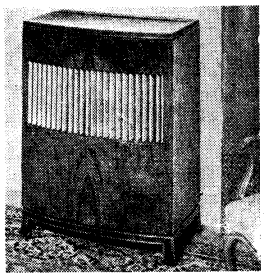
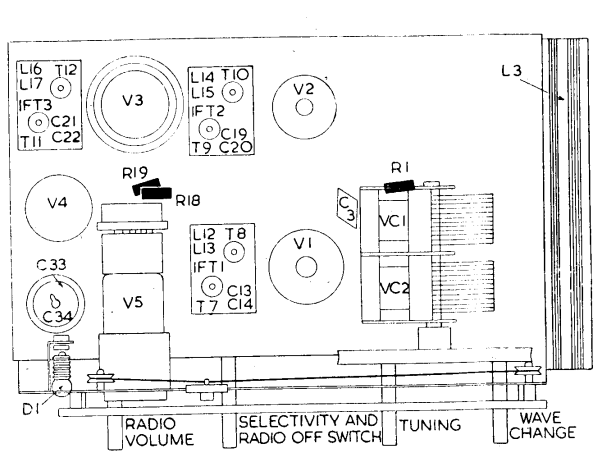
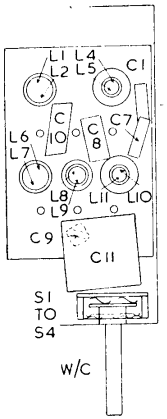
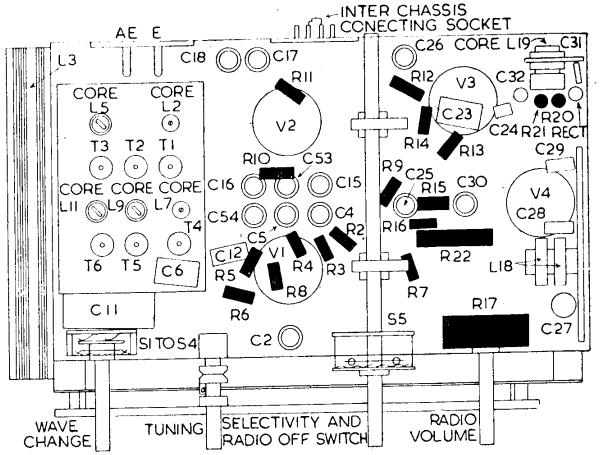
DECCA
BEAU DECCA



High fidelity record reproducer consisting of auto record changer, fitted with Decca light-weight pickup with sapphire stylus, and six-valve amplifier, having triode push-pull output stage and feeding into three 8-in. PM loudspeakers. Negative feedback is incorporated and a three-position tone control provided. A five-valve, three-waveband radio unit, having two IF stages with variable selectivity and magic-eye tuning indicator, is available as an extra, for fitting into the console cabinet. Power for the radio chassis is obtained from the amplifier unit, which is designed to operate from 200-250V 50 c/s mains. Housed in handsome figured walnut cabinet with louvers for sound dispersion. Made by Decca Radio & Television, Ltd., 1-3, Brixton Road, London, SW9.







RADIO Unit.—An internal frame aerial L3 is fitted for reception of local stations. When an external aerial is used the signal is fed through C1 to S1 and thence to coupling coils L1 (SW), L4 (LW) and to tapping near bottom end of MW tuned frame L3. The tuned coils L2 (SW), L3 (MW), L5 (LW) are series connected, tuned by VC1, and coupled to signal grid of V1 through C3. T1 (SW), T2 (MW), T3 (LW) are trimmers. S2 short circuits L5 in MW Position and L3 L5 in SW position.

AVC is applied to V1 through R1, decoupled by

Continued overleaf

CAPACITORS

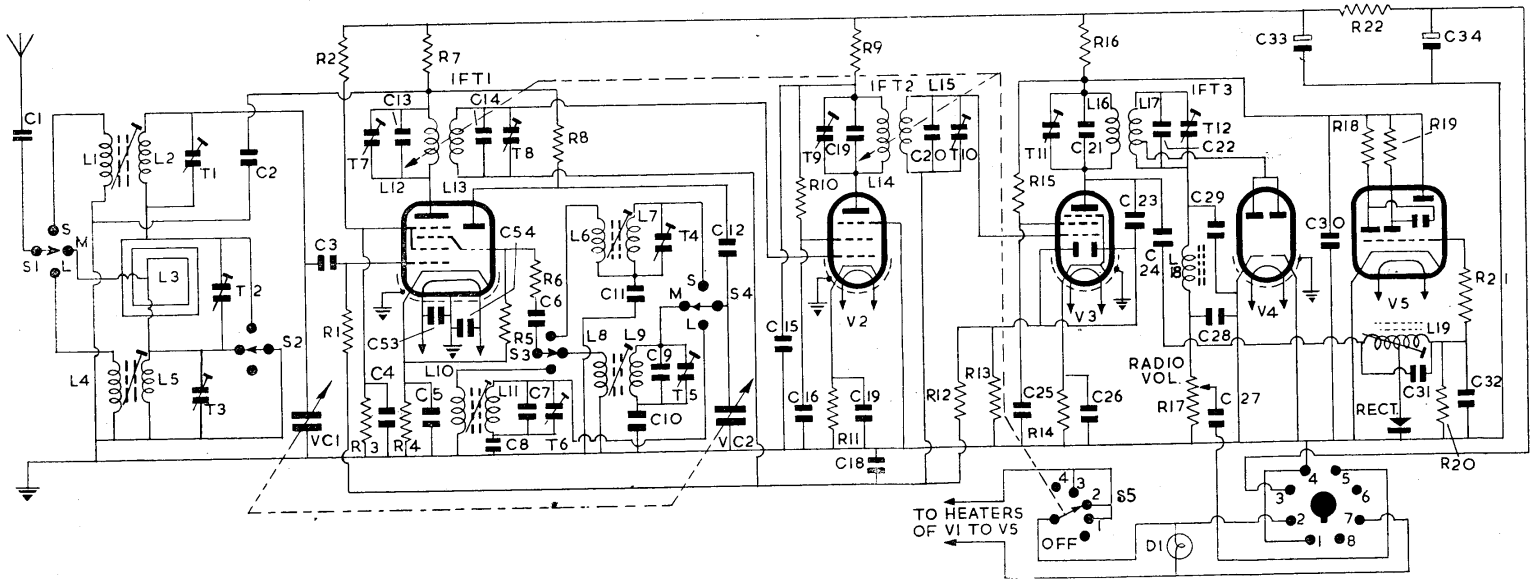
C	Capacity	Type
1	300pF	mica
2	.1	tubular 250V
3	60pF	silver mica
4	.1	tubular 350V
5	.1	tubular 350V
6	500pF	mica
7	85pF	silver mica
8	185pF	silver mica
9	15pF	ceramic
10	585pF	silver mica
11	5,000pF	silver mica
12	60pF	silver mica
13	220pF	silver mica
14	200pF	silver mica
15	.1	tubular 350V
16	.1	tubular 350V
17	.1	tubular 350V
18	.1	tubular 350V
19	200pF	silver mica
20	200pF	silver mica
21	170pF	silver mica
22	200pF	silver mica
23	15pF	silver mica
24	4pF	ceramic
25	.1	tubular 350V
26	.1	tubular 350V
2	.05	tubular 350V
28	150pF	mica
29	150pF	mica
30	.1	tubular 350V
31	200pF	silver mica
32	.01	tubular 500V
33	12	electrolytic 450V
34	12	electrolytic 450V

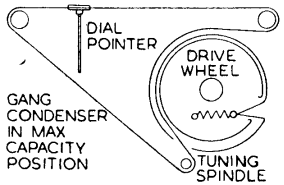
RESISTORS

R	Ohms	Watts
1	500K	½W
2	36K	½W
3	36K	½W
4	680	½W
5	50K	½W
6	120	½W
7	10K	½W
8	50K	½W
9	10K	½W
10	91K	½W
11	680	½W
12	500K	½W
13	2 Meg	½W
14	680	½W
15	91K	½W
16	10K	½W
17	50K Pot'meter	
18	1Meg	½W
19	1 Meg	½W
20	2.2 Meg	½W
21	1 Meg	½W
22	5K	10W

INDUCTORS

L	Ohms
1	.15
2	very low
3	4.25
4	17.5
5	28.5
6	.5
7	very low
8	.6
9	3.5
10	1.25
11–16	9.5
17	6.5 (from tap to bot. end)
18	200
19	5

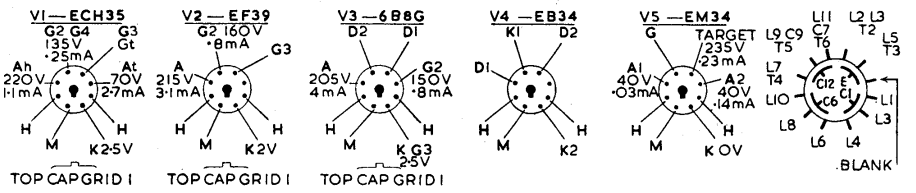


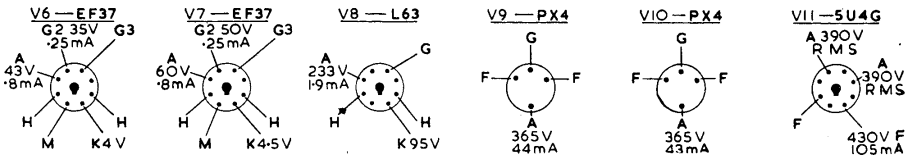


Dial drive with gang condenser in maximum capacity position

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to grid V3 with VC2 short circuited and selectivity control in position 2	—	T12, T11
(2) 465 k/cs to grid of V2 as above	—	T10, T9
(3) 465 k/cs to grid of V1 as above	—	T8, T7 and adjust core of L19 for maximum indication of magic-eye
(4) 18 m/cs to AE socket via a dummy aerial	18 m/cs	T4
(5) 15 m/cs as above ..	15 m/cs	T1 and adjust core L7 for correct calibration and core L2 for max. gain. Repeat (4) and (5)
(6) 1.5 m/cs as above ..	200 metres	T5, T2
(7) 600 kc/s as above ..	500 metres	Core L9. Repeat (6) and (7)
(8) 333 k/cs as above ..	900 metres	T6, T3
(9) 157.9 k/cs as above	1900 metres	Core L11, L5. Repeat (8) & (9)





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C18. Cathode bias is provided by R4, C5. Screen voltage is obtained from divider network R2, R3, decoupled by C4. L12, C13, T7, forming the primary of IFT1, are in the hexode anode circuit of V1, the HT supply for which is decoupled by R7, C2.

Oscillator is connected in a tuned anode parallel-fed HT circuit. L7 (SW), L9 (MW), L11 (LW) are the anode coils and S4 switches them to tuning capacitor VC2 and through C12 to oscillator anode of V1. R8 is anode load, T4, T5, C9 and T6, C7 are trimmers and C11, C10, C8 padders. Grid reaction voltages are developed on L6 (SW), L8 (MW), L10 (LW) and are switched by S3 through C6 and series limiter R6 to oscillator grid. R5 is leak.

IF amplifier operates at 465 Kc/s. By cams attached to the shaft of S5, coupling between the primary and secondary windings of IFT1 and IFT2 can be varied to provide four degrees of IF bandwidth.

L13, C14, T8, the secondary of IFT1, feed the signal to grid of first IF amplifier V2. AVC is fed to grid through L13 and decoupled by C18. Cathode bias is obtained from R11, C17, and screen voltage from R10, C16. L14, C19, T9, the primary of IFT2, are in the anode circuit of V2, the HT supply for which is decoupled by R9, C15.

Secondary of IFT2, tuned by C20, T10, feeds signal to grid of V3, the second IF amplifier. AVC is fed through L15 and decoupled by C18. Cathode bias is by R14, C26 and screen voltage by R15, C25. L16, C21, T11, the primary of IFT3, are in the anode circuit of V3, the HT supply for which is decoupled by R16, C30.

Automatic volume control.—The strapped diodes of V3 are used for AVC. R13 is load resistor and

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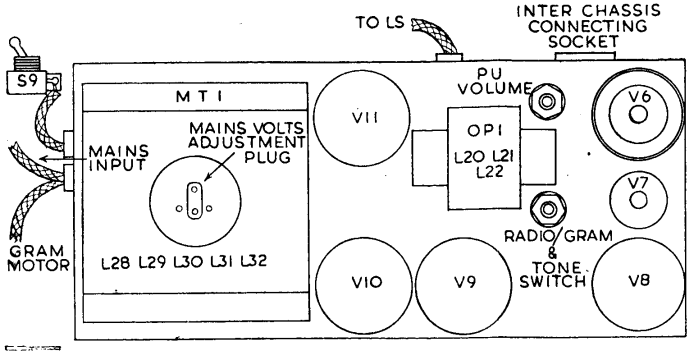
R12, C18 provide line decoupling. Bias across R14 provides AVC delay.

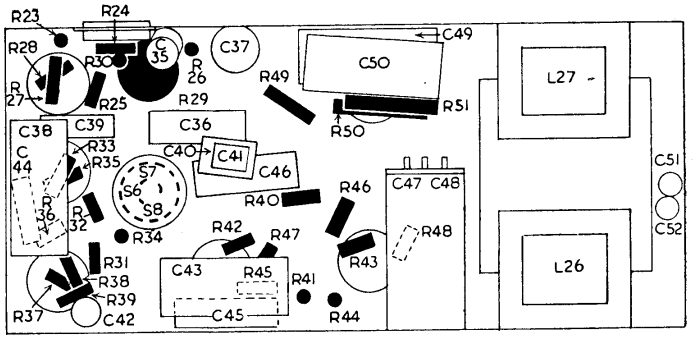
Signal rectifier is a twin diode, V4, with diodes strapped. R17, radio volume control, is the load and L18, C28, C29 constitute a filter. The cathodes are connected to earth. C27 feeds rectified signal to pin 5 of inter-chassis connecting socket.

Magic-eye tuning indicator. C24 feeds signal at anode of V3 to tuned circuit L19, C31, where it is rectified by a half-wave metal rectifier and thence fed through R21 to grid of tuning indicator V5. R20 is load and C32 by-pass. Cathode of V5 is connected to earth. R18, R19 are load resistors of anodes 1 and 2. Target voltage is obtained direct from decoupling resistor R16.

Heaters of V1 to V5 obtain their current from the amplifier power pack through inter-chassis socket and switch S5, which is ganged to selectivity control. S5 enables heaters to be switched off when gramophone only is in use. C53, C54 are by-pass capacitors across the heater supply. The dial lamp obtains its current from the heater supply but is not controlled by S5 in its off position.

High tension is also obtained from the amplifier chassis. Although fully smoothed in the amplifier, further resistance capacity smoothing by means of R22, C33, C34 is incorporated in the radio unit.





AMPLIFIER. Signal from pickup is fed through compensating network R23, R24, C35 to grid of first amplifier V6, which is of the low noise type. Cathode bias is by R25, C36 and screen voltage by R28, C37. Suppressor is strapped to cathode. R27 is anode load. HT to anode and screen is decoupled by R26, C38.

Signal at V6 anode is fed by C39 to R29, the gram. volume control, and thence to the three strapped gramophone contacts on S7. The signal from the radio unit is applied across R30, which is connected to the fourth (radio) contact of S7.

When S7 is in the gram. position, signal across R29 is fed to grid of second amplifier V7 and R29 acts as grid load. When S7 is switched to the

Continued overleaf

CAPACITORS

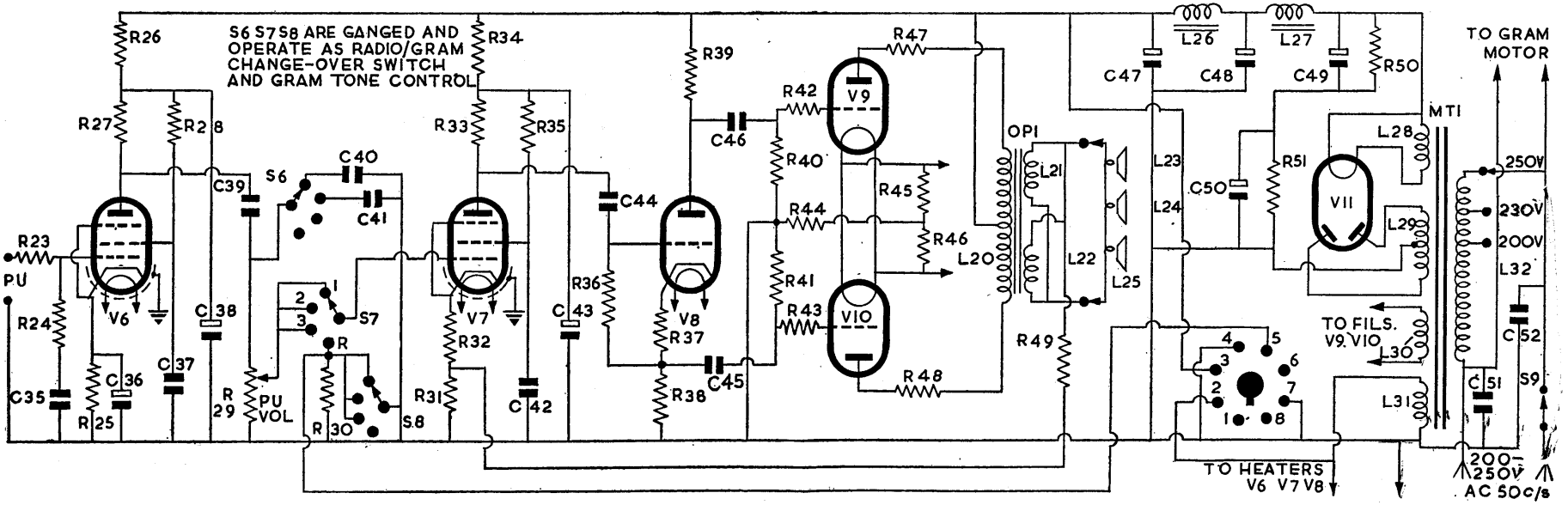
C	Capacity	Type
35	.05	tubular 500V
36	.25	electrolytic 25V
37	.5	tubular 500V
38	8	electrolytic 450V
39	.01	tubular 350V
40	1,010pF	silver mica
41	250pF	silver mica
42	.1	tubular 350V
43	8	electrolytic 450V
44	.1	tubular 350V
45	.25	tubular 350V
46	.25	tubular 350V
47	16	electrolytic
48	8	electrolytic
49	8	electrolytic 450V
50	8	electrolytic 450V
51	.005	tubular 750V
52	.005	tubular 750V
53, 54	.1	tubular 350V

INDUCTORS

L	Ohms
20	350 total
21 }	very low
22 }	
23	2
24	2
25	2
26	280
27	280
28	very low
29	175
30	very low
31	very low
32	6.5 total

RESISTORS

R	Ohms	Watts
23	100K	½W
24	10K	½W
25	3.2K	½W
26	22K	½W
27	270K	½W
28	1 Meg	½W
29	1 Meg Pot'meter	
30	1M	½W
31	500	½W
32	3.2K	½W
33	270K	½W
34	22K	½W
35	1M	½W
36	500K	½W
37	3.9K	½W
38	50K	½W
39	50K	½W
40	100K	½W
41	100K	½W
42	1K	½W
43	1K	½W
44	600	5W
45	22	½W
46	22	½W
47	47	½W
48	47	½W
49	3.2K	½W
50	100K	1W
51	100K	1W



BEAU DECCA—*Continued*

radio position, signal appearing across R30 is applied to grid of V7 and R30 acts as grid load.

Ganged to S7 are two other switches, S6 and S8. S6 switches tone control capacitors C40, C41 in positions 1 and 2 and S8 short circuits R30 when in gram. position.

R32 is cathode bias resistor for V7 and R31 introduces negative feedback voltage obtained from secondary of output matching transformer OP1 through R49. Screen voltage is obtained from R35, C42. Suppressor is strapped to cathode. R33 is anode load. HT supply to anode and screen is decoupled by R34, C43.

C44 feeds signal from anode V7 to grid of triode phase-splitter V8. R36 is grid resistor and R37 cathode bias resistor. The opposite-phased signals for grids of output valves are developed across R38 in the cathode circuit and R39 in the anode circuit.

Output stage utilises two class A triodes in push-pull. C45 feeds signal from R38 to grid of V10, and C46 from R39 to grid of V9. R40, R41 are grid resistors and R42, R43 grid stoppers.

Automatic bias is developed across R44, with R45 and R46 providing an artificial centre tap on the separate filament winding L30 on the mains transformer. HT for anodes is fed to centre tap of primary L20 of output matching transformer OP1 and thence via stopper resistors R47, R48 to the anodes.

The two secondaries L21, L22 of OP1 are paralleled and feed into three 8inch PM loud-speakers connected in series. Negative feedback from L21, L22 is fed by R49 to cathode circuit of second amplifier valve V7.

High tension is provided by directly heated full-wave rectifier V11. L29 provides its anode voltages and L28 its filament current. Choke-capacity smoothing is provided by L26, L27, C47, C48. The reservoir capacitor consists of two capacitors connected in series across a bleeder network R50, R51.

The smoothed HT supply is fed to an octal output socket to provide the HT supply for the radio unit. Further resistance capacity smoothing is incorporated in the radio unit.

Heaters of V6, V7, V8 obtain their current from secondary L31, one side of which is connected to earth or chassis. This heater supply is also fed to the octal output socket for use in the radio unit.

Filaments of V9, V10 obtain their current from a separate secondary L30.

Primary L32 of mains input transformer is tapped for input voltages of 200-210, 220-230, 240-250V 40-60 c/s. C51, C52 are filter capacitors across the mains input. S9, the ON/OFF switch, breaks the mains supply to amplifier and gramophone motor.

Automatic record changer is a Garrard model 70 fitted with Decca ffrr light-weight pickup, type C, with sapphire stylus. The pickup head is held in the tone-arm by a bayonet socket. The DC resistance of the pickup is approximately 450 ohms. The record changer will play either eight 10 or eight 12 in. records, but not eight mixed records.

It is fitted with a rim drive synchronous induction motor, designed to operate from 100-130, 200-250V 50-60 c/s mains.

DISMANTLING INSTRUCTIONS

Radio unit.—Lift out unit from control panel under lid of cabinet. Unplug the 15-ft. chassis inter-connecting lead from radio unit and amplifier chassis, and remove aerial and earth plugs from radio unit.

Remove the four push-on control knobs and remove back panel (held by two screws at top). Unfasten the four chassis bolts on underside of case and withdraw chassis.

The frame aerial, aerial and oscillator coils, together with wavechange switch, are constructed on a separate sub-chassis, which can be removed if wavechange locking nut is undone and aerial, oscillator grid and anode, and gang condenser wires are unsoldered from the tags on the coil panel. The self tapping screws securing sub-chassis to main chassis should also be taken out.

Amplifier and power unit.—Remove the three push-on control knobs. Unscrew and remove the two screws at front edge of control panel and lift off panel. Remove loudspeaker and pickup plugs from chassis. Unfasten mains lead from input socket at rear of cabinet and remove screws from cleats positioning mains lead up side of cabinet. Take off turntable of record changer and remove Bakelite cover plate of voltage changing panel. Undo hexagonal nuts and release mains lead so that it drops through clearance hole in record changer baseplate.

Remove the four chassis bolts on underside of shelf at back of cabinet. Turn amplifier chassis diagonally across shelf so that the left-hand side of chassis is nearest to front. Grasp chassis, and, first lifting end nearest front, withdraw carefully so as to clear hinge edge of lid.

Record changer is floating on four spiral springs attached to outer edges of baseplate. These springs merely rest in circular cavities in the bottom shelf. Grip edges of baseplate of changer and lift out complete assembly.

DECCA FREQUENCY RECORDS

Three Decca frequency records provide wide scope for audio testing.

K.1802 on the A side gives a gliding tone from 14,000 to 3,000 c/s, with a break at every 1,000 c/s. At 12,000 c/s volume is plus 6db ; at 6,000 c/s plus 3db and at 3,000 c/s 0db. K.1802 on the B side glides from 3,000 to 10c/s in breaks at 0db down to minus 11db.

K.1803 on the A side glides from 14,000 to 3,000 c/s with all frequencies at zero level.

K.1803 on the B side is the same as K1802B gliding from 3,000 to 10 c/s in breaks at Odb to minus 11 db.

K.1804 on the A side provides a steady tone in 10 bands from 14,000 to 5,000 c/s at zero level, and on the B side steady tones in 9 bands beginning 4,000 and ending 30 c/s at 0db down to minus 16.5 db. Each record is 4s. 9d. plus 2s. 1d. PT from the Decca Record Co., Ltd., 1-3, Brixton Road, London, SW9.

In the Norge refrigerator service review in the November, 1947, Service Charts supplement, the caption to Fig. 3 should read " Current through A falls and permits contacts C to *open*."