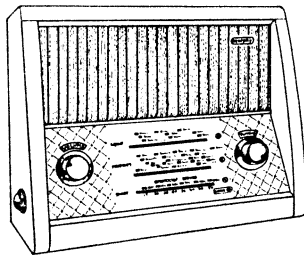


MURPHY SERVICE INSTRUCTIONS



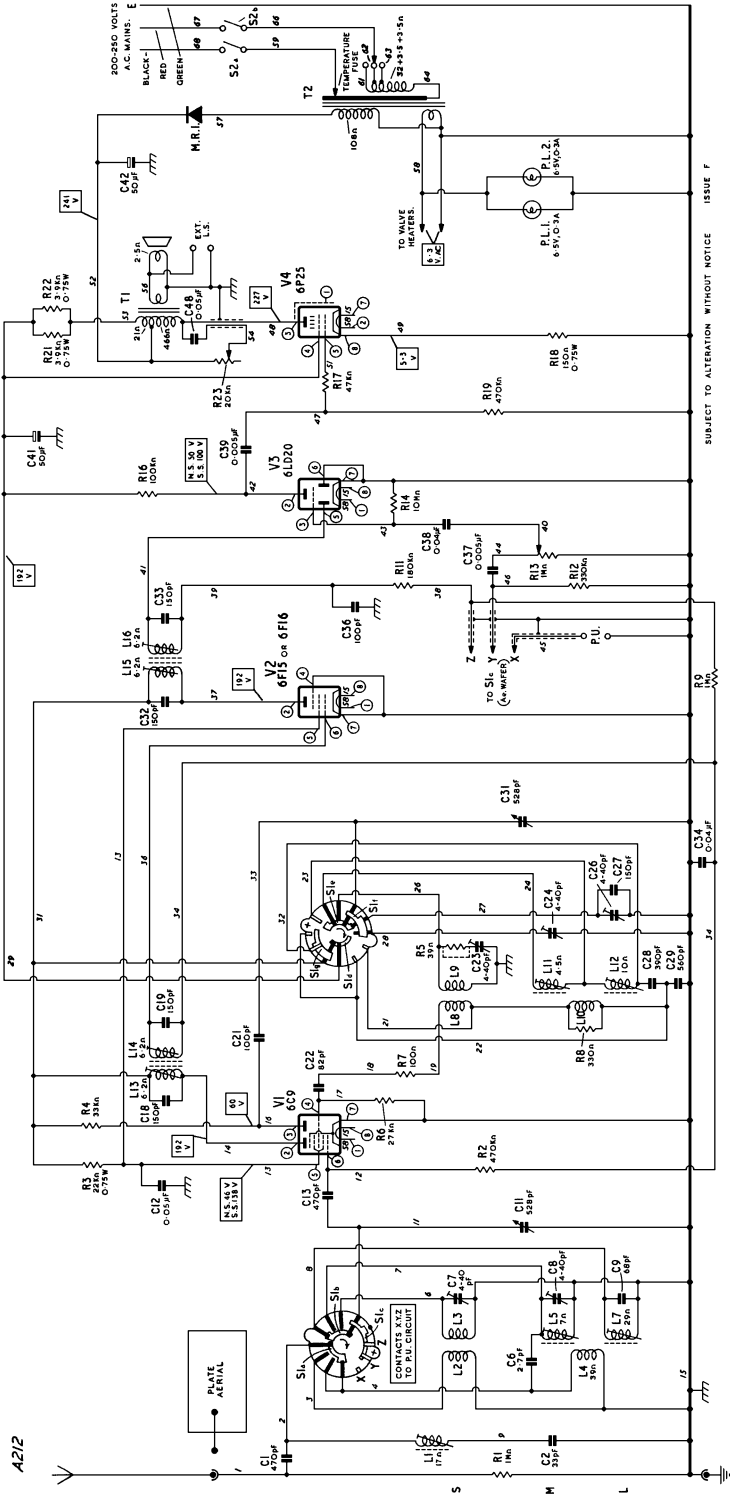
SPECIFICATION

MAINS SUPPLY:	200-250 volts a.c., 50-100 c/s
CONSUMPTION:	42 watts approximately
WAVE BANDS:	Short: 16·8-50·4 metres Medium: 187-540 metres Long: 1000-2000 metres
INTERMEDIATE FREQUENCY:	470 Kc/s
VALVES:	6C9, 6F15 or 6F16, 6LD20, 6P25
SCALE LAMPS:	Two 6·5 volts 0·3 amp. m.e.s.
LOUDSPEAKER:	Type: 8 in. dia., permanent magnet Impedance: 3 ohms
CABINET DIMENSIONS:	19 in. wide, 16 in. high, 8 in. deep
WEIGHT:	18 lb.

Issued by

MURPHY RADIO LTD
WELWYN GARDEN CITY · HERTS
PHONE: WELWYN GARDEN 3434

May 1954



SUBJECT TO ALTERATION WITHOUT NOTICE ISSUE F

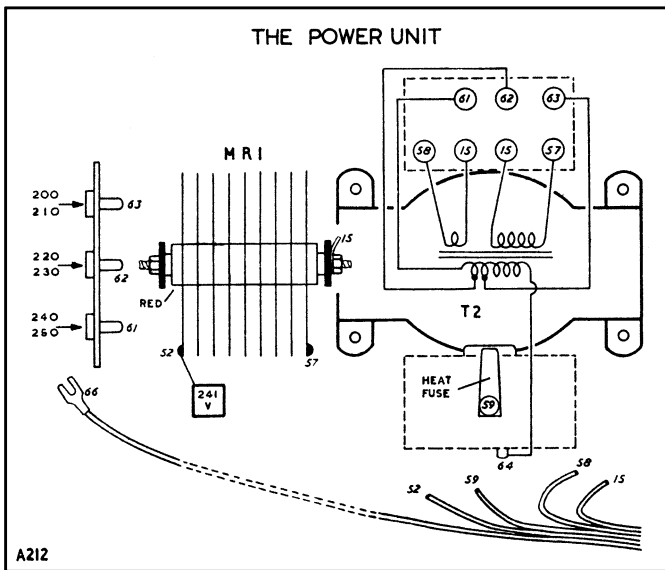
The wave band switch (S1a-S1g) is shown in the long wave position, and is drawn as seen from the rear; rotate clockwise for medium, short and gramophone. The black contacts and inner rotors are on the hidden sides of the wafers and the lugs marked with a cross are the nearer to the chassis. Blank positions and anchoring tags are shown by a spot.

Circuit voltages are shown within rectangles and were measured with a 20KΩ/V meter while the receiver was switched to the M band. Two read-

ings are quoted for those points where the voltage differs appreciably from No-Signal (N.S.) to Strong Signal (S.S.) conditions.

Where the resistance of a coil is less than one ohm, the value is omitted. Component terminals and connecting leads are identified by test point (t.p.) numbers which correspond with those appearing on the chassis drawings. The valve pin numbers are shown within small circles.

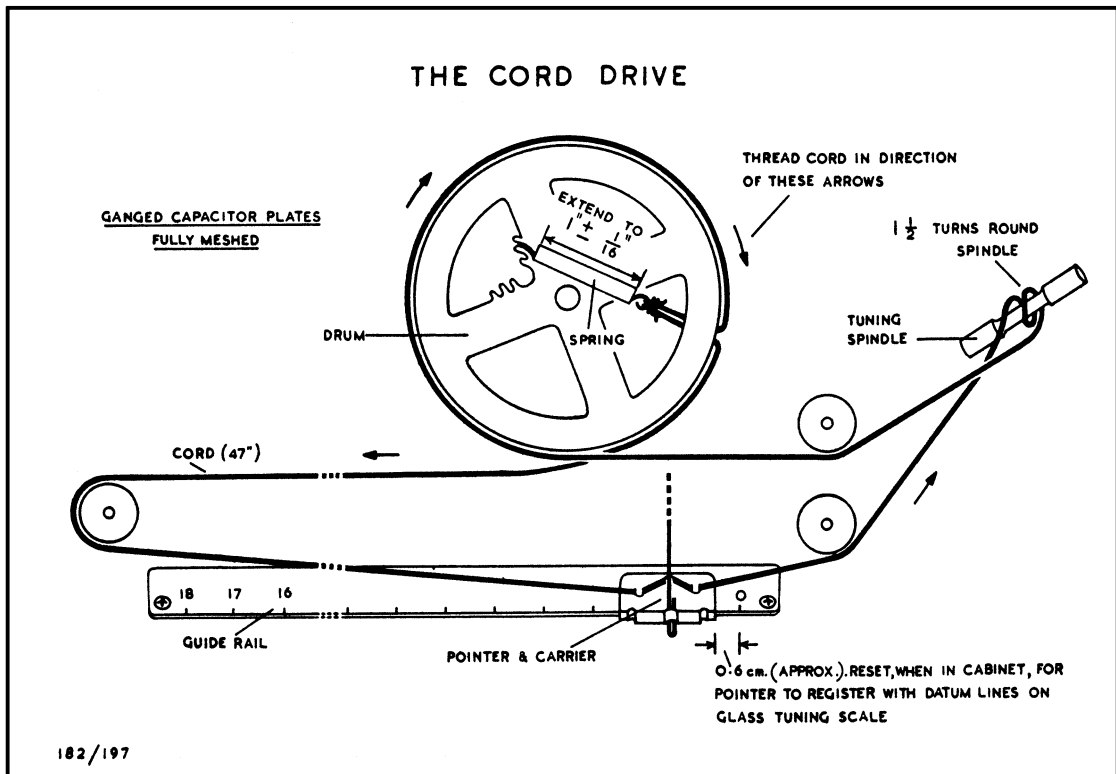
Squegging. If squegging occurs with some frequency changer valves, R5 must be brought into circuit by cutting the wire link across it.



PARTS LIST ABBREVIATIONS

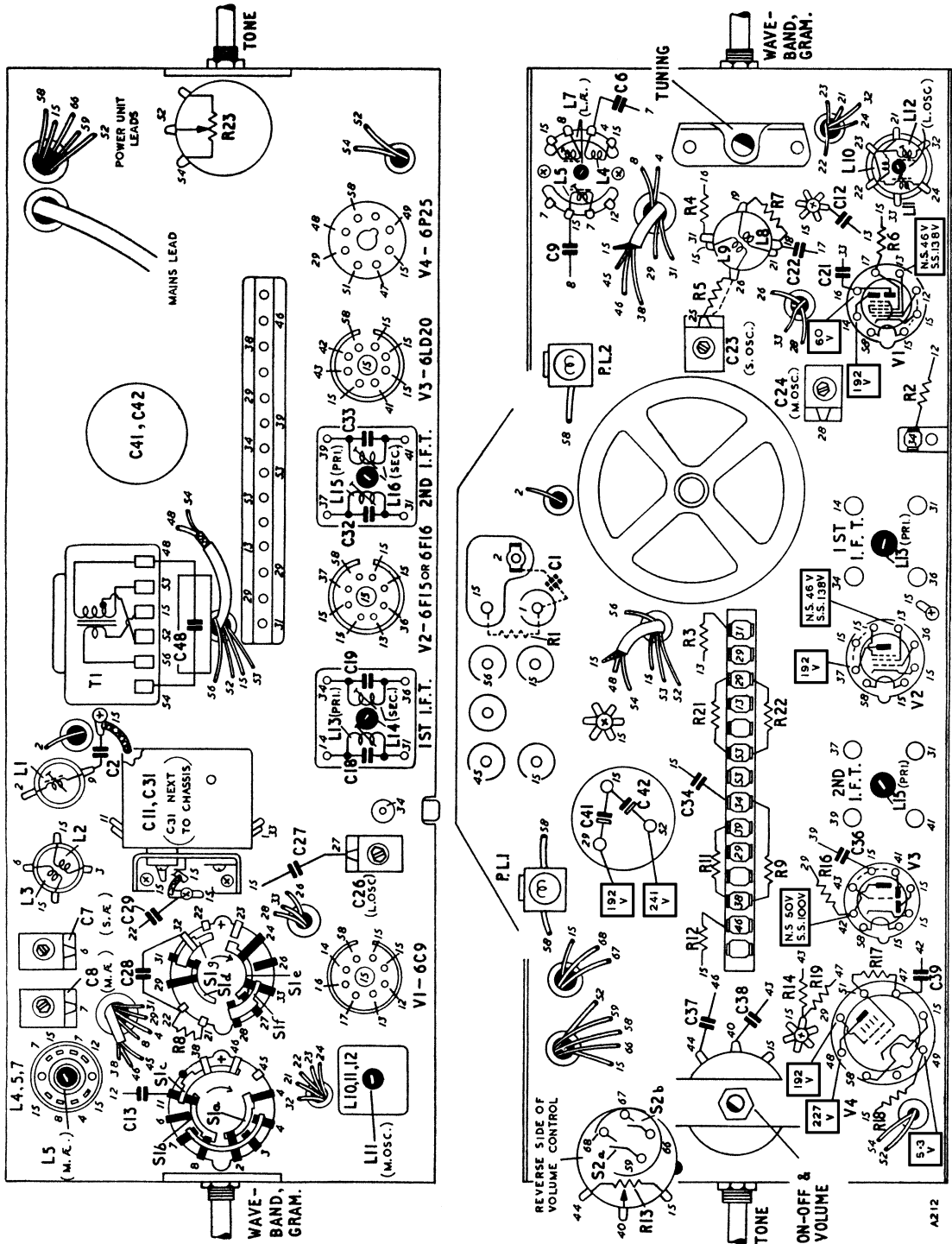
- cer. — ceramic
- p.s.m. — protected silvered mica
- tub. — paper tubular
- m.tub. — metallized paper tubular
- s.tub. — sealed paper tubular
(metal cased)
- elec. — electrolytic
- V d.c. — d.c. voltage rating
- W — wattage rating
- log. — logarithmic law

When removing the chassis, take care not to scratch the tuning scale.
To remove the tuning scale, first remove the loudspeaker and the power unit.



PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS	PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
54083	C1	470 pF	20%, cer., 500V d.c.	24549	R7	100 Ω	10%, 0.6W
28299	C2	33 pF	2%, p.s.m., 350V d.c.	24741	R8	330 Ω	10%, 0.6W
52143	C6	2.7 pF	20%, cer., 500V d.c.	27461	R9	1 MΩ	20%, 0.6W
56322	C7	4-40 pF	Trimmer, S ae.	25797	R11	180 KΩ	10%, 0.6W
56322	C8	4-40 pF	Trimmer, M ae.	27365	R12	330 KΩ	20%, 0.6W
23606	C9	68 pF	10%, p.s.m., 350V d.c.	52851	R13	1 MΩ	Volume control, log.
59075	C11	528 pF (swing)	Ganged capacitor, ae. section, with C31	27653	R14	10 MΩ	20%, 0.6W
41403	C12	0.05 μF	20%, tub., 350V d.c.	27269	R16	100 KΩ	20%, 0.6W
54083	C13	470 pF	20%, cer., 500V d.c.	27205	R17	47 KΩ	20%, 0.6W
52631	C18	150 pF	5%, p.s.m., 350V d.c.	24621	R18	150 Ω	10%, 0.75W
52631	C19	150 pF	5%, p.s.m., 350V d.c.	27397	R19	470 KΩ	20%, 0.6W
54070	C21	100 pF	20%, cer., 500V d.c.	25165	R21	3.9 KΩ	10%, 0.75W
28179	C22	82 pF	5%, p.s.m., 350V d.c.	25165	R22	3.9 KΩ	10%, 0.75W
56322	C23	4-40 pF	Trimmer, S osc.	52803	R23	20 KΩ	Tone control, log.
56322	C24	4-40 pF	Trimmer, M osc.				
56322	C26	4-40 pF	Trimmer, L osc.				
23622	C27	150 pF	10%, p.s.m., 350V d.c.				
28311	C28	390 pF	1%, p.s.m., 350V d.c.				
28270	C29	560 pF	1%, p.s.m., 350V d.c.				
59075	C31	528 pF (swing)	Ganged capacitor, osc. section, with C11				
52631	C32	150 pF	5%, p.s.m., 350V d.c.				
52631	C33	150 pF	5%, p.s.m., 350V d.c.				
49454	C34	0.04 μF	25%, m.tub., 150V d.c.				
54070	C36	100 pF	20%, cer., 500V d.c.				
41409	C37	0.005 μF	25%, tub., 500V d.c.				
49454	C38	0.04 μF	25%, m.tub., 150V d.c.				
50962	C39	0.005 μF	25%, s.tub., 500V d.c.				
56152	{ C41	{ 50 μF	+ 50% -20%, elec., 275V d.c.				
	{ C42	{ 50 μF					
41424	C48	0.05 μF	20%, tub., 750V d.c.				
27461	R1	1 MΩ	20%, 0.6W	55856	L1	17 Ω	I.f. rejector
27397	R2	470 KΩ	20%, 0.6W	59103	{ L2	—	S ae. coupling
25453	R3	22 KΩ	10%, 0.75W		{ L3	—	S ae. tuned
25509	R4	33 KΩ	10%, 0.6W		{ L4	39 Ω	L & M ae. coupling
24389	R5	39 Ω	10%, 0.6W	59105	{ L5	7 Ω	M ae. tuned
25477	R6	27 KΩ	10%, 0.6W		{ L7	29 Ω	L ae. tuned
				59104	{ L8	—	S osc. coupling
					{ L9	—	S osc. tuned
				59106	{ L10	—	L & M osc. coupling
					{ L11	4.5 Ω	M osc. tuned
					{ L12	10 Ω	L osc. tuned
				55879	{ L13	6.2 Ω	Pri.
					{ L14	6.2 Ω	Sec. } 1st i.f.t.
				55879	{ L15	6.2 Ω	Pri.
					{ L16	6.2 Ω	Sec. } 2nd i.f.t.
				59102	T1	{ 487 Ω (total)	Pri. } output transformer
						{ 39 Ω (total)	Pri. } output transformer
				64304	T2	{ 108 Ω	H.t. sec. } mains transformer
						{ —	Htr. sec. } mains transformer

PART NO.	DESCRIPTION	REMARKS	PART NO.	DESCRIPTION	REMARKS
61389	Anchor (sleeve)	for mains lead	59675	Panel with tags	for mains adjustment
64148	Back, complete	for cabinet	59051	Plate, anchor	for mains lead
62076	Badge, Murphy	for front of cabinet	37975	Plug (black)	for earth
64030	Cabinet		37974	Plug (red)	for aerial
48466	Can (2)	for i.f. transformers	45974	Plug (2)	for loudspeaker
46903	Can	for L10/L11/L12	64371	Pointer and carrier	
62416	Clip, nut (2)	for cabinet back fixing	64340	Rail, ornamental	for cabinet front
52292	Clip, retaining	for L10/L11/L12	59078	Rail	for pointer
37973	Clip, spring (3)	for leads	55232	Rectifier, metal (M.R.1)	Westinghouse 14B986
59066	Collar	for anchoring tuning spindle	59195	Reflector	for scale
3962/1	Cord 47 in.	for tuning drive	55779	Retainer (4)	for i.f.t. cores
46911	Core, iron dust (4)	for i.f. transformers	64033	Scale, tuning	glass
46916	Core, iron dust (2)	for L5 and L7	10421	Screw, grub 4BA	for collar on tuning spindle
46913	Core, iron dust (2)	for L11 and L12	10412	Screw, grub (4)	for tuning knobs
			14768	Spacer (7)	inside chassis and ganged capacitor mounting grommets
59079	Drum, tuning		64365	Spindle, tuning	for drive cord
15633	Eyelet (4)	inside V1 and V3 mounting grommets	19448	Spring, tension	for L1, L2/L3, and L8/L9
64514	Foil, adhesive	plate aerial	57315	Strip, clamping (3)	
56622	Grommet (7)	for chassis and ganged capacitor mounting	59107	Switch, waveband	
42844	Grommet (4)	for V1 and V3 mounting	40134	Tag (3)	for mains adjustment panel
60060	Knob (2)	volume and tuning	40135	Terminal, spade	for mains voltage adjustment
63468	Knob (2)	wave band, tone	51451	Valve holder, B8A (3)	for V1, V2, and V3
16882	Lamp (2)	6.5V, 0.3A, m.e.s.	5687	Valve holder, I.O.	for V4
56453	Lampholder (2)		58554	Washer (14)	for chassis and ganged capacitor mounting grommets
64324	Loudspeaker	8 in. dia.	491313	Washer	for tuning spindle
			58555	Washer, felt (2)	for volume and tuning knobs
64596	Panel with sockets	for aerial/earth, etc.	58556	Washer, felt (2)	for wave band and tone knobs



The layout of the front and rear of the chassis

CIRCUIT ALIGNMENT

Receiver output. Excepting where otherwise stated, make all adjustments for maximum output with the volume control at maximum. Adjust the signal generator attenuator so that this output does not exceed 500 mW., or 1 V across the loudspeaker speech coil.

Trimming tool. A non-metallic tool must be used to adjust the coil cores. **The r.f. coil cores.** More than one peak is possible with the r.f. coil cores. In case of difficulty, unscrew the core almost fully and then trim to the first major peak.

The pointer setting. Before aligning the r.f. circuits, make sure that the right-hand edge of the pointer carrier registers with 0.6 cm. on the guide rail when the ganged capacitor plates are just fully meshed (not necessarily against the stop). After the chassis is fitted into the cabinet, the pointer must

be set so that it registers with the datum lines at the right-hand end of the tuning scale when the ganged capacitor plates are fully meshed. The figures in the table refer to the setting of the right-hand edge of the pointer carrier.

Receiver oscillator frequency. On all wave bands, this is higher than the signal frequency.

The scale light reflector. This must be in position during r.f. alignment. **Replacement s.w. coils.** The inductance of replacement coils must be adjusted after fitting. Referring to the circuit alignment table, commence at the lower frequency end of the S band and adjust the spacing of the end turns (osc. first). Then adjust the trimmers at the high frequency end of the band. Repeat these adjustments until there is no further improvement and finally seal the windings with wax.

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	POINTER SETTING	ADJUSTMENTS
2nd i.f.t.	Unscrew sec. core (chassis rear) before starting adjustments	470 Kc/s	Via 0.01 µF capacitor	V2 signal grid (pin 6)	0.6 cm.	L15 (pri.) at chassis front L16 (sec.) at chassis rear DO NOT RE-ADJUST PRI.
1st i.f.t.	As above. Switch to M band	470 Kc/s	As above	C11 (t.p.11)	0.6 cm.	L13 (pri.) at chassis front L14 (sec.) at chassis rear DO NOT RE-ADJUST PRI.
I.f. rejector	Switch to M band Adjust for minimum output	470 Kc/s	Via dummy aerial	Ae. socket	0.6 cm.	L1 at chassis rear
M	Repeat these adjustments until there is no further improvement	600 Kc/s (500 m.)	As above	As above	2.25 cm.	L11 (osc.) at chassis rear L5 (ac.) at chassis rear
L	As above	1363 Kc/s (220 m.)	As above	As above	11.45 cm.	C24 (osc.) at chassis front C8 (ac.) at chassis rear
S	Set C23 to lower capacitance peak. Rock tuning control for maximum sensitivity while adjusting C7	176.5 Kc/s (1700 m.)	As above	As above	4.1 cm.	L12 (osc.) at chassis front L7 (ac.) at chassis front
		300 Kc/s (1000 m.)	As above	As above	12.75 cm.	C26 (osc.) at chassis rear
		17.8 Mc/s (16.86 m.)	As above	As above	13.9 cm.	C23 (osc.) at chassis front C7 (ac.) at chassis rear
		6.7 Mc/s (44.8 m.)	As above	As above	2.35- 2.65 cm.	No adjustments