AMBASSADOR Model PA146

General Description : Seven-valve (including rectifier) general-purpose amplifier incorporating two-waveband superheterodyne receiver. Audio output 20 watts. Released April 1946.

Power Supply : A.C. mains, 200–250 volts.

Intermediate Frequency : 465 kc/s.

Valves : (V1) TH41; (V2) VP41; (V3) HL41/DD (Demodulator and microphone pre-amplifier); (V4) SP41 (A.F.); (V5 and V6) Pen 44s; (V7) UU7.

General Notes : The receiver section of this unit incorporates a mixer and I.F. amplifier, followed by a diode for detection and undelayed A.V.C. This diode is part of the double-diode triode of which the triode section is used as a microphone amplifier. The radio section follows standard practice, and the only difficult fault likely to arise is, as on the 545, a breakdown of the insulation of one or other of the I.F. transformers, resulting in an intermittent crackle, which is easily detected by tapping the I.F. transformer cans.

The amplifier employs a high-gain A.F. stage, transformer coupled to a pair of Pen 44 output valves connected in push–pull. The output transformer is tapped at 7·5, 15 and 30 ohms to match varying loads. A pilot speaker is employed, which can be switched off after tuning and setting the amplifier. This loudspeaker does NOT, by itself, load the amplifier, and the correct loading of the main output must be ensured when testing. A 0·3-amp. bulb in the negative H.T. lead acts as indicator and fuse bulb. Failure of this to light indicates failure of the H.T. system.

A common fault in the amplifier, indicated by low volume and distortion, is the failure of the SP41 screen resistor (1MΩ). In ealier models the 0·0001-μF. across the Pen 44 grids is replaced by a 4·7-kΩ resistor and a 0·002-μF. capacitor wired in series from anode to anode. In the event of breakdown of this capacitor, it should not be replaced, but the 0·0001-μF. capacitor should be wired from grid to grid.

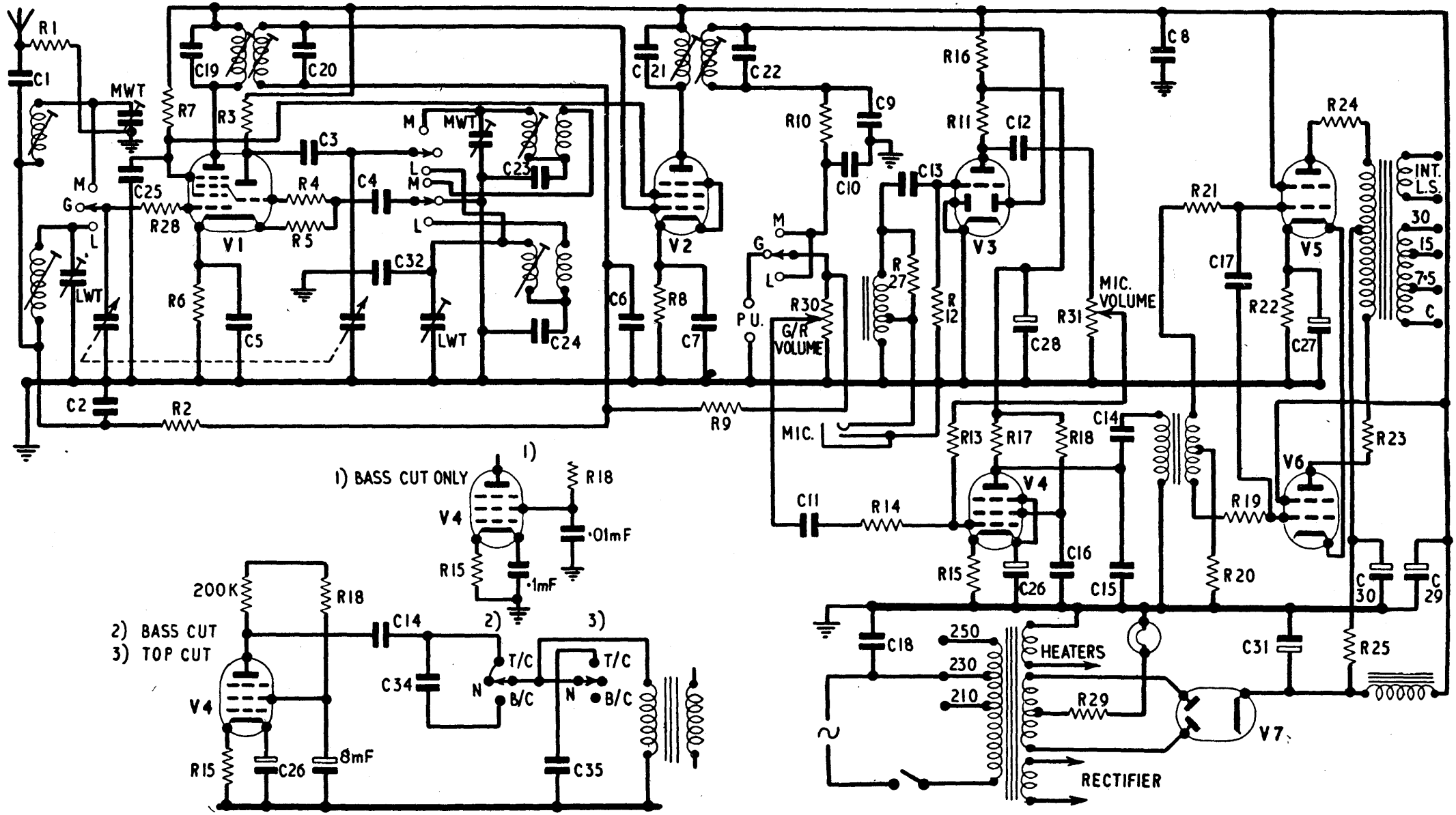
The microphone jack is wired to a transformer holder. The transformer (an enclosed type, on an octal base) must be removed when a high-impedance microphone is used, and inserted for a low-impedance microphone.

No tone control is fitted to this amplifier, but this may be necessary if the amplifier is frequently used on speech. Suggested tone-correction circuits are given.

Component Values :

Capacitors.

C1	600 pF.	C9	200 pF.	C17	100 pF.	C25	0·1
C2	2400 pF.	C10	200 pF.	C18	0·002	C26	25 (25 v.)
C3	100 pF.	C11	0·02	C19	100 pF.	C27	25 (25 v.)
C4	100 pF.	C12	0·02	C20	100 pF.	C28, C29	8 + 8 (450 v.)
C5	0·1	C13	0·02	C21	100 pF.	C30, C31	8 + 8 (450 v.)
C6	0·1	C14	0·1	C22	100 pF.	C32	100 pF.
C7	0·1	C15	200 pF.	C23	405 pF.	C34	200 pF.
C8	0·1	C16	0·1	C24	220 pF.	C35	0·001



CIRCUIT DIAGRAM AND SUGGESTED TONE-CORRECTION CIRCUITS—AMBASSADOR AMPLIFIER MODEL PA146

Resistors.

R1	47k	R6	150	R11	100k	R16	47k	R21	1k	R27	470k
R2	47k	R7	22k (2 W.)	R12	4·7M	R17	220k	R22	68 (2 W.)	R28	47
R3	39k	R8	330	R13	1M	R18	1M	R23	47	R29	68 (2 W.)
R4	47	R9	1M	R14	1M	R19	1k	R24	47	R30	0·5M (Pot.)
R5	47k	R10	47k	R15	3·3k	R20	10k	R25	68 (1 W.)	R31	0·5M (Pot.)