, common	Countersink
Phillips Screwdriver, #4	File, flat
Phillips Screwdriver, #5	Metal Saw
Pliers, long nose	Hammer, ball peen
Pliers, diagonal	Multimeter, AN/PSM-4
Drill Motor, 1/4"	
Drill, #8, #37	
Punch, center	
Soldering Iron, 47½ watts	
Solder, 60/40	
Combination Square, 12"	
Scribe, metal	

PROCEDURE:

NOTE: OBSERVE ALL APPLICABLE SAFETY PRECAUTIONS WHILE PERFORMING THIS FIELD CHANGE.

1. Remove AC power from equipment.
2. Remove the dust cover from the CV-713/URC Frequency Generator.

"CV-731/URC FREQUENCY GENERATOR MODIFICATION"

3. Disconnect the connectors from J10, J11, J12, J13, J15, J16, and J17 located on the rear of the CV-731/URC Frequency Generator.
4. Remove the screws that secure the CV-731/URC Frequency Generator to the AN/URC-32 equipment rack and place the CV-731/URC Frequency Generator on a work bench.
5. Remove the following electronic assemblies from the CV-731/URC Frequency Generator chassis:
 - a. Frequency Divider.
 - b. Reference Oscillator.
 - c. R.F. Tuner.
 - d. Stabilized Master Oscillator.
 - e. Sidestep Oscillator.
6. Remove the alignment tool bracket that is located on the right hand side of the CV-731/URC Frequency Generator chassis.
7. Remove the rear cover from the CV-731/URC Frequency Generator chassis.
8. Remove the right hand dust cover support and the right hand control panel support.
9. Refer to Figure 5. Place the template (Item 2) on the front side of the chassis so that holes "A" of the template as indicated in Figure 5 line up with the retaining screw holes for the frequency divider module.
10. Secure the template (Item 2) to the chassis, using the two 8-32 X 3/8" binder head screws (Item 6).
11. Center punch the two "B" and the two "C" holes as indicated in Figure 5. Use a #8 drill and drill the four holes.

12. Countersink the two "C" holes on the rear of the main chassis plate so that the heads of the two 8-32 flat head screws (Item 6) will be flush with the chassis.

13. Cut out rectangular hole "D" as indicated in Figure 5.

14. Remove any burrs from the drilled holes.

15. True and dress up the rectangular hole "D" with a flat file.

16. Remove the template (Item 2) from the main chassis. Template may be discarded. Retain the two 8-32 binder head screws.

17. Remove all metal filings and drill shavings.

18. From the front side of the chassis, route the leads of Item 4 (which consist of the metal mounting plate and the phenolic mounting base) through the rectangular cutout.

19. Line up the holes in the metal base plate and secure to the chassis from the rear with the 8-32 X 3/8" screws. Use the two flat head screws in the countersunk "C" holes and the two 8-32 X 3/8" binder head screws and #8 lock washers in the "B" holes.

20. Remove the cable lacing from the portion of the cable harness between J12, J13, and J2 on the rear of the chassis.

21. Remove and discard the white coaxial lead that connects between J13 and J2 terminals 7 and 8. CAUTION: DO NOT REMOVE GROUND JUMPERS BETWEEN J2 - 7 and 15.

22. Remove and discard the white coaxial lead that connects between J12 and J2 terminals 11 and 12. CAUTION: DO NOT REMOVE GROUND JUMPER BETWEEN J2 - 4 and 12.

23. Loosen as necessary the screws securing the nylon cable clamps to permit passage of the leads to be installed through the cable clamps.

24. Remove Item 3 from Item 4.

25. Refer to Figure 4 and route the leads attached to the mounting base, jack (J8) of Item 4 as follows:

From jack J8:	Lead Color:	To:
Terminal A1	White Coax	J12 (shield to J12 ground terminal)
Terminal A2	White Coax	J13 (shield to J13 ground terminal)

Terminal A3	White Coax	Center Conductor to J2-11. Shield to J2-12 ground jumper
Terminal A4	White Coax	Center Conductor to J2-8. Shield to J2-7 ground jumper
Terminal 1	Wh-Blue-Blk	C17
Terminal 2	White	Ground Lug
Terminal 3	Wh-Red-Blue	C15
Terminal 5	Wh-Red-Grn-Blk	C3

Determine lead lengths to coincide with the existing leads which made up the original cable harness. Make the soldered connections as listed above and relace the added leads with the original leads to reform the cable harness.

26. With the AN/PSM-4, determine that the leads are connected as listed above.
27. Reinstall the right hand dust cover support, control panel support, and alignment tool bracket.
28. Reinstall the rear cover.
29. Reinstall the modules removed in Step 5.
30. Reinstall the CV-731/URC Frequency Generator in the AN/URC-32 equipment rack.
31. Reconnect the connectors which were disconnected in Step 3.
32. Reconnect Item 3 to Item 4.
33. Check the AN/URC-32 for proper operation.

"DUST COVER MODIFICATION"

34. Place the dust cover on the work bench.
35. Refer to Figure 1. Use the combination square and scribe a line 7/32" down from the top of the right hand corner of the dust cover.
36. Place Item 5 face down on the dust cover. Use the 7/32" line scribed in Step 35 to locate the top edge of Item 5. Line up the side edges of the insert (Item 5) and scribe another line across the dust cover at the bottom of the insert (Item 5). At the right hand corner of the dust cover window, scribe a short line at the left top corner of the insert up to the 7/32" line.

37. Lay the insert (Item 5) aside and cut out the layer of metal as indicated by the diagonal lines in Figure 1. CAUTION: DO NOT CUT THE FLANGE LIPS UNDER THE CUTOUT. MAKE CUTS INSIDE THE SCRIBED LINES.

38. Break the spot welds or rivets securing the cutout to the flange lips and remove the cutout. CAUTION: DO NOT TEAR THE FLANGE LIPS.

39. Hammer the bends and bumps out of the flange lips.

40. Make the cutout at the top of the exposed flange lip as indicated by the measurements and diagonal lines of Figure 2.

41. Smooth up the flange lips with a file, paying particular attention to the rivet or spot weld areas.

42. Smooth up all cutouts with a file and fit the insert (Item 5) into the cutout.

43. With the insert (Item 5) in place as shown in Figure 3 (CAUTION: THE SNAP FASTENER IS LOCATED AT THE TOP OF THE INSERT, FIGURE 3), drill the mounting holes with the #37 drill and secure the insert (Item 5) to the dust cover flanges with the rivets furnished in Item 1.

44. Replace the dust cover on the CV-731/URC Frequency Generator chassis.

ROUTINE INSTRUCTIONS:

1. No corrections are required to be accomplished in the Technical Manual for Radio Set AN/URC-32, NAVSHIPS 93285, or NAVSHIPS 93285(A). Naval shipyards, repair facilities, and tenders should forward with the equipment having this field change accomplished, Technical Manual, Volumes 1 through 3, for Radio Set AN/URC-32, with Supplement 1, and Change 1. These documents are available from the Navy Supply Depot, 5801 Tabor Ave., Philadelphia, Pennsylvania 19120, under the following federal stock numbers:

FSN 0967-066-7010, Technical Manual, Volumes 1 through 3

FSN 0967-066-7020, Supplement 1

FSN 0967-066-7030, Change 1

Technical Manuals, Volumes 1 through 3, were formerly NAVSHIPS 93285(B) for Radio Set AN/URC-32 series. Supplement 1 and Change 1 reflect the addition of the CV-1749/URC 0.1 KC electronic assembly to the AN/URC-32 Radio Set.

The CV-1749/URC 0.1 KC electronic assembly to be used with the equipments having this field change accomplished may be ordered by the holders of these equipments under federal stock number 2F5820-766-6029.

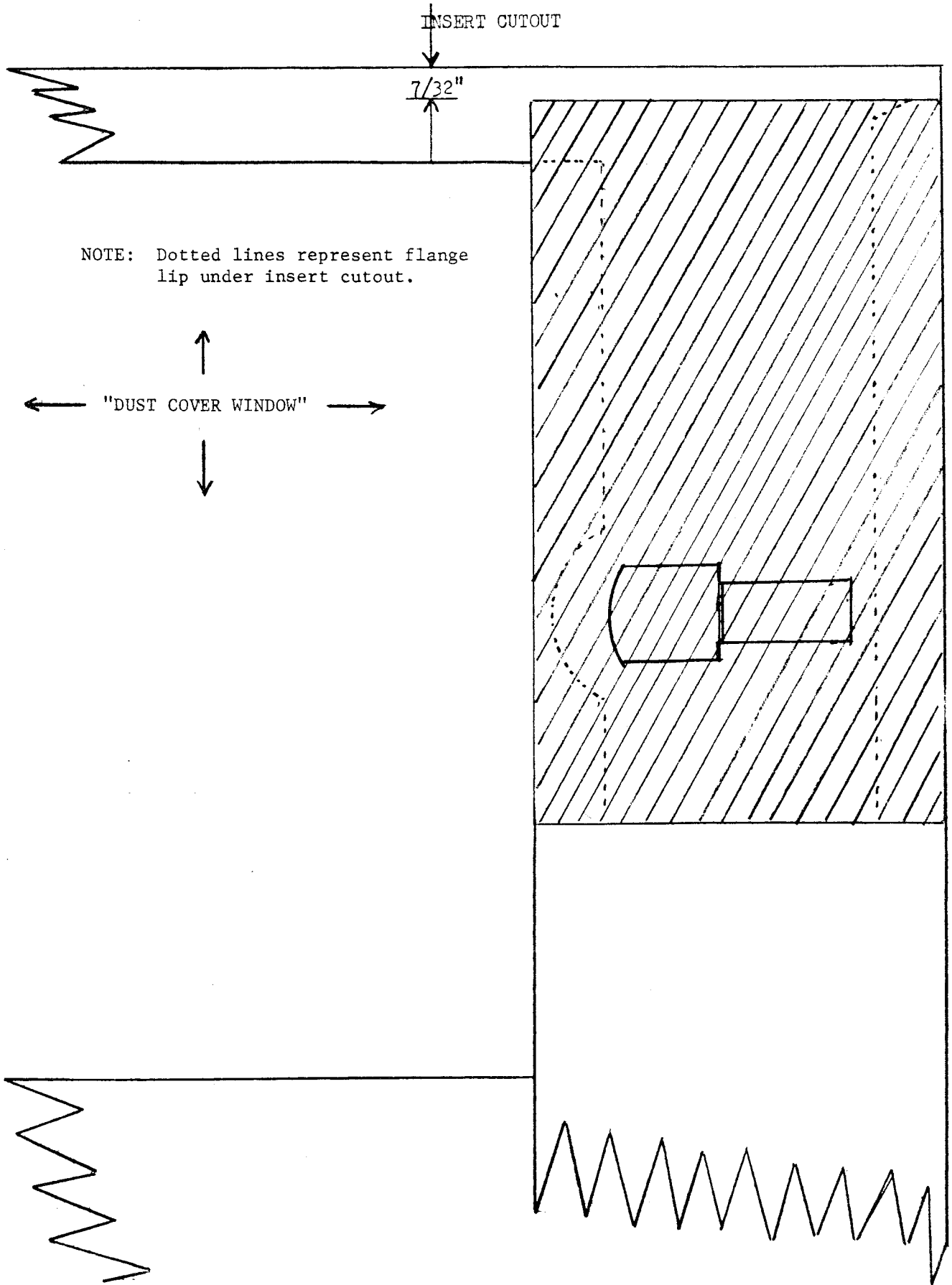
CAUTION: DO NOT ATTEMPT TO USE A CV-1749/URC 0.1 KC ELECTRONIC ASSEMBLY THAT HAS NOT HAD FIELD CHANGE 6-AN/URC-32B ACCOMPLISHED ON THE ASSEMBLY. FIELD CHANGE 6 IS RECOGNIZED BY THE ADDITION OF THE 0.1 KC KEYING RELAY INSTALLED WITHIN THE ASSEMBLY. IF THIS CHANGE HAS NOT BEEN ACCOMPLISHED, DAMAGE TO THE EQUIPMENT WILL RESULT.

2. Record of Accomplishment. Record this change on the Electronic Equipment History Card, NAVSHIPS 536, and on the Record of Field Changes Card, NAVSHIPS 537. Report completion to the Naval Ship Engineering Center, Norfolk Division, Code 1921, U.S. Naval Station, Norfolk, Virginia 23511, utilizing the Field Installation Notice of Completion (FINC) Card, NAVSECNORDIV 4700/1A, Item #7.

3. Disposition of Field Change Bulletin. Maintenance support activities shall maintain a library copy of this field change bulletin. Holders of equipment shall not destroy this field change bulletin until Volumes 1 through 3, FSN 0967-066-7010, for Radio Set AN/URC-32 series with Supplement 1, FSN 0967-066-7020, and Change 1, FSN 0967-066-7030, has been received. MAINTENANCE SUPPORT ACTIVITIES INSTALLING THIS FIELD CHANGE ARE RESPONSIBLE FOR SUPPLYING HOLDERS OF THIS EQUIPMENT WITH THE FIELD CHANGE BULLETIN.

4. Figure 6 is a schematic of CV-1749()/UR. Figure 7 is a schematic of CV-731()/URC after this field change has been completed.

FIGURE 1



NOTE: Dotted lines represent flange lip under insert cutout.

↑
← "DUST COVER WINDOW" →
↓

FIGURE 2
FLANGE CUTOUT

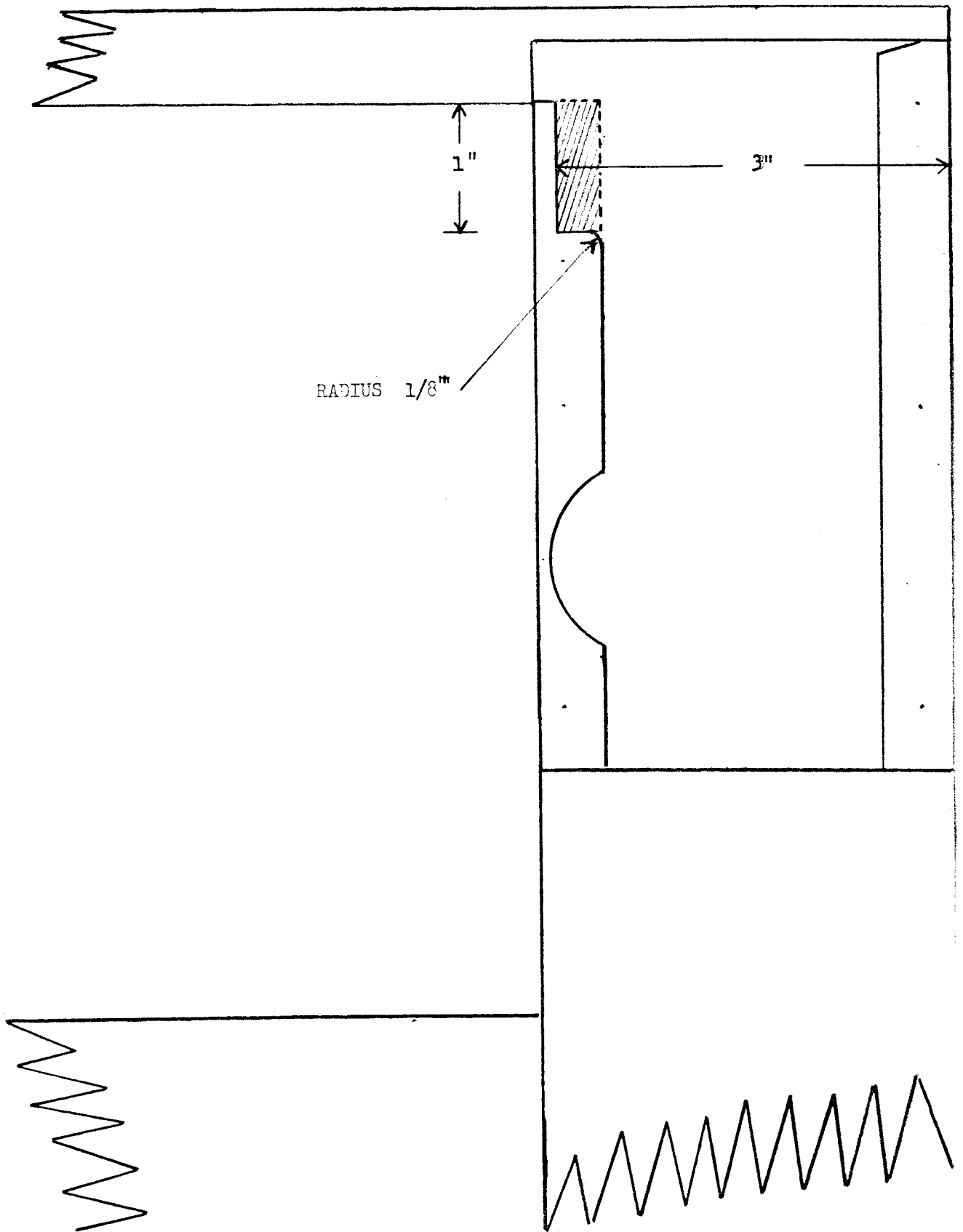
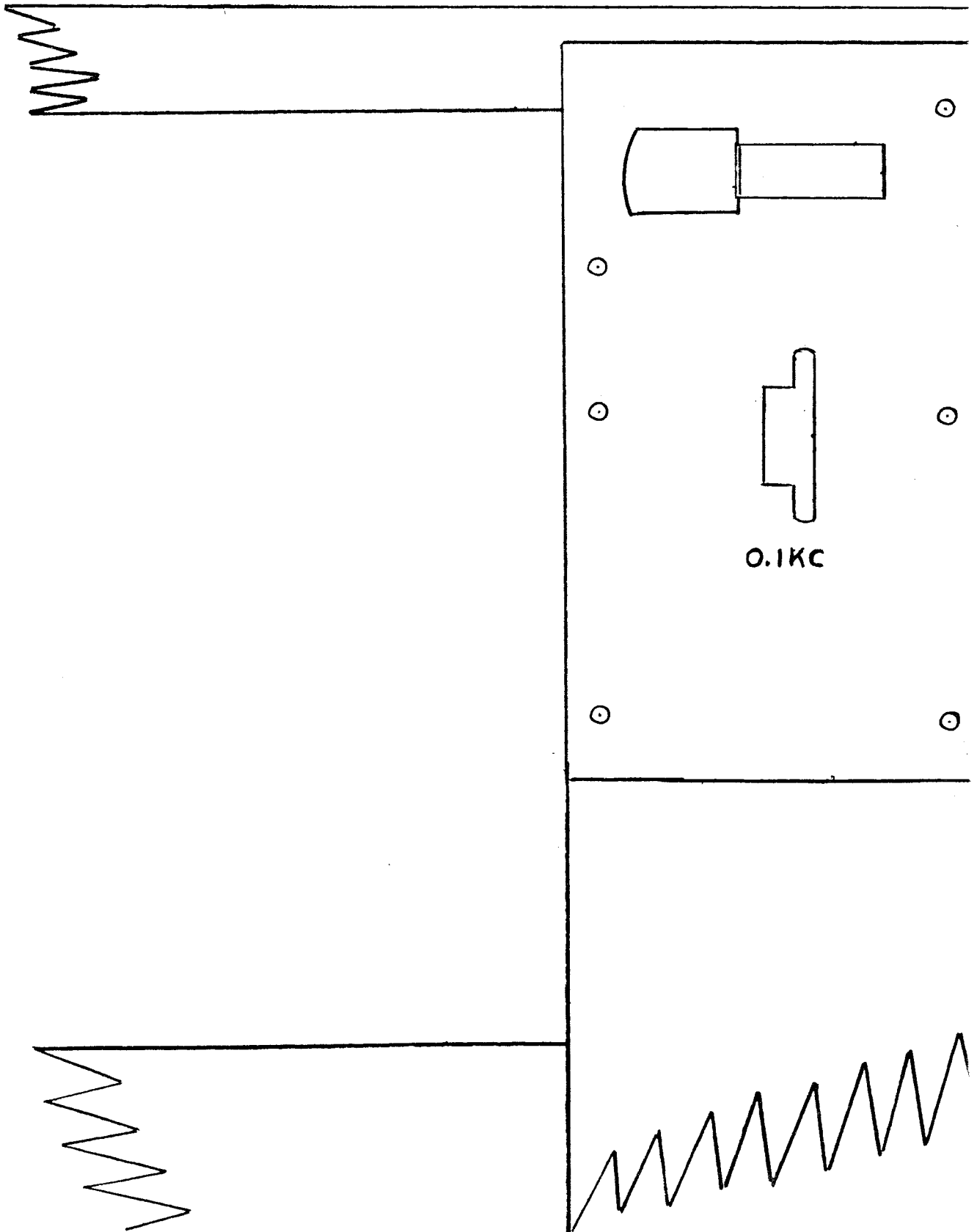


FIGURE 3

TOP RIGHT FRONT OF
MODIFIED DUST COVER



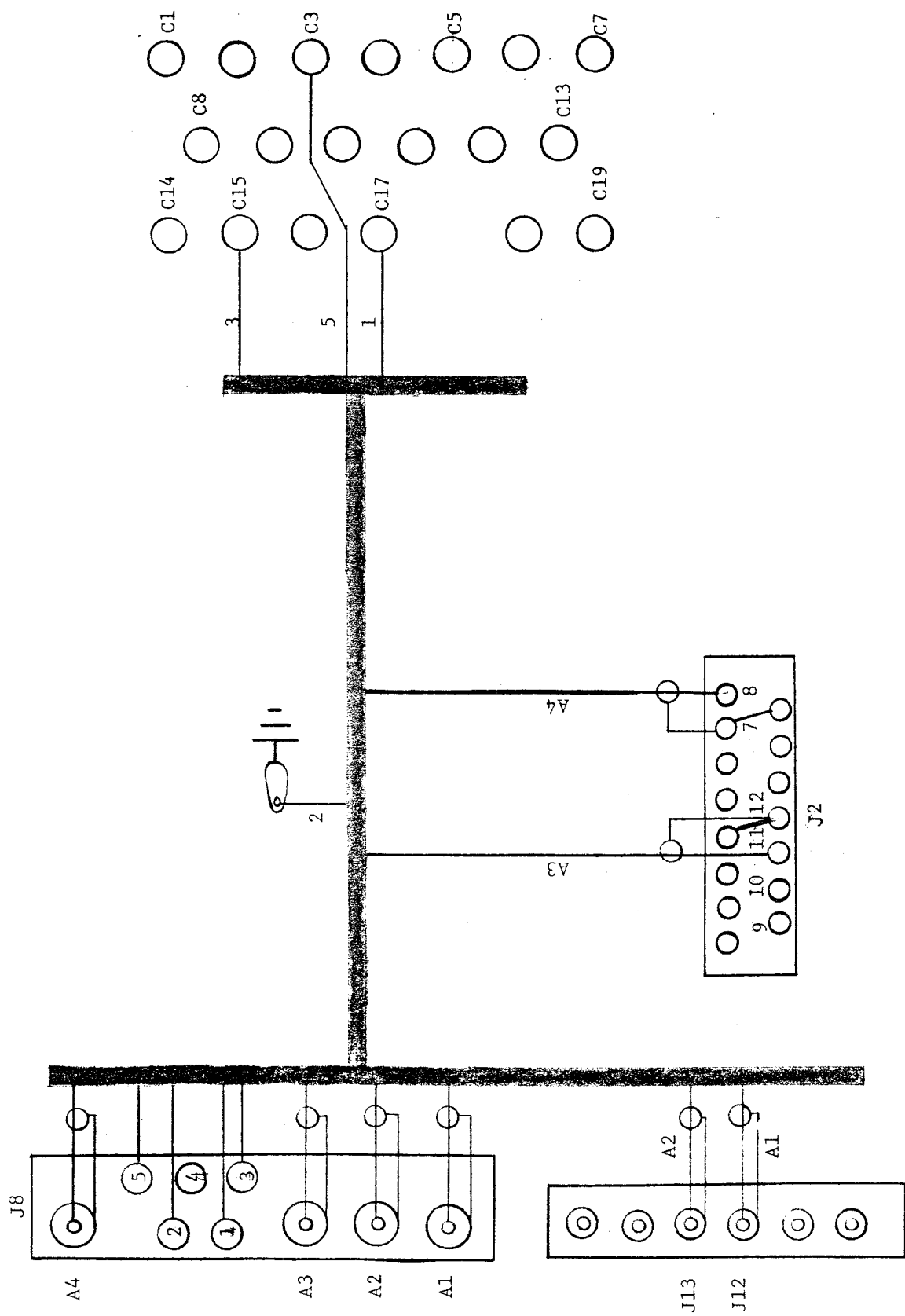


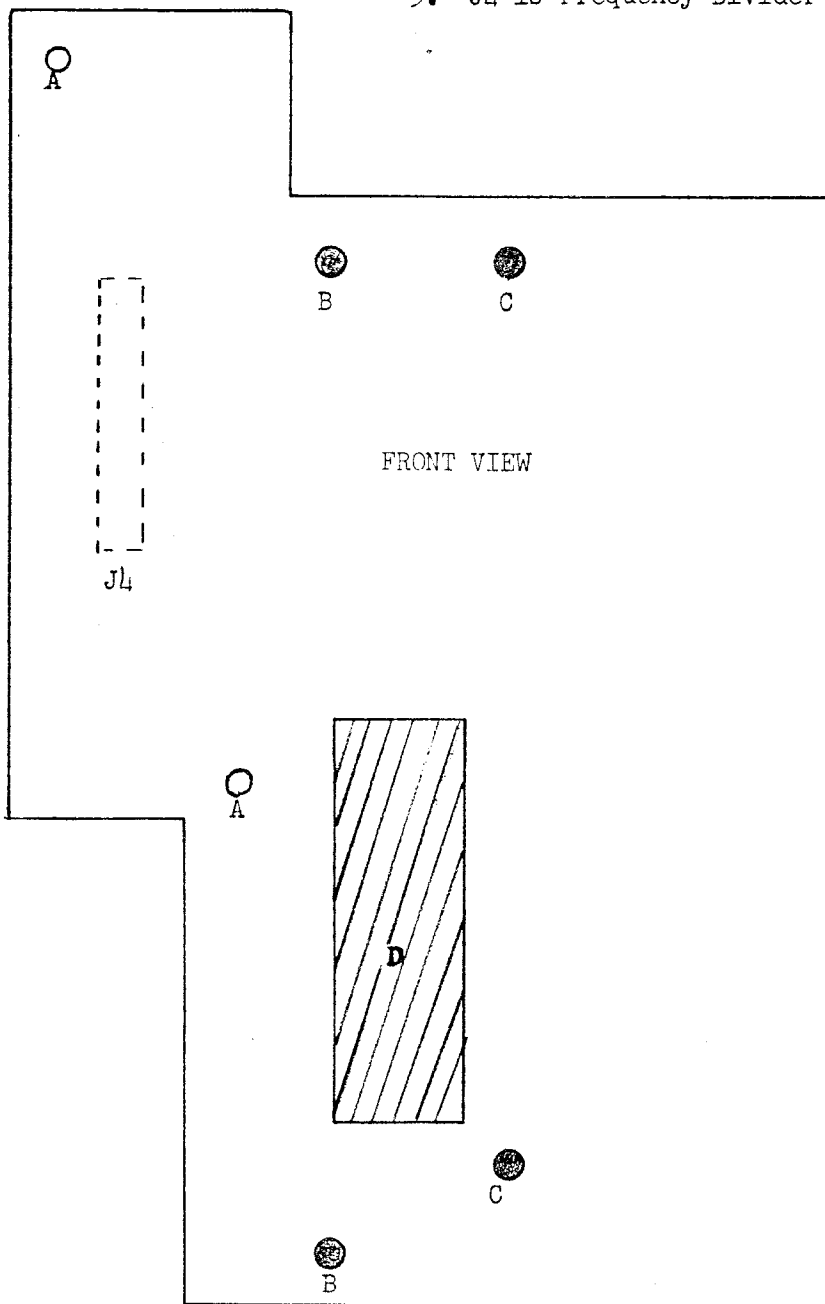
FIGURE 4

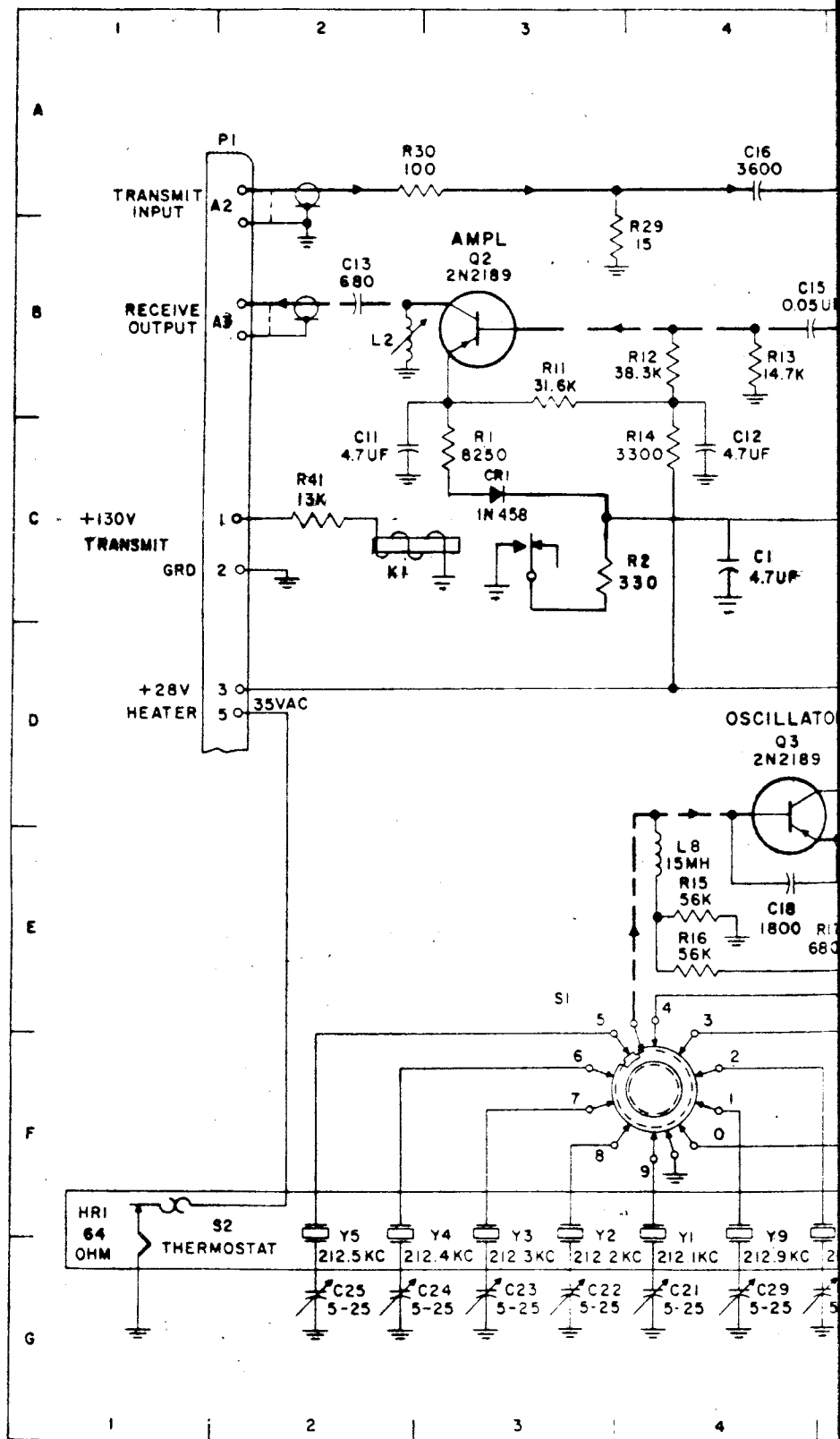
O.1KC MODULE WIRING DIAGRAM

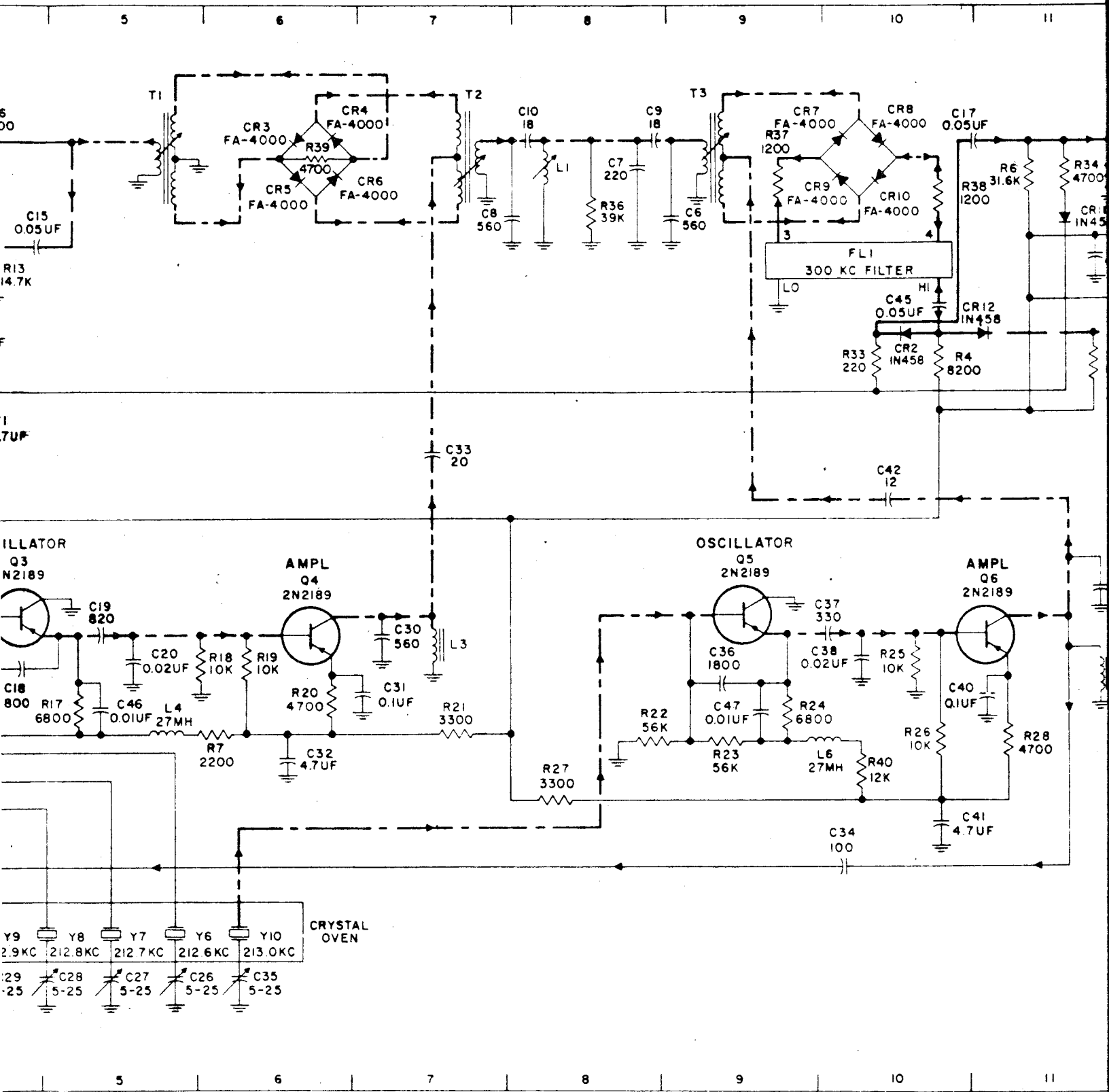
FIGURE 5
HOLE PATTERN TEMPLATE

NOTE:

1. Secure template, item 2, using threaded retaining holes for Frequency Divider and holes A of Template
2. Drill B and C holes, using a #8 drill, in main chassis of Frequency Generator.
3. Countersink C holes from rear of chassis so that E-32 flathead screws are flush with chassis.
4. Cutout rectangular hole D.
5. J₄ is Frequency Divider jack.







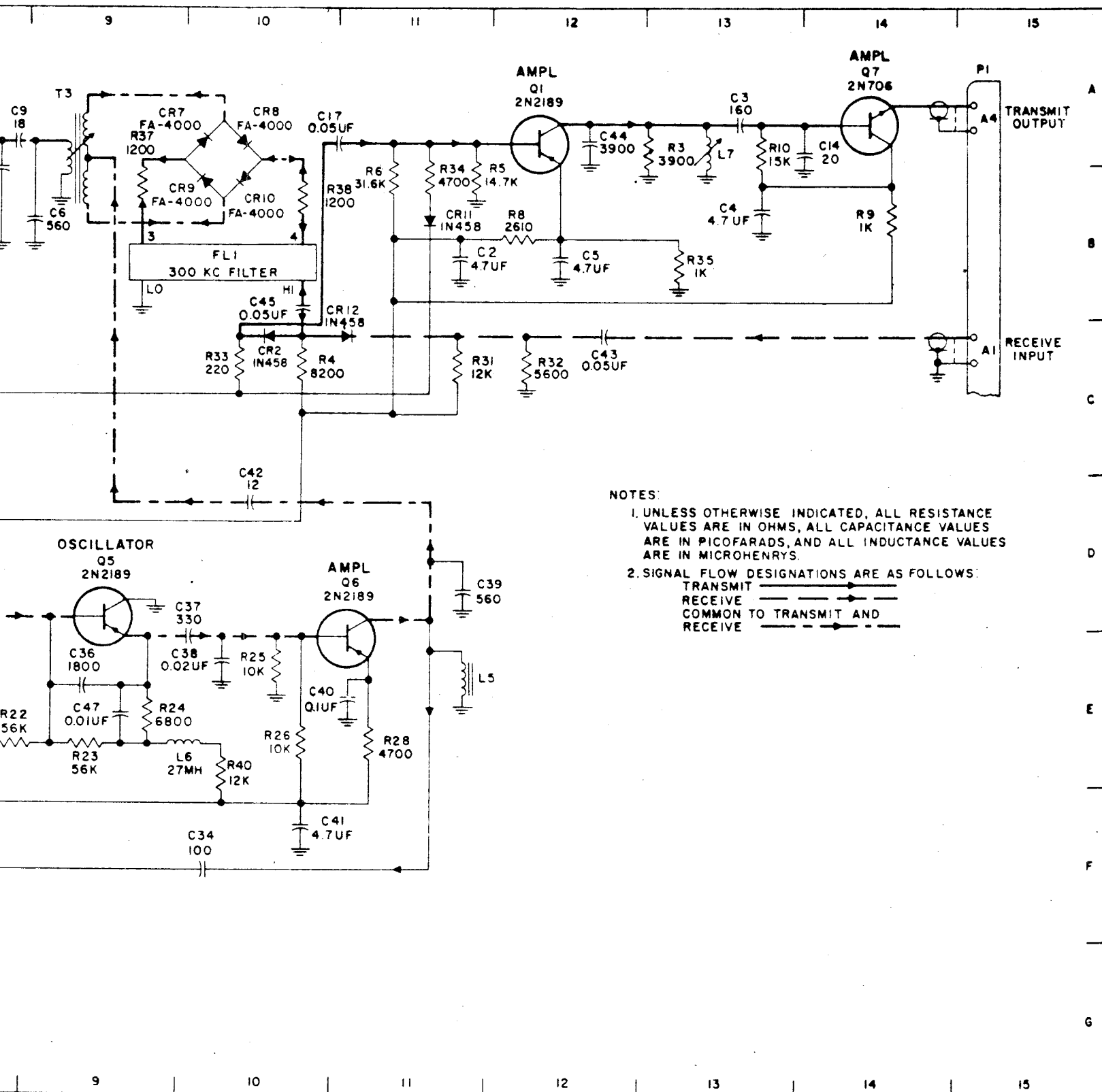
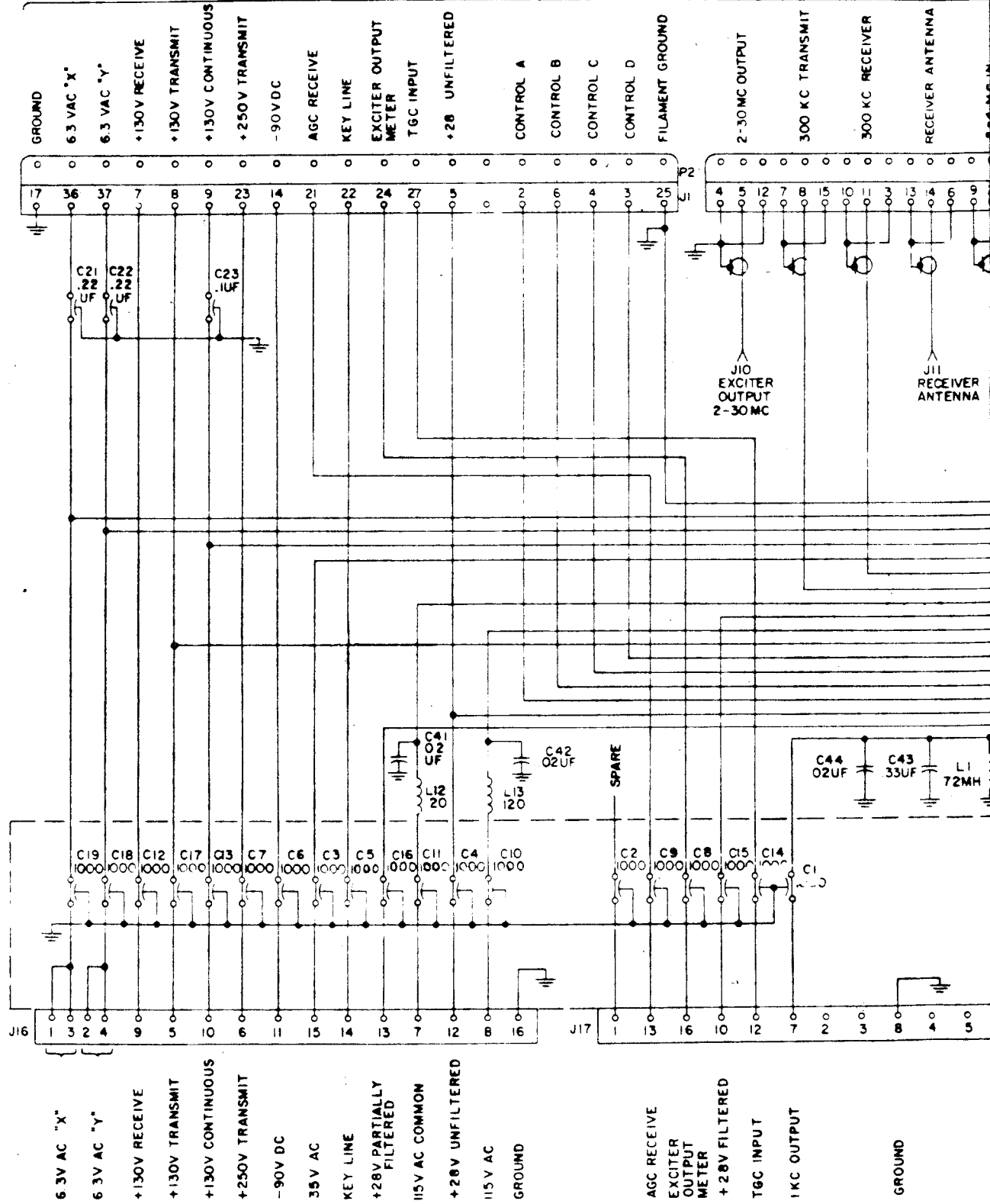
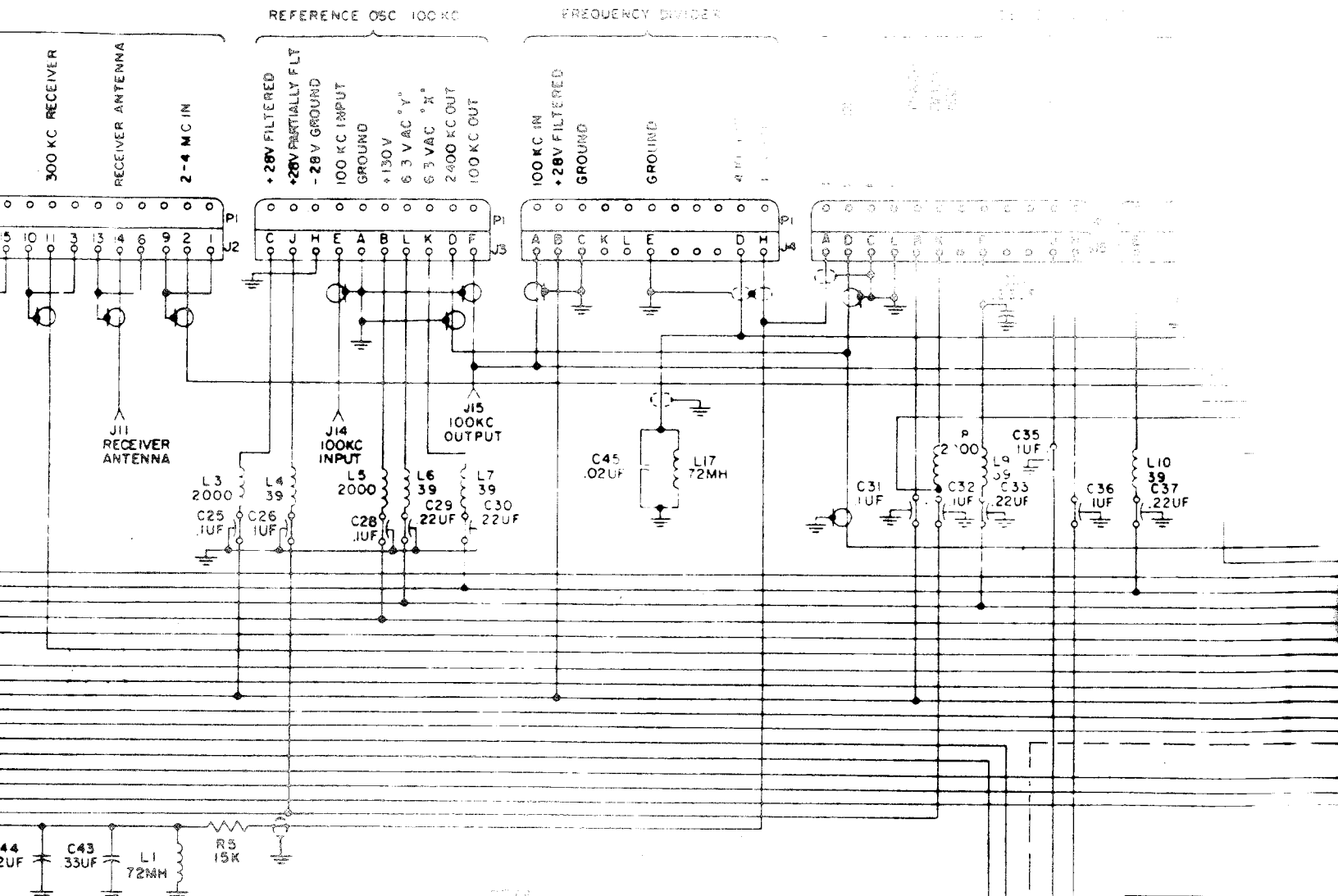


FIGURE 6. CONVERTER, FREQUENCY, ELECTRONIC, CV-1749 ()/UR, SCHEMATIC DIAGRAM

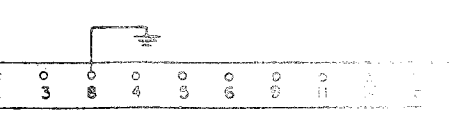
RF TUNER





UNLESS OTHERWISE INDICATED,
 ALL RESISTANCE VALUES ARE IN OHMS,
 ALL CAPACITANCE VALUES ARE IN UUF,
 ALL INDUCTANCE VALUES ARE IN UH.

MOD A-ADD WIRE FROM JOINT P15 TO
 JOINT A. MOD B-ADDED C44 AND L17.



GROUND

STEP OSCILLATOR

STABILIZED MASTER OSCILLATOR

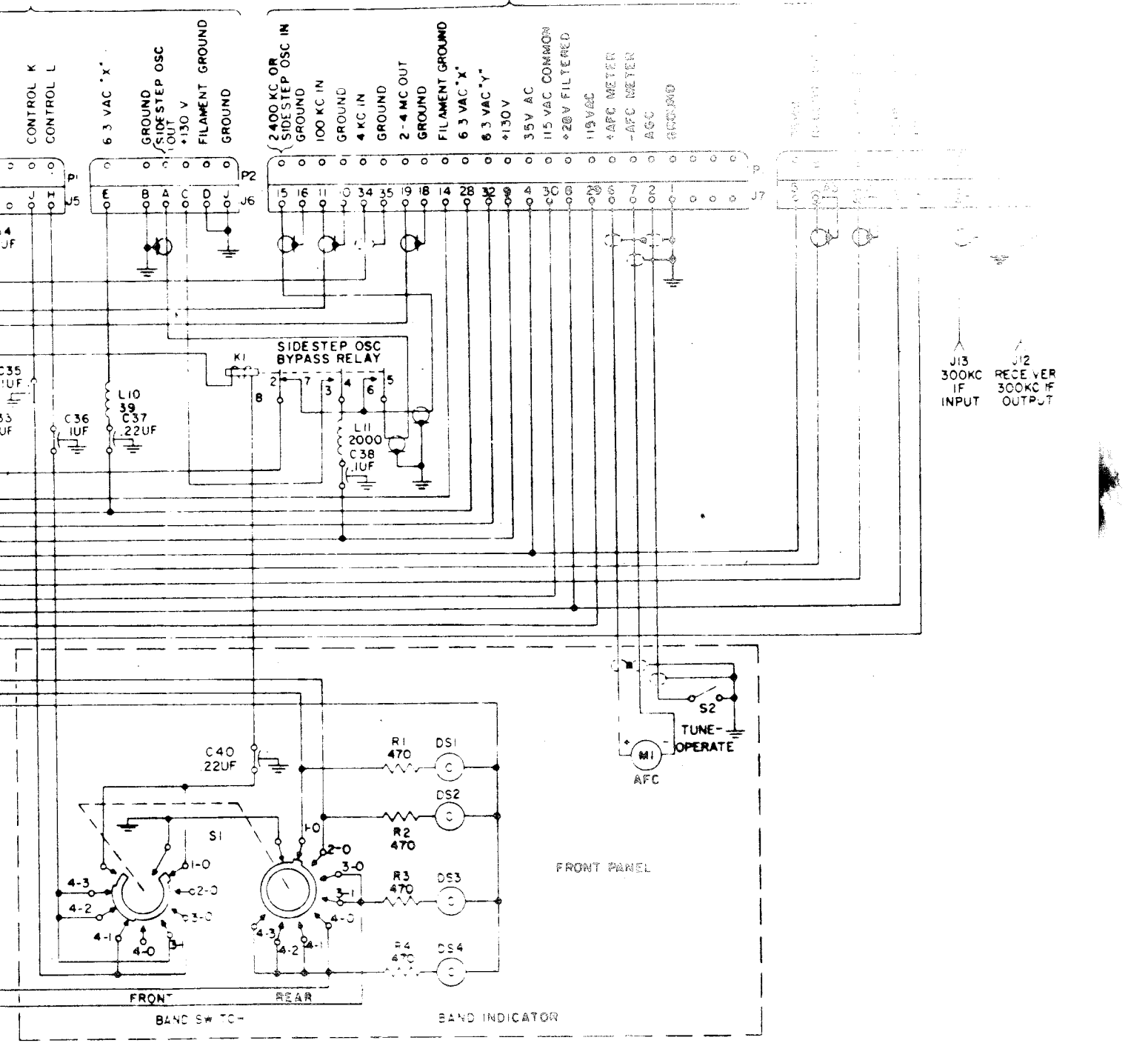


FIGURE 7 - CONVERTED FROM FIGURE 1
 AIRMAIL COY-1749 (1/15/40) 2-11