EKCO AD37

Three-valve, plus rectifier, straight receiver covering two wavebands and for operation from AC or DC supplies of 200–250 volts. Made by E. K. Cole, Ltd., Service Department, Southend-on-Sea.

THE aerial is connected through a series capacity-equalising trimmer T1 to an auto-transformer tapping on L2, the MW coil, or to L1, the primary of the LW input transformer. V1 is the radio-frequency amplifier with gain control by variable bias produced by VR1.

[redacted]ansformer coupling with tuned [redacted] leads to V2, a pentode used as [redacted]k detector. T2 between the [redacted] V1 and V2 is a pre-set reaction [redacted].

[redacted]ode circuit of V2 contains an HF choke L8, a load resistance R5, and a decoupling resistance R6.

C13 passes LF to V3 which has R7 for grid resistance while it is biased by R8 and C16. A fixed tone condenser C15 is across the output transformer.

V4 is the half-wave rectifier with smoothing by the choke L9 and electrolytics C17, C18.

L10, L11 and C19 are noise-filter components.

Valves.—V1, VP13C; V2, SP13C; V3, Pen36C or Pen3520 (Mazda); V4, UR1C or 1D5 (Brimar).

GANGING

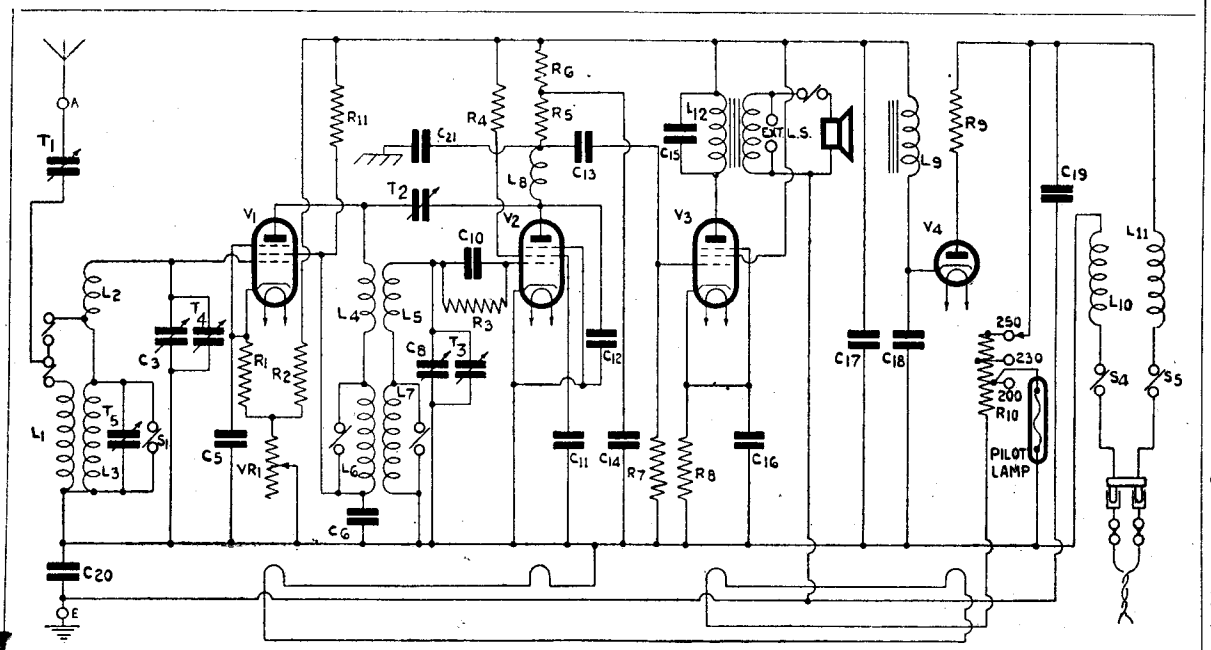
With gang at maximum, pointer should read 570 m. The indicator arm can be adjusted on its spindle.

MW Band.—Set T1 one and a quarter turns back from hard in. Inject 250 m (1,200 kc) to aerial socket *via* .0002 mfd. Adjust T3 and T4 for maximum reading on output meter.

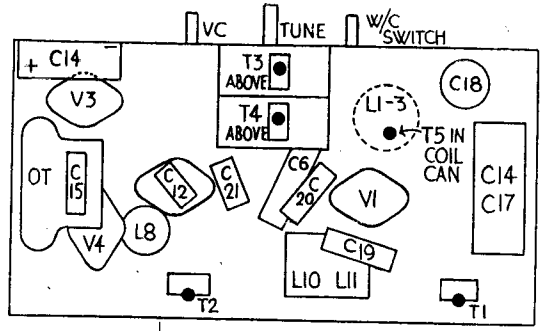
LW Band.—Inject and tune 200 kc (1,500 m). Adjust T5 for maximum while rocking gang condenser slightly.

Aerial Compensation.—Adjust tuning of set and T1 for maximum on a weak station at about 200 m, using the aerial with which the set will be used.

Pre-set Reaction.—Tune receiver to a station at about 200 m and which needs maximum volume adjustments. Adjust T2 to point just short of oscillation while rocking gang slightly.



Simplified diagram of the underside of the AD37 chassis indicating the positions of trimmers, T3 and T4 being accessible from the top. The receiver is a "straight" three-valve set plus a half-wave rectifier for operation from AC or DC supplies.



CONDENSERS

C	Mfds	C	Mfds
5	.25	15	.004
6	.15	16	50
10	15 cm	17	24
11	.1	18	8
12	.0003	19	.1
13	.1	20	.1
14	2	21	.0008

RESISTANCES

R	Ohms	R	Ohms
1	140	8	165
2	30,000	9	50
3	2 meg	10	500–700
4	500,000	11	10,000
5	100,000	VR1	10,000
6	25,000	L12	650
7	500,000		

From My Workshop Log-book

by F. Day-Lewis

A LARGE PA amplifier had the following rather peculiar fault. When the mixer section was being tested, it was found that with one valve taken out one channel would work at full volume; if the other channel was similarly tested, it also worked at full volume. With the two valves in circuit there was only half volume on both channels.

The circuit was of the type where two 6J7G valves were used with separate grid circuits and a common anode circuit, thus mixing the signals. The anode voltage was tested and found to rise appreciably when one valve was removed, the increase was more than normally expected.

When the anode feed resistor was checked its value was much too high, and the increased voltage drop when the two valves were drawing current was leaving each valve with too small an anode working voltage, and thus the amplification suffered.

A PYE receiver was being tested for a complaint of signals fading completely out and remaining off for some time. When this happened in the workshop the engineer checked the plate and screen voltages, and these were all found correct. Furthermore, the stages were all working with the exception of the oscillator section of the frequency-changer valve. (This was tested by injecting a signal from the signal generator to produce mixing and IF.)

It was noticed that the signals from the generator, whether HF or LF, seemed to be weak in strength. The valves and voltages were again checked, and only when the AC heater voltages to the valves were tried was the fault found; there was an intermittent short circuit in the winding on the mains transformer, and this was causing the heater voltage to drop to approximately 2.5 volts.

The lowered voltage was not sufficient to stop the valves from operating, with the sole exception of the frequency-changer oscillator.

A PYE QP/B on which I was working had weakness on all stations and some distortion. Voltages and valves were all correct, and testing the LF side with phones showed that the signal after the detector was of the expected strength.

When the input to the grids of the double pentode QP22A was tested, it was badly down in strength. There is a HF by-pass condenser across the grids, and opening one of its connections brought in the signal at full volume. It was short-circuiting almost all the signal voltage.

ENGINEERS should be careful when replacing a rewound transformer in a receiver that apparently takes no excessive HT current due to leakage of electrolytic or other condensers. We had a case of this recently where a client informed us that he already had the burnt-out mains transformer repaired on two occasions.

When we replaced it we left the set on "soak" test with a meter in the HT common return lead. After some days in use it was noticed that the current was steadily increasing in value. The cause was a bad electrolytic condenser.

OUR engineers were really puzzled a short while ago by what was actually a simple fault, but which, on account of its intermittent nature and the few occasions on which it occurred, took a long time to settle.

It was in a HMV 423, and the customer complained of it "going off at infrequent intervals." After numerous tests both in his home and in the shop the set was brought in for a prolonged run. It went off once or twice, but as soon as a meter was brought near it the signals reappeared.

After some time the cathode-ray tube was brought into use and connected across the grid input to the IF valve and a mains signal generator was switched on to the set and left working. This went on for a day or so, testing at frequent times.

At last the signal faded almost out and the tube showed that the IF stage was oscillating. There was no audible indication of the oscillation.

The condenser by-passing the AVC decoupling resistor was shunted with a good one and this stopped the trouble.

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