

NATIONAL COMPANY, INC.

HRO-5-1 SERIES SUPPLEMENT

Addition of Noise Limiter

To further improve the performance standards of the HRO Receiver, a noise limiter has been added to the circuit. The design and operation of this new noise limiter has been thoroughly tested in the National Laboratories and has proven its worth in minimizing the effects of undesirable noise pulses of high intensity and short duration. A Limiter control, front panel mounted to the left of the main tuning dial, is provided to adjust the threshold level at which limiting action starts. With the Limiter control set at 0, the limiter circuits will pass all but the strongest audio peak voltages; when the control is set at 10 limiting action is at its maximum, i.e. threshold level at its lowest point. When receiving voice or music, care should be taken not to advance the control too far as distortion will result due to suppression of the positive and negative peaks. The Limiter control may be advanced farther during radiotelegraph reception as distortion is then less important.

The new components used in the noise limiter assembly, with their respective symbol numbers are as follows:

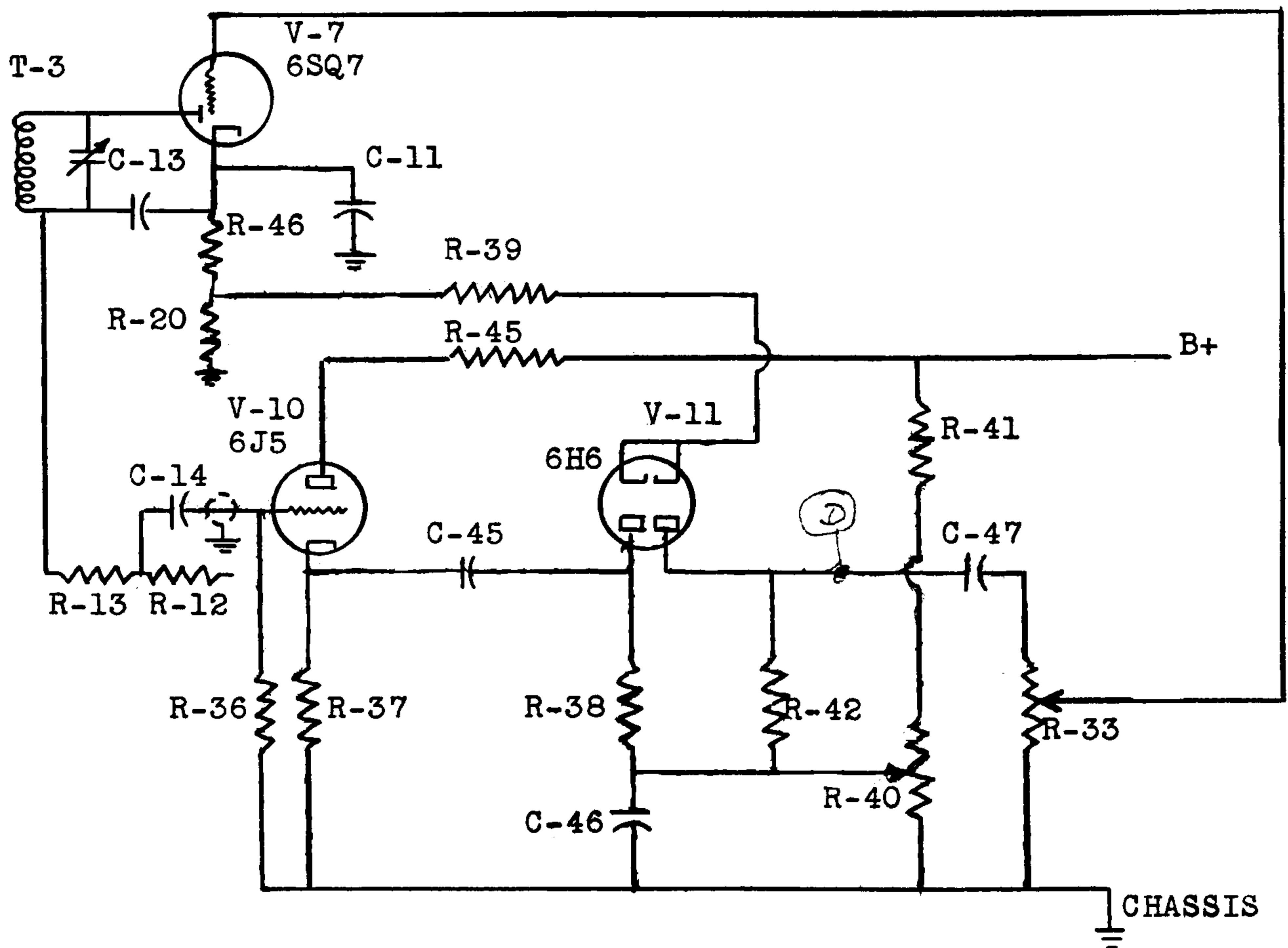
C45	0.1 mfd., 400 VDCW	R39	50,000 ohms, 1/2 watt
C46	8 mfd., 250 VDCW	R40	10,000 ohms, Variable
C47	0.01 mfd., 300 VDCW	R41	50,000 ohms, 2 watt
R36	1 megohm, 1/2 watt	R42	250,000 ohms, 1/2 watt
R37	5,000 ohms, 1/2 watt	V10	6J5
R38	50,000 ohms, 1/2 watt	V11	6H6
	C21 - Changed from 0.1 mfd. to 0.01 mfd.		

Drawn on the following page is the schematic diagram illustrating the noise limiter section of the circuit.

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SUPPLEMENT FOR HRO-5-1 INSTRUCTION MANUAL

SCHMATIC DETAIL
(Noise Limiter Components)



- | | | | |
|--------|------|----|-----------------------|
| Change | R-20 | to | 330 Ohms, 1/2 Watt |
| Add | R-46 | | 470 Ohms, 1/2 Watt |
| Add | R-45 | | 33,000 Ohms, 1/2 Watt |

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SUPPLEMENT FOR THE HRO-5TA & HRO-5RA

The HRO-5A Series of Receivers are equipped with bandspread coil sets, namely the A, B, C and D coil sets. The frequency and dial coverage of these coil sets are as follows:

<u>COIL SET</u>	<u>GENERAL COVERAGE</u>	<u>BANDSPREAD</u>	
		Frequency	Dial
A	14.0 - 30.0	28 - 29.7 MC;	50 - 450
B	7.0 - 14.4	14 - 14.4 MC;	50 - 450
C	3.5 - 7.3	7.0 - 7.3 MC;	50 - 450
D	1.7 - 4.0	3.5 - 4.0 MC;	50 - 450

These coil sets are aligned in the Receiver at the National Laboratories using crystal controlled test oscillators assuring precision calibration. The frequency tolerance for the calibration of the amateur bands adhered to at the National Laboratories is $\pm 0.03\%$.

The National Company wishes to caution those owners of HRO Receivers who intend to purchase the now available bandspread coil sets. These coil sets can be properly aligned in the individual receivers only by using crystal controlled test signals. If the purchaser does not have available suitable test equipment, the National Company is prepared to align these coil sets provided the receiver is shipped to the factory. In the past, the National Company has manufactured models of the HRO employing both glass and metal type tubes. The bandspread coil sets are different for these two models of the HRO Receiver and when ordering it should be stated which model is to be used with the bandspread coil sets.

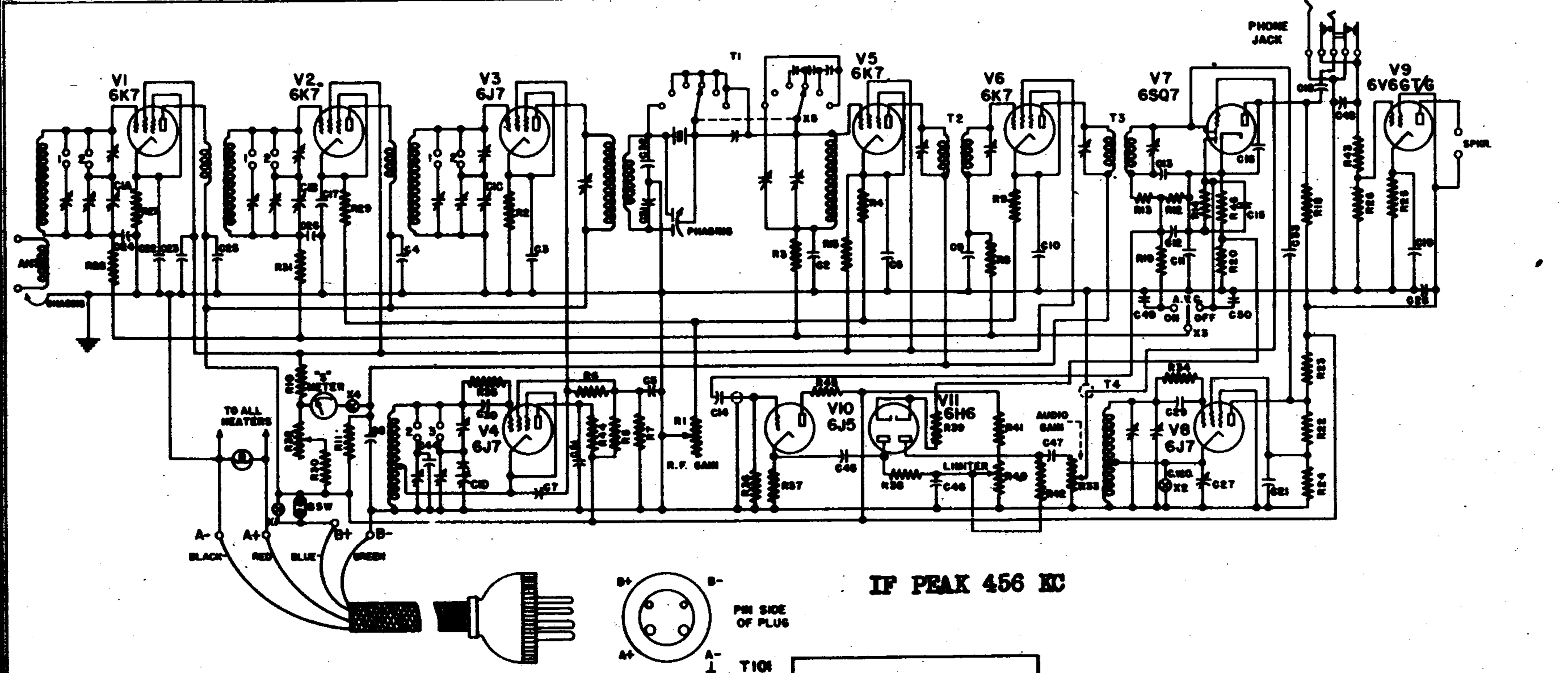
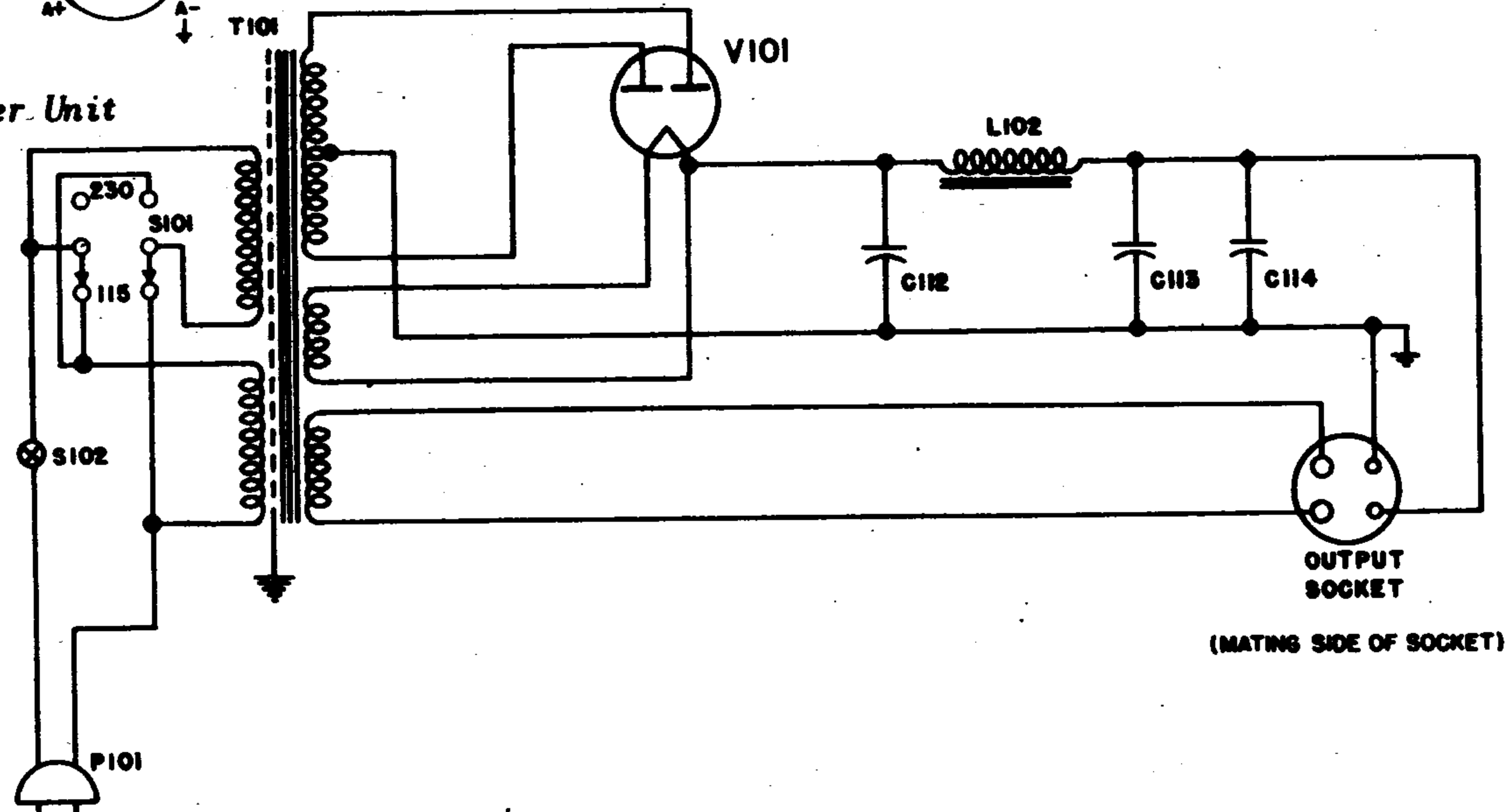
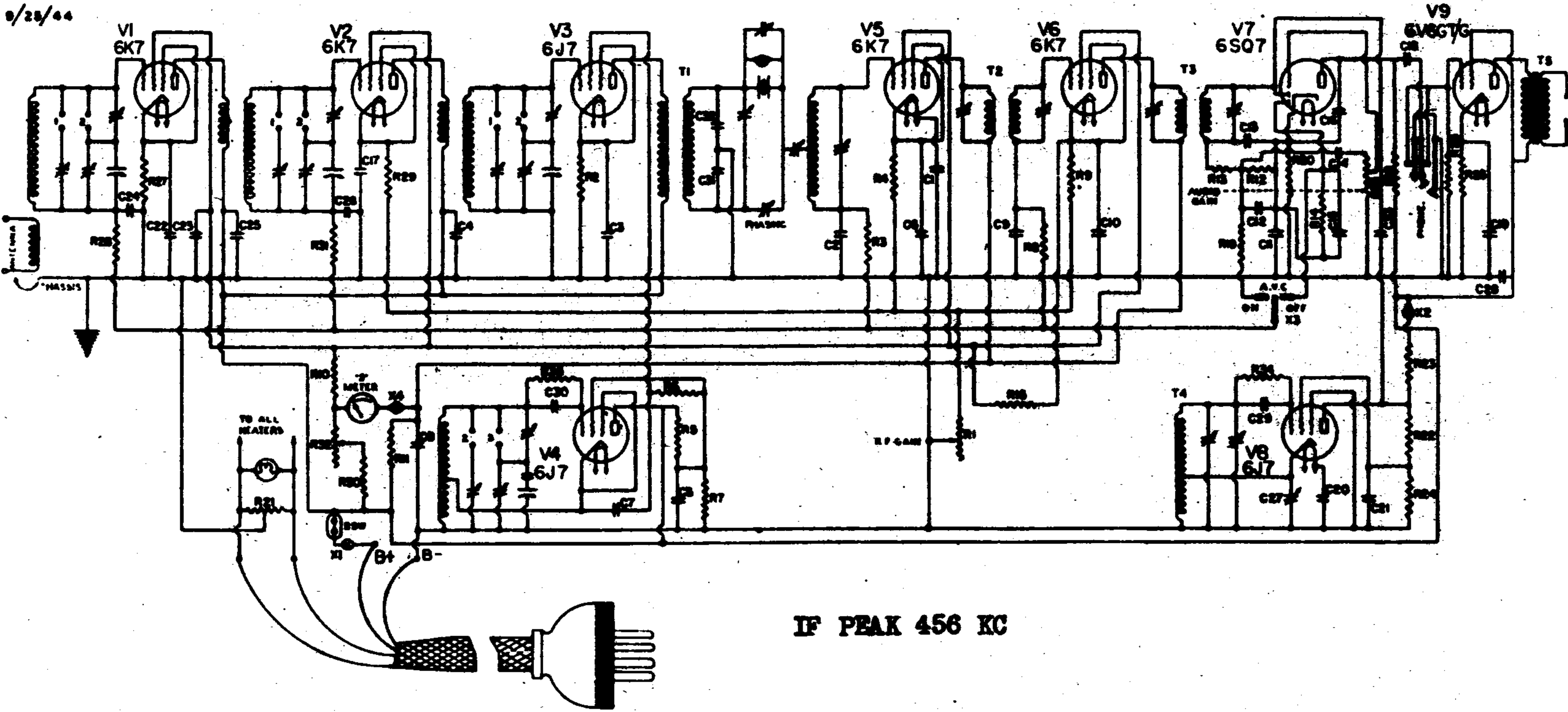


Figure No. 9. Schematic Diagram -- 697 Power Unit



SCHEMATIC DIAGRAM FOR HRO-5 RADIO RECEIVER

9/28/44



IF PEAK 456 KC