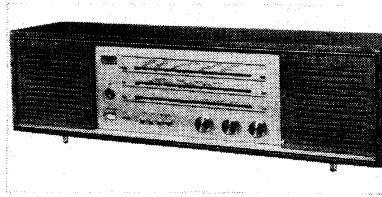


E R T

**SERVICE
CHART
1644**



Ekco A400 is a table receiver with twin channel stereo amplifier and built-in decoder for receiving multiplex broadcasts. The cabinet has olive veneers, satin-silver trim and feet

EKCO

A400

STEREO RADIO

Additional copies of this chart price 1s. 6d. post free. Payment with order please to ERT, 40 Bowling Green Lane, London EC1

TRANSISTORISED stereo mains radio employing 18 transistors and incorporating Pye Group integrated switch pack (ISP). Pushbuttons control on/off and waveband switching.

Mains, 200-250V AC 50c/s.

Wavebands, MW 185-572m (1620-525 kc/s), LW 1200-2000m (250-150kc/s),

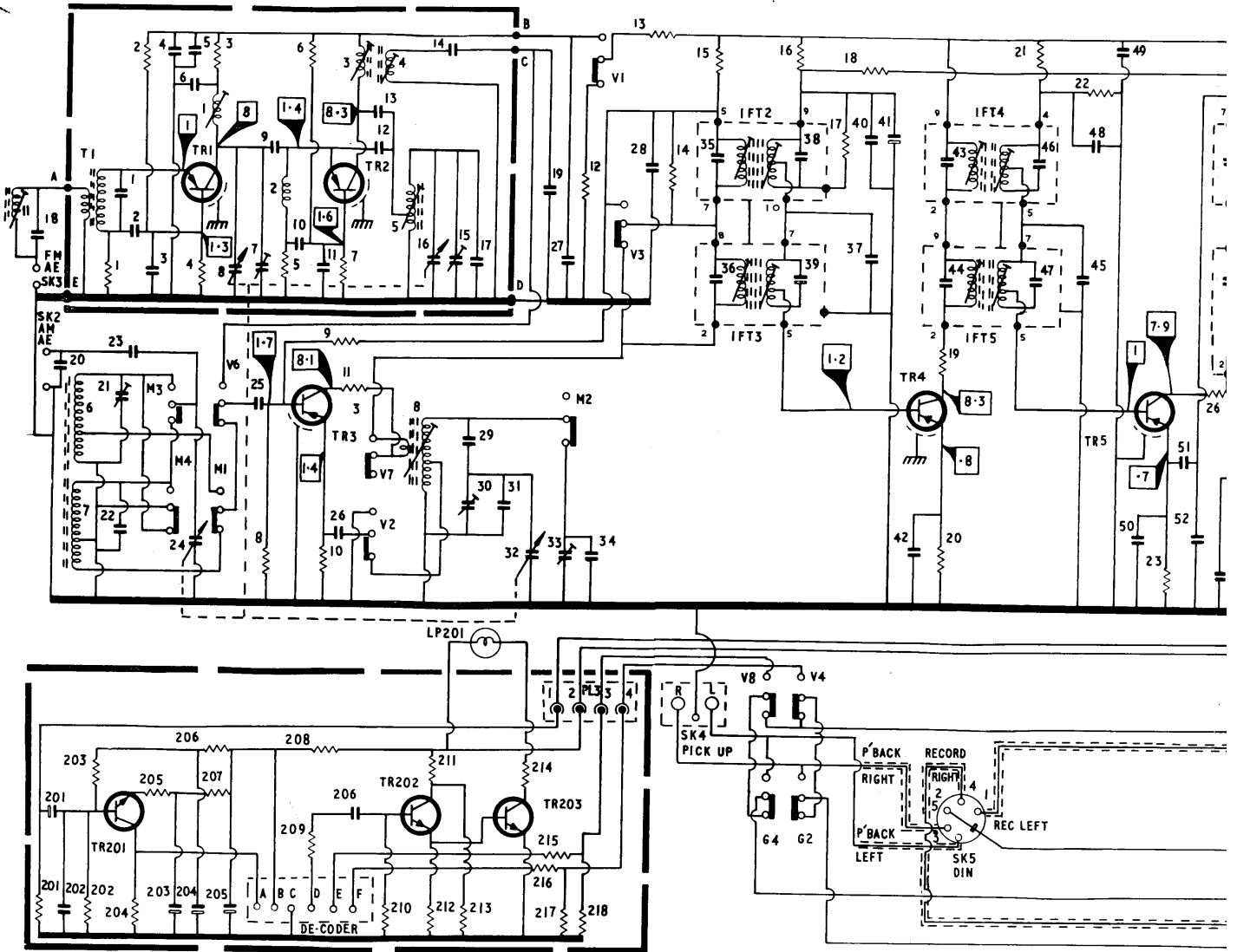
VHF 87-108mc/s.

Transistors, TR1 AF178 RF FM, TR2 AF115 mixer FM, TR3 NKT675 (AF 115) frequency changer, TR4 NKT676 (AF116) first IF amplifier, TR5 NKT676 (AF116) second IF amplifier, TR6 BC108 (BC113) first AF amplifier (left), TR7 BC108 (BC113) first AF amplifier (right),

TR8 BC108 (BC113) second AF amplifier, TR9 NKT281 (AC128) driver, TR10 AC128 output, TR11 AC176 output, TR201 BC108 stereo pre-amplifier, TR202 OC75 (NKT213) stereo beacon control, TR203 AC128 (NKT281) stereo beacon control.

Continued overleaf

R	201	202	203	204	205	206	3	4	209	8	5	6	9	7	10	11	210	211	212	213	214	215	216	217	218	12	13	14	15	16	17	18	19	20	21	22	23	24																									
L	18	20	21	22	23	201	202	24	203	204	205	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
							I						2						3						4						5						IFT 2,3						IFT 4,5																				



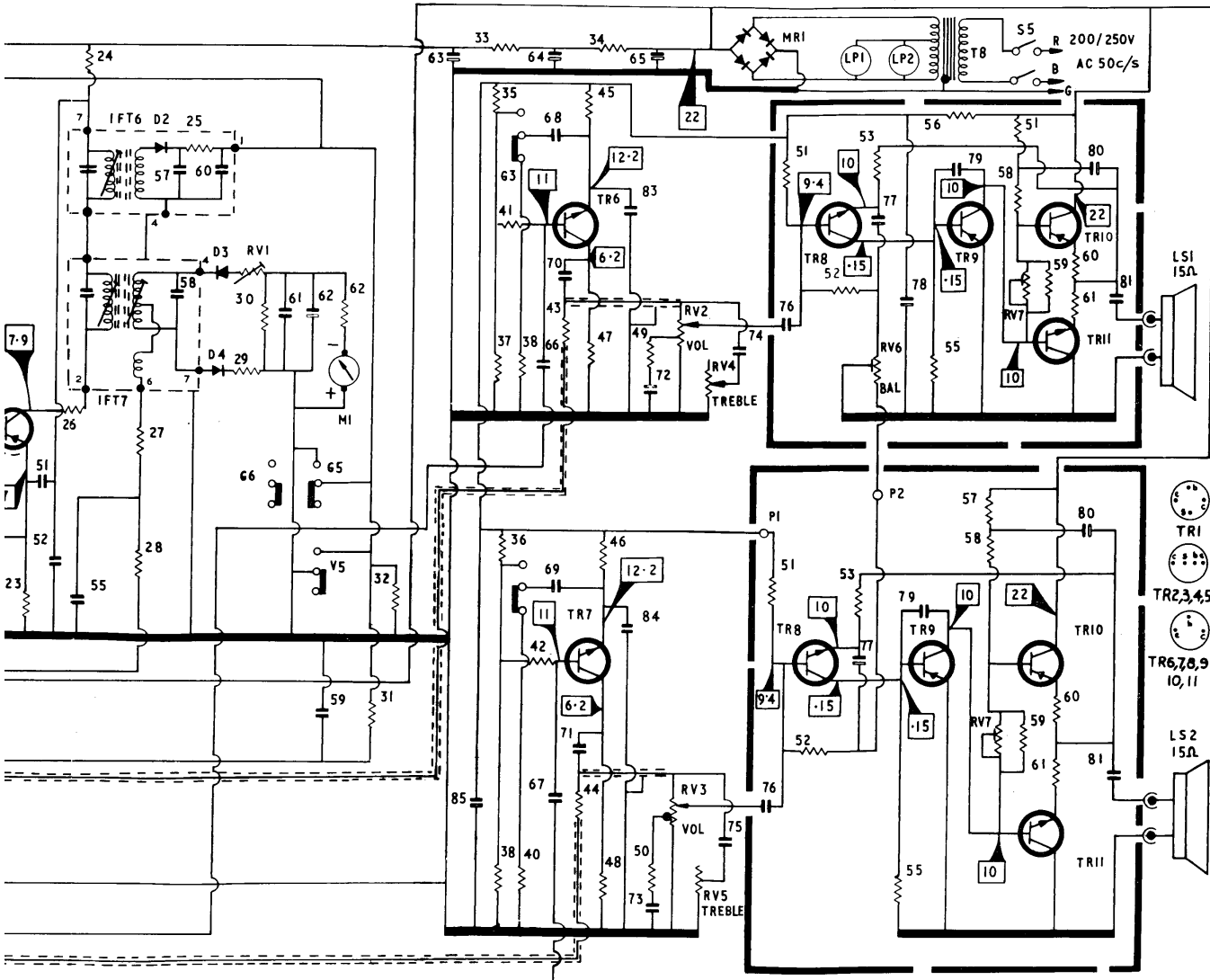
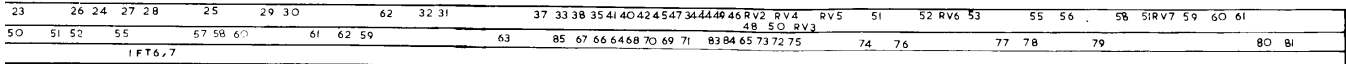
RESISTORS

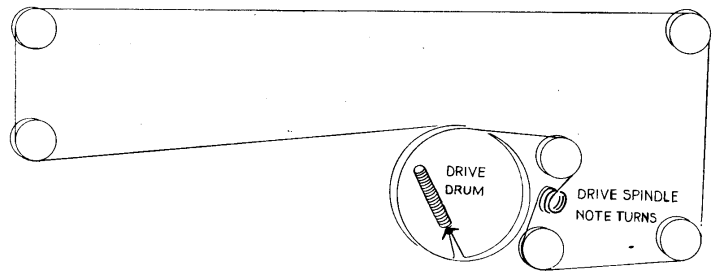
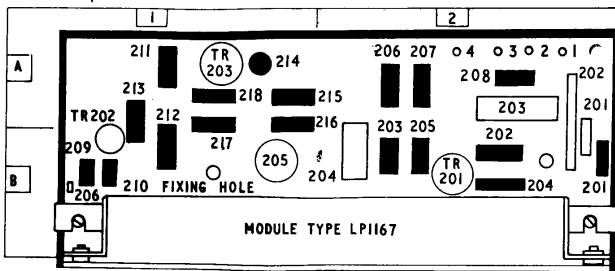
R1	560	Tuner	R34	1K	E3	R208	820	A2	C20	12pF	F3	C55	1KpF	F3
R2	27K	Tuner	R35	1M	F3	R209	47K	B1	C21	2-25pF	F3	C57	10KpF	F3
R3	180	Tuner	R36	1M	F3	R210	33K	B1	C22	100pF	F3	C58	68pF	F3
R4	5K6	Tuner	R37	1M5	E3	R211	4K7	A1	C23	3pF	F3	C59	5KpF	F3
R5	560	Tuner	R38	1M5	E3	R212	1K	B1	C24	—	F2	C60	10KpF	F3
R6	6K8	Tuner	R39	2K7	F3	R213	4K7	A1	C25	10KpF	F2	C61	10KpF	F3
R7	1K5	Tuner	R40	2K7	F3	R214	120	A1	C26	10KpF	F2	C62	4mF	F3
R8	6K8	Tuner	R41	22K	E3	R215	22K	A1	C27	10KpF	F2	C63	500mF	F3
R9	27K	F2	R42	22K	E3	R216	22K	A1	C28	40KpF	F2	C64	200mF	F3
R10	1K	F2	R43	220K	F3	R217	1K	A1	C29	360pF	F3	C65	3000mF	F1
R11	220	F2	R44	220K	F3	R218	1K	A1	C30	2-25pF	F3	C66	100KpF	F3
R12	1K	F2	R45	22K	F3				C31	14pF	F3	C67	100KpF	F3
R13	47	E2	R46	22K	F3				C32	—	F3	C68	10mF	F3
R14	39K	F2	R47	22K	F3				C33	2-25pF	F3	C69	10mF	F3
R15	100	F2	R48	22K	F3				C34	300pF	F3	C70	100KpF	F3
R16	82K	F2	R49	3K3	E1				C35	820pF	F3	C71	100KpF	F3
R17	12K	F2	R50	3K3	E1				C36	120pF	F2	C72	100KpF	E1
R18	12K	F3	R51	390K	D1				C37	2KpF	F2	C73	100KpF	E1
R19	220	F3	R52	390K	D1				C38	820pF	F2	C74	22KpF	E1
R20	680	F3	R53	1K	C2				C39	470pF	F2	C75	22KpF	E1
R21	12K	F3	R54	1K5	C2				C40	2KpF	F2	C76	100KpF	D2
R22	1K8	F3	R55	4K7	D1				C41	10mF	F2	C77	250mF	D2
R23	330	F3	R56	4K7	D1				C42	40KpF	F2	C78	25mF	D1
R24	100	F3	R57	150	D1				C43	1KpF	F2	C79	470pF	C2
R25	470	F3	R58	390	C1				C44	120pF	F3	C80	40mF	D2
R26	220	F3	R59	VA1077	C2				C45	2KpF	F3	C81	400mF	D2
R27	100	F3	R60	2.2	C2				C46	820pF	F3	C83	1KpF	E3
R28	1K5	F3	R61	2.2	—				C47	470pF	F3	C84	1KpF	E3
R29	330	F3	R62	22K	B2				C48	40KpF	F3	C85	25mF	—
R30	39K	F3	R201	47K	B2				C49	100KpF	F2	C201	1.6mF	B1
R31	470	F3	R202	82K	B2				C50	100KpF	F3	C202	2K7pF	A2
R32	4K7	F3	R203	4K7	B2				C51	40KpF	F3	C203	40mF	A2
R33	180	F3	R204	5K6	B2				C52	10KpF	F3	C204	40mF	B2
			R205	150	B2				C53	820pF	F3	C205	400mF	B1
			R206	2K2	A2				C54	220pF	F3	C206	1KpF	B1
			R207	330	A2									

CAPACITORS

C1	30pF	Tuner
C2	1KpF	Tuner
C3	1KpF	Tuner
C4	10KpF	Tuner
C5	1KpF	Tuner
C6	1KpF	Tuner
C7	4-20pF	Tuner
C8	—	F2
C9	2.2pF	Tuner
C10	330pF	Tuner
C11	1KpF	Tuner
C12	6.8pF	Tuner
C13	47pF	Tuner
C14	470pF	Tuner
C15	4-20pF	Tuner
C16	—	F2
C17	5pF	Tuner
C18	200pF	F2
C19	820pF	F2

A1	C20	12pF	F3	C55	1KpF	F3
B1	C21	2-25pF	F3	C57	10KpF	F3
B1	C22	100pF	F3	C58	68pF	F3
A1	C23	3pF	F3	C59	5KpF	F3
B1	C24	—	F2	C60	10KpF	F3
A1	C25	10KpF	F2	C61	10KpF	F3
A1	C26	10KpF	F2	C62	4mF	F3
A1	C27	10KpF	F2	C63	500mF	F3
A1	C28	40KpF	F2	C64	200mF	F3
A1	C29	360pF	F3	C65	3000mF	F1
A1	C30	2-25pF	F3	C66	100KpF	F3
A1	C31	14pF	F3	C67	100KpF	F3
	C32	—	F3	C68	10mF	F3
	C33	2-25pF	F3	C69	10mF	F3
	C34	300pF	F3	C70	100KpF	F3
	C35	820pF	F3	C71	100KpF	F3
	C36	120pF	F2	C72	100KpF	E1
	C37	2KpF	F2	C73	100KpF	E1
	C38	820pF	F2	C74	22KpF	E1
	C39	470pF	F2	C75	22KpF	E1
	C40	2KpF	F2	C76	100KpF	D2
	C41	10mF	F2	C77	250mF	D2
	C42	40KpF	F2	C78	25mF	D1
	C43	1KpF	F2	C79	470pF	C2
	C44	120pF	F3	C80	40mF	D2
	C45	2KpF	F3	C81	400mF	D2
	C46	820pF	F3	C83	1KpF	E3
	C47	470pF	F3	C84	1KpF	E3
	C48	40KpF	F3	C85	25mF	—
	C49	100KpF	F2	C201	1.6mF	B1
	C50	100KpF	F3	C202	2K7pF	A2
	C51	40KpF	F3	C203	40mF	A2
	C52	10KpF	F3	C204	40mF	B2
	C53	820pF	F3	C205	400mF	B1
	C54	220pF	F3	C206	1KpF	B1





Diodes. D2 SFD107, D3 IN542, D4 IN542.

Rectifier. MR1 LT119.

Dial lamp. 6-8V 0.5A.

Speakers. Two 8 x 5in. 15ohm.

IF. AM 470kc/s, FM 10.7mc/s.

Aerial. Internal ferrite rod for AM. Aerial sockets for AM and FM.

Input. Stereo pickup socket.

Manufacturer. Ekco Radio & Television.

Service Departments. Spares orders to: Combined Electronic Services Ltd., PO Box 11, Cambridge. Tel.: Cambridge 59761 or 59101. Night answering service: Cambridge 59106. Main service depot: Combined Electronic Services Ltd.,

Somerton Works, Arterial Road, West-cliff-on-Sea, Essex. Tel.: Southend 42296.

DISMANTLING

Chassis removal. Disconnect set from power supply. Remove back cover and disconnect all plugs from rear of chassis. Release decoder earth lead and plug assembly. Pull off front control knobs and remove chassis fixing bolts on the underside of cabinet. Chassis may now be withdrawn from cabinet.

SERVICE NOTES

Audio Adjustments. If either of output pair TR10, TR11, are replaced it is essential to re-adjust RV6 and RV7 as follows: insert Avo 8 or similar meter (switched to 100mA range) between TR10 collector and supply line and adjust RV7 to obtain a quiescent current of 8mA at 240V input.

Remove meter, set volume and treble controls to maximum and connect two matched output meters, one to each pair of speaker sockets.

Link pickup inputs together, apply 400c/s signal from audio oscillator and then adjust RV6 to obtain equivalent readings from both channels.

Stereo Decoder. The decoder is pre-aligned at the factory and it is not intended that any adjustments be carried out.

Extension speaker. An extension

speaker having an impedance of not less than 15ohms may be connected in place of one of the internal speakers. Extensive damage is likely to result if a speaker of less than 15ohms is used, or if a speaker is connected in addition to the internal one.

ALIGNMENT

Equipment required. Modulated signal generator covering LW, MW and AM and FM IFs, wobulator, output meter, oscilloscope, two 100KpF capacitors, dummy aerial, polystyrene cement, trimming tools.

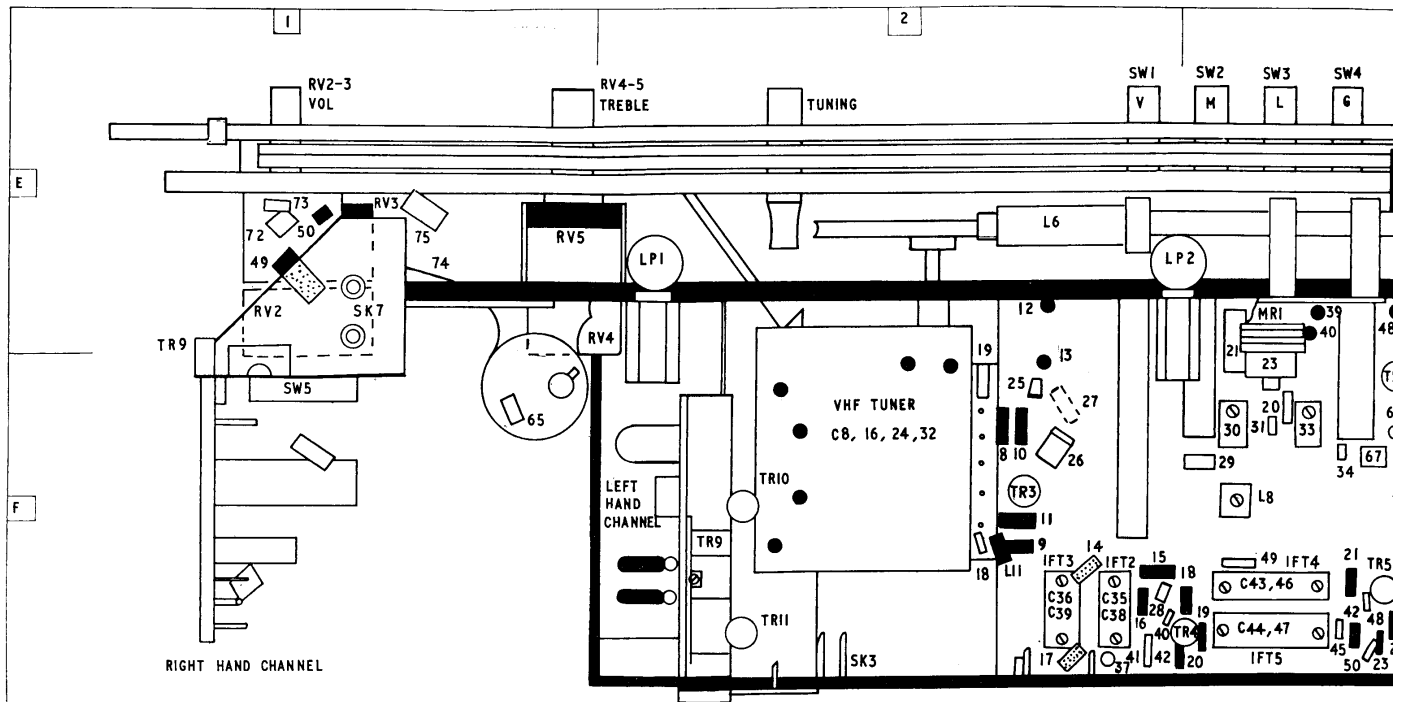
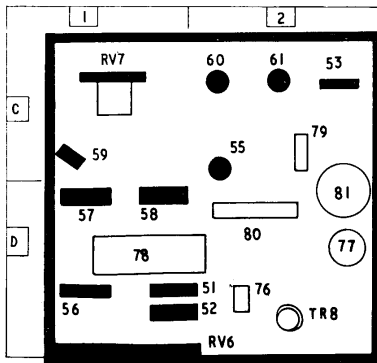
Connect output meter (15ohms) in place of one speaker.

AM, IF. Set volume and treble controls to maximum. Check that pointer is aligned with datum marks at low frequency end of the scale. Switch to MW. Tune receiver to 500m. Inject 30 per cent modulated 470kc/s signal across L6 with a 100KpF capacitor in each lead.

Adjust cores of IF T6, IF T4 and IF T2 for maximum output, in order given.

MW RF. Switch to MW. Tune receiver to 461.5m. Connect generator to external aerial socket via standard dummy aerial. Inject modulated 650kc/s signal.

Adjust core of L8 and position of L6 on ferrite rod in turn to obtain



maximum output. Change receiver tuning to 200m. and input signal frequency to 1500kc/s.

Adjust trimmers C30 and C21 to obtain maximum output. Repeat until no further improvement is obtained, seal position of L6 on ferrite rod.

LW RF. Switch to LW and tune receiver to 1400m. Tune signal generator to 214kc/s and connect to external aerial socket via dummy aerial. Adjust trimmer C33 and the position of L7 on ferrite rod for maximum output. Seal position of L7 on ferrite rod.

FM IF. Connect wobbulator signal at 10.7mc/s to base of TR3 and oscilloscope to junction of RV1 and R30 (wobbulator output should be terminated by approximately 75ohms and signal applied via 10-100KpF low impedance capacitor).

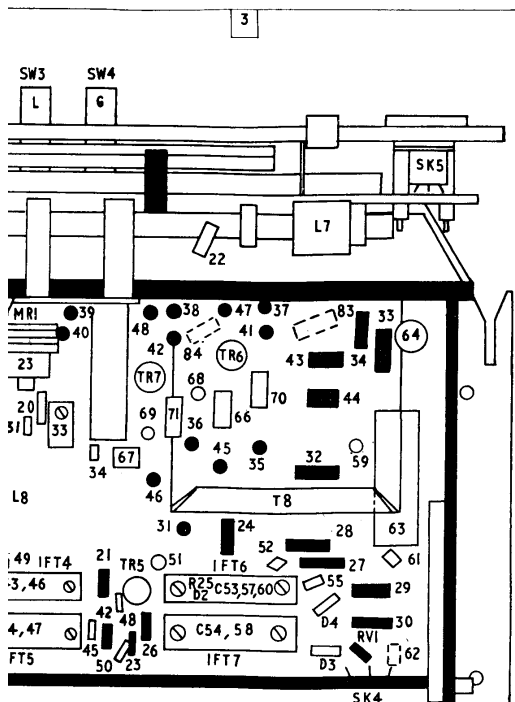
Set volume control to minimum, switch to VHF and tune to low frequency end of band. Disconnect C26 and adjust cores of IF T3, IF T5 and IF T7 for maximum output consistent with symmetry and band shape.

Connect the wobbulator via low impedance capacitor to FM aerial socket and short circuit L11. Adjust cores of L3 and L4 to obtain maximum output consistent with symmetry and band shape.

Remove short circuit across L11 and adjust L11 for minimum response at 10.7mc/s. Reconnect C26. Short-circuit L11 and transfer oscilloscope lead to PL3 (pin 1). Check for satisfactory "S" curve.

FM RF. Replace wobbulator with FM signal generator $\pm 25Kc/s$ deviation. Set volume and treble controls to maximum. Adjust L5 and L1 at 88mc/s, C15 and C7 at 106mc/s for calibration and maximum sensitivity.

Tune signal generator to 92mc/s with a $\pm 75Kc/s$ deviation signal at 10microvolts and tune receiver for maximum output. Switch off modulation and adjust RV1 for minimum noise output. Remove short circuit across L11.



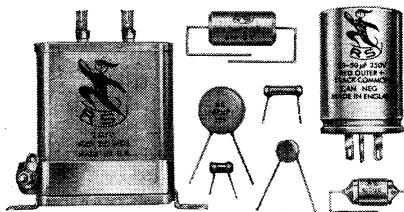
NOTES



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