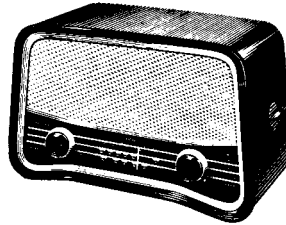


MURPHY SERVICE MANUAL



SPECIFICATION

MAINS SUPPLIES:		200-250V a.c., 25-100 c/s 200-250V d.c.
CONSUMPTION:		38 watts average
WAVE-RANGES:	M:	186-568 metres
	L:	1,000-2,000 metres
INTERMEDIATE FREQUENCY:		470 Kc/s
VALVES:		10C14, 10FD12, UCL82, U381
LOUDSPEAKER:	Type:	5 in. dia., permanent magnet
	Impedance:	3 ohms
OVERALL DIMENSIONS:		14 in. wide, 8 $\frac{3}{4}$ in. high, 7 in. deep
WEIGHT:		8 $\frac{1}{2}$ lb.
RELEASED:		June, 1958
PRICE:		£11 6s. 7d. plus P.T.

Issued by

MURPHY RADIO LTD
WELWYN GARDEN CITY · HERTS

Telephone: WELWYN GARDEN 3434

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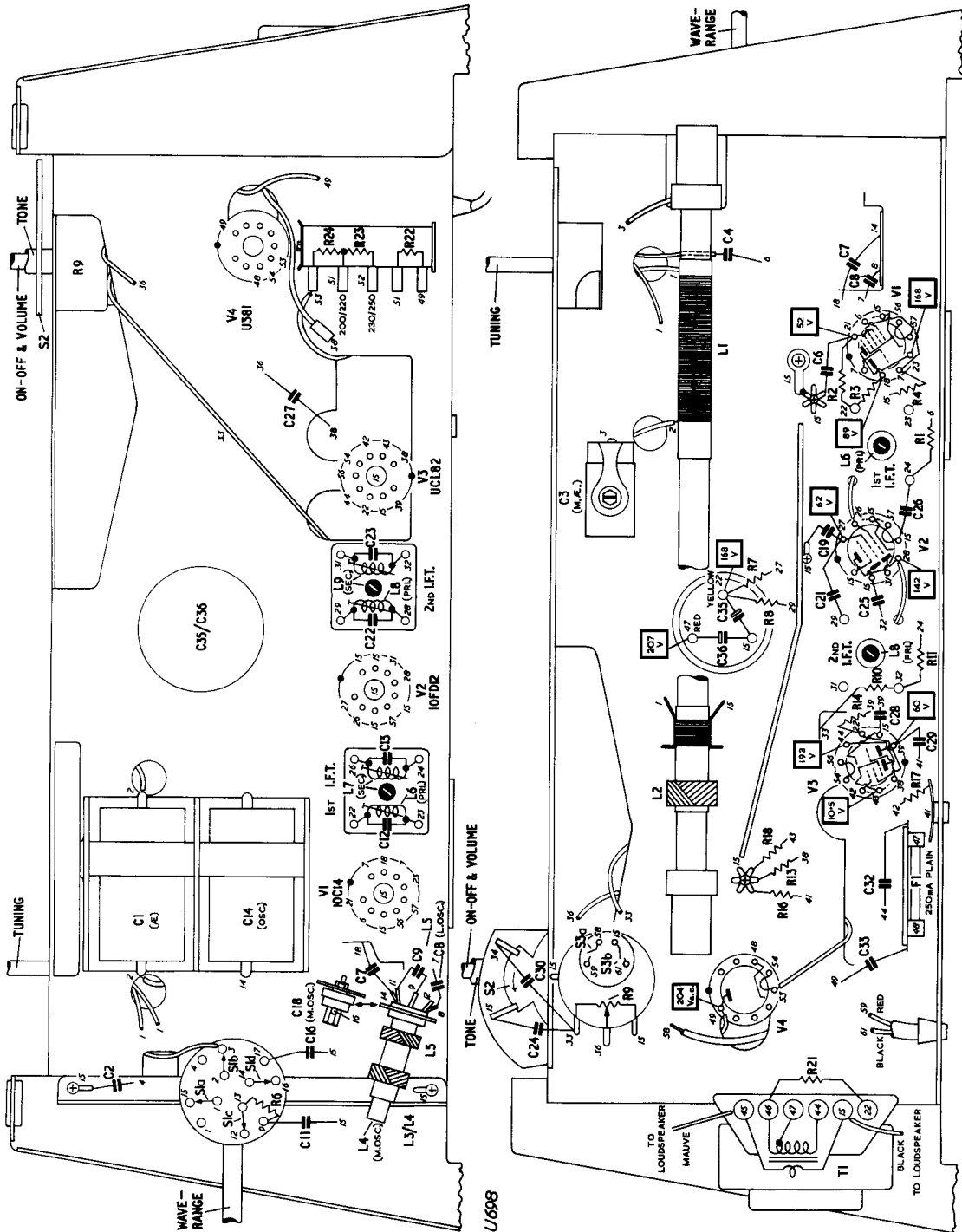


Fig. 1. The layout of the top and the underside of the chassis.

The Wave-Range switch is shown in the M position.

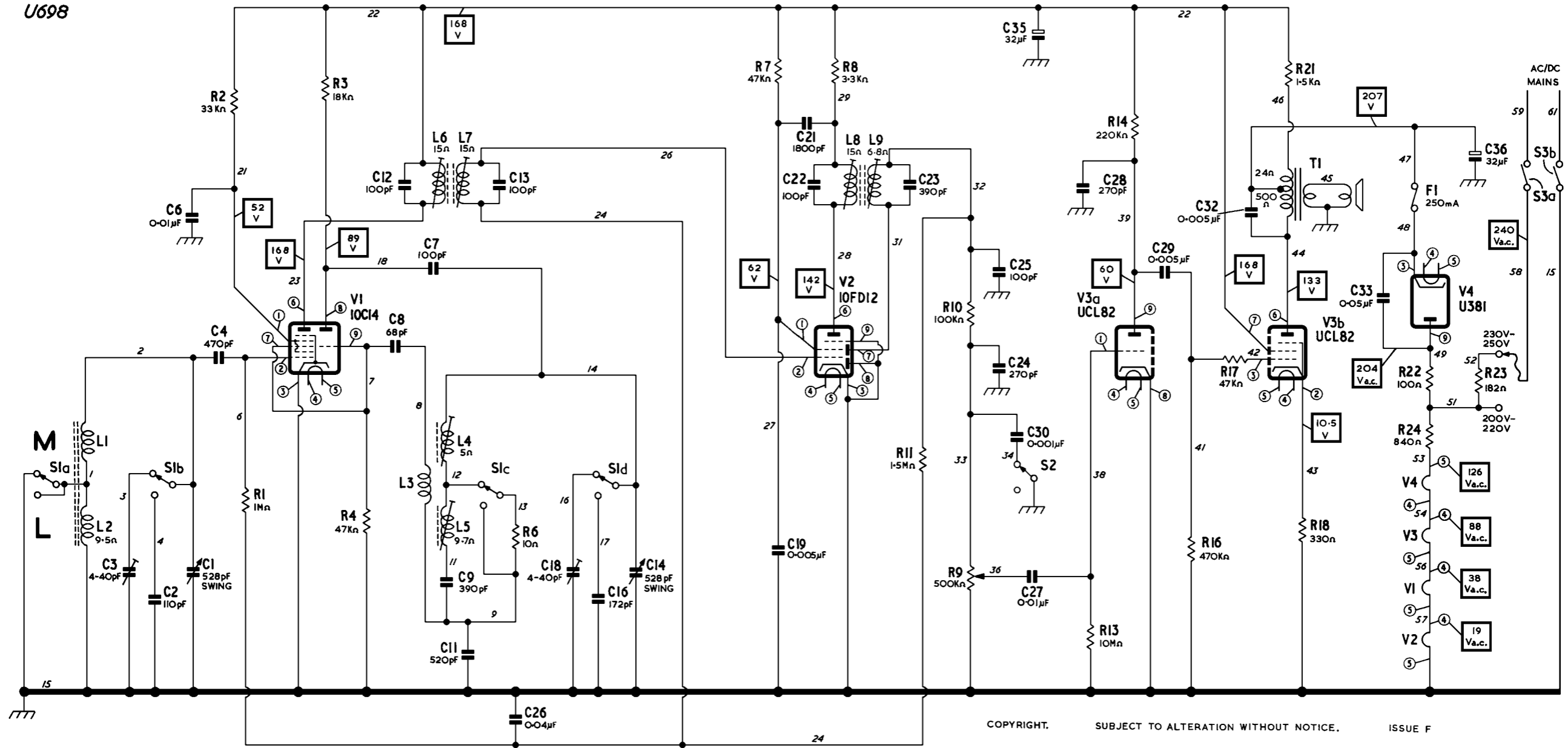
CIRCUIT ALIGNMENT

1. **Receiver output.** Make all adjustments for maximum output with the volume control at maximum. Adjust the signal generator attenuator so that this output does not exceed 180mW, or approximately 0.7V across the loudspeaker speech coil.
2. **Trimming tool.** A non-metallic tool must be used for adjusting the coil cores.
3. **Tuning pointer.** When the chassis is outside the cabinet the left-hand edge of the pointer carrier (looking from the rear) is used as an indicator and must register with 0 on the centimetre scale when the ganged capacitor is at maximum capacitance. When the chassis is inside the cabinet and with the ganged capacitor at maximum capacitance, the middle of the pointer must register with the dots to the right of the 2,000m. and 550m. scale markings.
4. **Coupling coil.** This is required during the alignment of the r.f. circuits and should consist of a coil (about 20 turns) wound on a 6 in. dia. former and placed about 1 ft. away from the h.f. end of the receiver, with its axis in line with the aerial rod. Connect the coil to the signal generator by means of a "straight through" lead.
5. **Aerial coils.** Only replacement aerial coils need to be adjusted. Start by sliding the coils towards their respective ends of the rod and then follow the instructions in the M and L sections of the table below, adjusting L1 and L2 for maximum output by sliding them along the rod. Repeat the M adjustments after completing the L adjustments. When connected in the correct phase, the approximate distance between the end of each coil former and the adjacent face of the moulded support should be 1/2 in. for L1 and 7/16 in. for L2. Finally, secure the coils to the aerial rod with cellulose cement.

CIRCUIT ALIGNMENT TABLE

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	SIG. GEN. CONNECTIONS	RECEIVER SETTING	ADJUSTMENTS
2nd i.f.t.	Unscrew pri. core (bottom of can) before starting adjustments	470Kc/s	Via 0.01µF capacitor	V2 grid 1 (pin 2)	0	L9 (sec.) top of can L8 (pri.) bottom of can DO NOT READJUST SEC. CORE
1st i.f.t.	As above. Switch to M band.	470Kc/s	As above	V1 grid 1 (pin 2)	0	L7 (sec.) top of can L6 (pri.) bottom of can DO NOT READJUST SEC. CORE
M	Repeat these adjustments until there is no further improvement	600Kc/s (500m.) 1364Kc/s (220m.)	See note 4 above As above	See note 4 above As above	1.9 8.2	L4 (osc.) chassis top L1 (ae.) see note 5 above C18 (osc.) chassis top C3 (ae.) chassis bottom
L		176.5Kc/s (1700m.)	As above	As above	2.7	L5 (osc.) chassis top L2 (ae.) see note 5 above

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Fig. 2. The circuit diagram.

Circuit voltages are shown within rectangles and were measured with a 20,000 Ω/V meter while the receiver was switched to the M band under no-signal 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.

ALTERNATIVE VALVES

V1 - UCH81 V4 - UY85
 V2 - UBF89

PARTS LIST (Electrical Components)

The d.c. resistance quoted for the coil and transformer windings is an average figure and should be used as a general guide only; it is omitted where the value is less than one ohm.

The following abbreviations are used in the table:

cer.	- ceramic	elec.	- electrolytic
p. s. m.	- protected silvered mica	V d.c.	- d.c. voltage rating
tub.	- paper tubular	W	- wattage rating
m. tub.	- metallized paper tubular	2 p.c.	- 2% law
p. f. tub.	- plastic film tubular		

Volume Control. This control has a new type of track, in which the resistance between the anti-clockwise stop and the slider at 50% rotation is 2% of the total track resistance

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS	PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
60763	C1	528pF	Ganged capacitor, ae. section (with C14)	51560	C32	0.005µF	25%, tub., 750V d.c.
28363	C2	110pF	2%, p. s. m., 350V d.c.	51559	C33	0.05µF	20%, tub., 1,000V d.c.
56322	C3	4-40pF	Trimmer, M ae.	56160	C35	32µF	{ +50% -20%, elec., 275V d.c.
54083	C4	470pF	20%, cer., 500V d.c.		C36	32µF	
49453	C6	0.01µF	25%, m. tub., 350V d.c.				
67505	C7	100pF	10%, cer., 750V d.c.	27461	R1	1MΩ	20%, 0.6W
67503	C8	68pF	10%, cer., 750V d.c.	25517	R2	33KΩ	10%, 0.75W
28311	C9	390pF	1%, p. s. m., 350V d.c.	25413	R3	18KΩ	10%, 0.6W
28288	C11	520pF	1%, p. s. m., 350V d.c.	25573	R4	47KΩ	10%, 0.6W
52630	C12	100pF	5%, p. s. m., 350V d.c.	24165	R6	10Ω	10%, 0.6W
52630	C13	100pF	5%, p. s. m., 350V d.c.	25573	R7	47KΩ	10%, 0.6W
60763	C14	528pF	Ganged capacitor, osc. section (with C1)	25125	R8	3.3KΩ	10%, 0.6W
28403	C16	172pF	1%, p. s. m., 350V d.c.	69564	R9	500KΩ	Volume control, 2 p.c. (with S3)
56322	C18	4-40pF	Trimmer, M osc.	27269	R10	100KΩ	20%, 0.6W
57795	C19	0.005µF	25%, m. tub., 250V d.c.	27493	R11	1.5MΩ	20%, 0.6W
54090	C21	1,800pF	20%, cer., 500V d.c.	27653	R13	10MΩ	20%, 0.6W
52630	C22	100pF	5%, p. s. m., 350V d.c.	27333	R14	220KΩ	20%, 0.6W
66298	C23	390pF	5%, p. f. tub., 350V d.c.	27397	R16	470KΩ	20%, 0.6W
54080	C24	270pF	20%, cer., 500V d.c.	27205	R17	47KΩ	20%, 0.6W
66169	C25	100pF	20%, cer., 750V d.c.	24741	R18	330Ω	10%, 0.6W
49454	C26	0.04µF	25%, m. tub., 150V d.c.	25023	R21	1.5KΩ	10%, 1.5W
49447	C27	0.01µF	25%, m. tub., 150V d.c.	78280	R22	100Ω	2W
51551	C29	0.005µF	25%, tub., 500V d.c.		R23	182Ω	9.6W } 5%
49450	C30	0.001µF	25%, m. tub., 350V d.c.		R24	840Ω	9.6W }
PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	DESCRIPTION AND REMARKS	PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	DESCRIPTION AND REMARKS
76599	L1	-	M ae., tuned	67694	L6	15Ω	Pri. Sec. } 1st i. f. t.
76602	L2	9.5Ω	L ae., tuned		L7	15Ω	
62586	L3	-	M & L coupling	72971	L8	15Ω	Pri. Sec. } 2nd i. f. t.
	L4	5Ω	M tuned		L9	6.8Ω	
	L5	9.7Ω	L tuned		T1	500+24Ω	

54080 C28 270pF 20%, cer., 500V d.c.

PARTS LIST (Mechanical Components)

This list contains only those parts which are not included in the Electrical Parts List; items such as self-tapping screws, bolts and nuts etc., may be obtained from Murphy Radio Ltd, Service Department. When more than one item is used per receiver, the quantity is given in brackets after the description.

PART NO.	TITLE	DESCRIPTION AND REMARKS	PART NO.	TITLE	DESCRIPTION AND REMARKS
63550 60486	Aerial rod Anchor	less coils and supports for mains lead	49883	Grommet (4)	on brackets (77606 & 77607) for chassis mounting
79154	Back for cabinet	with heat deflector, less Polythene plugs (69141)	68709	Guide rail	for cursor
78450	Baffle	with chassis locating dowels	77723	Knob	for Wave-Range switch
60761	Bearing	for tuning spindle	75099	Knob, inner (2)	for Tuning and Volume controls
77587	Bracket, locating	for Tone control switch	75105	Knob, outer (2)	for Tuning and Tone controls
77631	Bracket, mounting	for Wave-Range switch	68172	Loudspeaker	5 in. dia., permanent magnet
52592	Bracket, mounting (l.h.)	on cabinet rear, near Wave-Range switch	77594	Packing (4)	for front of loud- speaker
52591	Bracket, mounting (r.h.)	on cabinet rear, near fuse	55695	Pin (2)	for tuning drive pulleys
77606	Bracket, mounting (l.h.)	for chassis support, near mains dropper	69141	Plug, Polythene (2)	insulators for eyelets in cabinet back
77607	Bracket, mounting (r.h.)	for chassis support, under Wave-Range switch	70489	Pulley (2)	for tuning drive
63579	Bracket, support- ing	for osc. coil	74817	Reflector	for tuning scale
79985 48506	Cabinet Channel, rubber (4)	with fittings for tuning scale	77524	Scale	tuning
42580	Circlip	for Tuning spindle	103287	Screw, OBA, ½ in. (2)	for fastening chassis in cabinet
63877	Circlip	for Tone control	103877	Screw, PK8Y, ½ in. Ph. Rd. Hd. (4)	for fastening cabinet back
74323	Circlip (2)	for inner knobs, Tuning and Volume	103838	Screw, PK10Y, ½ in., Ph. Csk. Hd. (4)	for fastening brackets (52591 & 52592) to cabinet
74325	Circlip (2)	for outer knobs, Tuning and Tone	78146	Spindle	tuning
78372	Clamp (5)	for retaining baffle	47478	Spring	for tuning drive cord
77612	Clamp (2)	for retaining scale	22547	Studding	threaded rod for mains resistor mounting
43009	Clamp	for C35/C36	63560	Support, rubber (2)	for aerial rod
77697	Clip	for mains voltage ad- justment	78247	Switch	Wave-Range
52292	Clip, retaining	for osc. coil	77630	Switch	Tone control
14770	Collar	inside ganged capaci- tor mounting grommets for coil cores	79961	Trim	ornamental strip at top of tuning scale
1871/2	Compound	for L6, L7, L8, L9	59142	Valveholder, B9A (4)	
46910	Core, iron dust (4)	for L4, L5	58567	Washer (2)	Asbestos-Bakelite for mains resistor
46913	Core, iron dust (2)	for tuning drive	49910	Washer (2)	for chassis fixing screws
3962/1	Cord, 30 in.	for outer Tuning Knob	47955	Washer (4)	for screws fastening cabinet back
77616	Coupling, sleeve	for tuning scale	42035	Washer, centring	for mains resistor
77633	Cursor and carrier		58654	Washer, felt (2)	behind outer Tuning and Tone control knobs
60873	Drum, tuning	for ganged capacitor	58556	Washer, felt	behind Wave-Range knob
1829/31	Fabric, silk	for loudspeaker baffle			
33204	Fuse (F1)	250mA, plain			
62951	Fuseholder	with bracket			
78749	Grille	for front of cabinet			
56622	Grommet (3)	for ganged capacitor mounting			

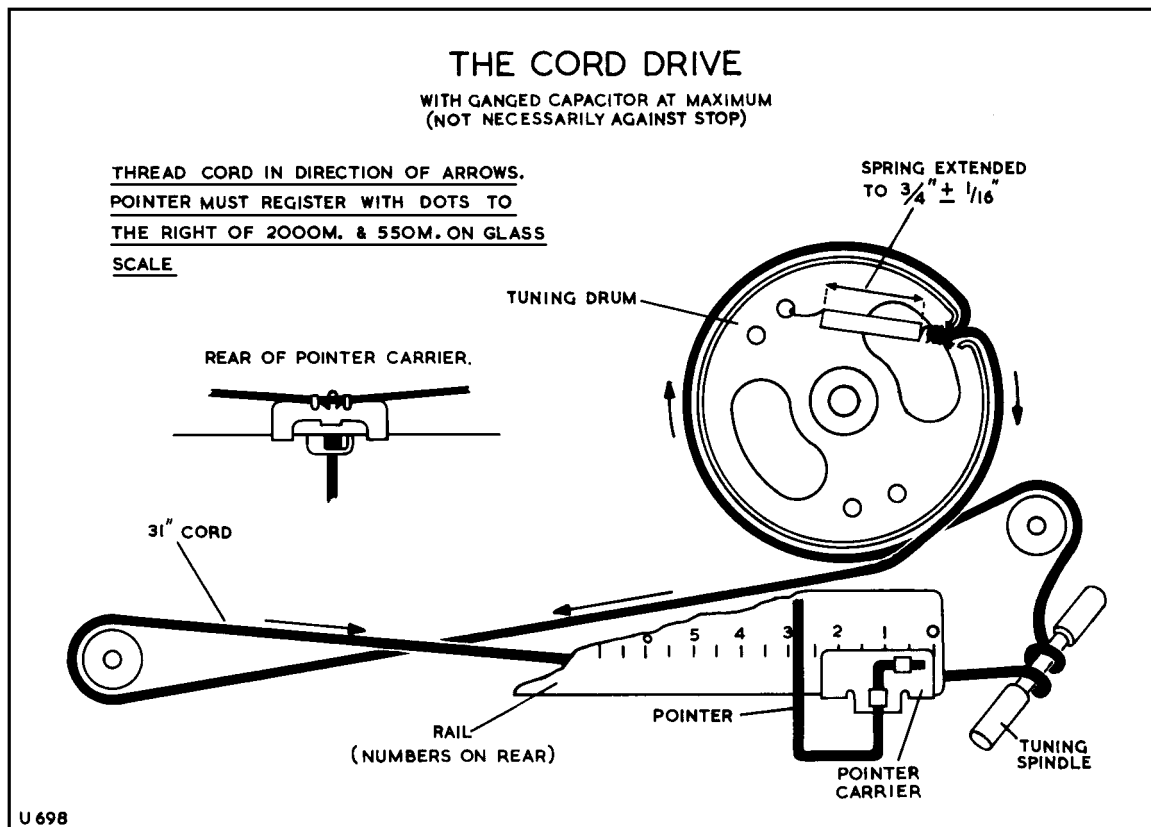


Fig. 3.

MODIFICATION

Hum. In early receivers, C28 was not fitted. Also, a 220KΩ resistor (20%, 0.6W, Part No. 27333) was connected between C27 and the

junction R13/V3a grid. The change was made to reduce hum which was noticeable on some receivers.