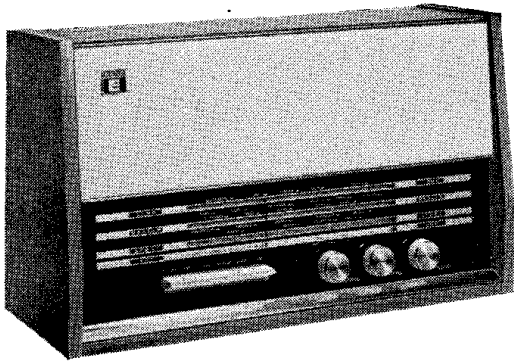


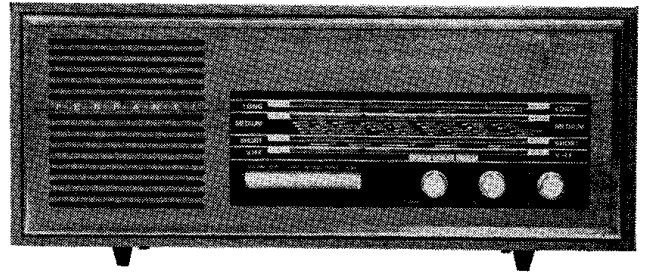
EKCO

FERRANTI

SERVICE SHEET



Model A449



Model A1143

A.M. — F.M. TABLE MODELS

TRIMMING PROCEDURE (A.M.)

Apply a 30% modulated signal as below:—	Set receiver controls as follows:—	Adjust in order for maximum output:—
1. 470 kc/s. between SW4 (pin 6) and chassis with 0.1 μ F capacitor in each lead.	Volume and Tone controls at maximum. M.W. button depressed. 500 metres. Check that pointer is aligned with datum marks at low frequency end of tuning scale.	Cores of T6, T4 and T2.
2. 650 kc/s. to external aerial socket via standard dummy aerial.	M.W. button depressed. 461.5 metres.	Core of L8 and position of L7 on ferrite rod.
3. As (2), but 1500 kc/s.	M.W. button depressed. 200 metres.	Trimmers C23 and C24.
4. Repeat (2) and (3) until calibration and tracking is correct. Seal position of L7 on rod.		
5. As (2), but 214 kc/s.	L.W. button depressed. 1400 metres.	Trimmer C21 and position of L6 on ferrite rod. Seal L6.
6. 7 Mc/s. to external aerial socket via standard dummy aerial.	S.W. button depressed. 7 Mc/s.	Cores of L10 and L9.
7. As (6), but 14.5 Mc/s.	S.W. button depressed. 14.5 Mc/s.	Trimmers C27 and C26.
8. Repeat (6) and (7) until tracking and calibration is correct.		

TRIMMING PROCEDURE (F.M.)

Apply signal and set receiver controls as follows —	Adjust as follows :—
1. Connect wobblator signal at 10.7 Mc/s. to base of VT3 and oscilloscope to Pin 1 (junction of RV1 and R27). Set Volume control to minimum, depress V.H.F. key and tune to low frequency end of band. Disconnect C66.	Cores of T3, T5 and T7 for maximum output consistent with symmetry and band shape.
2. Reconnect C66 and transfer oscilloscope lead to Pin 2 (positive end of C56).	Check for satisfactory 'S' curve.
3. Disconnect C66 and transfer wobblator leads to F.M. Aerial socket. Short circuit L11 and return the oscilloscope lead to Pin 1.	Cores of L3 and L4 for maximum output consistent with symmetry and band shape.
4. Remove the short circuit across L11.	L11 for minimum response at 10.7 Mc/s.
5. Replace wobblator with F.M. signal generator ± 25 kc/s. deviation. Reconnect C66. Set Volume and Tone controls to maximum.	L5 and L1 at 92 Mc/s.; C15 and C7 at 102 Mc/s. for calibration and maximum sensitivity.
6. 92 Mc/s. with a ± 25 kc/s. deviation signal at $10 \mu\text{V}$, tune for maximum output.	Switch off mod. and adjust RV1 for minimum noise output.

Note : The output of the wobblator should be terminated by approximately 75 ohms and in sections 1 and 2 the signal should be applied via a $0.01 \mu\text{F}$ to $0.1 \mu\text{F}$ low impedance capacitor.

AUDIO ADJUSTMENTS

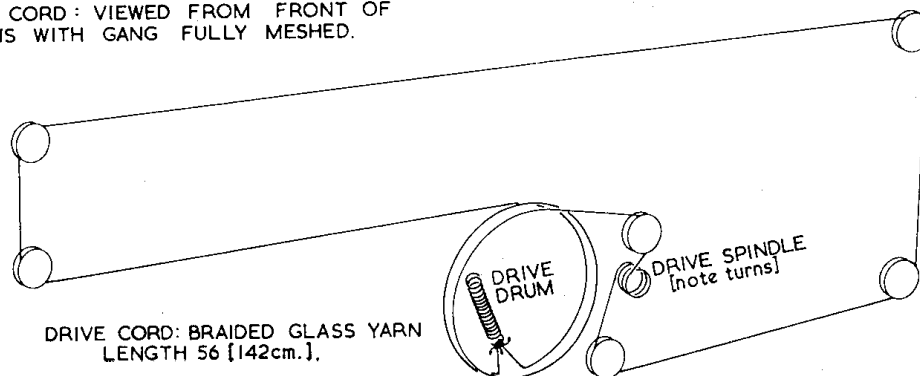
In the event of either output pair (VT9 and VT10) or driver (VT8) being replaced, it is essential to re-adjust RV4 and RV5 in the following manner:—

1. Insert Avo or similar meter (switched to 1 amp. range) between VT9 (AC 128) collector and supply line; connect oscilloscope across loudspeaker.
2. Inject sine wave at Pin 11 on audio panel and increase input until 'clipping' is apparent; then adjust RV4 so that peaks 'clip' simultaneously.
3. Remove input and, with meter switched to 100mA range, adjust RV5 to obtain a quiescent current of 10mA.

Note: If only one of an output pair is replaced, the replacement must have the same code letter printed on its side.

Warning : Immediate damage to VT9 and VT10 will result from use of a loudspeaker or load less than 15 ohms. A base or emitter short circuit to earth will cause immediate damage.

DRIVE CORD : VIEWED FROM FRONT OF CHASSIS WITH GANG FULLY MESHED.



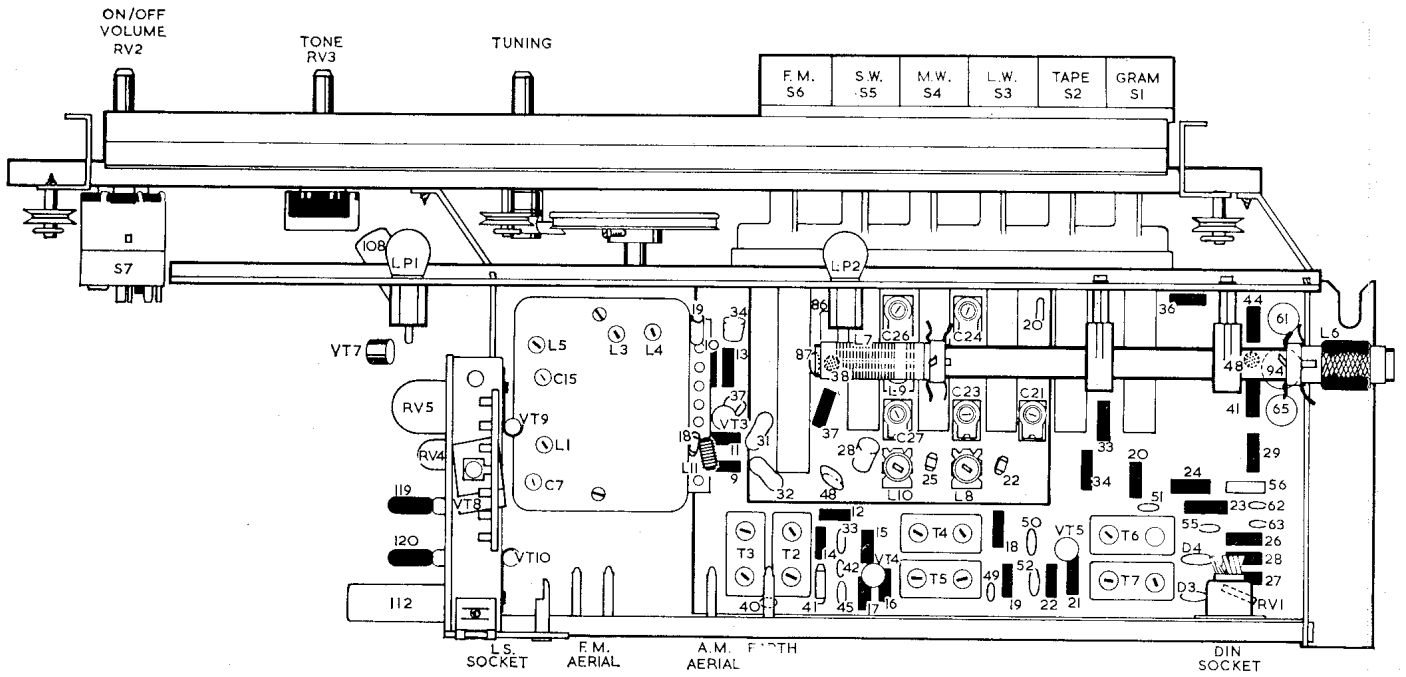


Fig. 1

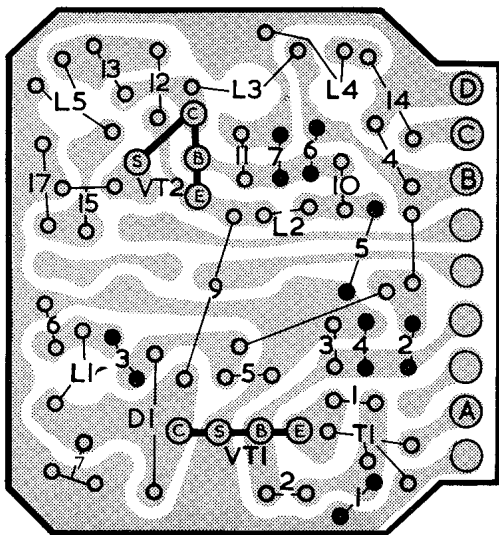


Fig. 2

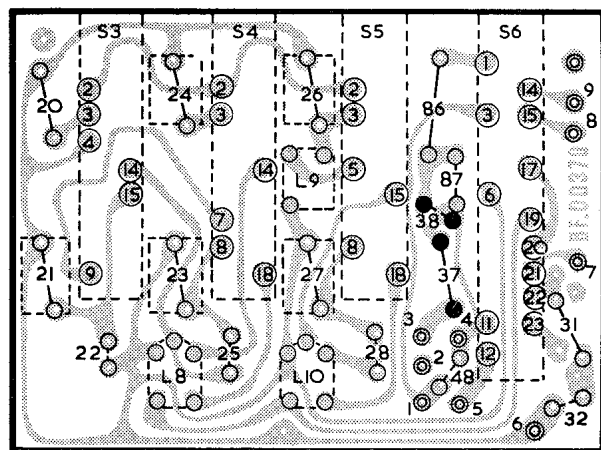


Fig. 3

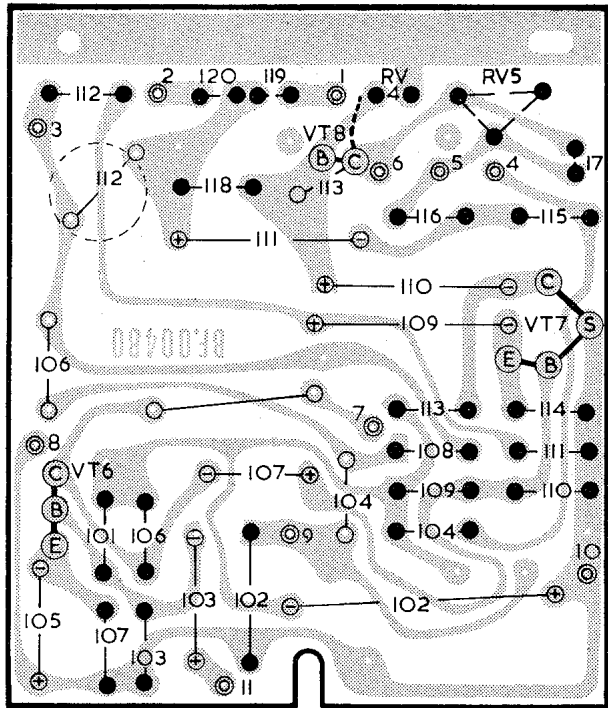


Fig. 5

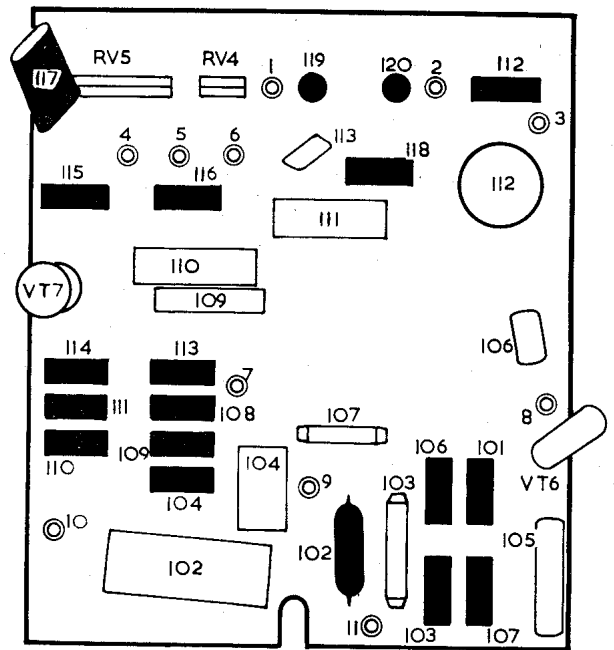


Fig. 6

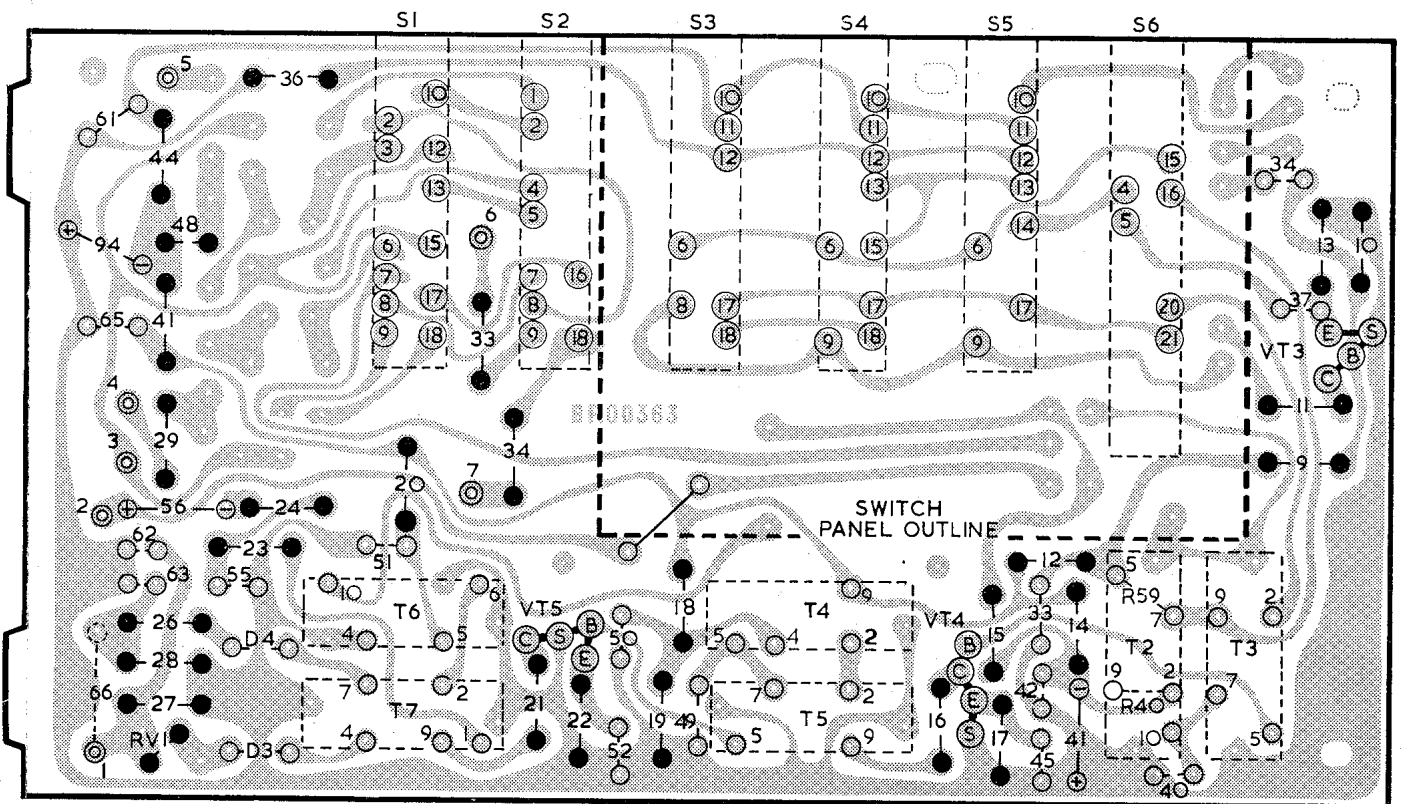
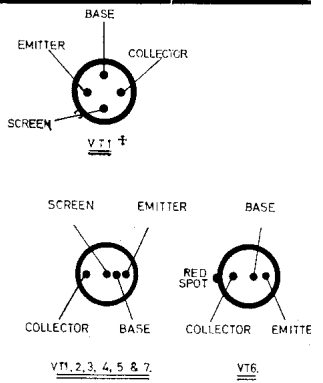
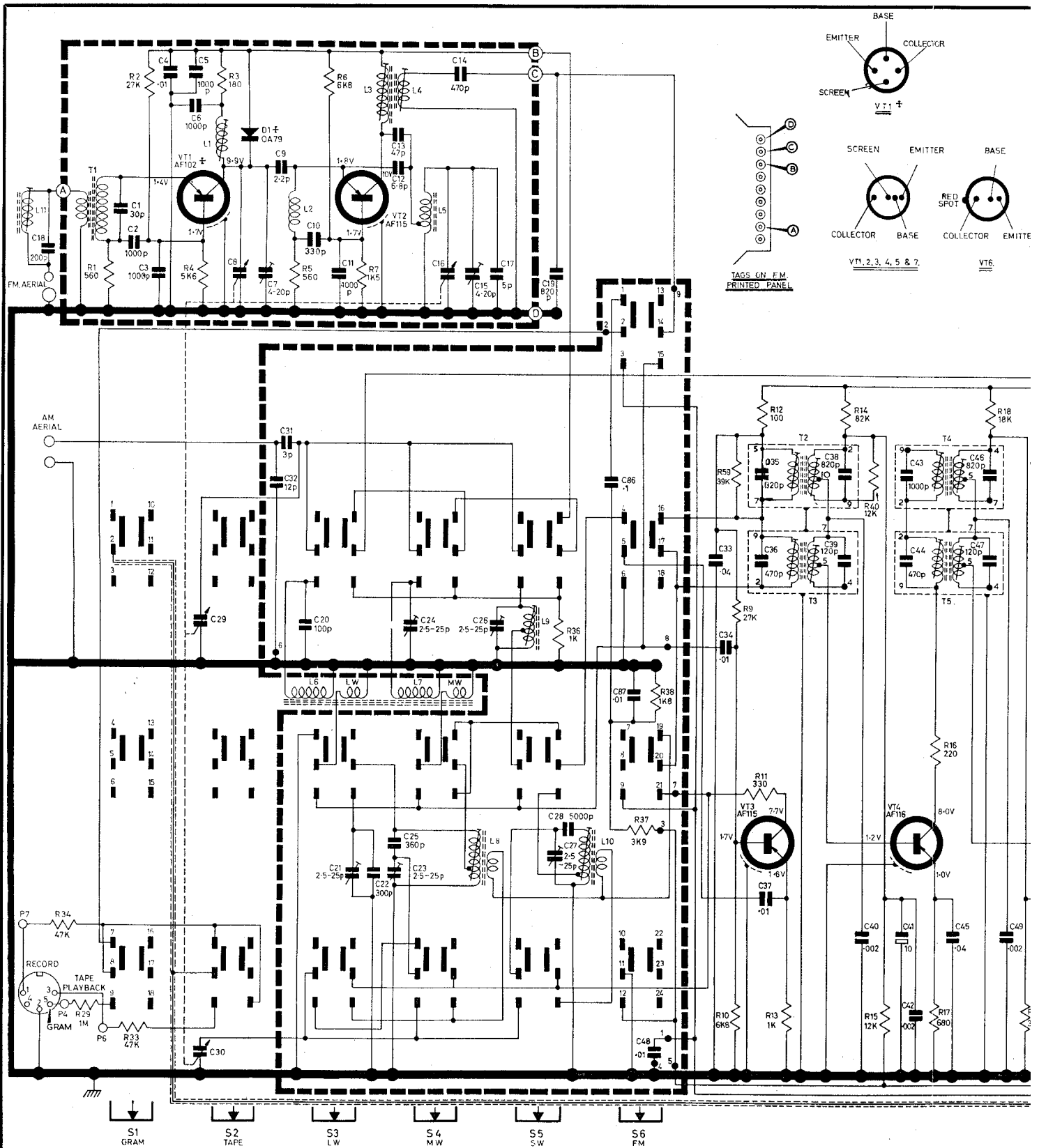


Fig. 4

CAPACITORS							RESISTORS						
Code No.	Value	Tol. ±%	Description	Volts	Fig. No.	Grid Ref.	Part No.	Code No.	Value	Tol. ±%	Fig. No.	Grid Ref.	Part No.
C1	30 pF	10	Disc Ceramic		2	3C	PN 12300	R1	560	10	2	3B	NG 56104
C2	1000 pF	-25+50	Disc Ceramic		2	3C	PN 26307	R2	27K	10	2	1C	NG 27304
C3	1000 pF	-25+50	Disc Ceramic		2	3C	PN 26307	R3	180	10	2	1D	NG 18104
C4	0.01 μF	-20+80	Disc Ceramic		2	1C	PN 50301	R4	5K6	10	2	3G	NG 56204
C5	1000 pF	-25+50	Disc Ceramic		2	1C	PN 26307	R5	560	10	2	3P	NG 56104
C6	1000 pF	-25+50	Disc Ceramic		2	2C	PN 26307	R6	6K8	10	2	1E	NG 68204
C7	4-20 pF		Trimmer		2	3D	PV 05047	R7	1K5	10	2	3E	NG 15204
C8			Part of Gang			3D	PV 01010	R8	Not Used				
C9	2.2 pF	0.1 pF	Tubular Ceramic		2	2D	PN 01021	R9	27K	10	1	7J	NG 27313
C10	330 pF	10	Disc Ceramic		2	3D	PN 21310	R10	6K8	10	1	11L	NG 68213
C11	1000 pF	-25+50	Disc Ceramic		2	3E	PN 26307	R11	330	10	1	8J	NG 33113
C12	6.8 pF	0.1 pF	Tubular Ceramic		2	2E	PN 05131	R12	100	10	1	5J	NG 10113
C13	47 pF	2	Mica		2	2E	PP 06670	R13	1K	10	1	11L	NG 10213
C14	470 pF	2	Mica		2	1F	PP 11251	R14	82K	10	1	5K	NG 82313
C15	420 pF		Trimmer		2	3F	PV 05047	R15	12K	10	1	11K	NG 12313
C16			Part of Gang			3F	PV 01010	R16	220	10	1	8L	NG 22113
C17	5 pF	0.5 p	Disc Ceramic		2	3F	PN 04300	R17	680	10	1	11L	NG 68113
C18	200 pF	2½	Polystyrene	125	1	3G	PQ 10011	R18	18K	10	1	5L	NG 18313
C19	820 pF	2½	Polystyrene	125	1	3G	PQ 12525	R19	3K9	10	1	11M	NG 39213
C20	100 pF	2½	Polystyrene	125	1	7D	PQ 08505	R20	100	10	1	5M	NG 10113
C21	2-25 pF		Trimmer		1	9E	PV 00016	R21	220	10	1	8M	NG 22113
C22	300 pF	2½	Polystyrene	125	1	9E	PQ 10506	R22	1K	10	1	11M	NG 10213
C23	2.25 pF		Trimmer		1	9E	PV 00016	R23	100	10	1	8N	NG 10113
C24	2-25 pF		Trimmer		1	7E	PV 00016	R24	1K5	10	1	10M	NG 15213
C25	360 pF		Polystyrene		1	9E	PQ 10853	R25	Not Used				
C26	2-25 pF		Trimmer		1	7F	PV 00016	R26	330	10	1	7P	NG 33113
C27	2-25 pF		Trimmer		1	9G	PV 00016	R27	22K	10	1	6P	NG 22313
C28	500 pF	5	Polystyrene	125	1	9G	PQ 21001	R28	22K	10	1	7P	NG 22313
C29			Part of Gang			7C	PV 01010	R29	1M	20	1	11B	NH 10513
C30			Part of Gang			11C	PV 01010						
C31	3 pF	10	Ceramic Tubular		1	5D	PN 02002	R33	47K	10	1	11C	NG 47313
C32	12 pF	10	Ceramic Tubular		1	5D	PN 09133	R34	47K	10	1	10B	NG 47313
C33	.04 μF	10	Mylar	100	1	6J	PQ 29005	R35	Not Used				
C34	.01 μF	10	Mylar	100	1	7J	PQ 25002	R36	1K	10	1	7G	NG 10213
C35	820 pF	2½	Polystyrene	125	1	5J	PQ 12525	R37	3K9	10	1	9H	NG 39213
C36	470 pF	2½	Polystyrene	125	1	6J	PQ 11363	R38	1K8	10	1	7H	NG 18206
C37	.01 μF	10	Mylar	100	1	10J	PQ 25002	R39	Not Used				
C38	820 pF	2½	Polystyrene	125	1	5K	PQ 12525	R40	12K	10	6	5K	NG 12303
C39	120 pF	2½	Polystyrene	125	1	6K	PQ 08766	R41	560	10	6	5P	NG 56113
C40	.002 μF	10	Mylar	100	1	10K	PQ 16507						
C41	10 μF	2½	Electrolytic		1	10K	PS 23056	R44	270	10	6	4Q	NG 27113
C42	.002 μF	10	Mylar	100	1	10K	PQ 16507						
C43	1000 pF	2½	Polystyrene	125	1	5K	PQ 13018	R48	1K	10	1	4Q	NG 10206
C44	470 pF	2½	Polystyrene	125	1	6K	PQ 11363						
C45	.04 μF	10	Mylar	100	1	10L	PQ 29005	R59	39K	10	—	5J	NG 39306
C46	820 pF	2½	Polystyrene	125	1	5L	PQ 12525						
C47	120 pF	2½	Polystyrene	125	1	6L	PQ 08766	R101	330K	10	6	8Q	NG 33413
C48	.01 μF	10	Mylar	100	1	11H	PQ 25022	R102	1	10	6	11Q	NG 01006
C49	.002 μF	10	Mylar	100	1	10L	PQ 16507	R103	22K	10	6	11Q	NG 22313
C50	.04 μF	10	Mylar	100	1	10M	PQ 29005	R104	1K	10	6	6T	NG 10213
C51	.01 μF	10	Mylar	100	1	5M	PQ 25005	R105	Not Used				
C52	.04 μF	10	Mylar	100	1	10M	PQ 29005	R106	22K	10	6	8R	NG 22313
C53	820 pF	2½	Polystyrene	125	1	5M	PQ 12525	R107	2K2	10	6	11R	NG 22213
C54	220 pF	2½	Polystyrene	125	1	6M	PQ 10059	R108	2K7	10	6	11Q	NG 27213
C55	.01 μF	10	Mylar	100	1	10M	PQ 25002	R109	27K	10	6	8S	NG 27313
C56	1 μF		Electrolytic	110	1	11M	PS 13059	R110	4K7	10	6	10S	NG 47213
C57	.01 μF	10	Mylar	100	1	5N	PQ 25022	R111	10	10	6	11S	NG 10013
C58	.68 pF	2½	Polystyrene	125	1	7N	PQ 07812	R112	2K7	10	6	11S	NG 27213
								R113	2K2	10	6	8S	NG 22213
C61	200 μF		Electrolytic	10	1	5P	PS 40058	R114	470	10	6	11S	NG 47113
C62	.001 μF	10	Mylar	100	1	6P	PQ 13021	R115	180	10	6	7T	NG 18113
C63	.001 μF	10	Mylar	100	1	7P	PQ 13021	R116	470	10	6	7T	NG 47113
C64		Not Used						R117	VA1077 Thermistor		6	8T	PL 23052
C65	200 μF		Electrolytic	10	1	5P	PS 40058	R118	18K	10	6	10T	NG 18313
C66	4 μF		Electrolytic	10	1	6P	PS 18077	R119	2.2	10	6	8U	NG 02206
								R120	2.2	10	6	8U	NG 02206
C86	0.1 μF	20	Polyester	100	1	5G	PQ 32017						
C87	.01 μF	10	Mylar	100	1	7H	PQ 25022						
C94	200 μF		Electrolytic	12	1	5Q	PS 40068						
C98	3000 μF		Electrolytic	30		5R	PS 55007						
C99	.001 μF	10	Mylar	100	6	10R	PQ 13021						
C102	200 μF		Electrolytic	18	6	7Q	PS 40065						
C103	6 μF		Electrolytic	12	6	9Q	PS 20005						
C104	0.22 μF	10	Polystyrene	250	6	10Q	PQ 33011						
C105	32 μF		Electrolytic	6	6	10R	PS 29049						
C106	470 pF		Ceramic Tubular	500	6	11Q	PN 22105						
C107	6 μF		Electrolytic	12	6	8R	PS 20005						
C108	0.33 μF	10	Polyester	160	6	11R	PQ 33041						
C109	32 μF		Electrolytic	6	6	10S	PS 29049						
C110	40 μF		Electrolytic	15	6	8S	PS 30022						
C111	40 μF		Electrolytic	15	6	7U	PS 30022						
C112	200 μF		Electrolytic	18	6	11U	PS 40065						
C113	.002 μF	10	Mylar	100	6	8T	PQ 16507						

INDUCTORS						
Code No.	Description	Fig. No.	Grid Ref.	Part No.		
L1	F.M. R.F. Collector	..	2	2D	AL	06108
L2	F.M. R.F. Collector	..	2	3D	AL	06107
L3	F.M. I.F. Primary	..	2	2E	AL	06111
L4	F.M. I.F. Secondary	..	2	2E	AL	06110
L5	F.M. Oscillator	..	2	3F	AL	06109
L6	L.W. Aerial	..	1	8D	AN	01823
L7	M.W. Aerial	..	1	8E	AN	01822
L8	M.W. Oscillator	..	1	9F	AN	01825
L9	S.W. Aerial	..	1	7G	AN	01826
L10	S.W. Oscillator	..	1	9G	AN	01824
L11	F.M. I.F. Filter	..	1	3A	AL	06167

TRANSFORMERS							DIODES AND RECTIFIERS					
Code No.	Description			Fig. No.	Grid Ref.	Part No.	Code No.	Type		Fig. No.	Grid Ref.	Part No.
T1	F.M. Aerial			2	3B	AL 06106	D1	OA 79	Mullard	2	2D	FV 09300
T2	1st I.F. A.M.			1	5J	AN 00727	D2	SFD 107	Cosem	1	5N	FV 09130
T3	2nd I.F. F.M.			1	6J	AN 00730	D3	1N542	Cosem	1	6N	FV 09129
T4	2nd I.F. A.M.			1	5L	AN 00728	D4	1N542	Cosem	1	7N	FV 09129
T5	3rd I.F. F.M.			1	6L	AN 00730	MR1	Rectifier	Westinghouse HO 29	—	5S	FV 08417
T6	3rd I.F. A.M.			1	5M	AN 00729						
T7	Ratio Detector			1	6M	AN 00908						
T8	Mains			—	5T	AN 00408						
VARIABLE RESISTORS												
Code No.	Value	Description		Fig. No.	Grid Ref.	Part No.						
RV1	1K	A.M. Rejector		1	6P	PL 00268						
RV2	10K	Volume		1	9Q	PL 00378						
RV3	25K	Tone		6	11R	PL 00302						
RV4	1K	Pre-set		1	11T	PL 00277						
RV5	50	Pre-set		1	8T	PL 00372						
TRANSISTORS												
Code No.	Type	Function		Fig. No.	Grid Ref.	Part No.						
VT1	{ AF 178	R.F. F.M.		2	4C	FV 05116						
	{ AF 102	R.F. F.M.		2	4C	FV 05062						
VT2	{ AF 115	Mixer F.M.		2	7C	FV 05063						
VT3	{ AF 115	Frequency Changer		1	12H	FV 05063						
VT4	{ AF 116	1st I.F.		1	14H	FV 05078						
VT5	{ AF 116	2nd I.F.		1	16H	FV 05078						
VT6	{ OC 75	1st A.F.		6	20H	FV 05046						
	{ NKT 213	1st A.F.		1	20H	FV 06318						
VT7	{ AF 117	2nd A.F.		6	24H	FV 05064						
	{ NKT 677	2nd A.F.		6	24H	FV 06237						
VT8	{ AC 128	Driver		1	26J	FV 05117						
VT9	{ AC 128	Output		1	27F	FV 05124						
VT10	{ AC 176	Output		1	27H	FV 05124						
MISCELLANEOUS												
Code No.	Description				Part No.							
					A449	A1143						
SW1	Wavechange Switch				FS 00116	FS 00116						
SW2												
SW3												
SW4												
SW5												
SW6												
SW7	On/Off (Part of RV2)				PL 00378	PL 00378						
LP1	Scale Lamp: 6.8 volts 0.5 amps.				FL 01006	FL 01006						
LP2	Scale Lamp: 6.8 volts 0.5 amps.				FL 01006	FL 01006						
LS1	Loudspeaker: 8 in. x 5 in.				FS 10062	FS 10062						
	Tuning Scale				EB 03168	EB 03170						
	Backcover				EB 04803	EB 04806						
	Control Knobs				BH 01026	BH 00236						
	Drive Spindle				BB 00518	BB 00518						
	Drive Drum Assembly				AJ 01379	AJ 01379						
	Pointer Assembly				AJ 01401	AJ 01401						
	Rod Aerial Assembly				AJ 01319	AJ 01319						
	Pulleys				BG 10448	BG 10448						
	Lampholder				FH 03028	FH 03028						
	Drive Spring				EB 02137	EB 02137						
	Light Diffuser				BF 00345	BF 00345						
	Top Trim				EA 56478							
	Scale Trim				EA 56479							
	Bottom Trim				EA 56477							
	Trim					EA 56193						
	Ekco Symbol				EB 02767							
	Feet				FR 06021	FR 06021						
	Ferrite Rod				FC 02295	FC 02295						
	F.M. Aerial Plug				FP 00054	FP 00054						
	Tuner Unit				AE 01454	AE 01454						
	5-pin Din Socket				FS 16703	FS 16703						
	Organ Key Tab				EB 02149	EB 02150						
	Cabinet				AK 00442	AK 00444						



TAPS ON F.M. PRINTED PANEL

POWER SUPPLY

200-250 volts A.C. 50/60 cycles.

WAVEBAND COVERAGE

- L.W. 1200-2000 metres (250-150 kc/s.)
- M.W. 185-572 metres (1620-525 kc/s.)
- S.W. 18.5-54.2 metres (16.25-5.5 Mc/s.)
- V.H.F. 87-108 Mc/s.

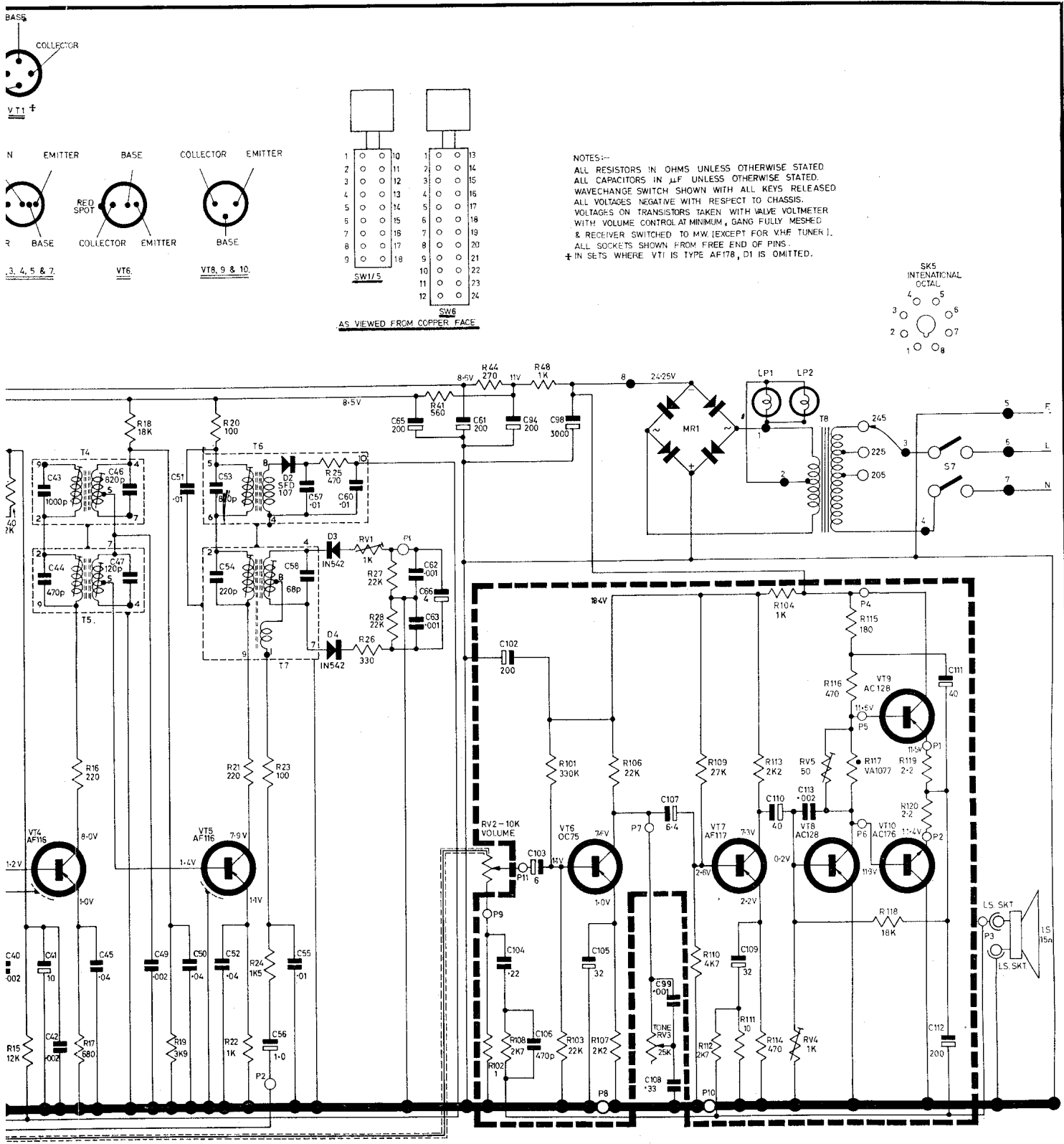
INTERMEDIATE FREQUENCIES

- A.M. 470 kc/s.
- F.M. 10.7 Mc/s.

CHASSIS REMOVAL

1. Remove the backcover and disconnect 1
2. Disconnect all plugs from rear of the ch
3. Remove the six screws and washers the cabinet, when the power unit and ch

NOTE: In early models the scale is attached to the front of the chassis. Before it is necessary to slacken off the control knobs, before removing the



EXTENSION LOUDSPEAKER

cover and disconnect the power supply. plugs from rear of the chassis. ix screws and washers from the underside of ten the power unit and chassis may be withdrawn.

If it is desired to use an extension loudspeaker, this must have an impedance of 15 ohms and should be connected to the sockets at the rear of the chassis in place of the internal loudspeaker. The receiver must not be switched on without a speaker being connected.

is the scale is attached to the cabinet and there is necessary to slacken off the grub screws and remove obs, before removing the chassis.