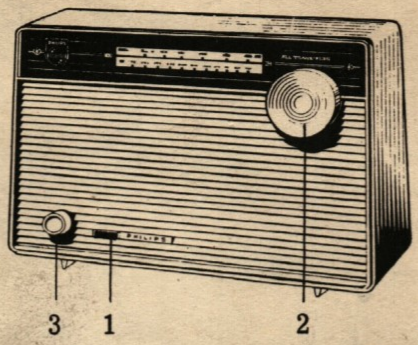
PHILIPS Service NOTES

B0Z17T
PHILETTE TRANSISTOR

Service release
December 1962



Model B0Z17T

PHILETTE TRANSISTOR

CORDLESS MANTEL BROADCAST RADIO

Battery voltage	9 v. (6x950 Eveready cells)
Battery consumption	15mA (no signal)
Tuning range	517 - 1622 kc/s
Intermediate frequency	455 kc/s
Cabinet	Plastic mantel
Output	350mW
Loudspeaker	AD 2400 HZ (25 ohms)
Dimensions	11 3/16" x 7 1/16" x 4 9/16"

SEMI-CONDUCTOR FUNCTIONS

	No.	Type	Function		No.	Type	Function
Transistor	TR1	AF117	Frequency conv.	Transistor	TR5	OC74	Class B power output
"	TR2	AF117	IF amplifier	"	TR6	OC74	
"	TR3	AF117	IF amplifier	Diode	X1	OA79	Limiting diode
"	TR4	OC71	Audio driver	"	X2	OA95	Demodulator and A.V.C. (in 3rd IFT can)

CONTROLS

1 Battery on-off switch 2 Tuning 3 Volume

REMOVAL OF PRINTED BOARD FROM CABINET

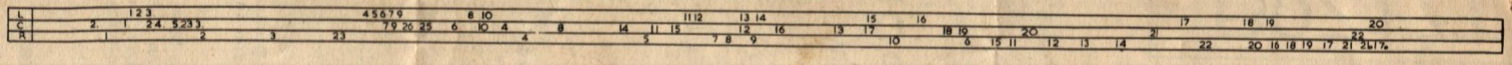
Remove battery compartment cover and remove batteries. Remove cabinet back—one screw.

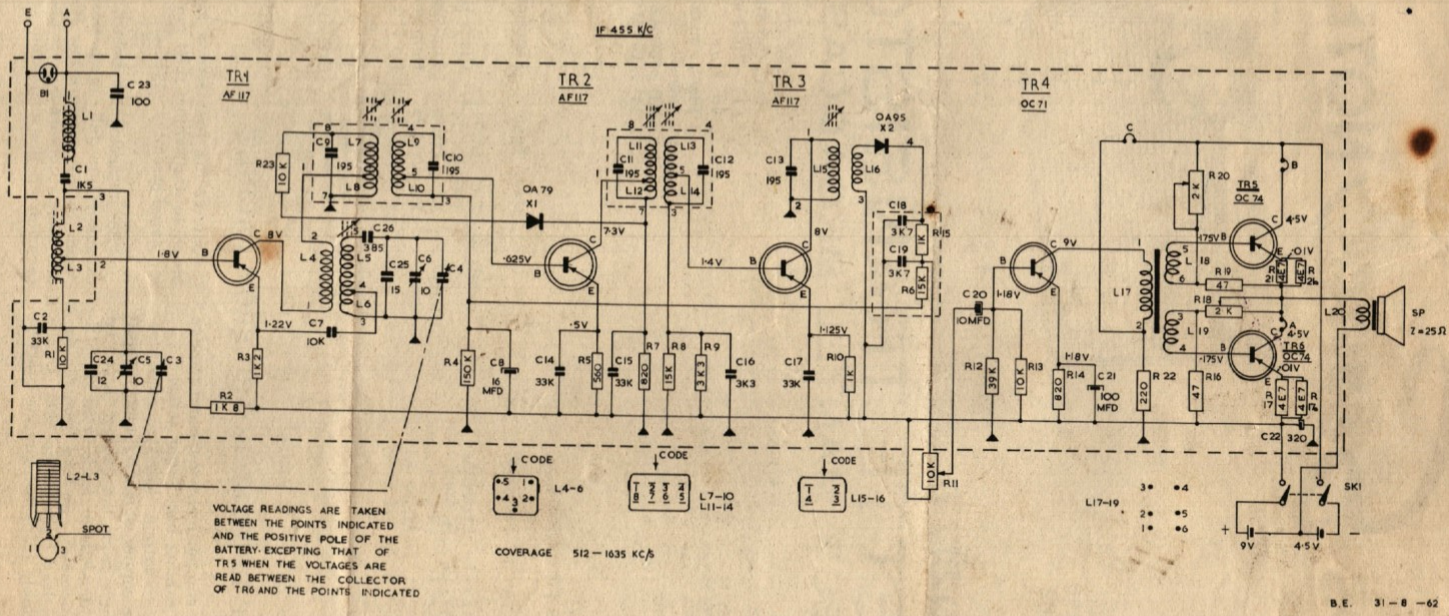
Turn dial cursor to extreme low frequency position. Unsolder the copper shielding plate against the I.F. transformers from the cabinet mounted shield plate. Unsolder—three leads from the volume control potentiometer, one lead from the on/off switch and one lead from the speaker. Unclip the rod aerial assembly from its mounting bracket.

Remove the four screws mounting the printed board to the cabinet. Lift out the board and the rod aerial assembly together.

When replacing the board, first put the tuning capacitor into full mesh position and the dial cursor to the extreme low frequency end of the dial scale to ensure correct coupling of the tuning capacitor to the dial drum.

Published by Philips Electrical Industries of New Zealand Limited
Box 2097, Wellington
Branches at Auckland Wellington Christchurch




IF 455 K/C
TR1 AF117
TR2 AF117
TR3 AF117
TR4 OC71
TR5 OC74
TR6 OC74
OA79 X1
OA95 X2
SPOT
L2-L3
CODE
L4-6
L7-10 L11-14
L15-16
L17-19
SP Z=25Ω
SK1
9V
4·5V
COVERAGE 512 — 1635 KC/S
VOLTAGE READINGS ARE TAKEN BETWEEN THE POINTS INDICATED AND THE POSITIVE POLE OF THE BATTERY. EXCEPTING THAT OF TR5 WHEN THE VOLTAGES ARE READ BETWEEN THE COLLECTOR OF TR6 AND THE POINTS INDICATED

B.E. 31 — 8 — 62

CAPACITORS

C.No.	Description	Tol. %	V.W.	Type or Code No.
1	1.5nF ceramic, Hi-K	-20+50		904/P1K5
2	0.033 μF Polyester	10	125	Philips C296.AA/A33K
3) 4)	Tuning capacitor			49.002.64
5	10pF ceramic trimmer			908/10E
6	10pF ceramic trimmer			908/10E
7	0.01μF ceramic Hi-K	-20+50		904/P10K
8	16μF electrolytic		10	Philips C.426.AE/D16
9) 10)	Part of 1st I.F.T.			
11) 12)	Part of 2nd I.F.T.			
13	Part of 3rd I.F.T.			
14	0.033 μF Polyester	10	125	Philips C.296.AA/A33K
15	0.033 μF Polyester	10	125	Philips C.296.AA/A33K
16	3.3nF ceramic, Hi-K	-20+50		904/3K3
17	0.033 μF Polyester	10	125	Philips C.296.AA/A33K
18	3.7nF ceramic) Combination unit			E.556.ZZ/01
19	3.7nF ceramic) with R6 and R15			
20	10μF electrolytic		16	Philips C.426.AE/E10
21	100μF electrolytic		4	Philips C.426.AE/B100
22	320μF electrolytic		10	Philips C.426.AE/D320
23	100pF ceramic, N750	10		Philips C.304.GH/A100E
24	12pF ceramic, N750	10		Philips C.304.GH/A12E
25	15pF ceramic, N750	10		Philips C.304.GH/A15E
26	385 pF Styroflex	1	125	Philips C.285.AB/D385E

NOTE: nF = nanofarad, i.e. 10^{-9} farad.

RESISTORS

R. No.	Description	Tol. %	W	Type or Code No.
1	10,000Ω cracked carbon	10	¼	Philips B8.305.05A/10K
2	1,800Ω cracked carbon	10	¼	Philips B8.305.05A/1K8
3	1,200Ω cracked carbon	10	¼	Philips B8.305.05A/1K2
4	150kΩ cracked carbon	10	¼	Philips B8.305.05A/150K
5	560Ω cracked carbon	10	¼	Philips B8.305.05A/560E
6	15,000Ω part of combi unit			E.556.ZZ/01
7	820Ω cracked carbon	10	¼	Philips B8.305.05A/820E
8	15,000Ω cracked carbon	10	¼	Philips B8.305.05A/15K
9	3,300Ω cracked carbon	10	¼	Philips B8.305.05A/3K3
10	1,000Ω cracked carbon	10	¼	Philips B8.305.05A/1K
11	10,000Ω carbon potentiometer log. taper (volume)			Philips E.098.AG/00B29
12	39,000Ω cracked carbon	10	¼	Philips B8.305.05A/39K
13	10,000Ω cracked carbon	10	¼	Philips B8.305.05A/10K
14	820Ω cracked carbon	10	¼	Philips B8.305.05A/820E
15	1,000Ω part of combi unit			E.556.ZZ/01
16	47Ω cracked carbon	10	¼	Philips B8.305.05A/47E
17-17a	4.7Ω carbon	10	½	Philips B8.031.42A/4E7
18	2,000Ω pre-set potentiometer			E.097.AC/2K
19	47Ω cracked carbon	10	¼	Philips B8.305.05A/47E
20	2,000Ω pre-set potentiometer			E.097.AC/2K
21-21a	4.7Ω carbon	10	½	Philips B8.031.42A/4E7
22	220Ω cracked carbon	10	¼	Philips B8.305.05A/220E
23	10,000Ω cracked carbon	10	¼	Philips B8.305.05A/10K

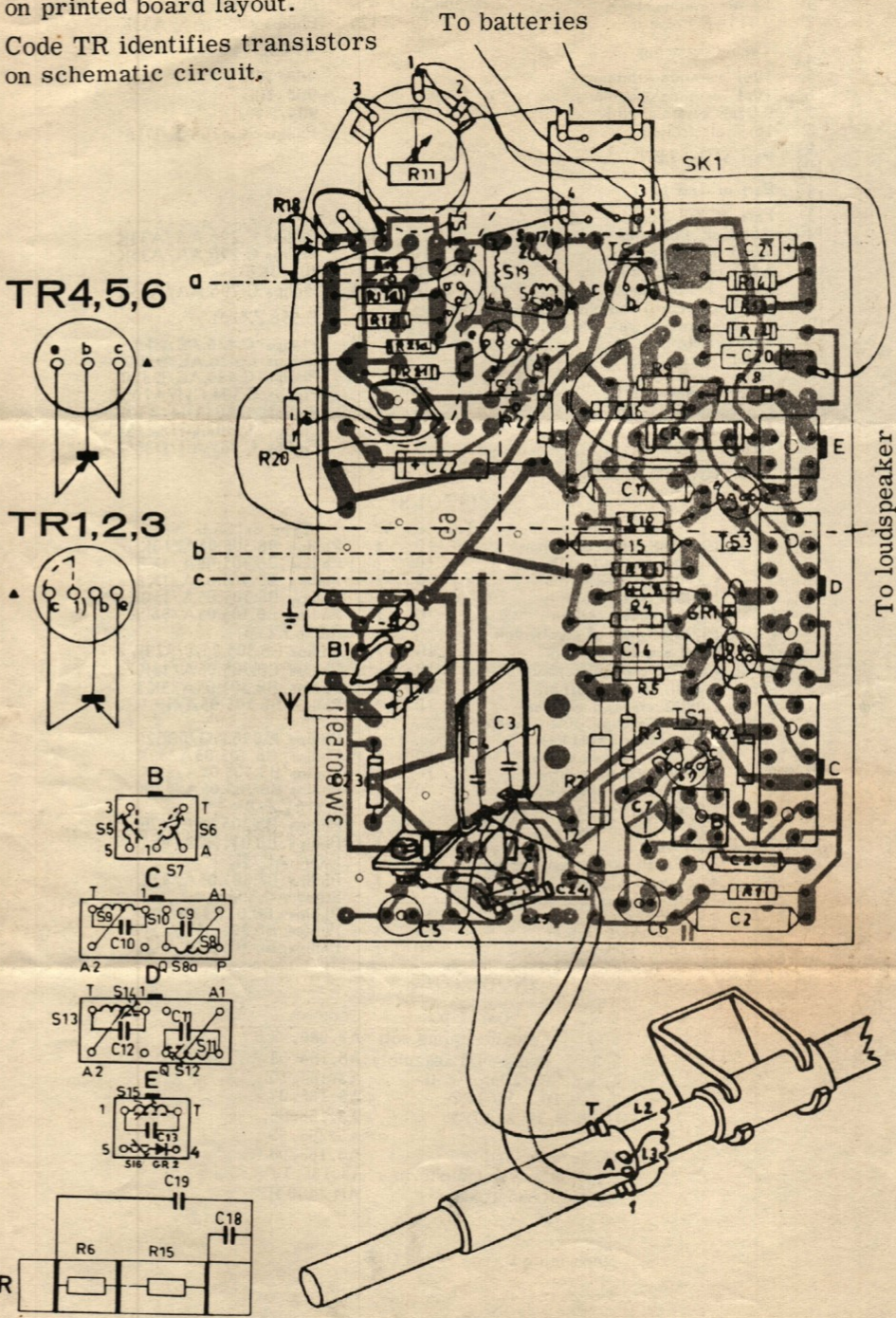
INDUCTORS

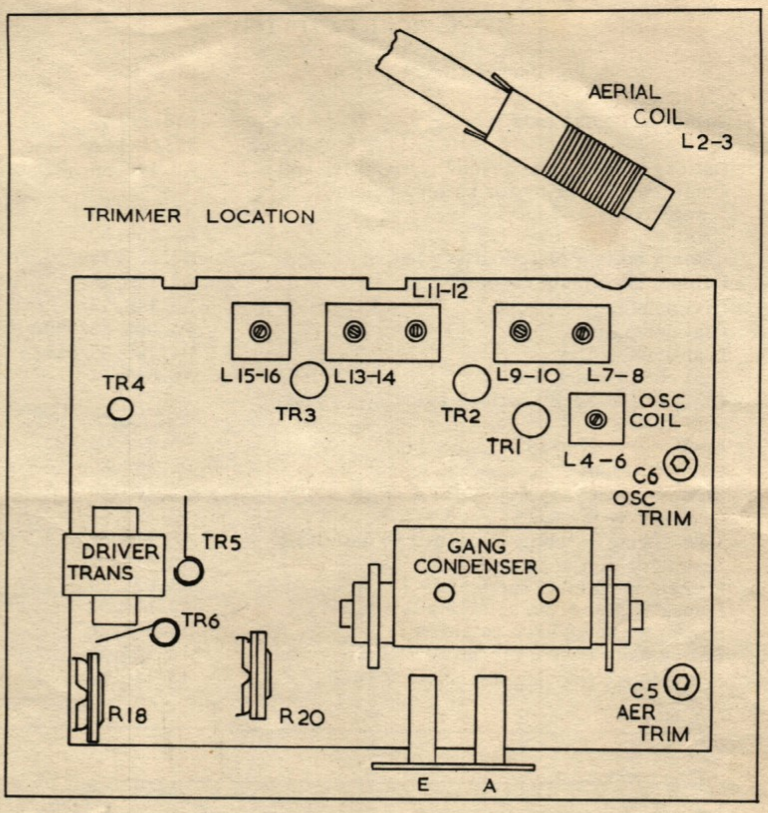
L No.	Description	Code No.
1	Aerial coupling coil	A3.986.92
2, 3	Rod aerial assembly	A3.184.08
4, 5, 6	Oscillator coil.	A3.184.10
7, 8, 9, 10	1st IFT	A3.168.07
11, 12, 13, 14	2nd IFT	A3.168.06, or A3.205.33
15, 16	3rd IFT	A3.168.08
17, 18, 19	Driver transformer	A3.168.19
20	Loudspeaker	AD 2400 HZ

Neon lamp B1 Type GL8

Code TS identifies transistors on printed board layout.

Code TR identifies transistors on schematic circuit.





ALIGNMENT INSTRUCTIONS

Adjustment of Collector Current of TR5 and TR6	Insert milliameter across bridges located at measuring points A & B		Volts supply	Collector current TR5 TR6	Adjust with	Condition
Unsolder points a, b, c on printed board. (See printed board layout sheet)	TR5	b	9 v.	4mA=59° F 5mA=68° F 6mA=77° F 8mA=86° F	R20	No signal
	TR6	a			R18	

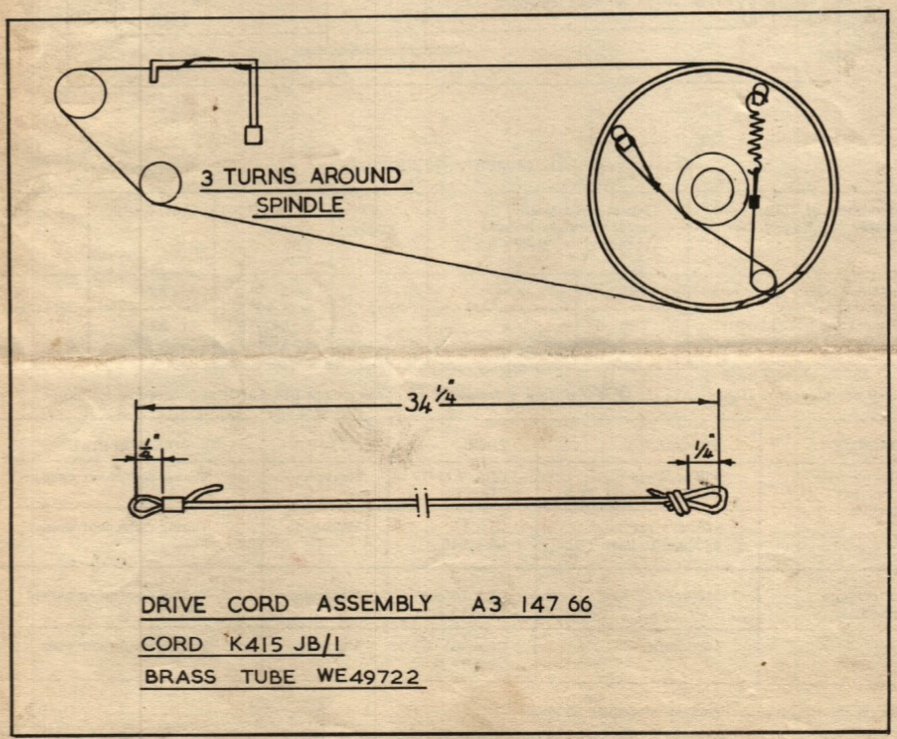
Before commencing alignment of the IF transformers screw out all cores except L15-L16 then proceed as follows:-

ALIGNMENT	FREQUENCY	TRIM	OUTPUT	POINT ON DIAL
Intermediate frequency circuits	455 kc/s via 33000pF to base TR2	L15 - L11-12 L13-14	Maximum	Tuning condenser open
	455 kc/s via 33000pF to base TR1	L7 - L8 L9 - L10	Maximum	Tuning condenser open
RF circuits broadcast	512 kc/s	L4 - L6 osc. L2 - L3 aer.	Maximum	Tuning condenser closed
	1635 kc/s	C6 osc. C5 aer.	Maximum	Tuning condenser open

Repeat the RF circuit alignment procedure as above.

MECHANICAL PARTS LIST

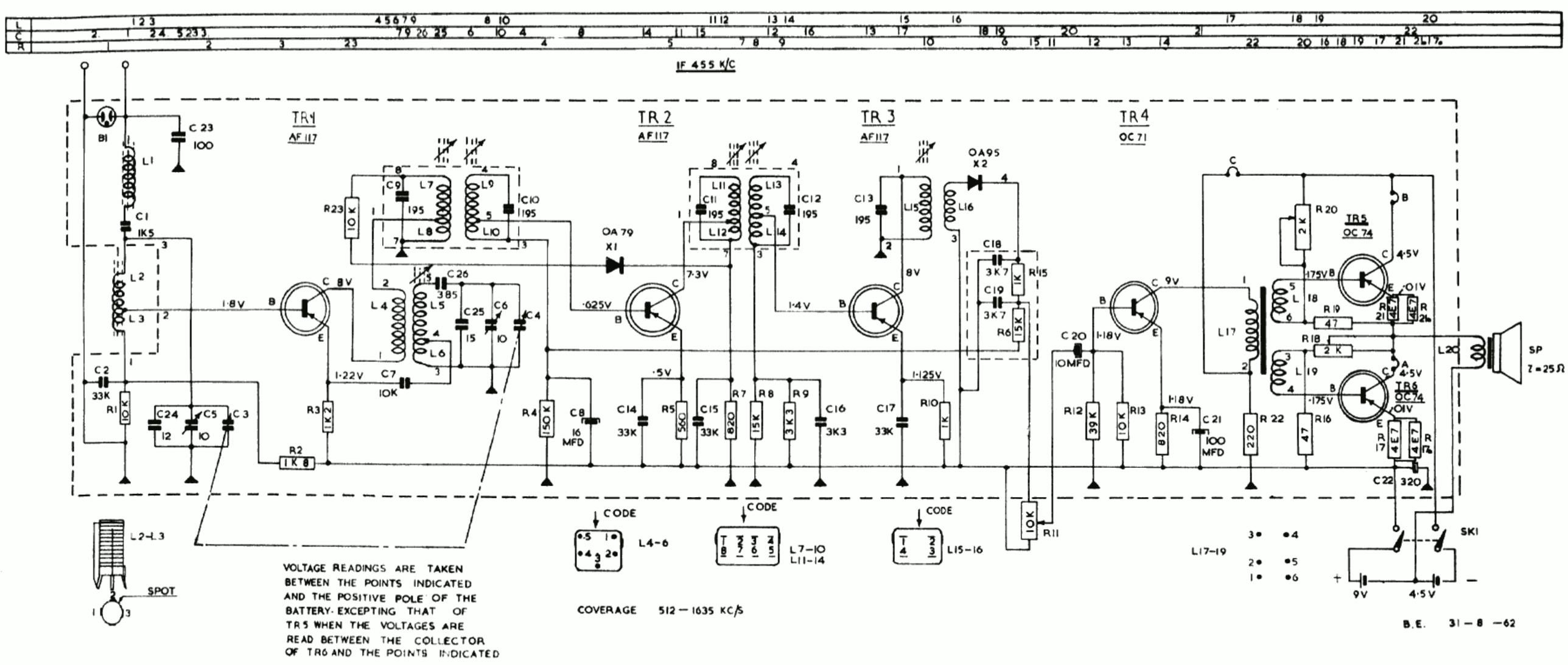
Description		Code No.
Aerial and earth plug	Red	978/1x4AF
	Black	978/1x4AA
Battery holder plate assembly, positive end		A3.146.59
Compression spring for battery holder, negative end, 2x		A3.146.56
Cabinet		A3.156.80
Cabinet bottom plate (battery hatch)		A3.157.70
Cabinet back plate assembly		A3.146.75
Dial pointer		A3.146.72
Dial drive drum		P4.095.22/799
Dial drive pulley		P4.120.09/111
Dial cord tension spring		A3.647.14
Dial cord — 34 $\frac{3}{4}$" with $\frac{1}{4}$" loops		
Dial scale		EN.852.97
Knob — on-off switch		P5.412.06/423
Knob — volume		P5.260.85/423
Knob — tuning		P5.260.84/423
Grub screw for knob		A3.324.16
Leaf spring — tuning capacitor to dial drum		A3.146.66
Screw for dial scale mounting, 2x		A3.812.92
Socket, aerial and earth, 2x		A3.821.27
Spring — dial drum retaining to cabinet		A3.147.03
Spring — tuning knob retaining		A8.818.38
Switch plate (fixed) for on-off switch		A3.146.70
Switch plate (moving) for on-off switch		A3.146.69



DRIVE CORD ASSEMBLY A3 147 66

CORD K415 JB/1

BRASS TUBE WE49722


IF 455 K/C
TR1
AF117
TR2
AF117
TR3
AF117
TR4
OC71
TR5
OC74
TR6
OC74
B1
C23 100
L1
C1 1K5
L2
L3
C2 33K
R1 10K
C24 12
C5 10
C3
R2 1K8
R3 1K2
C7 10K
C8 16 MFD
R4 150K
C9 195
L7
L8
L9
C10 195
R23 10K
C26 385
L4
L5
L6
C25 15
C6 10
C4
OA79 X1
C11 195
L11
L12
L13
C12 195
L14
C13 195
L15
L16
OA95 X2
C18 3K7
C19 3K7
R6 15K
R115 1K
R5 560
C14 33K
C15 33K
R7 820
R8 15K
R9 3K3
C16 3K3
C17 33K
R10 1K
R11 10K
C20 10MFD
R12 39K
R13 10K
R14 820
C21 100 MFD
R20 2K
L17
L18
L19
R19 47
R18 2K
R22 220
R16 47
4E7
R17
C22 320
L20
SP Z=25Ω
SK1
9V
4·5V
1·8V
7·3V
·625V
1·4V
1·22V
·5V
1·125V
8V
9V
4·5V
·175V
·01V
L2-L3
SPOT
CODE
L4-6
L7-10
L11-14
L15-16
L17-19
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