

VIDOR CN 353

"PERSONAL"

Portable pocket radio in "cigar-box" plastic case; miniature 7BG glass-base valves used in two-band superhet circuit. Size 8 1/2 by 3 1/2 by 3 1/2 in.; weight 4 1/2 lb. Made by Vidor, Ltd., West Street, Erith, Kent.

CIRCUIT consists of a pentagrid frequency changer V1 feeding a pentode IF amplifier V2, with a single diode-pentode V3 for second detector, AVC and AF amplification and a power pentode V4. HT is obtained from a miniature 67.5V layer-type battery and LT from a 1.5V dry cell. Differences in trimming arrangements between aerial and oscillator circuit should be noted.

Aerial circuits consist of MW frame L1, basket-wound and mounted in the lid; and LW frame L2,

similarly constructed but mounted in the removable base plate of the set. L1 and L2 are used in series for LW. For MW, L2 is shorted out by S1.

VC1 is frame aerial tuning capacitor, T1 is LW trimmer, C1 being additional capacity across it. No trimmer for MW. Aerial circuit is coupled to grid of V1 via C2. AVC is applied to grid through R1. L5 C15, the primary of IFT1 is in the anode circuit of V1.

Oscillator, of tuned grid type, L3 is the tuned inductance; VC2 the tuning capacitor. T2 is used for MW trimming with C4 as padding.

On LW, C5 is switched across L3, no trimming capacitor being fitted. C3 is grid coupling capacitor; with grid resistor R2 it provides leak-condenser bias for oscillator grid.

L4 is the anode reaction coil and is in series with the HT supply to oscillator anode.

IF Amplifier operates at 456 Kc L6, C16, the secondary of IFT1, feeds the signal to grid of V2. AVC is applied to grid in series with L6. Screen voltage is obtained from R3 and decoupled by C6. L7, C17, the primary of IFT2, is in the anode circuit of V2.

Detection and AVC are by the single diode of V3. L8, C18, secondary of IFT2, feeds signal to diode anode.

Volume control R6 is the diode load; R5, C8, C9 form an IF filter; AVC is taken from top of

R5 and fed via R to grids V1 and V2; C7 is decoupling capacitor.

AF Amplification is by the pentode section of V3. C10 applies signal from volume control to grid; R7 is the grid resistor. Leak-condenser bias is derived from R7, C10 network: Screen voltage from R8 decoupled by C11. R9 is the anode load and C12 anode HF by-pass.

Output.—C13 applies signal to grid V4, a power amplifier pentode. R11 is grid resistor; bias is obtained from R10, in the HT negative lead. Screen voltage is obtained direct from HT line. L9, primary of OPI, output matching transformer, is in the anode circuit. C14 is for frequency correction. L10, secondary of OPI, feeds the signal to a 2 1/2-in. PM speaker L11. C19 and C20 are HT by-pass capacitors.

LT: a special 1.5V cell designed for this type of set is used; a standard "U" type cell may be used with an adaptor.

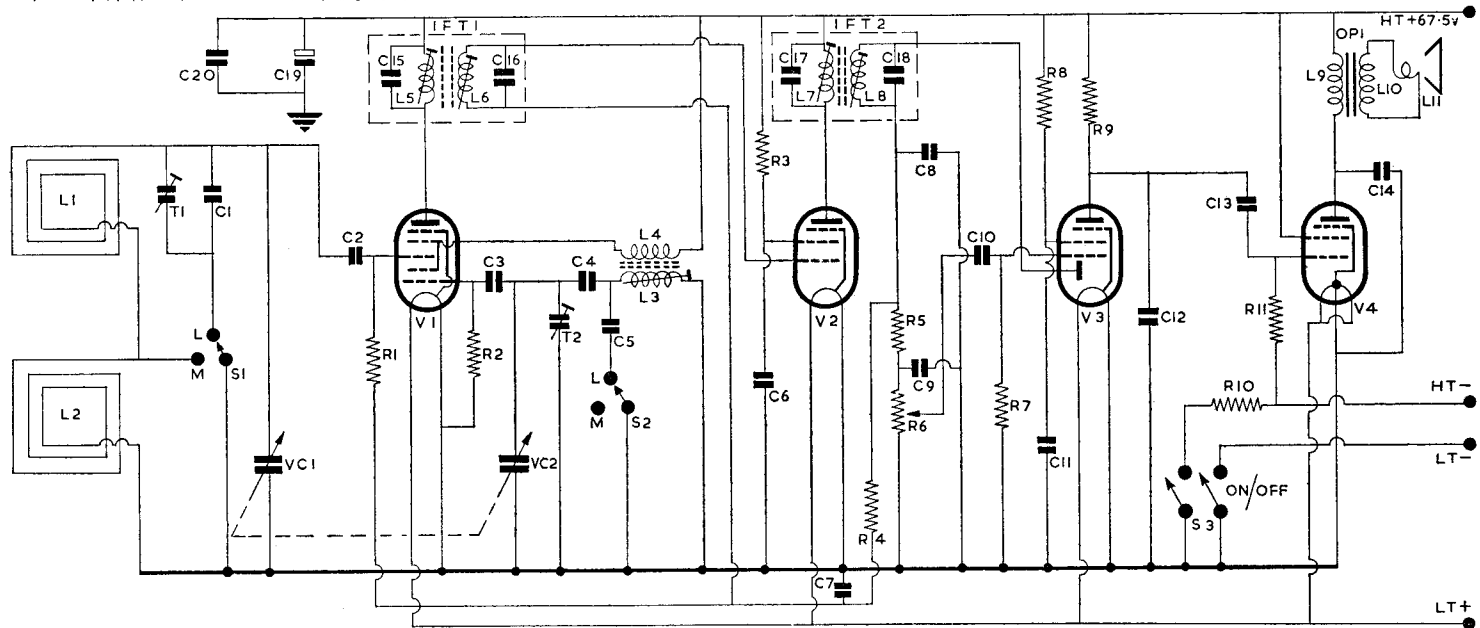
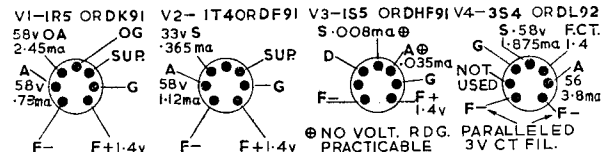
S3, an on/off switch, is operated by lid of case. V4 has a 3V centre-tapped filament, the ends of which are strapped together so as to take 1.5V.

Chassis Removal.—Remove baseplate of case, held by anchored screw towards one end of baseplate. Remove batteries. Carefully remove sponge rubber shock absorbers over valve tops. Remove six screws holding chassis to case.

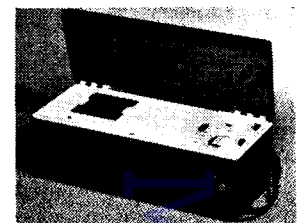
Chassis complete with escutcheon and lid can now be withdrawn.

Note.—The receiver can be operated, on MW only, when out of the case. To test on LW, the baseplate should be screwed to chassis by the fixing screw.

(CHASSIS LAYOUT DIAGRAM ON NEXT PAGE)



Vidor "Personal" portable, model CN 353 in plastic "cigar-box" case



TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune set to	Trim in order stated for max. output
1) 456 Kc to control grid V1 via .01 capacitor ...		Core of L8, L7, L6 and L5
2) 1.2 Mc to frame aerial via loop near to Rx ...	250 metres	T2
3) 600 Kc as above ...	500 metres	Core, L3
NOTE: Frame aerial is not trimmed on MW		
4) 200 Kc as above ...	1500 metres	T1

RESISTORS

R	Ohms
1	470K
2	100K
3	47K
4	2.2M
5	47K
6	1M Miniature Pot.
7	4.7M
8	4.7M
9	1M
10	820
11	4.7M

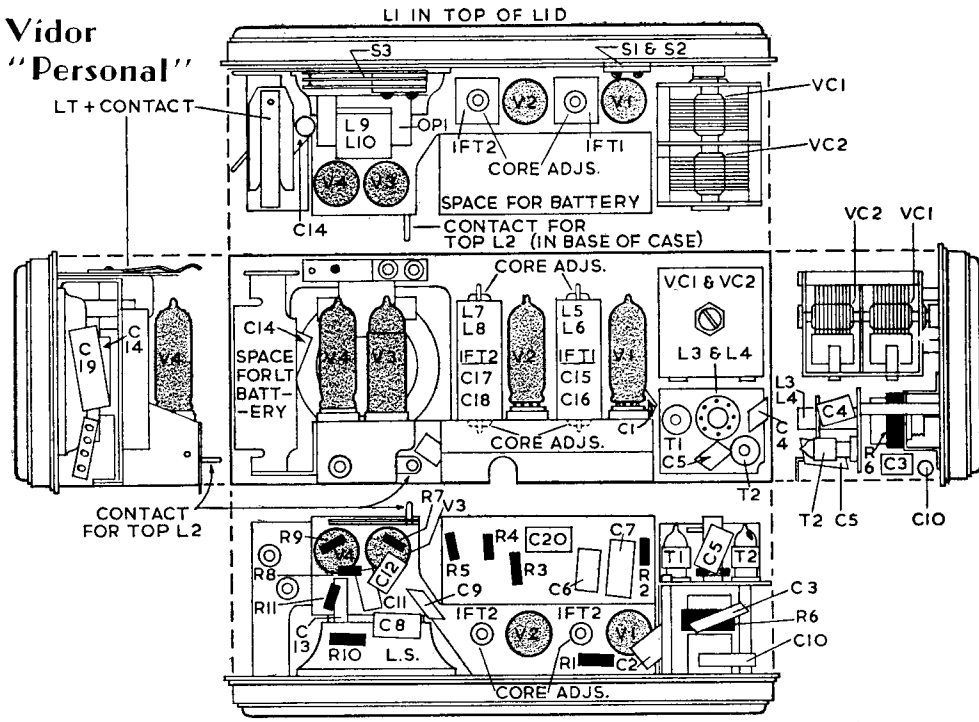
CAPACITORS

C	Mfds
1	90pF Silver Mica
2	100pF Silver Mica
3	100pF Silver Mica
4	360pF Silver Mica
5	315pF Silver Mica
6	.1 Tubular 150V
7	.1 Tubular 150V
8	100pF Silver Mica
9	100pF Silver Mica
10	.01 Tubular 350V
11	.1 Tubular 150V
12	50pF Silver Mica
13	.01 Tubular 350V
14	.005 Tubular 250V
15	Enclosed within IFT1 & IFT2
16	
17	
18	
19	2 Electrolytic 200V
20	.1 Tubular 150V

INDUCTORS

L	Ohms
1	3.5
2	18.5
3	2
4	1.4
5	12.5
6	12.5
7	12.5
8	12.5
9	400
10	.5
11	2.5

Vidor "Personal"



Philips 462A—Cont. from p.iv

coil is also applied to grid through L23, L22, R11, R10, C15.

R7 is the anode load resistor, and R6, C13 provide HT decoupling.

Output Stage.—C14 feeds signal to grid of output valve V3. R15 is grid stopper, and R14 grid resistor. R14 is a potentiometer which, with C18, gives tone control. Bias is from R19, R20.

L24, primary of OP1, is in the anode circuit of V3. Anode supply is from reservoir smoothing capacitor C24, and is fed into the tapping on L24.

C20 provides a degree of tone correction. L25, the secondary of OP1, feeds into the speech coil L26 of an eight-inch PM speaker. Sockets for a 5-7 ohm extension speaker are fitted across L25.

Mains supplies come from a directly heated full-wave rectifier V4. L27, the HT secondary of MT1 mains input transformer, provides anode voltages of V4; L28 supplies its heater voltage.

C24, R18, C23 and part of L24 included in the set HT line provide smoothing. C21 is to prevent modulation hum.

Removal of Chassis.—Remove scale; turn pointer on to top of cabinet. Remove rear of cabinet (Capacity Aerial); four control knobs; metallised screening plate from underside of cabinet. Disconnect earth wire from chassis.

Remove screw securing scale pointer to drive wire plate; unsolder LS and dial lamp leads; remove four chassis bolts on underside of cabinet.

Chassis is now free to be withdrawn.

Condenser Drive Replacement.—Make up cables as shown. Set condenser to min. Turn friction assembly until slot "B" is at 12 o'clock, with slot "A" at 4 o'clock. To fit cable "B": Slip inner cable at non-loop end into slot so that nipple fits into the recess and cable leaves drum through hole "B." Outer cable (mantle) should be kept at looped end of the cable.

Turn friction assembly anti-clockwise until hole "A" is at the top and allow inner cable to pass vertically through mantle guide on left bracket. Hold looped end of cable and slide mantle into rear clip on condenser. Take one complete turn anti-clockwise round drum, thence over flanged pin and hook looped end on spring. Secure spring.

To fit cable "A": Slip inner cable at non-loop end into its slot and through hole "A." Take 1½ turns anti-clockwise round brass drum and allow cable to pass vertically through mantle clip on right-hand bracket.

Hold looped end and slide mantle down into its clip. Engage the other end of mantle into front clip on condenser bracket. Inner cable is passed clockwise over front pulley round drum (clockwise) and then over flanged pin and hooked to spring. This operation is facilitated by disconnecting spring from drum.

Note.—With gang at minimum, brass drum with slot "A" at top (12 o'clock), the insulated pointer drum should be so fitted that slot is at approximately 9 o'clock.

Pointer Drive Replacement.—Make up cable as shown. Turn condenser to max. Slip end "A" into slot of insulated drum and wind two turns of the shortest part of cable in clockwise direction. Take half a turn of longest part round the drum in an anti-clockwise direction.

Pass shortest part over upper pulley; pass other part over right-hand pulley (looking at the back), and over lower left-hand pulley. This adjustment is facilitated by pressing spring. Pointer can now be secured. (See Trimming Instructions.)

Note.—The two curved lips of the slotted guide should face front of cabinet.



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