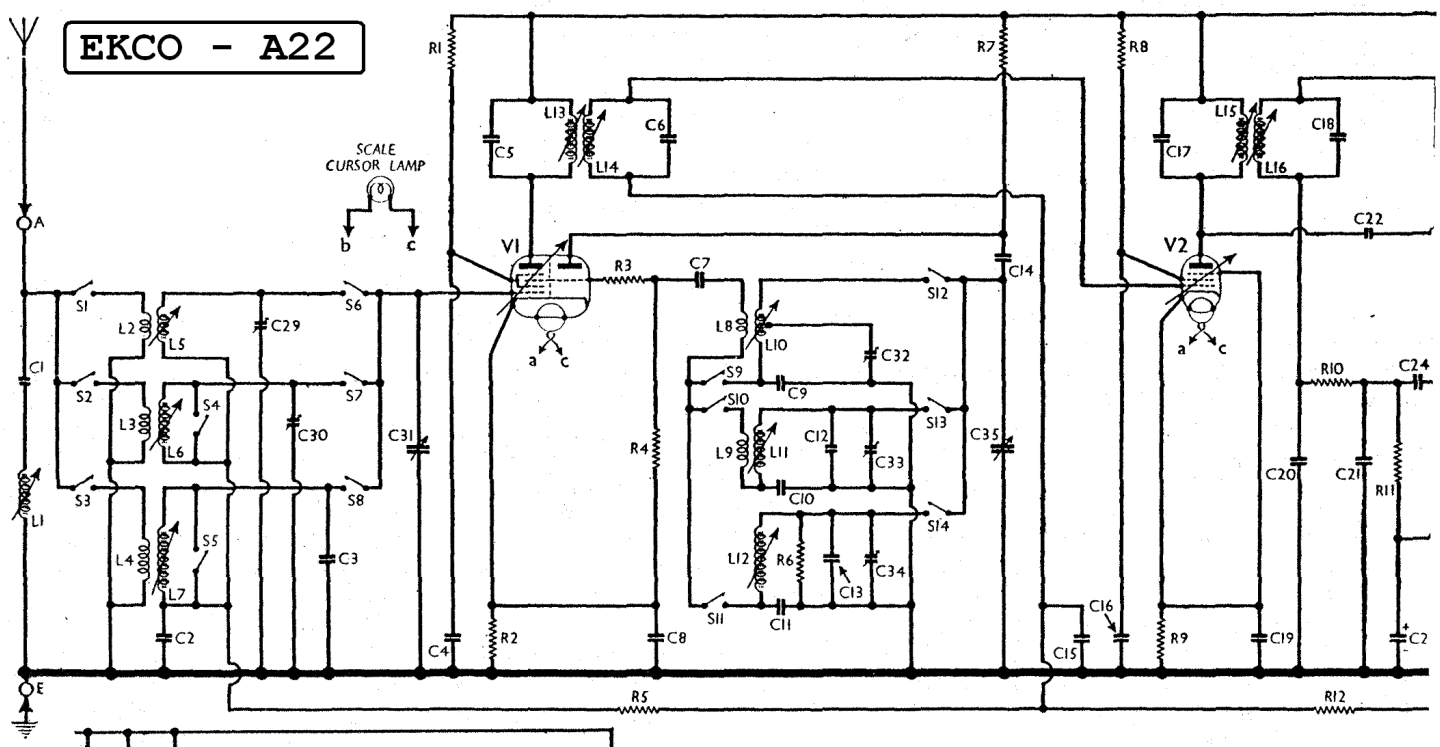
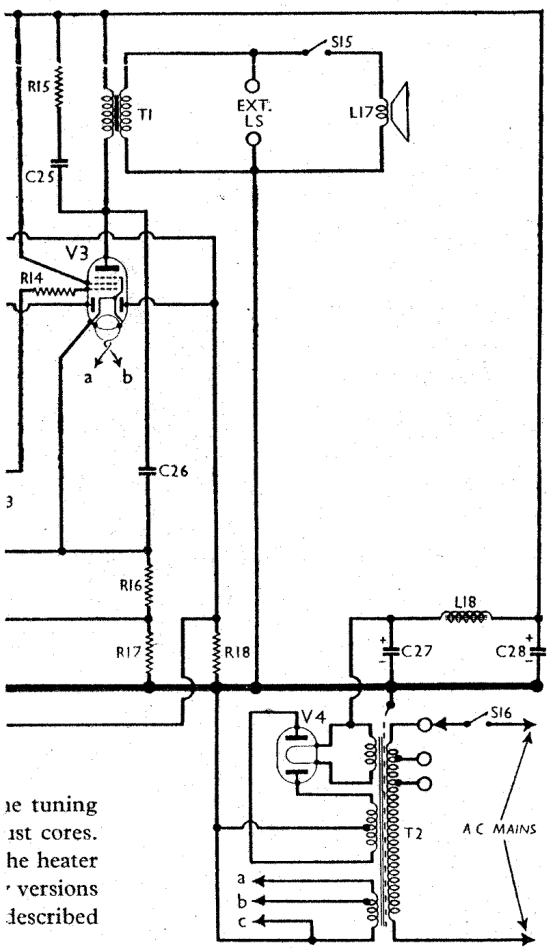
EKCO - A22





CAPACITORS		Values (μF)
C1	Aerial I.F. filter tuning...	0·00005
C2	V1 hex C.G. decoupling...	0·1
C3	Aerial circ. L.W. trimmer	0·0001
C4	V1 S.G. decoupling ...	0·05
C5	1st I.F. transformer tuning	0·0001
C6	capacitors	0·0001
C7	V1 osc. C.G. capacitor ...	0·0001
C8	V1 cathode by-pass ...	0·1
C9	Osc. circ. S.W. tracker ...	0·00617
C10	Osc. circ. M.W. tracker ...	0·000485
C11	Osc. circ. L.W. tracker ...	0·000172
C12	Osc. M.W. fixed trimmer	0·000025
C13	Osc. L.W. fixed trimmer...	0·00011
C14	V1 osc. anode coupling ...	0·00005
C15	A.V.C. line decoupling ...	0·05
C16	V2 S.G. decoupling ...	0·05
C17	2nd I.F. transformer	0·0001
C18	tuning capacitors ...	0·0001
C19	V2 cathode by-pass ...	0·1
C20	I.F. by-pass capacitors ...	0·0001
C21		0·0001
C22	V3 A.V.C. diode coupling	0·00005
C23*	V3 cathode by-pass ...	25·0
C24	A.F. coupling to V3 pent.	0·05
C25	Fixed tone correctors ...	0·04
C26		0·0025
C27*	H.T. smoothing capacitors	8·0
C28*		16·0
C29†	Aerial circ. S.W. trimmer	—
C30‡	Aerial circ. M.W. trimmer	—
C31†	Aerial circuit tuning ...	—
C32‡	Osc. circ. S.W. trimmer...	—
C33‡	Osc. circ. M.W. trimmer...	—
C34‡	Osc. circ. L.W. trimmer...	—
C35†	Oscillator circuit tuning...	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values (ohms)
R1	V1 S.G. H.T. feed ...	47,000
R2	V1 fixed G.B. resistor ...	150
R3	V1 osc. C.G. stabiliser ...	47
R4	V1 osc. C.G. resistor ...	47,000
R5	A.V.C. line decoupling ...	220,000
R6	Osc. circ. L.W. damping...	15,000
R7	V1 osc. anode H.T. feed...	47,000
R8	V2 S.G. H.T. feed ...	68,000
R9	V2 fixed G.B. resistor ...	150
R10	I.F. stopper ...	47,000
R11	V3 signal diode load ...	330,000
R12	A.V.C. line decoupling ...	1,000,000
R13	Manual volume control ...	1,000,000
R14	V3 pent. grid stopper ...	4,700
R15	Part of tone corrector ...	5,600
R16	V3 pent. G.B. and A.V.C.	150
R17	delay resistors	220
R18	V3 A.V.C. diode load ...	680,000

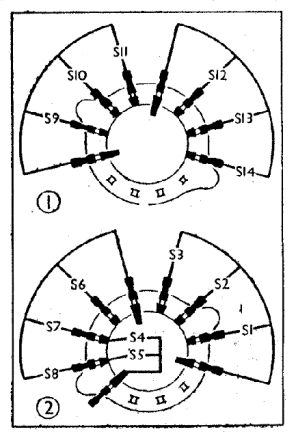
OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial I.F. filter tuning ...	20·0
L2	Aerial coupling coils ...	0·2
L3		44·0
L4		30·0
L5	Aerial S.W. tuning coil ...	0·1
L6	Aerial M.W. tuning coil ...	3·0
L7	Aerial L.W. tuning coil ...	30·0
L8	Osc. S.W. reaction coil ...	10·5
L9	Osc. M.W. reaction coil ...	0·5
L10	Osc. S.W. tuning coil, total	0·2
L11	Osc. M.W. tuning coil ...	3·2
L12	Osc. L.W. tuning coil ...	6·0
L13	1st I.F. trans. Pri. ...	10·0
L14	Sec. ...	10·0
L15	2nd I.F. trans. Pri. ...	10·0
L16	Sec. ...	10·0
L17	Speaker speech coil ...	2·6
L18	H.T. smoothing choke ...	310·0
T1	Output trans. Pri. ...	450·0
	Sec. ...	0·17
T2	Mains trans. Pri., total ...	50·0
	Heater sec. ...	0·15
	Recr. heat. sec.	0·15
	H.T. sec., total...	1,150·0
S1-S14	Waveband switches ...	—
S15	Int. speaker switch ...	—
S16	Mains switch, ganged R11	—

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH35	240	2·0	80	3·4
	Oscillators			
	85	3·3		
V2 EF39	240	7·6	65	2·3
V3 EBL31	225	32·0	240	3·7
V4 AZ31	270†	—	—	—

† Each anode, A.C.

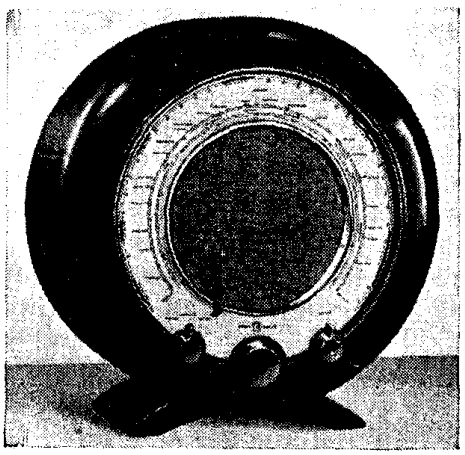
Switch	S.W.	M.W.	L.W.
S1	C	—	—
S2	—	C	—
S3	—	—	C
S4	C	—	—
S5	C	C	—
S6	C	—	—
S7	—	C	—
S8	—	—	C
S9	C	—	—
S10	—	C	—
S11	—	—	C
S12	C	—	—
S13	—	C	—
S14	—	—	C

Switch Table



Diagrams of the waveband switch units. Arrows in the under-chassis view overleaf show the directions in which they are viewed.

EKCO - A22



The Ekco A22 post-war superhet. The cabinet shown is finished in black and chromium, but a walnut finish is available also.

CIRCUIT ALIGNMENT

I.F. Stages.—Switch set to M.W. and tune to 550 m on scale. Turn the volume control to maximum and keep the input low to avoid A.V.C. action. Connect signal generator leads to control grid (top cap) of **V1** and chassis, via a 0.1 μF capacitor, feed in a 465 kc/s (645.16 m) signal, and adjust the cores of **L16, L15, L14** and **L13,** in that order, for maximum output.

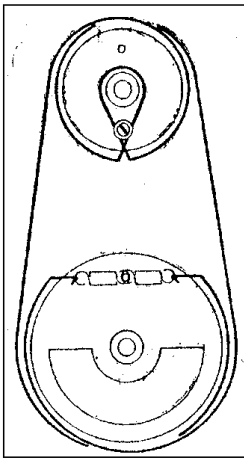
I.F. Filter.—Transfer signal generator leads via a M.W. dummy aerial to **A** and **E** sockets, feed in a strong 465 kc/s signal and adjust the core of **L1** for minimum output.

R.F. and Oscillator Stages.—With the gang at maximum, the cursor shadow should cover the red spot just beyond the "L" at the high wavelength end of the L.W. scale. If it does not, the cursor arm may be adjusted within the limits of the slotted screw-holes in its carrier arm if the two screws holding it to the smaller (central) drive wheel are slackened. To do this, the scale disc much first be removed, as described under "Dismantling the Set." The signal generator leads remain connected to **A** and **E** sockets, via a suitable dummy aerial.

S.W.—Switch set to S.W., tune to 16 m on scale (middle of 16 m band area), feed in a 16 m (18.75 Mc/s) signal, and adjust **C32** for maximum output. Tune to 40 m on scale, feed in a 40 m (7.5 Mc/s) signal, and adjust the core of **L10** for maximum output. Tune to 18 m on scale, feed in an 18 m (16.67 Mc/s) signal, and adjust **C29** for maximum output. Tune to 48 m on scale, feed in a 48 m (6.25 Mc/s) signal, and adjust the core of **L5** for maximum output.

M.W.—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C33** for maximum output. Tune to 400 m on scale, feed in a 400 m (750 kc/s) signal, and adjust the core of **L11** for maximum output. Tune to 220 m on scale, feed in a 220 m (1,364 kc/s) signal, and adjust **C30** for maximum output. Tune to 520 m on scale, feed in a 520 m (576.9 kc/s) signal, and adjust the core of **L6** for maximum output.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C34** for maximum output. Tune to 1,500 m on scale, feed in a 1,500 m (200 kc/s) signal, and adjust the core of **L12** for maximum output. Tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal, and adjust the core of **L7** for maximum output.



Reverse, or "inside" view of the cursor drive wheels, seen as they lie on the bench, showing the course taken by the drive cord, whose replacement is described in the next column.

DRIVE CORD REPLACEMENT

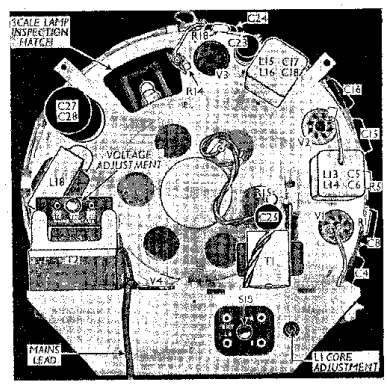
Turn the gang to minimum, and remove the collar (set screw) and cupped washer holding the upper wheel in place on the central stem; then dismount the cursor arm (one screw, one nut, with washers) from the upper wheel, and withdraw the wheel.

Slacken the two grub screws holding the lower wheel boss to the gang spindle, and remove the two set screws, behind the wheel, holding the friction drive bracket to its mounting (the screwdriver is applied *through* the drive wheel). The lower wheel may now be withdrawn, complete with tuning spindle and friction drive. Lay both wheels face-down on the bench, the spindle on the lower wheel overhanging the edge of the bench.

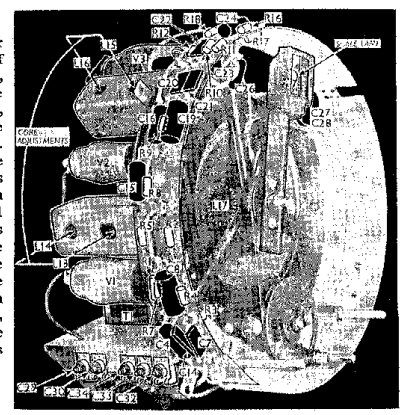
Removing the two tension springs from their anchor, knot one end of the new cord to one spring, then knot the other end to the second spring, so that the overall length, including the two springs relaxed, is $30\frac{3}{8}$in, then cut off the surplus cord.

Fold the new cord exactly in half, and thread the centre loop so formed through the lower hole in the rim of the smaller wheel. Open the loop, slip it over the centre boss, pull it taut, and secure it under the clamping screw between the hole and boss.

The cord must now be run round the two drive wheels, which still lie face-down on the bench, in the manner shown in the diagram in col. 5, terminating with the springs at the anchor pin in the larger wheel. Then, holding the wheels to keep the cord taut, lift them and slip them on to their spindles, upper side first, and allow springs to take up slack. Finally,



Rear view of the chassis, showing all the valve positions, **V4** being on the horizontal deck. The cover has been removed from the scale lamp inspection hatch, and the lamp and cursor are seen through the aperture



Three-quarter front view of the chassis, with the scale disc removed, showing the speaker cone. Most of the components are fitted to a flexible band which is bolted round the rim of the chassis. The valves are shown in position, and the I.F. core adjustments are indicated.