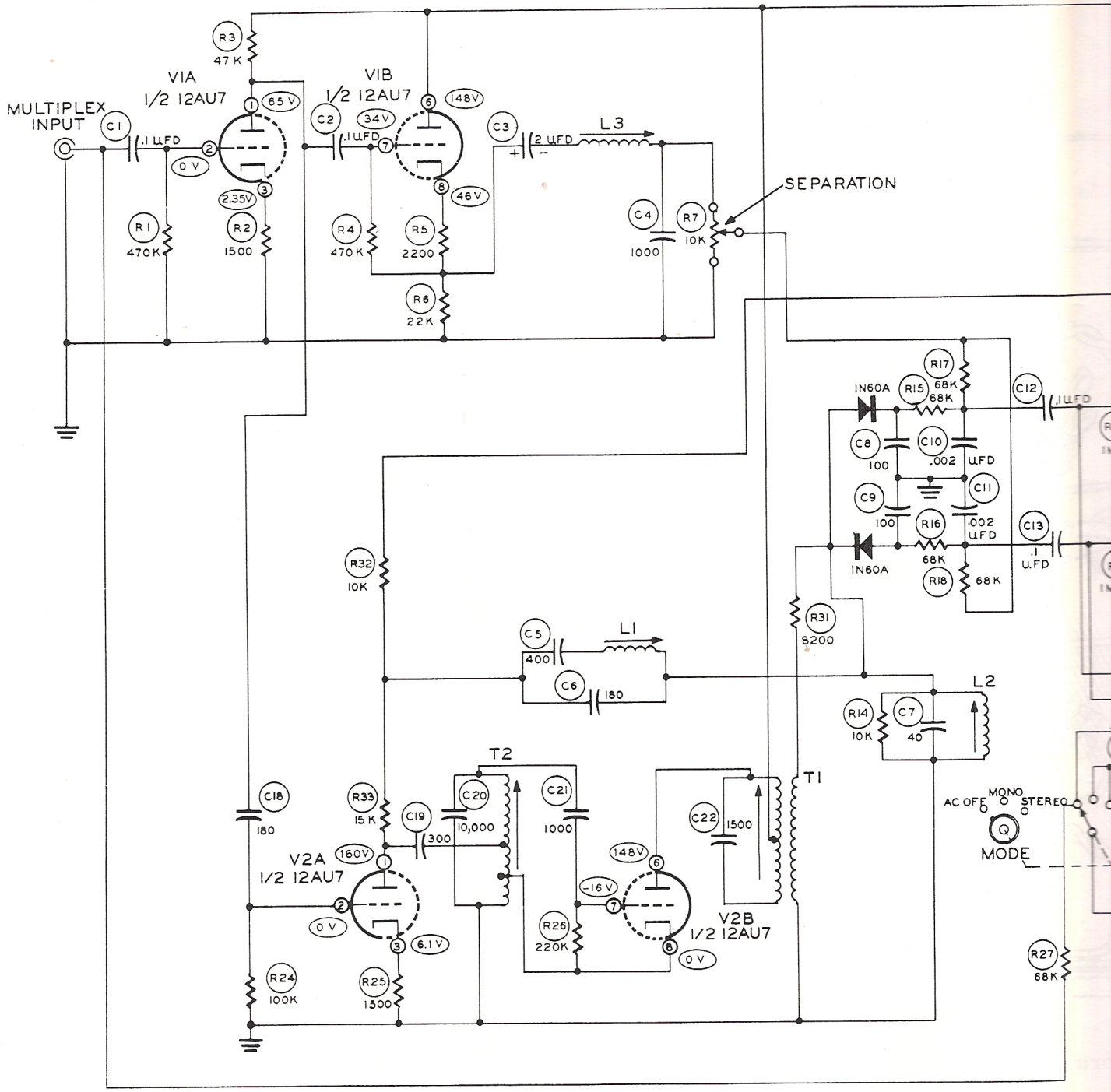


HEATHKIT by Daystrom

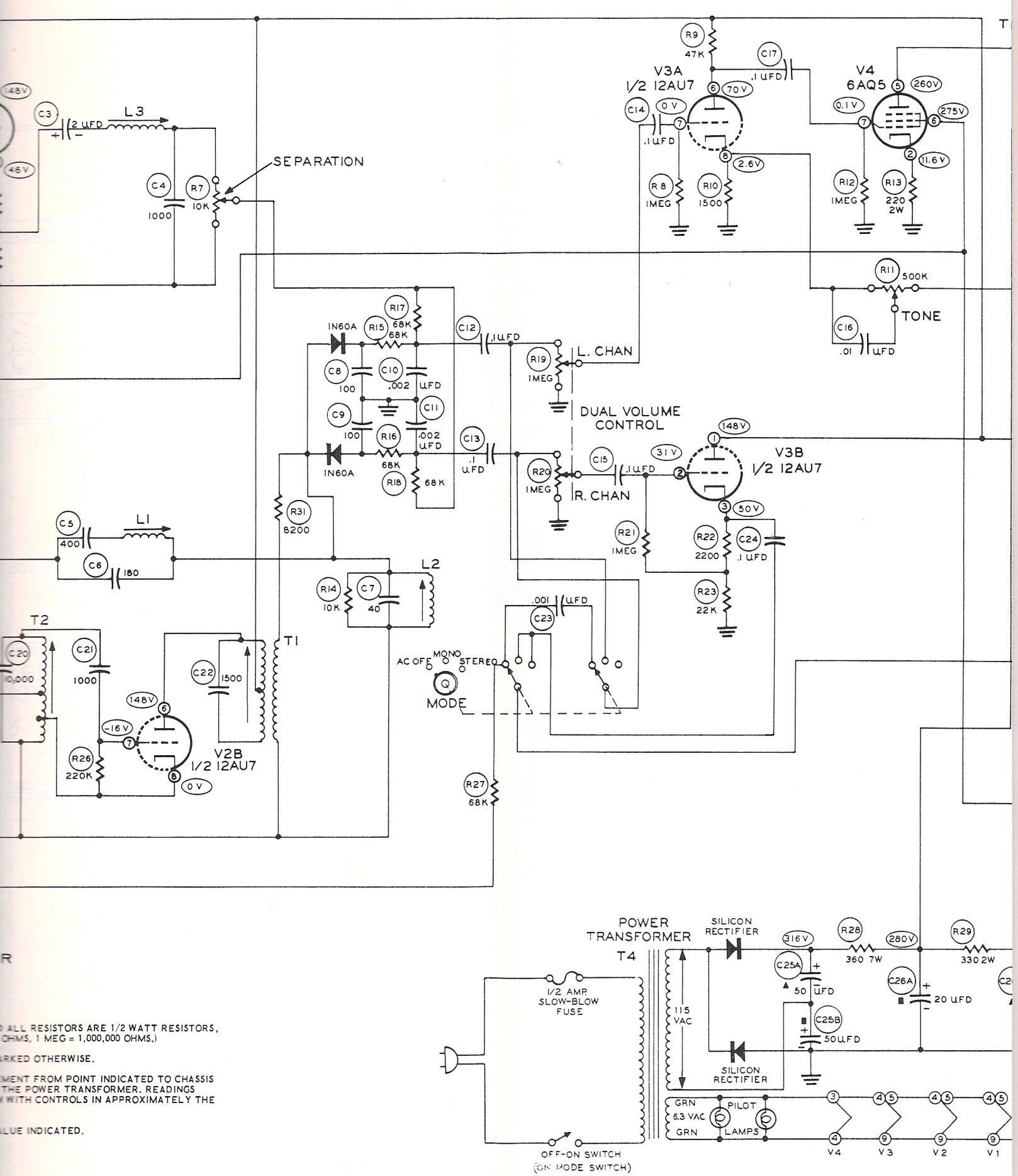
MULTIPLEX ADAPTER
MODEL GRA-21-1

ALL RESISTOR VALUES ARE IN OHMS, AND ALL RESISTORS ARE 1/2 WATT RESISTORS, UNLESS MARKED OTHERWISE. (1 K = 1000 OHMS, 1 MEG = 1,000,000 OHMS.)

ALL CAPACITORS ARE IN $\mu\mu$f, UNLESS MARKED OTHERWISE.

⬭ INDICATES A VOLTAGE MEASUREMENT FROM POINT INDICATED TO CHASSIS GROUND, EXCEPT FOR AC VOLTAGES ON THE POWER TRANSFORMER. READINGS TAKEN WITH AN 11 MEGOHM INPUT VTVM WITH CONTROLS IN APPROXIMATELY THE CENTER POSITIONS.

VOLTAGES MAY VARY ±10% FROM THE VALUE INDICATED.

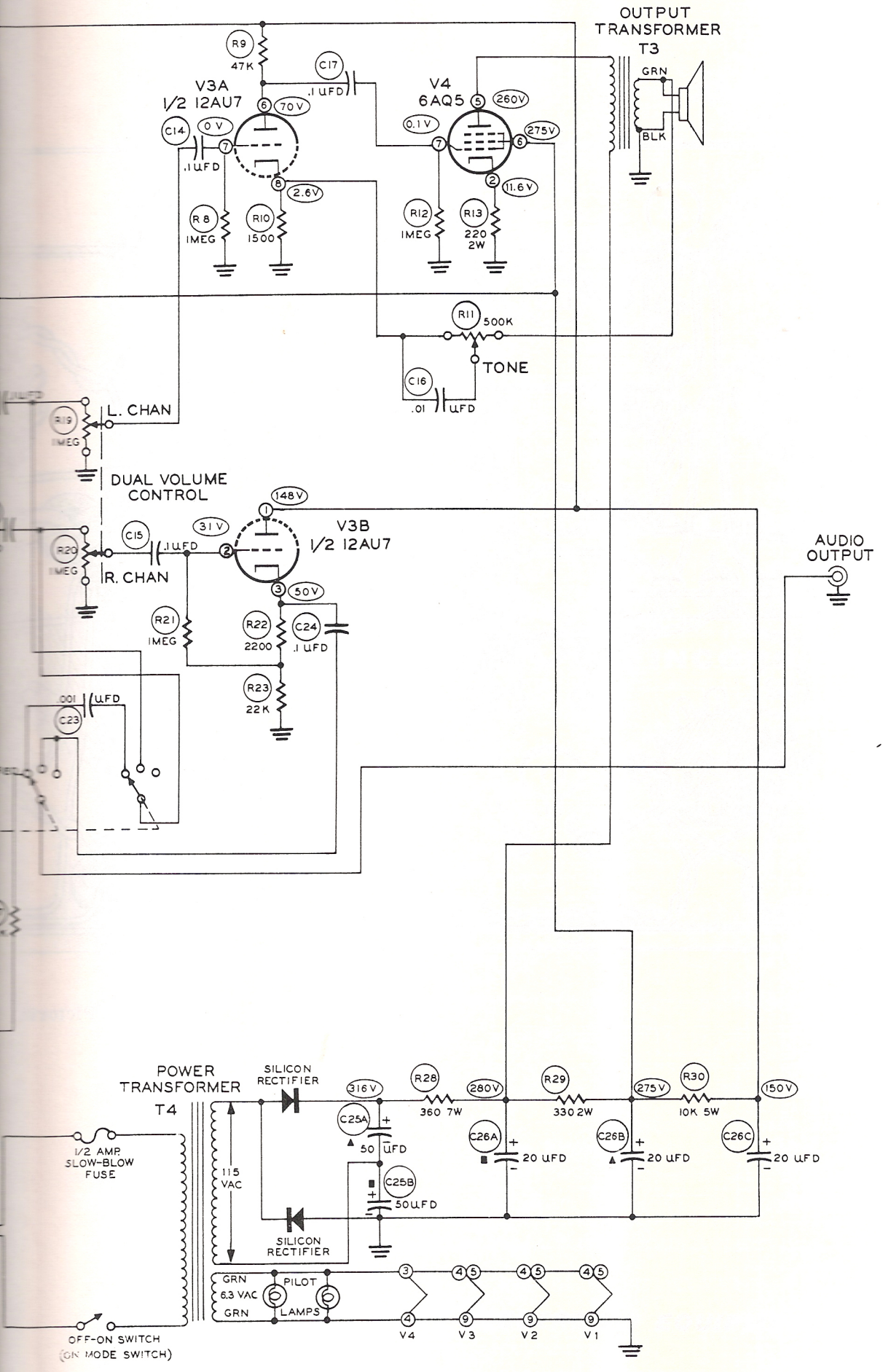


ALL RESISTORS ARE 1/2 WATT RESISTORS,
OHMS, 1 MEG = 1,000,000 OHMS.)

ARKED OTHERWISE.

MENT FROM POINT INDICATED TO CHASSIS
THE POWER TRANSFORMER. READINGS
WITH CONTROLS IN APPROXIMATELY THE

ALUE INDICATED.


OUTPUT TRANSFORMER T3
GRN
BLK
R9 47K
C17 .1 uFD
V3A 1/2 12AU7
6 70 V
C14 0 V
7
.1 uFD
8 2.6V
R8 1MEG
R10 1500
V4 6AQ5
5 260V
0.1 V
7
6 275V
2 11.6 V
R12 1MEG
R13 220 2W
R11 500K
TONE
C16 .01 uFD
L. CHAN
R19 1MEG
DUAL VOLUME CONTROL
R. CHAN
R20 1MEG
148V
1
C15 .1 uFD
31 V
2
V3B 1/2 12AU7
3 50V
R21 1MEG
R22 2200
C24 .1 uFD
R23 22K
.001 uFD
C23
AUDIO OUTPUT
POWER TRANSFORMER T4
SILICON RECTIFIER
316 V
C25A 50 uFD
C25B 50 uFD
SILICON RECTIFIER
R28 360 7W
280V
R29 330 2W
275V
R30 10K 5W
150V
C26A 20 uFD
C26B 20 uFD
C26C 20 uFD
1/2 AMP SLOW-BLOW FUSE
115 VAC
GRN
6.3 VAC
GRN
PILOT LAMPS
OFF-ON SWITCH
(ON MODE SWITCH)
V4
V3
V2
V1

ALIGNMENT

( ) 1. Remove the Multiplex Adapter from its cabinet.

( ) 2. Short lug D of coil T2 (#40-384) to ground (chassis) with a short clip lead. See Pictorial 2 on Page 16.

( ) 3. Connect a generator to the multiplex input jack, set at a frequency of 67 kc. Adjust the generator output level to .3 volt rms.

( ) 4. Connect an oscilloscope and AC VTVM to lug 5 of terminal strip C. See Pictorial 3 on Page 21.

( ) 5. Plug the Multiplex Adapter in and turn it on.

( ) 6. After the unit has warmed up, adjust coil L1 (#40-392) for minimum output. The voltmeter should read about .02 volt rms, or less. NOTE: This adjustment will be quite sharp.

( ) 7. Disconnect the clip lead from lug D on coil T2 (#40-384).

( ) 8. Leave the generator connected to the multiplex input and set it to 19 kc (+ or - 100 cps). Adjust the generator output level to .1 volt rms.

( ) 9. Leave the oscilloscope and voltmeter connected to lug 5 of terminal strip C.

( ) 10. Adjust coil T2 (#40-384) to a maximum output. Observe the oscilloscope to make sure the 38 kc output is locking on the 19 kc input signal. NOTE: This adjustment will be very sharp and should be made carefully.

( ) 11. Next, adjust coil T1 (#40-385) for maximum output. NOTE: This adjustment will also be quite sharp and should be peaked carefully.

( ) 12. Finally, adjust coil L2 (#40-387) for maximum output. NOTE: This coil will be very broad and the slug will probably have to be rocked back and forth to find the peak.

( ) 13. The voltmeter should now read about 8 volts rms.

( ) 14. Reset the generator to 1000 cps and adjust its output level to 3 volts.

( ) 15. Remove the oscilloscope and voltmeter from lug 5 of terminal strip C and connect them to lug 5 of terminal strip E. Set the voltmeter to the 10 volt range.

( ) 16. Set the VOLUME control to the full clockwise position.

( ) 17. With the channel SEPARATION control in the maximum counterclockwise position, there should be no output (voltmeter on the 10 volt range).

( ) 18. With the channel SEPARATION control in the maximum clockwise position, the voltmeter should read between 6 and 10 volts rms and the oscilloscope should show a pure sine wave.

( ) 19. Remove the oscilloscope and voltmeter lead from lug 5 of terminal strip E and connect it instead to lug 1 of terminal strip E.

( ) 20. Repeat steps 17 and 18 to check the right channel output.

( ) 21. Remove the oscilloscope and voltmeter from lug 1 of terminal strip E. Unplug the unit and install it in its cabinet again.

This completes alignment of the Multiplex Adapter.