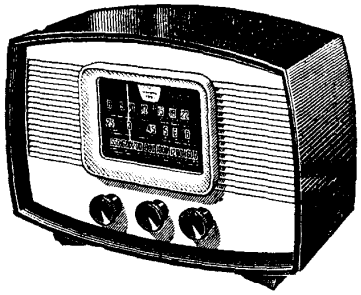
A192

MURPHY SERVICE INSTRUCTIONS



SPECIFICATION

MAINS SUPPLY:		190–250 volts, a.c., 40–100 c/s
CONSUMPTION:		38 watts (approx.)
WAVE BANDS:	Long:	2050–967 metres
	Medium:	576–184 metres
	Short:	51–16·7 metres
INTERMEDIATE FREQUENCY:		470 Kc/s
VALVES:		Mazda 10C1, 10F9, 10LD11, 10P14, U404
SCALE LAMP:		6·5 volts, 0·3 amp. (M.E.S.)
SPEECH COIL IMPEDANCE:		3 ohms
CABINET DIMENSIONS:		14½ in. wide, 10¼ in. high, 7¼ in. deep
WEIGHT:		12 lb.
RELEASED:		March, 1953

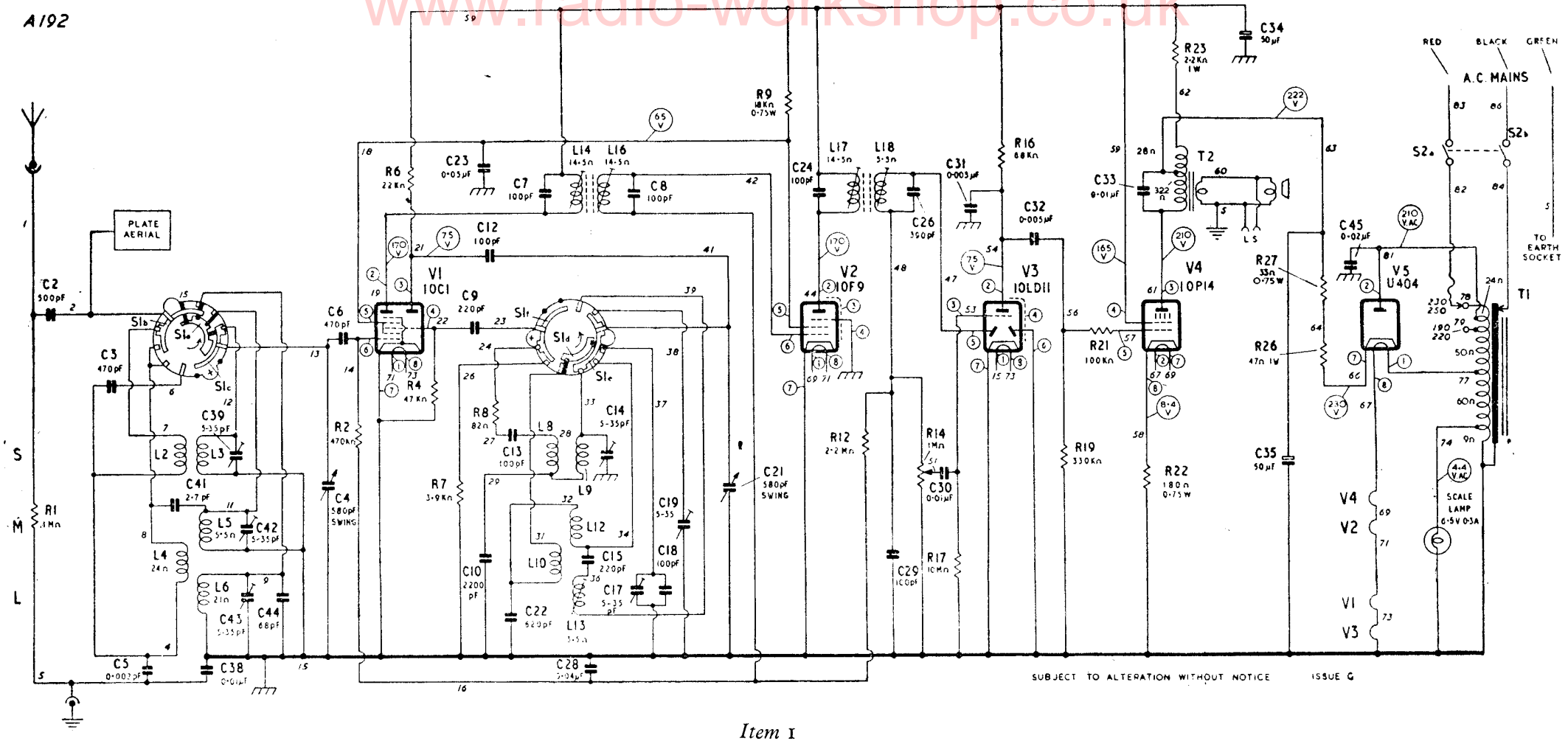
Issued by

MURPHY RADIO LTD

WELWYN GARDEN CITY · HERTS

PHONE: WELWYN GARDEN 800

March 1953



Item 1

R27 should be shown as 39Ω, 1·5W

The switch wafers are drawn as seen from the rear of the receiver, and the lugs marked with a cross are the nearer to the chassis. The black contacts and inner rotors are on the hidden sides of the wafers. Blank contacts and anchoring tags are shown by a spot.

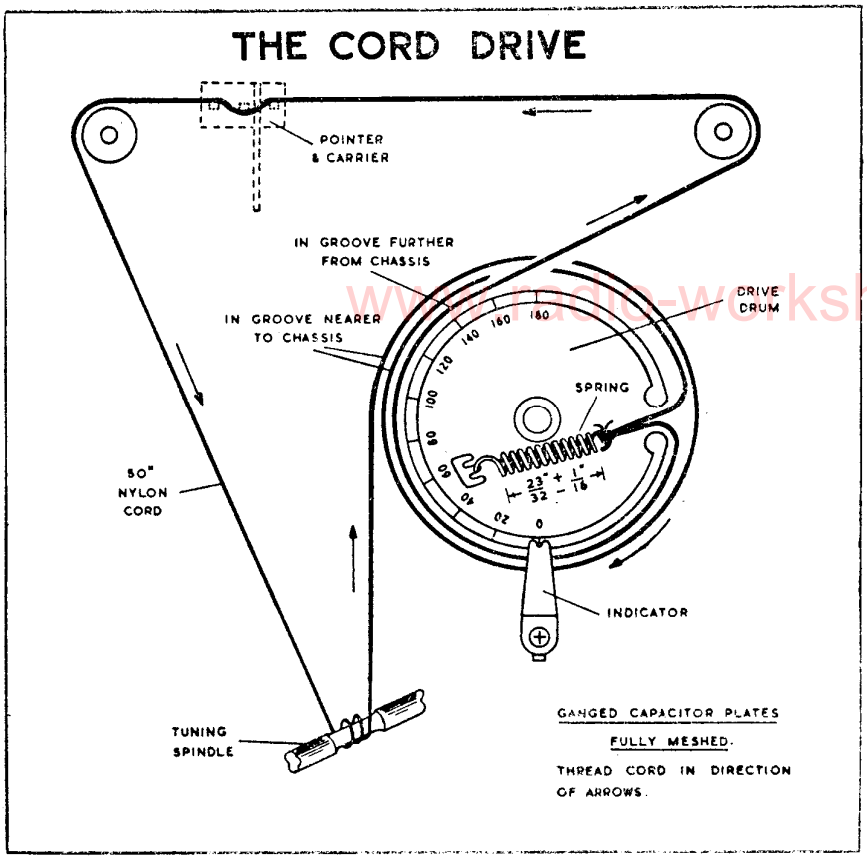
The waveband switch is shown in the S position; rotate anti-clockwise for M and L.

When measuring the voltages, the receiver was switched to the M band, with no signal input. A 20,000 Ω/V meter was used and the readings are given in the large circles on the diagram.

The valve pin numbers are shown in the small circles.

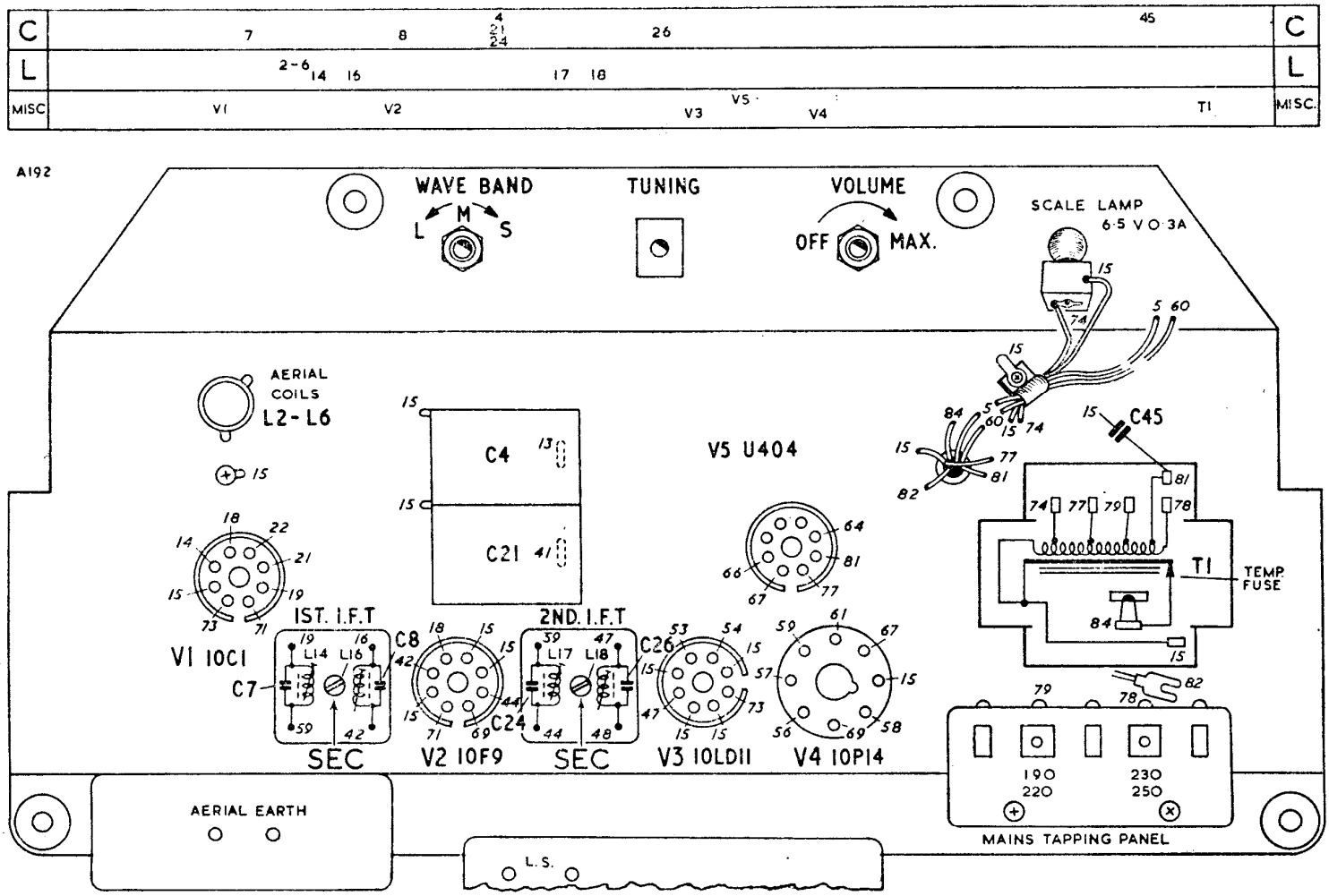
Component terminals and connecting leads are identified by test point numbers which correspond with those appearing on the chassis drawings.

Coil resistances are omitted where the values are less than one ohm.



PARTS LIST ABBREVIATIONS

cer.	—	ceramic
elec.	—	electrolytic
i.s.tub.	—	insulated sealed tubular (metal cased)
m.tub.	—	metallized paper tubular
p.s.m.	—	protected silvered mica
tub.	—	paper tubular
V a.c.	—	a.c. voltage working
V d.c.	—	d.c. voltage working
w.w.	—	wire wound
W	—	wattage rating



The layout of the top of the chassis

PARTS LIST (Electrical Components)

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
57773	C2	500 pF	2%, m.tub., 300V a.c.
28243	C3	470 pF	2%, p.s.m., 350V d.c.
55079	C4	580 pF swing	gang capacitor, ae. section
57774	C5	0·002 μF	20%, m.tub., 300V a.c.
54083	C6	470 pF	20%, cer., 500V d.c.
52630	C7	100 pF	5%, p.s.m., 350V d.c.
52630	C8	100 pF	5%, p.s.m., 350V d.c.
28267	C9	220 pF	20%, p.s.m., 350V d.c.
23656	C10	2200 pF	10%, p.s.m., 350V d.c.
23607	C12	100 pF	10%, p.s.m., 500V d.c.
23607	C13	100 pF	10%, p.s.m., 500V d.c.
37480	C14	5–35 pF	trimmer, S osc.
28223	C15	220 pF	2%, p.s.m., 350V d.c.
37480	C17	5–35 pF	trimmer, L osc.
23607	C18	100 pF	10%, p.s.m., 350V d.c.
37480	C19	5–35 pF	trimmer, M osc.
55079	C21	580 pF swing	gang capacitor, osc. section
28241	C22	620 pF	1%, p.s.m., 350V d.c.
41403	C23	0·05 μF	20%, tub., 350V d.c.
52630	C24	100 pF	5%, p.s.m., 350V d.c.
52633	C26	390 pF	5%, p.s.m., 350V d.c.
49454	C28	0·04 μF	25% ,m.tub., 150V d.c.
54070	C29	100 pF	20%, cer. ,500V d.c.
49447	C30	0·01 μF	25%, m.tub., 150V d.c.
49448	C31	0·003 μF	25%, m.tub., 350 V d.c.
53062	C32	0·005 μF	25%, i.s.tub., 500V d.c.
41419	C33	0·01 μF	20%, tub., 1000V d.c.
56152	C34	50 μF	+50 –20%
	C35	50 μF	elec., 275V d.c.
51766	C38	0·01 μF	20%, i.s.tub., 275V a.c.
37480	C39	5–35 pF	trimmer, S ae.
52143	C41	2·7 pF	20%, cer., 350V d.c.
37480	C42	5–35 pF	trimmer, M ae.
37480	C43	5–35 pF	trimmer, L ae.
23606	C44	68 pF	10%, p.s.m., 350V d.c.
41423	C45	0·02 μF	20%, tub., 750V d.c.

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
27461	R1	1 MΩ	20%, 0·6W
27397	R2	470 KΩ	20%, 0·6W
27205	R4	47 KΩ	20%, 0·6W
25445	R6	22 KΩ	10%, 0·6W
25157	R7	3·9 KΩ	10%, 0·6W
24517	R8	82 Ω	10%, 0·6W
25421	R9	18 KΩ	10%, 0·75W
27525	R12	2·2 MΩ	20%, 0·6W
52776	R14	1 MΩ	v/c with switch
27237	R16	68 KΩ	20%, 0·6W
27653	R17	10 MΩ	20%, 0·6W
27365	R19	330 KΩ	20%, 0·6W
27269	R21	100 KΩ	20%, 0·6W
24653	R22	180 Ω	10%, 0·75W
25087	R23	2·2 KΩ	10%, 1W
40460	R26	47 Ω	20%, 1W, w.w.
26653	R27	47Ω	20%, 1W

PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	REMARKS
57723	L2	—	aerial coil
	L3	—	
	L4	24 Ω	
	L5	5·5 Ω	
	L6	21 Ω	
57572	L8	—	oscillator coil
	L9	—	
	L10	—	
	L12	—	
	L13	3·5 Ω	
58116	L14	14·5 Ω	pri. 1st i.f.t.
	L16	14·5 Ω	sec. 1st i.f.t.
58117	L17	14·5 Ω	pri. 2nd i.f.t.
	L18	5·5 Ω	sec. 2nd i.f.t.
60158	T1	143 Ω Total	mains transformer
60157	T2	350 Ω pri.	output transformer
		— sec.	output transformer

Item 2

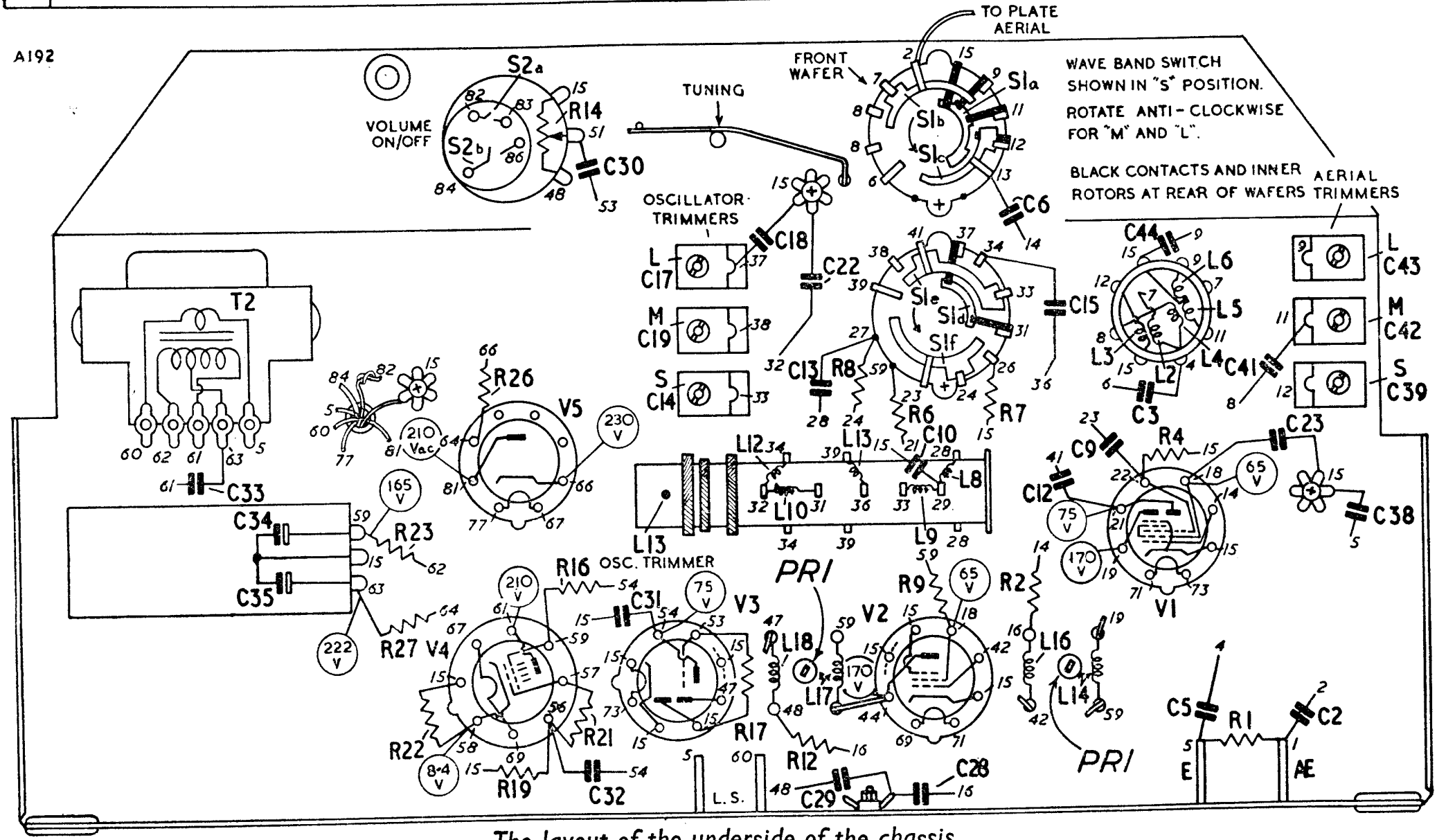
NOTE: In the table above, R27 should be given as 39Ω, 10%, 1·5W, Part No. 24415.

PARTS LIST (Mechanical Components)

PART NO.	DESCRIPTION	REMARKS
60170	Back	for cabinet
57424	Bracket	for lampholder
57483	Cabinet	
48506	Channel, rubber (4)	for scale fixing
53019	Clamp	for C34, C35, C37
55897	Clamp	for oscillator coil
50062	Clamp	for aerial coil
57315	Clamping piece	for L1
2033/5	Cord, for drive	50 in. length (127 cms.)
53774	Drive drum	for cord drive
57484	Escutcheon	
57422	Guide rail	for pointer
57418	Indicator	for cord drive
58715	Knob	for On/Off, Volume Control
53035	Knob	for Tuning Control
57496	Knob	for Wave Band Switch
16882	Lamp	6·5V, 0·3A

PART NO.	DESCRIPTION	REMARKS
56453	Lampholder	
51813	Loudspeaker	5 in. dia., p.m.
53819	Panel, mains tapping	
60164	Plate, aerial	
37974	Plug	for aerial
37975	Plug	for earth
57932	Pointer and carrier	
60165	Scale, tuning	
103267	Screw (2)	for chassis fixing
19642	Screw, grub	for drive drum
10413	Screw, grub (3)	for control knobs
57419	Spindle, tuning	
19460	Spring	for cord drive
51171	Spring	for tuning spindle
57571	Switch	wave band
40134	Tag (5)	for mains tapping panel
40135	Terminal, spade	for mains adjustment
51451	Valve holder, B8A (4)	
5687	Valve holder, I.O.	
34588	Washer, felt (3)	for control knobs
49910	Washer, cup (2)	for chassis fixing

C	33 35 34 — 30 32 31 17 19 14 — 18 13 29 — 22 — 10 28 — 6 15 12 9 — 3 44 5 — 41 23 — 2 38 43 39 42	C
L	12 18 — 10 17 — 13 — 9 — 8 — 16 — 3 14 2 4 5 6	L
R	23 27 22 — 26 19 — 16 — 14 21 — 17 — 12 — 8 — 6 9 — 7 2 — 4 — 1	R
MISC	T2 — S2b S2a V4 — V5 — V3 — V2 — S1b S1a S1e S1c S1d S1f — V1	MISC



The layout of the underside of the chassis

CIRCUIT ALIGNMENT

Output reading. Connect an output meter to the loudspeaker speech coil. Turn the volume control to maximum output. Make all adjustments for maximum output. Adjust the signal generator attenuator so that the output does not exceed 180mW (0·7V).

Drive drum setting. Check that the ganged capacitor plates are fully meshed (i.e. maximum capacitance) when 0° on the drive drum registers with the "V" on the indicator.

Tuning pointer adjustment. The pointer should register with the spots at the left of the tuning scale when the ganged capacitor plates are fully meshed.

Replacement s.w. coils. The inductance of the tuned windings of replacement S band aerial and oscillator coils may be adjusted after fitting as follows. Refer to the alignment table and where it states "No Adjustment", adjust the spacing of the end turns of the S band aerial and oscillator coils. Readjust the trimmers at the h.f. end of the wave band. Make final adjustments to the coils and then seal the windings with wax.

CIRCUIT ALIGNMENT TABLE

Note: On all wave bands, the local oscillator frequency is higher than the signal frequency.

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	DRIVE DRUM SETTING	ADJUSTMENTS
2nd i.f.t.	Unscrew sec. core (top of can) before starting adjustments	470 Kc/s	Via 0·01 μF capacitor	V2 signal grid (pin 6)	0° M Band	L17 (pri.) under chassis L18 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
1st i.f.t.	As above	As above	As above	V1 signal grid (pin 6)	As above	L14 (pri.) under chassis L16 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
L	Repeat these adjustments until there is no further improvement	176·5 Kc/s (1700 m.)	Dummy aerial	Aerial socket	62°	L osc. coil (L13)
		300 Kc/s (1000 m.)	As above	As above	168°	L osc. trimmer (C17) L ae. trimmer (C43)
M		1363·6 Kc/s (220 m.)	As above	As above	157°	M osc. trimmer (C19) M ae. trimmer (C42)
		600 Kc/s (500 m.)	As above	As above	37°—39°	No adjustment
S	Set osc. trimmer to lower capacitance peak	15·2 Mc/s (19·75 m.)	As above	As above	157·5°	S osc. trimmer (C14) S ae. trimmer (C39)
		6·7 Mc/s (44·8 m.)	As above	As above	34°—36°	No adjustment

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