MODEL BP321 is a light weight portable A.M. radio receiver operated from dry batteries. Four low consumption valves and a 'Ferrite' rod aerial are employed in a superheterodyne circuit for the reception of medium and long waveband broadcast frequencies.

SUPPLIES : H.T. 90 volts 9mA.
L.T. 1.4 volts 125mA.

BATTERIES : Suitable types are H.T. Ever Ready B126 or equivalent.
L.T. Ever Ready AD35 or equivalent.

CONTROLS : Front 'TUNING'
In a recessed escutcheon at the right hand side are :—
Upper WAVECHANGE.
Lower VOLUME ON/OFF.

WAVEBAND COVERAGE :

M.W.	1600-540 Kc/s.	187-556 metres.
L.W.	270-170 Kc/s.	1100-1800 metres.

LOUDSPEAKER : 5" P.M., impedance 3 ohms at 400 c/s.

VALVES

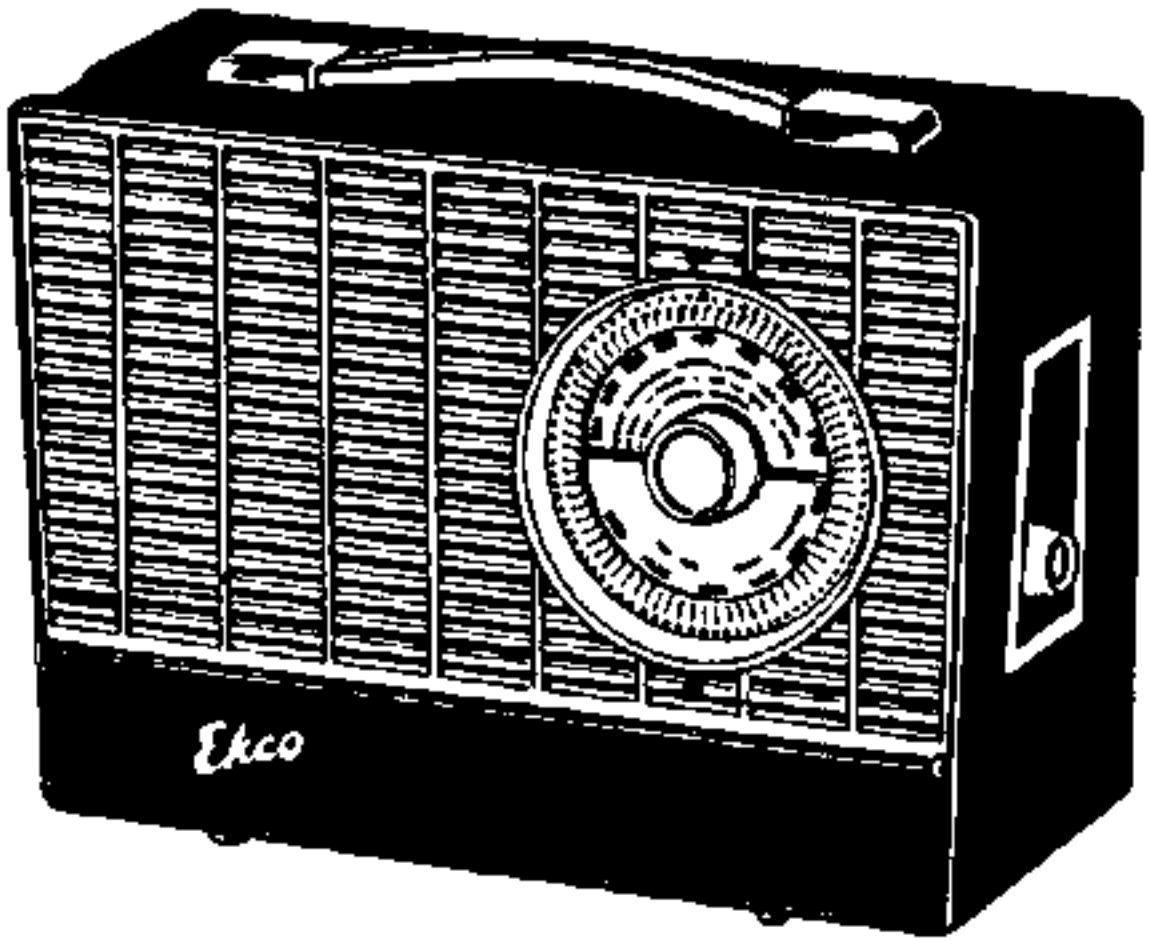
V1	DK96	Frequency Changer.
V2	DF96	I.F. Amplifier.
V3	DAF96	Detector and A.F. Amplifier.
V4	DL96	Power Output.

SERVICE NOTE : When operating this receiver outside its cabinet care must be taken to ensure that the underside of the chassis is insulated from any metal surface.
Component replacement must be carried out with care to avoid bridging adjacent conductors with solder.

CHASSIS REMOVAL : Switch off the receiver. Release the back cover and remove the batteries. Remove the spring clip to release the side escutcheon. Remove the four screws securing the chassis to the cabinet. The chassis can now be withdrawn to the extent of the speaker leads.

INTERMEDIATE FREQUENCY : 470 Kc/s.

ALIGNMENT : Requirements : A signal generator capable of producing amplitude modulated signals at frequencies from 210 Kc/s. to 1600 Kc/s. and an A.F. output meter or low range A.C. voltmeter. Connect the output meter across the loudspeaker tags. All the inputs should be modulated 30% at 400 c/s. The iron dust cores used in this receiver are Part No. B18310.



I.F. ALIGNMENT : Switch the receiver to M.W. and fully mesh the gang, i.e., tuning control fully clockwise. Set the volume control for maximum output. Unscrew all cores. Tune the generator to 470 Kc/s. Inputs via 0.01 μF capacitor to V2 Pin 6. Adjust the cores of L7/L8 for maximum output. Input to V1 Pin 6, adjust the cores of L3/L4 then re-adjust the cores of L7/L8 for maximum output.

Repeat these adjustments until no further improvement is obtained.

M.W. ALIGNMENT : Switch the receiver to M.W. and, with the tuning capacitors fully meshed, set the scale so that the datum line at the end of the M.W. scale coincides with the pointer. Set the generator to 540 Kc/s. and inject the signal to V1 Pin 6. Adjust L5 core for maximum output. Tune receiver and generator to 1546 Kc/s. and adjust C9 for maximum output.

Loosely couple the generator output to the M.W. end of the ' Ferrite ' rod aerial and apply a signal at 600 Kc/s. then adjust the position of the M.W. coil for maximum output.

Tune receiver and generator to 1400 Kc/s. and adjust C2 for maximum output.

L.W. ALIGNMENT : Switch to L.W. and loosely couple the generator to the L.W. end of the ' Ferrite ' rod aerial. Apply a signal of 210 Kc/s. and adjust the position of the L.W. aerial coil for maximum output.

VALVE BASE DATA :

VALVE	TYPE	BASE	PINS						
			1	2	3	4	5	6	7
V1	DK96	B7G	F-	A	G2	G1	G4	G3	F+G5
V2	DF96	B7G	F-G3	A	G2	N.C.	F-G3	G1	F+
V3	DAF96	B7G	F-G3	I.C.	A.d.	G2	A	G1	F+
V4	DL96	B7G	F-	A	G2	N.C.	FCT.G3	G1	F+

I.C. = Internally connected. N.C. = Not connected.

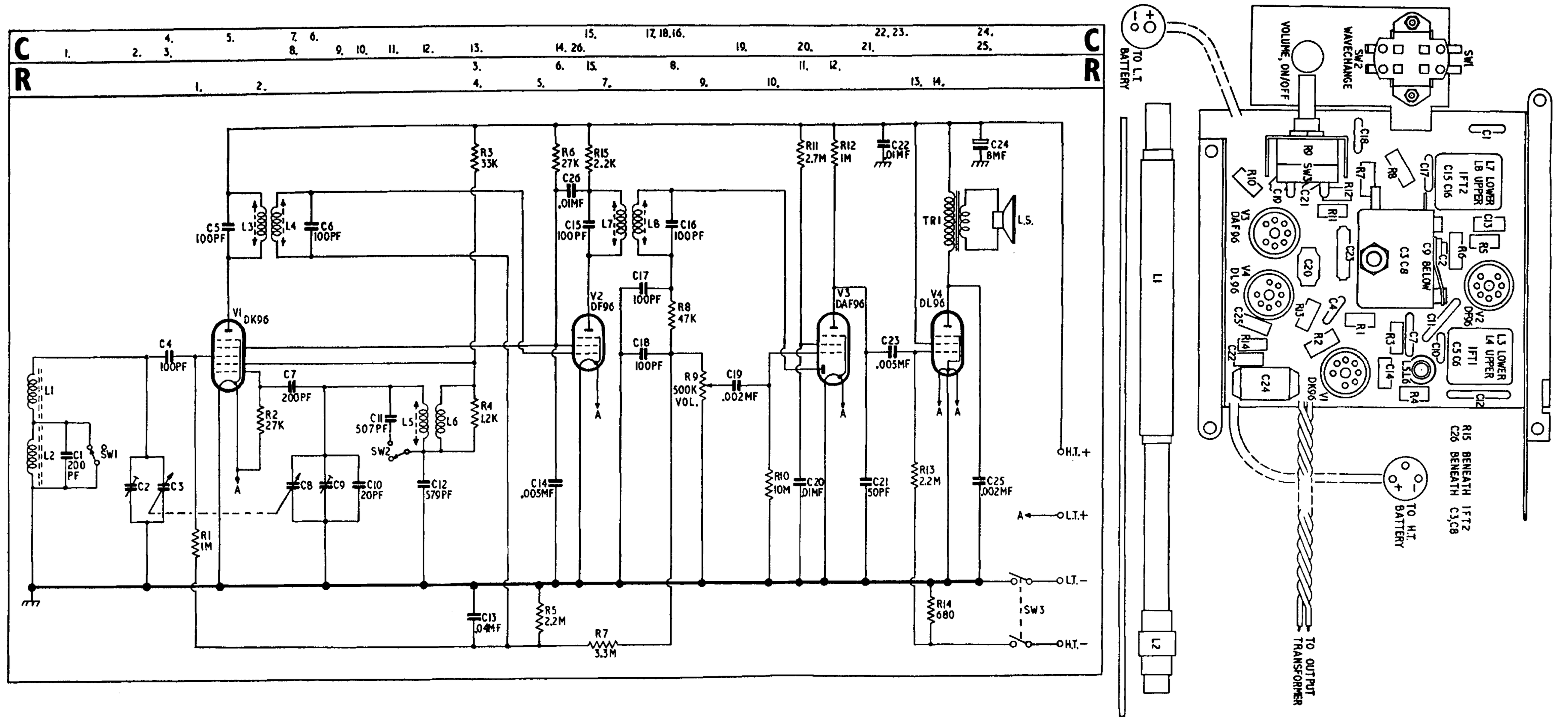
VOLTAGE AND CURRENT DATA

VALVE	TYPE	ANODE		SCREEN		GRID
		V	mA	V	mA	V
V1	DK96	90	0.26 IG2.1.6	72	0.11	—
V2	DF96	90	1.8	72	0.58	—
V3	DAF96	—	0.068	—	0.013	—
V4	DL96	87	3.8	90	0.68	-6

H.T. supply 90 volts battery. L.T. supply 1.4 volts measured across the filaments.
Receiver tuned to 550 Kc/s. No signal Input.

D.C. RESISTANCE OF WINDINGS

WINDING	RESISTANCE	PART NUMBER
L1	Less than 1 ohm.	DP24675
L2	6.5 ohms	DP24676
L3.L4	10.2 ohms	DP24640/A
L7.L8	10.2 ohms	
L5	less than 1 ohm	DP24673
L6	2.2 ohms	
T1 Pri.	720 ohms	SA5500/B
T1 Sec.	less than 1 ohm	



SERVICE DEPT., E. K. COLE Ltd.,
Somerton Works, Arterial Road,
Southend-on-Sea
'Phone: Southend 42296
Head Office: Ekco Works, Southend-on-Sea

SCOTTISH SERVICE DEPOT:
17, Cadogan Street,
Glasgow, C.2.
'Phone: Central 3633/4

NORTHERN SERVICE DEPOT:
115, Jersey Street,
Ancoats,
'Phone: Collyhurst 4421/3.

MIDLAND SERVICE DEPOT:
11, Brook Street,
Birmingham, 3
'Phone: Central 2505/6