

EKCO BAW71

Four - wire, three - waveband battery-operated table model superhet in moulded cabinet. For operation from 2nd accumulator. Made by E. K. Cole, Ltd., Aston Clinton, Bucks.

Circuit.—A simple transformer, L7 and L8, forms the S.W. input to V1, the frequency changer. On M. and L.W. the input is band-pass. L5 and L6 are the M. and L.W. grid coils respectively, and L2, L3, the corresponding aerial coils. L3 is inductively coupled to the aerial by L1. L2 is capacitively coupled from a tapping via C14 and a switch. L1 is shorted out on S.W.

An image rejector trimmer, T9, is between the aerial side of C14 and L6. C11 is between the top of L3 and the bottom of L6 via a switch. L2 is trimmed by T5 on the gang condenser aerial section and L3 by a separate trimmer, T8. L6 is trimmed by T4 across the gang grid section and L6 by T7.

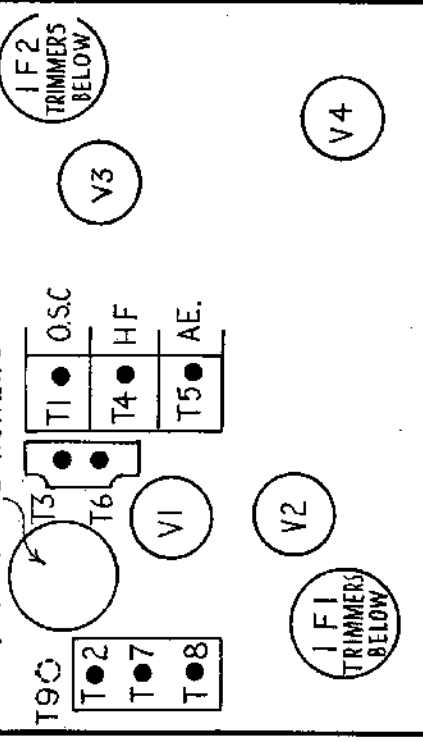
A.V.C. is applied to V1 via the grid coils on all three bands, being decoupled by C16 and supplied via R4.

V1 screen is supplied by R1 and decoupled by C16. The oscillator is tuned grid with separate anode reaction coils on each band. The transformers are S.W.: L11 (primary), L8 (secondary); M.W., L12, L9; L.W., L13, L10. The oscillator anode is decoupled by C17 and the voltage reduced first by R16 and then (for M. and L.W.) by R15. C36 is across R15, C35 provides extra decoupling, and a switch shorts out C36, R15, L12 and L13 on S.W.

The oscillator grid has R17 for an harmonic reducer and R2 for the leak down to L.F.+ . The grid condenser C20 leads to the grid coils via a switch. The S.W. trimmer is on the gang. Padding is fixed on each band.

A conventional I.F. transformer, with primary connected to full H.T., leads to

OSC. COILS L9,10,12,13



Top-of-chassis layout diagram of the Ekco BAW71, showing how the trimmers, valves, and some of the coils are located. The image rejector, T9, is adjustable from the front of the set.

V2, the I.F. amplifier. The screen of C38 is a tone condenser between VR1 slider and L.T.—. R8 in V3 anode and C28 passes the signal to the primary of the intervalve transformer. This has a centre-tapped secondary feeding the two sections of V4, a Q.P.P. output valve.

This has a push-pull output transformer with a tone control (C33 and VR2 in series) between the anodes as well as a fixed tone condenser, C30, C29 and C32 go from each anode to chassis. C39 is between the V4 grids. R12 is a stabiliser in the common grid return to H.T.—, and C31 is an electrolytic across the bias potentiometer R10, R11 (the latter being on the chassis side).

Notes.—A 135 v. H.T. battery is required and may be a Drydex H131, Partrix 484, Hellesen A230, Eveready 53 or Siemens 1314. The 2 v. cell should be an Exide DMG or GKG5. H.T. consumption should be 10 ma and L.T., 75 amp.

An extension speaker should be of 3 ohms impedance.

CIRCUIT DIAGRAM

E. K. Cole, Ltd., do not permit us to publish the circuit diagram of this receiver. However, the circuit description above will enable the engineers to follow the stage-by-stage design, while the tables give the purpose and value of every component. Absence of a circuit should cause no difficulty with the great majority of repairs.

250 m., inject 1,200 kes. and adjust T4 and T5.

L.W. Band.—Tune to 1,300 m., inject 230 kes. and adjust T6. Then adjust T7 and T8. Padding is fixed on all bands, but check calibration at the high wavelength ends, readjusting trimming and compensating if necessary.

Image Rejection.—Tune receiver to 747 kes., inject 1,000 kes. and adjust T9 for minimum.

VALVE READINGS

V	Type	Electrode	Volts.	Ma.
1	TH2	Anode Screen Osc. anode (M.L.W.) Osc. anode (S.W.)	126 58 58	.54 .36
2	VP2B	Anode	85	.71
3	TDD2A	Anode	61	1.32
4	QP25B	Anode Screen	106 44	1.15 .45
		Anode	81	.58
		Screen	125	2.45
		Screen	126	.82

Bias volts across R11, 1.0v.
Bias volts across R10, R11, 10v.

WINDINGS

L	Purpose	Mfdts.
14	M.W. aerial coupling	.001
15	V1 A.V.C. decoupling	.1
16	V1 screen decoupling	.1
17	V1 osc. anodes decoupling	800 mmfd.
18	L.W. padding	2,100 mmfd.
19	M.W. padding	.00012
20	L.W. top bypass coupling	.1
21	V2 screen decoupling	15 cms.
22	A.V.C. diode feed	.0001
23	Signal diode I.F. filter	.0001
24	Signal diode I.F. filter	.01
25	L.F. coupling to V.C.	.1
26	V3 anode decoupling	.1
27	V3-V4 L.F. coupling	.1
28	V4 anode shunt	.003
29	Between V4 anodes	.003
30	Bias potentiometer decoupling	.01
31	V4 anode shunt	.02
32	V4 anode tone control	.0008
33	V4 anode shunt (L.F. by-pass)	.1
34	V4 osc. anode decoupling	.001
35	Across L15	.01
36	V2 A.V.C. decoupling	.0002
37	V3 grid-chassis tone shunt	80 mmfd.
38	Between V4 grids	
39		

RESISTANCES

R	Purpose	Ohms.
1	V1 screen feed	200,000
2	V1 osc. grid leak	100,000
3	V3 screen feed	150,000
4	V1 A.V.C. feed	1,000
5	A.V.C. diode load (part)	470,000
6	Signal diode I.F. stopper	68,000
7	Signal diode load	470,000
8	V3 anode load	47,000
9	V1 V2 V3 H.T. dropper	4,800
10	Bias potentiometer (part)	100
11	Bias potentiometer (part)	100
12	V4 bias decoupling	100,000
13	A.V.C. diode load (part)	270,000
14	V3 A.V.C. feed	1,000
15	V1 osc. anode volt dropper	82,000
16	V1 osc. anode volt dropper	47,000
17	V1 osc. grid stopper	39

WINDINGS

L	Purpose	Ohms.
1	L.W. aerial coil	84
2	M.W. aerial secondary	2.5
3	L.W. aerial secondary	27
4	V1 S.W. grid coil	2.5
5	V1 M.W. grid	2.5
6	V1 L.W. grid	2.5
7	Aerial S.W. coil	2.5
8	Osc. S.W. grid	4.5
9	Osc. M.W. grid	4.5
10	Osc. L.W. grid	4.5
11	Osc. S.W. anode	7
12	Osc. M. and L.W. anode	7
13	L.F. windings	50
14	L.F. trans. primary	420
15	L.F. trans. secondary (1)	1,600
16	L.F. trans. secondary (2)	1,300
17	Output trans. primary (1)	40
18	Output trans. primary (2)	680
19	Output trans. secondary (1)	680
20	Output trans. secondary (2)	680

Wireless Service Manual

THE Wireless Service Manual, by W. T. Cookling, A.M.I.E.E., has reached its sixth edition. The book has been enlarged—it just tops 300 pages—and in addition to many revisions it has a new chapter on automatic frequency control.

The book is essentially practical, and assumes that the reader has quite a fair knowledge of the underlying principles of how a set and its component parts operate. The learner should certainly precede, or at least supplement, study of the book with that of another on elementary theory.

Mr. Cookling begins by describing testing equipment, how it should be used and how its indications should be interpreted. Valve testing is dealt with next, and then follow chapters giving symptoms and causes of all the common faults, such as hum, instability, distortion and noise.

Ganging and the causes of whistles are dealt with at some length, and the sections on A.V.C. and A.F.C. are well done. The chapter on television receivers has been retained together with one on the use of cathode-ray test gear. Short-wave sets, speakers and extension speakers have individual chapters.

At the end are appendices giving technical reference material, including colour codes and a comprehensive list of British, American and Continental valves and bases. Constructional details of simple test units are reprinted from *Wireless World*.

Published by Iliffe & Sons, Ltd., at 6s., the volume is available from Oudmans Press Technical Book Dept., 92, Long Acre, London, W.C.2, at 6s. 6d. post free.