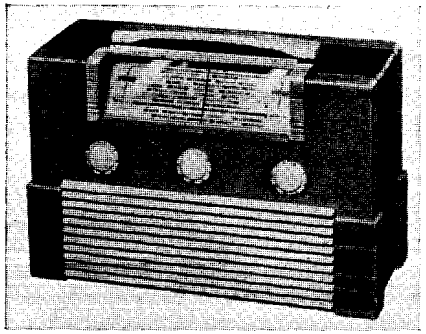
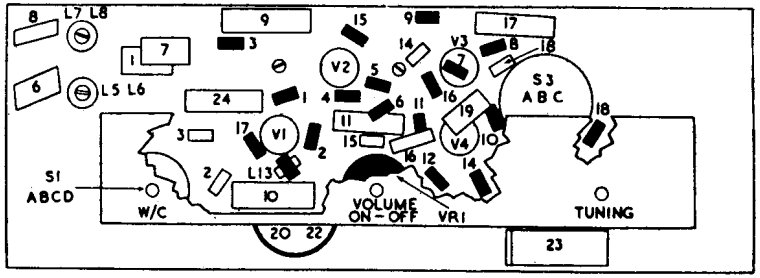
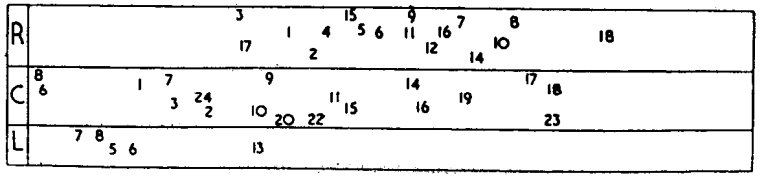
VIDOR CN421

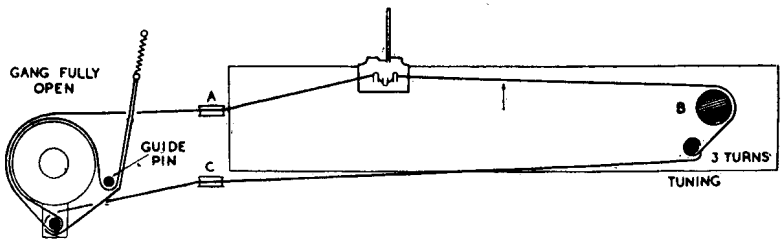
'GALA'

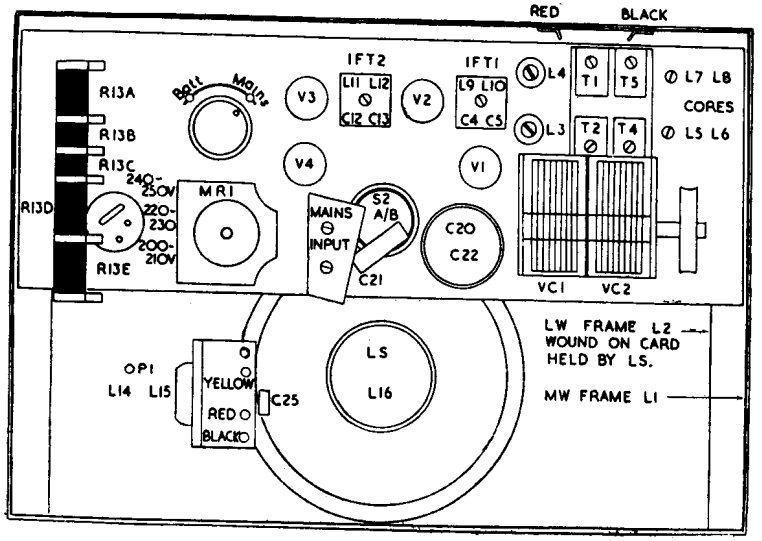


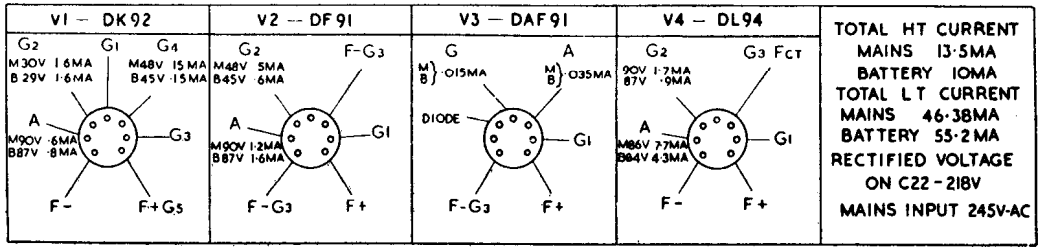
Four-valve two-waveband AC-DC battery portable receiver with self-contained frame aerials. Housed in two-tone fabric-covered cabinet with spring-loaded plastic carrying handle. Suitable for operating from all-dry batteries and 200-250V AC/DC mains. Manufactured by Vidor, Ltd., West Street, Erith, Kent.











CAPACITORS

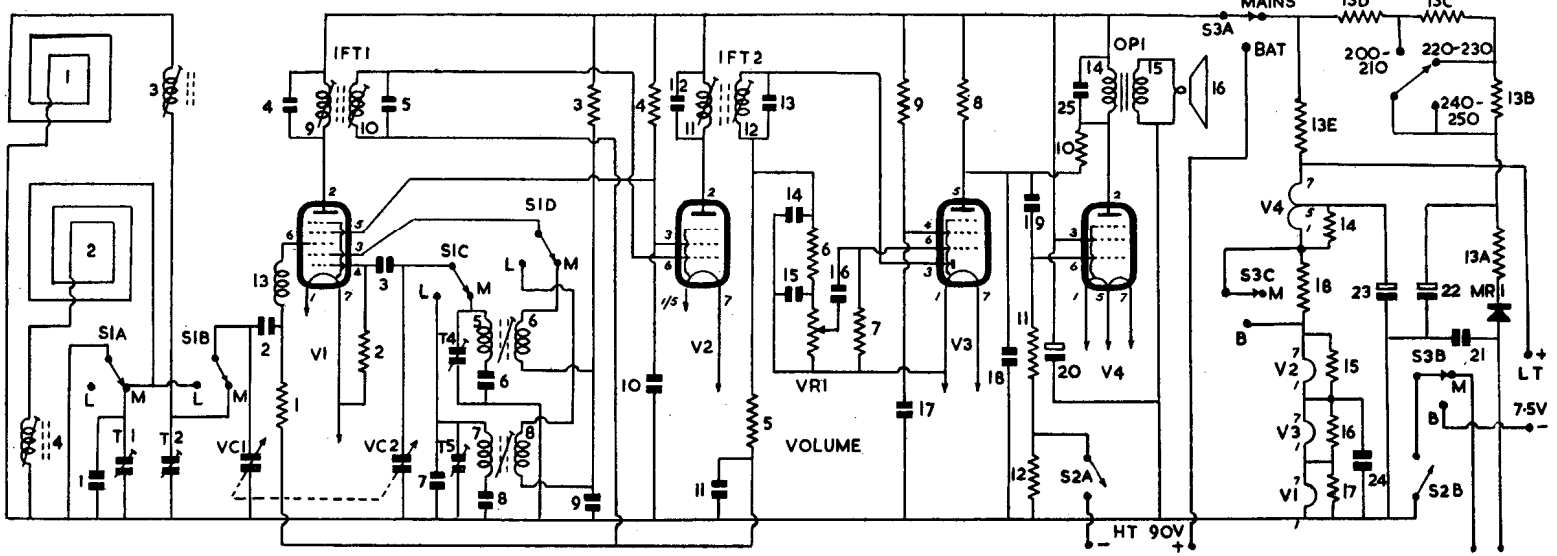
C	Capacity	Type
1	100pF	Silver Mica
2	100pF	Tub Ceramic
3	100pF	Tub Ceramic
4	65pF	Silver Mica
5	65pF	Silver Mica
6	532pF	Silver Mica
7	200pF	Silver Mica
8	280pF	Silver Mica
9	.1	Tubular 350V
10	.1	Tubular 350V
11	.05	Tubular 350V
12	65pF	Silver Mica
13	65pF	Silver Mica
14	100pF	Tub. Ceramic
15	100pF	Tub. Ceramic
16	.001	Tubular 500V
17	.05	Tubular 350V
18	220pF	Tub. Ceramic
19	.01	Tubular 500V
20	32	Electrolytic 275V
21	.01	Tubular 600V AC
22	32	Electrolytic 275V
23	25	Electrolytic 12V
24	.05	Tubular 350V
25	220pF	Tub. Ceramic

RESISTORS

R	Ohms			Watts
1	4.7M	...	...	¼
2	27K	...	...	¼
3	33K	...	...	¼
4	39K	...	...	¼
5	2.2M	...	...	¼
6	47K	...	...	¼
7	4.7M	...	...	¼
8	1M	...	...	¼
9	4.7M	...	...	¼
10	8.2M	...	...	¼
11	2.2M	...	...	¼
12	220	...	...	½
13A	315	...	...	6W
B	365	Tapped		1½
C	365	Dropper		1½
D	1410	...	...	6
E	1800	...	...	5
14	330	...	...	¼
15	150	...	...	¼
16	120	...	...	¼
17	120	...	...	¼
18	10	...	...	½
VR1	1M Log Law Potr. with DP Switch			

INDUCTORS

L	Ohms
1	1.8
2	16.4
3	4.4
4	6.6
5	3.2
6	1.3
7	6.6
8	2.25
9	20.5
10	20.5
11	20.5
12	20.5
13	6.4
14	760
15	.3
16	2.75



AERIAL. The receiver is fitted with separate MW and LW frame aerials, each connected in series with a permeability tuned loading coil. The MW frame L1 is fastened around inside of rear opening of cabinet, whilst the LW frame L2 is located behind fibre panel secured to inside front of cabinet by the loudspeaker and output transformer fixing screws.

On MW band frame L1 in series with loading coil L3 and trimmed by T2 is switched by S1B to aerial tuning capacitor VC1 and coupled by C2 through RF choke L13 to control grid (g3) of heptode frequency changer V1.

In MW position of wavechange switch the LW tuned circuit is shorted to chassis by S1A. On LW band frame L2 in series with loading coil L4 and trimmed by T1 C1, is switched by S1A to VC1 and coupled through C2 L13 to g3 of V1. AVC voltages decoupled by R5 C11 are fed to g3 through R1 L13. Screen (g4) voltage is obtained

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Continued

from R4, decoupling being given by C10. Primary L9 C4 of IFT1 is in the anode circuit.

Oscillator employs g1 and g2 of heptode V1 as a triode connected in a tuned grid series fed anode circuit. The grid coils L5(MW) L7(LW), trimmed by T4 T5-C7 and padded by C6 C8 respectively, are switched by S1c to oscillator tuning capacitor VC2 and coupled by C3 to g1 of V1. Automatic bias for oscillator grid is developed on C3 with R2 as leak. Anode reaction voltages are developed inductively from L6(MW) L8(LW), the appropriate coil being switched in series with HT feed to oscillator anode (g2) by S1D. Oscillator anode voltage is obtained from R3 decoupled by C9.

IF amplifier operates at 475 kc/s. Secondary L10 C5 of IFT1 feeds signal, and AVC voltage decoupled by R5 C11 to g1 of IF amplifier V2. Screen (g2) voltage is obtained in common with that of g4 of V1 from R4 decoupled by C10. Suppressor grid (g3) is internally strapped to negative side of filament. Primary L11 C12 of IFT2 is in the anode circuit.

Signal rectifier. Secondary L12 C13 of IFT2 feeds signal to the single diode anode of V3. Volume control VR1 forms diode load, whilst IF filtering is given by R6 C14 C15.

AVC. The DC component of the rectified signal is decoupled by R5 C11 and fed to control grids of V1 V2 as AVC voltage.

AF amplifier. Rectified signal across volume control VR1 is fed by C16 to g1 of pentode AF amplifier section of V3. Automatic bias for grid is developed on C16 with R7 as leak resistor. Screen (g2) voltage is obtained from R9 decoupled by C17. Suppressor grid (g3) is internally strapped to negative side of filament. R8 is anode load and C18 anode RF bypass capacitor.

Output stage. Signal at anode V3 is fed by C19 to g1 of pentode output amplifier V4. On mains operation the grid is negatively biased by virtue of the filament of V4 being connected at high potential side of LT supply. On battery operation, however, the anode current of V4 is reduced to prolong life of HT battery by increasing negative bias on grid by returning its grid resistor R11 to chassis through R12 in negative HT battery lead. Screen (g2) voltage is obtained direct from HT line, decoupling being given by C20. Suppressor grid (g3) is internally strapped to centre tap of filament.

Audio output at anode V4 is transformer fed by OP1 to a 5in. PM speaker L16. Fixed tone correction is given by C25, while negative feedback from anode is applied through R10 C19 to its grid.

HT of 90V is provided by a Vidor type L5512 battery or alternatively from the mains. Receiver HT line is switched by S3A to either source of supply. HT battery is decoupled by C20, which in addition functions as smoothing capacitor on mains-generated HT. Battery HT negative lead is switched on/off by S2A, which is ganged to S2B and controlled by volume control spindle. When operated from mains supply HT is provided by metal rectifier MR1, which is fed direct from input mains. HT is resistance-capacity smoothed by R13D C20 C22 with R13B and R13C giving voltage adjustment. Reservoir smoothing capacitor C22 should be rated to handle 150mA ripple current. Mains input is filtered by C21.

LT of 7.5V for series connected filaments of V1 to V4 is provided by a Vidor type L5042 LT battery or, if the receiver is operated from the mains, from the rectified and smoothed HT through dropper resistor R13E. Additional smoothing to LT line is given by C23 whilst C24 is RF bypass capacitor. R14 to R17 are current bypass resistors to maintain current voltage across each valve filament. R18, which is connected in series with filament line between V2 and V4, is short-circuited by S3C when mains battery switch is placed in battery position.

S3B switches LT battery negative or mains lead through section S2B of receiver on/off switch to chassis.

As a safety precaution mains connection to receiver is made through a plug attached to inside of hinged rear panel of cabinet and a socket mounted on receiver chassis. Thus, when back of cabinet is opened to give access to batteries, etc., the mains connection to receiver chassis is broken.

Chassis removal. Remove the three push-on type control knobs. Open back of cabinet and disconnect and remove batteries. Unsolder the two leads from MW frame aerial tag panel located at rear of top right-hand side of cabinet, and also unsolder from OP1 the three leads connecting it to receiver. Remove screws holding battery lead cleats to rear panel and undo and remove the four hexagonal nuts (two at each side) which secure receiver chassis to side brackets.

Raise fully the carrying handle and carefully withdraw chassis as far as connecting leads to LW frame aerial (mounted on inside front of cabinet) will permit. Finally unsolder leads from LW frame tag panel—chassis is then free to be removed from cabinet.

Renewal of cord drive. Approximately 40in. of Python Flax, Braided No. 20, is required. Place gang capacitor at minimum capacity. Tie one end of cord securely to spring and then anchor spring to lug projecting on chassis adjacent to L7/8. Keeping spring under tension, take cord under guide pin and back up over drum and around boss attached to plate on drum. Bring cord back round drum and pass it over pulleys A and B—wind three turns in clockwise direction around tuning spindle and pass over pulley C—over and around boss and finally up under guide pin. Pass end of cord through loop on spring and, whilst maintaining tension of cord and spring, tie the knot.

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
For IF alignment the chassis must be withdrawn from cabinet		
(1) 475 kc/s to g3 of VI via C2 L13	MW band with gang at minimum	Cores L9, L10 L11 and L12
Pointer alignment with scale—rotate gang capacitor to minimum capacity and adjust pointer carriage to set cursor against righthand end of scale calibration		
(2) 600 kc/s to frame via loosely coupled loop	MW band 500 metres	Core L5, L3
(3) 1.5 mc/s as above...	200 metres	T4, T2. Repeat (2) and (3)
(4) 158 kc/s as above...	LW band 1900 metres	Core L7, L4
(5) 273 kc/s	1100 metres	T5, T1. Repeat (4) and (5)