

EKCO AD38

Three-valve, plus rectifier, two waveband tuned-radio-frequency receiver for operation from 200-250 v. DC or 200-250 v. 40-80 cycle AC. Extra loudspeaker sockets are provided for a low-impedance speaker of about 3 ohms. Marketed by E. K. Cole, Ltd., Ekco Works, Southend-on-Sea.

AERIAL input is shunted by R14 and signals are fed via C1 to the coupling coils L1 (medium wave), L2 (long wave). The tuning coils L3 (MW) and L4 (LW) are connected directly

WINDINGS

L	Ohms	L	Ohms
1	15	8	11.3
2	85	9	650
3	1.7	10	very low
4	11.3	11	3
5	1.7	12	375
6	1.7	13	2.5
7	9.3	14	2.5

across VC1 section. The ganged condenser and signals are fed to the grid of the variable-mu pentode V1.

An HT bleeder resistance R2 supplements the anode current which flows through the cathode resistances R1 and VR1, so as to give the latter more control over the gain of the stage. Control is effected by varying the bias.

A high frequency transformer L5, L6 (MW) and

RESISTORS

R	Ohms	R	Ohms
1	140	9	50
2	30,000	10	575+100+100
3	2 meg	11	10,000
4	250,000	12	10,000
5	100,000	13	10,000
6	25,000	14	50,000
7	500,000	15	100
8	165	VR1	10,000

CONDENSERS

C	Mfds	C	Mfds
1	.0012	10	.0003
2	.00015	11	2
3	.1	12	.01
4	.25	13	.01
5	.15	14	50
6	15 cm.	15	24
7	.1	16	8
8	.0002	17	.1
9	.1		

L7, L8 (LW) transfers signals to the grid of the pentode V2 which operates as leaky-grid condenser. R3 and C6 are the leak and condenser. VC2 section of the gang tunes the grid coils L6, L8.

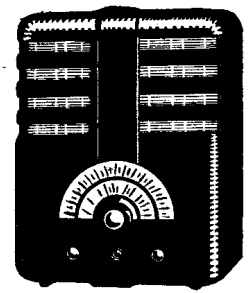
Reaction is introduced from the anode of V2 to the primary coils of the HF coupling transformer by means of VC3.

VALVE READINGS

V	Type.	Electrode	Volts	Mas
1	VP13C Mullard or VPU1 Ekco	Anode	143	5.5
		Screen	143	2
		Cathode	1.1	—
2	SP13C Mullard	Anode	100	1
		Screen	75	.35
		Anode	175	45
3	Pen36C Mullard	Screen	183	9.5
		Cathode	9	—

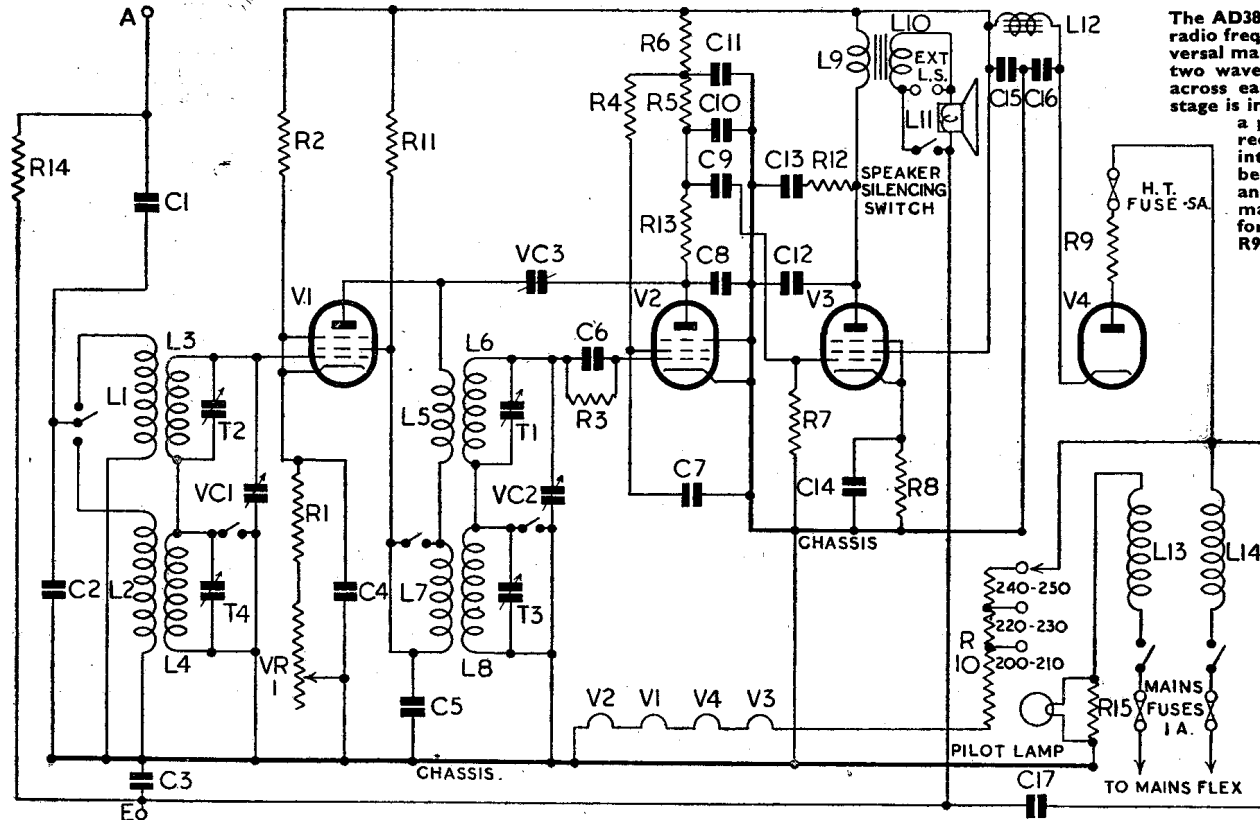
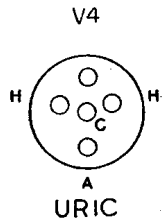
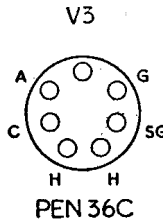
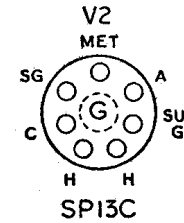
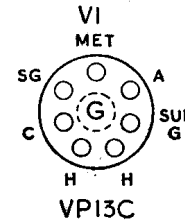
Readings taken aerial disconnected, volume control at maximum and sensitivity control fully anti-clockwise.

The Ekco AD38 is an AC-DC model in a black moulded cabinet. It is a straight three-valve plus rectifier.

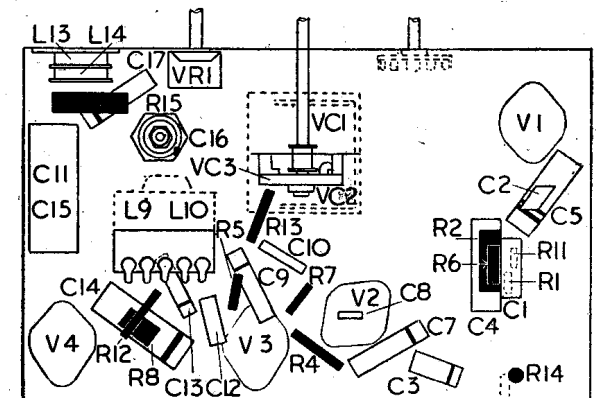
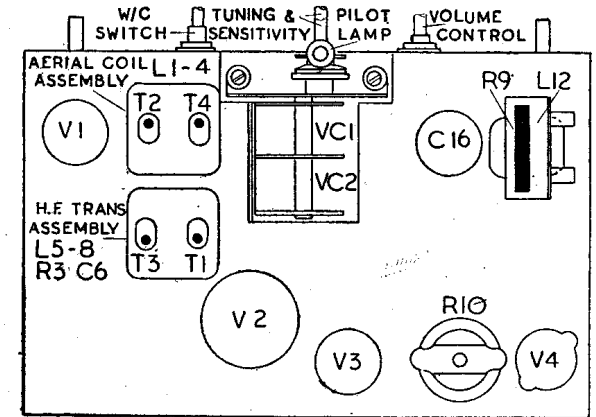


HF filtering in the V2 anode circuit is effected by R13 and C8, and decoupling by R5, R6, C10 and C11. R5 is also the audio frequency coupling resistance which feeds the grid of the output pentode V3.

(Continued overleaf)



The AD38 is a "straight," tuned radio frequency, receiver for universal mains operation. It covers two wavebands with a trimmer across each coil. The detector stage is interesting as it employs a pentode as a leaky-grid rectifier while reaction is introduced by a condenser between the anodes of V1 and V2. The half-wave mains circuit is straightforward and contains both R9 and a fuse for HT protection.



The two layout diagrams indicate a logical and neat layout with most small parts suspended in the wiring. All trimmers are located on the coil cans and are accessible from above.

through C9. R7 is the grid leak, and the valve is cathode biased by R8, decoupled by C14.

A permanent degree of tone correction is effected by R12 and C13, connected between the anode of V3 and chassis.

Output transformer L9, L10 couples V3 to the low resistance permanent-magnet loudspeaker in which L11 is the speech coil. Sockets are provided for an extra loudspeaker, and a speaker silencing screw may be adjusted to break the internal speaker circuit when the internal speaker is not required.

High tension is derived from the mains input via a fuse and a limiting resistance R9. On AC mains the half-wave valve V4 rectifies the current, and the DC pulsations are smoothed by the choke L12 and condensers C15, C16.

Valve heaters are in series with the mains dropping resistance R10 which is in one mains lead, while a pilot lamp and its shunt R15 are in the other mains

lead. Mains ring is effected by L13, L14, and a one-amp fuse incorporated in each mains lead.

GANGING

Calibrating. Adjust the tuning condenser to its electrical maximum and see that the scale pointer covers the 560 m. mark; if it does not, remove the tuning knob, slacken off the two small screws in front of the pointer mounting plate and move the pointer through the desired angle. Tighten up the two small screws and replace the tuning knob.

MW Band. Switch receiver to MW and tune to 250 m. Adjust volume control to maximum and turn the sensitivity control until the receiver is just short of oscillating point.

Inject a 250 m. signal via the aerial and earth sockets and adjust T1 and T2 for maximum output.

LW Band. Switch receiver to LW and tune to 1090 m. Adjust volume control and sensitivity control as for MW band and inject a signal of 1090 m. into the aerial and earth sockets.

Adjust T3 and T4 for maximum output.

Wanted—More Fusing, Fewer Burnouts

Reflections, Technical and otherwise, by "ONLOOKER"

Fusing Sets

DURING the past two war years, engineers have reported a spate of burnt-out sets. True, the majority have been old ones but this sort of thing would not have happened if these had been adequately fused.

I agree that to fuse a set to obviate every possible source of danger is not as easy as it looks.

Most of us have known of resistances which, owing to a short in an adjacent condenser, have become overheated and burst into flame, setting the chassis alight. If a ceramic type had been used this could not have happened.

A receiver should certainly be fused on each side of the mains, also a fuse could be fitted in the centre lead of the HT secondary of the mains transformer.

Cabinet "Winners"

SELECTION of radio cabinets has always been to manufacturers an almost insoluble puzzle. We all want "winners." But the old sets which have been returned for servicing, some of them for the first time in ten years, make us realise with what esteem those fitted with the plainest "boxes" are held in.

This sentiment does not spring from the cabinet design but from the quality of service the set has given.

Original designs for radio cabinets, like original plots for stories, rarely materialise. Although an attractive cabinet is a definite selling factor the greatest value should be placed inside it.

Far too much inconsequential effort is spent on trying to find cabinet designs which will lick creation. Eggs are all alike in appearance, yet everyone knows how their quality can vary.

Under Chassis Layouts

A FEW days ago I had a discussion with several service engineers. We were talking about the under-chassis layout of components and most of us agreed that a lot could be done to simplify matters from the servicing angle.

"But why should we?" said one dissentient

voice. "If things are arranged as simply as all that, the public will eventually be able to service its own sets. I think," he continued, "we should make it more difficult. We should imitate the medical profession which uses latin terms that no one else can understand. We should emulate the legal profession which has brought ambiguous legal jargon, which few laymen can understand, to a fine art. In like manner, we should make the servicing of radio sets so difficult that it would become an exclusive profession."

I don't think my friend or anyone else need worry about the public being their own radio service engineers even if the chassis layout was doubly simplified to what it is now.

Let us not forget that the industry was, in the first place, largely recruited from the enthusiastic amateur and despised dabbler.

These were the so-called fools who stepped in where the angels feared to tread. The angels in this case were the electrical people who, had they seized their golden opportunities with both hands, could have prevented the Radio Trade from being dragged through unhappy adventures.

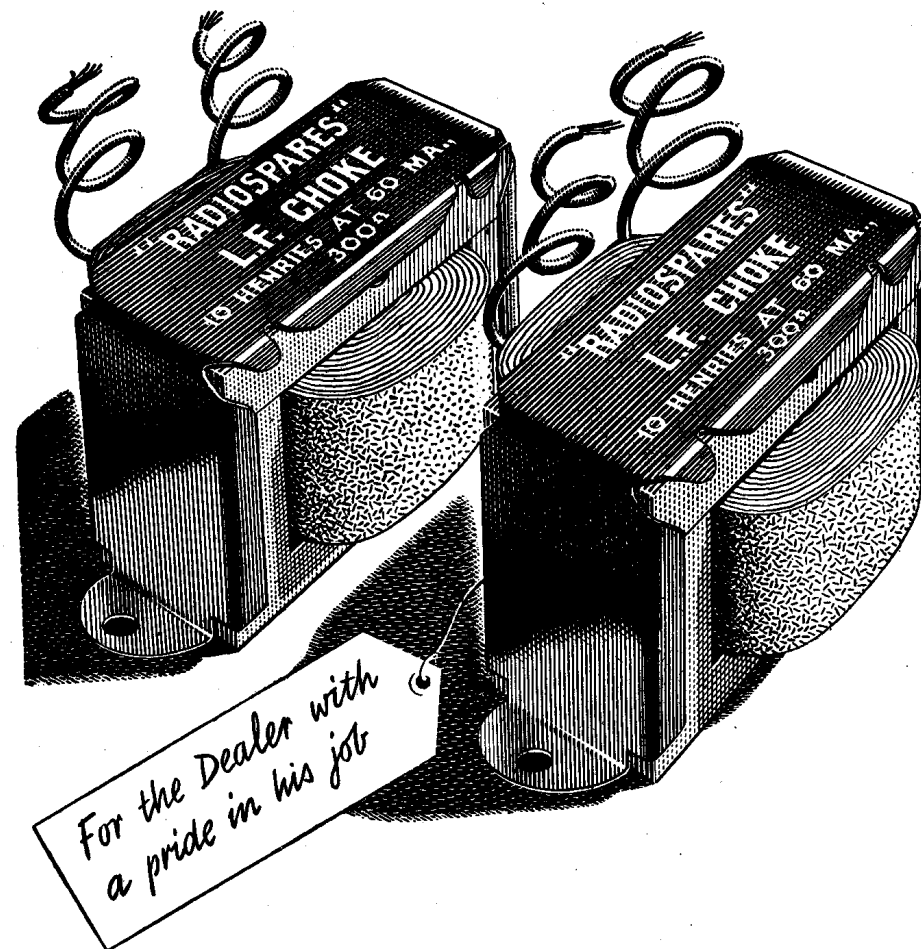
Commercial experience had to be learned by the Radio Industry as a whole, the hard way, and we have still to go on learning. We shall see, sooner or later, what the new Radio Industry Council makes of it.

Hocus Pocus

WITH the advent of the mains superhet receiver, the hocus-pocus of the set designer in the laboratory became apparent; he never wanted to finish playing about with his experimental circuits.

We have seen something of this in regard to the Wartime Civilian Receivers. Apparently, a general standard circuit was not acceptable. Fourteen firms who have manufactured it have each incorporated modifications of their own.

A manufacturer once declared to me, quite blandly, that if he always followed the airy dictates of his men of lettered degrees, he would be insolvent within a month.



We present our range of L.F. (Smoothing) Chokes. They are guaranteed quality components with the following general characteristics. **WINDINGS:** paper-interleaved, wax-impregnated. **LAMINATIONS:** high-mu alloy steel. **OVERALL HEIGHT:** 2 in. **OVERALL WIDTH:** 2 $\frac{3}{4}$ in. (fixing centres: 3 $\frac{1}{8}$ in.). **OVERALL DEPTH:** 1 $\frac{7}{8}$ in. (Stack only: 1 $\frac{1}{8}$ in.). They are available in two distinct types. (1) **INDUCTANCE:** 10 Henries, capacity: 60 M/a. **RESISTANCE:** 300 Ω . (2) **INDUCTANCE:** 40 Henries, capacity: 30 M/a. **RESISTANCE:** 1250 Ω . The price of both types is 6/9 each net trade; and they are obtained only direct from

Radiospares Ltd.

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