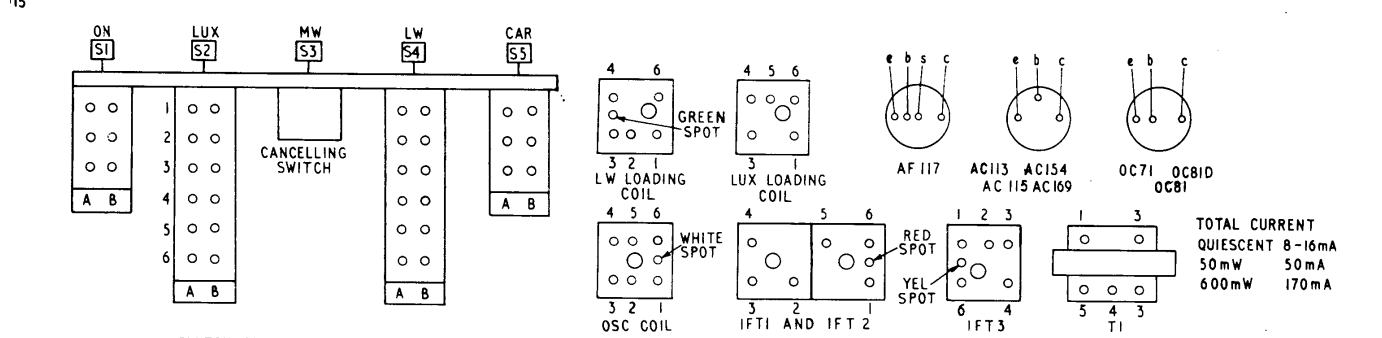
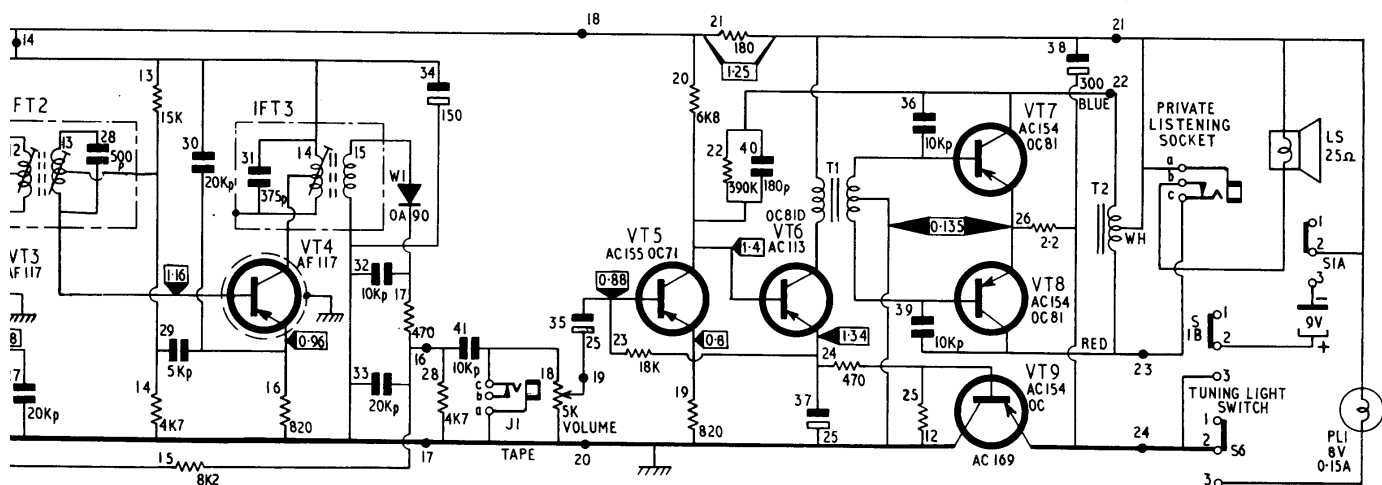
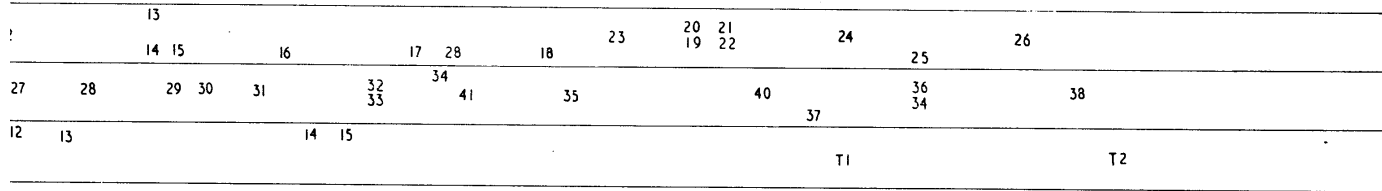


RESISTORS		CAPACITORS		RESISTORS		CAPACITORS	
R1	56K	B2	C2	250pF	B2	C34	150mF
R2	4K7	B4	C3	393pF	B1	C35	25mF
R3	3K9	B3	C4	2KpF	B3	C36	10KpF
R4	1K2	B34	C5	27pF	B3	C37	25mF
R5	1K2	B4	C6	3-30pF	B3		
R6	1K	B4	C7	2-25pF	B3		
R7	120K	B3	C8	100pF	B3		
R8	680	B4	C9	2KpF	B2		
R9	22K	B4	C10	22KpF	B4		
R10	56K	B4	C11	20KpF	B4		
R11	470	C4	C12	5KpF	B4		
R12	680	C4	C13	500pF	BC4		
R13	15K	C4	C14	250pF	B4		
R14	4K7	C4	C15	10KpF	B4		
R15	8K2	C4	C16	315pF	B3		
R16	820	C4	C17	27pF	B2		
R17	470	C4	C18	393pF	B1		
R18	5K log	B2	C19	4-40pF	B2		
R19	820	C3	C20	8-80pF	B3		
R20	6K8	C3	C21	275pF	B3		
R21	180	C3	C22	10KpF	B3		
R22	390K	C3	C23	75mF	B4		
R23	18K	C3	C24	500pF	B4		
R24	470	C3	C25	20KpF	C4		
R25	12	C2	C26	500pF	C4		
R26	2.2	C2	C27	20KpF	C4		
R27	47K	B4	C28	500pF	C4		
R28	4K7	C4	C29	5KpF	C4		
		C4	C30	20KpF	C4		
		C4	C31	375pF	C4		
		C4	C32	10KpF	C4		
		C4	C33	20KpF	C4		

VT	Type	Function	Emitter	Base	Collector
1	AF117	Mixer	0.75* (0.3-0.4)	0.88	—
2	AF117	Oscillator	1.01	1.16	—
3	AF117	First IF	0.8	0.96	—
4	AF117	Second IF	0.96	1.16	—
5	AC155 or OC71	AF amp.	0.8	0.88	1.4
6	AC113 or OC81D	Driver	1.34	1.14	—
7, 8	AC154 or OC81	Output pair	0.135 (to CT of T1)	—	—
9	AC169	Stabiliser	—	—	—

*With oscillator stopped. Bracketed figures show peak-to-peak value with oscillator operating as indicated on oscilloscope.
NOTE: See consumption figures in first section of Chart for total current demands. Volt drop across R21 in collector supply line. 1.25V.



SWITCH SHOWN IN MW POSITION

PIN CONNECTIONS FROM COPPER SIDE OF PRINTED BOARD

TOTAL CURRENT		
QUIESCENT	8-16mA	
	50mA	
	600mW	170mA

One leg of scale lamp support bracket is bent up to prevent lamp falling off. Straighten the leg before removing lamp and bend again after lamp replacement.

Scale diffuser is held by the drive cord support frame. Remove lamp and pull off diffuser for access to ferrite rod aerial, etc.

Receiver is constructed on a car aerial tuner board, a wavechange switch (or oscillator) board, an IF board and an audio board. Interconnections from tag to tag are shown on the circuit diagram.

Connections that are other than simple pairs are: car tuner board tag 1 to C2 shorting link, C2 and SKT1 inner; 2 to SKT1 outer and 8 on WC switch-board; 3 to C2 shorting link, C2 and S4B contact 2; 6 to L3 and S2A contact 3; 7 to L3 and S4B contact 1.

On WC switch-board, 8 to gang frame, switch frame and tag 2; 14 to tags 11 and 18; 16 to C41 and R28. On audio board, 20 to 17 and earthy end of VC; 21 to T2 (white or yellow lead), J2 contact "a", scale lamp, upper speaker tag and S1A contact 2; tag 23 to T2 (red lead) and J2 contact "c"; tag 24 to S1B contact 3 and S6 contact 2.

CIRCUIT

First transistor, VT1, is the mixer with signal input to the base via part of the

car switch. This switch changes over from tuned circuits using the ferrite rod aerial windings to a set of permeability-tuned coils that are used when a car aerial is connected. The slug of these coils is ganged with the two-gang tuning capacitor.

With the ferrite aerial and gang capacitor in use, a bandspread Luxembourg tuning range is obtained on operation of the Lux push button which brings in C7 in the aerial stage and C19 in the oscillator stage to modify the tuning characteristics.

When the Car button is pressed, the oscillator stage is not affected but the input circuit becomes MW coil L3, tuned by permeability core and trimmed by C1, with loading coils L2 and L1 added for LW and Lux respectively.

VT1 is on the IF board but VT2, the oscillator, is on the wavechange switch-panel. Two 475kc/s IF stages, VT3 and VT4, are employed, with AGC applied to VT1 and VT3 via R15 from the rectified component of the signal at the detector diode (W1) output.

Audio signal passes via C41 to the volume control, across which is a "Tape" input jack socket. The audio panel carries amplifier VT5 and driver VT6 which feeds, by transformer, a class B output stage VT7-VT8. This employs auto-transformer coupling to the 25ohm

speaker across which is the "private listening" socket.

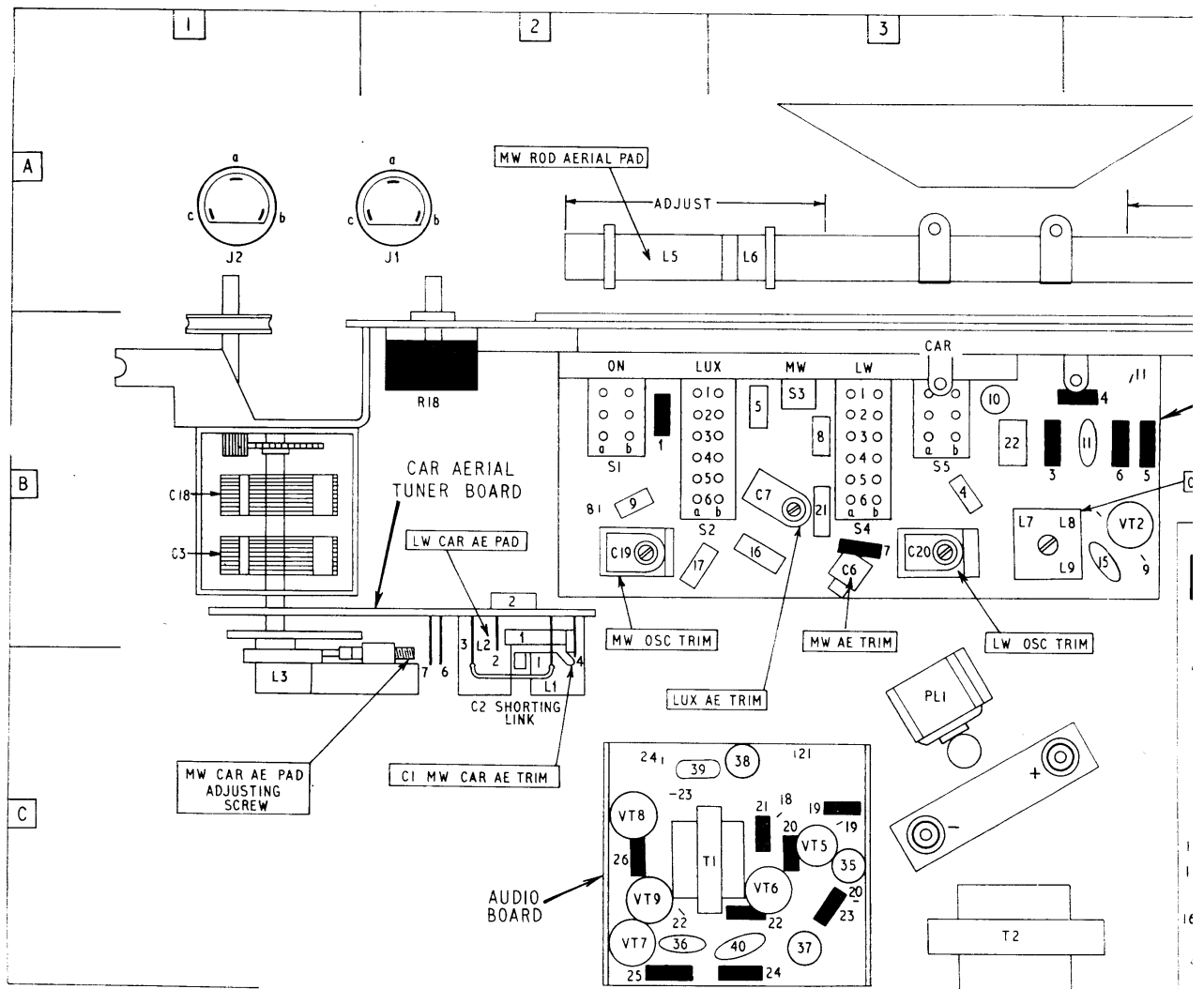
Stabilisation against temperature and battery voltage changes is provided by VT9, the collector/emitter voltage of which provides the bias for the output transistors. The thermal characteristic of VT9 itself provides temperature compensation (by suitable change of bias) while supply voltage compensation is obtained by biasing VT9 from the emitter current of VT6. This emitter current, decoupled by C37, passes through potentiometer R24-R25, the voltage across the latter being the bias of VT9.

Controls of the receiver include separate double-pole on/off switch S1 "a" and "b" and a scale-lamp switch S6.

ALIGNMENT

Equipment required. Signal generator covering MW/LW and AM/IF frequencies with 30 per cent amplitude modulation, 20-30ohm output meter or Model 8 Avometer (switched to 2.5V AC range), and 0.1mF capacitor.

IF circuits. With new battery in use, press On and MW buttons and turn gang to maximum. Apply 475kc/s modulated signal through 0.1mF capacitor between tag 13 and chassis. Adjust L14, L13, L12, L11 and L10 in that order for maximum output. Repeat in same



order until no further improvement is obtained.

Throughout all alignment, limit the signal input to give an output not more than 50mW to avoid error due to AGC operation.

RF circuits. With gang at maximum, see that cursor coincides with set-zero pips at lefthand of scale window. Correct any error by sliding cursor along drive cord. Inject signal via a loop loosely coupled to the ferrite rod aerial, with Car button in the off position. MW range must be aligned first.

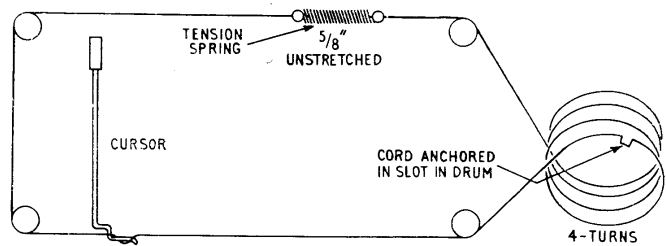
Switch to MW, inject 600kc/s, tune set to 500m and adjust L7 and L5. L5 is adjusted only if essential and by sliding coil on ferrite rod.

Switch to Lux, inject 1500kc/s, tune to 200m and adjust C19.

Still at 1500kc/s, switch to MW, tune to 200m, and adjust C6. Push Lux button again, and at 200m, adjust C7.

Switch to LW, inject 200kc/s, tune to 1500m and adjust C20 and L4 (by sliding on rod).

Car aerial tuner. Depress Car and MW buttons and set MW car aerial pad (L3) adjusting screw (cam follower) so that an equal amount of thread is seen each end of the black moulded support. With gang fully closed check that slot in rear face of drive cam is in line with cam follower.



USE APPROX 36" NYLON BRAIDED CORD
ACTUAL LENGTH BETWEEN EYES OF SPRING 30"

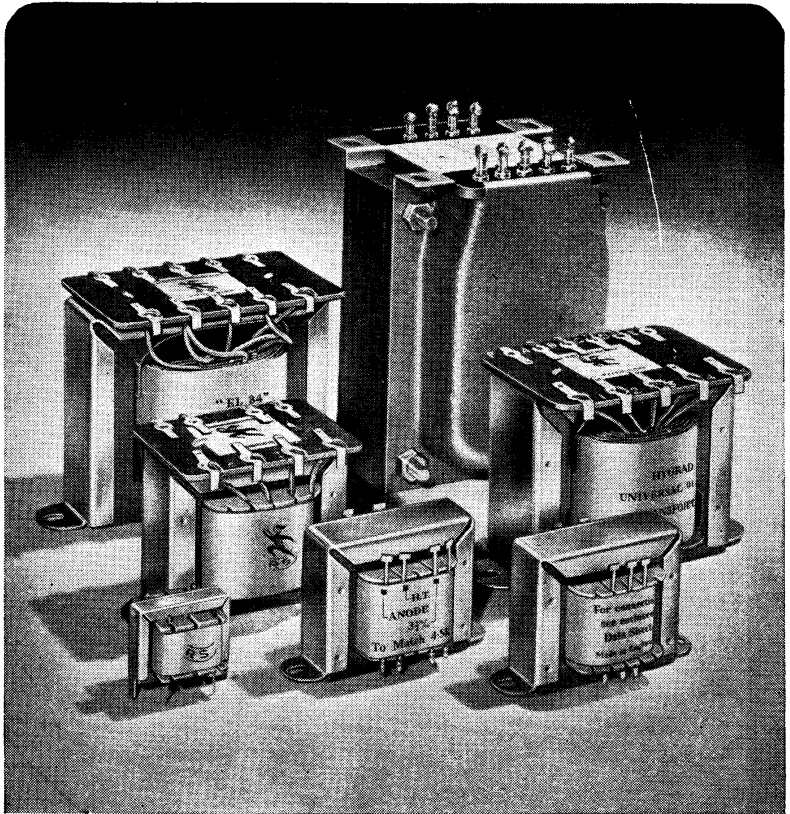
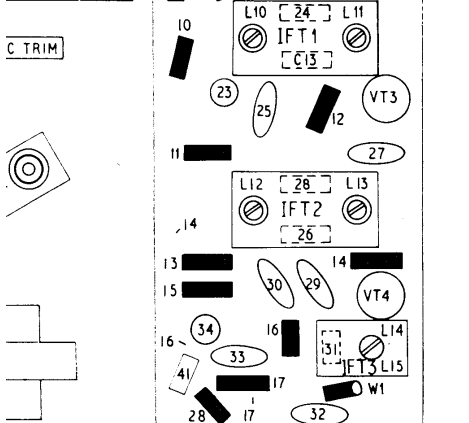
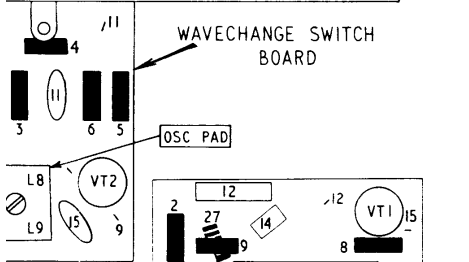
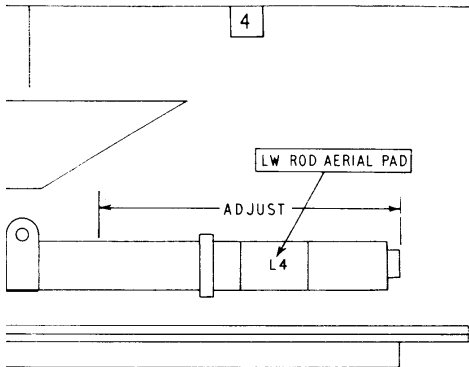
Tune set to 500m, inject 600kc/s into car aerial socket via dummy load comprising series 18pF capacitor followed by shunt 60pF unit. Adjust C1 for maximum output.

Tune to 214m, inject 1400kc/s and adjust MW car aerial pad adjusting screw (see layout diagram) for maxi-

um. Repeat these two adjustments.

Press Car and Lux buttons, tune to 200m on Lux scale, inject 1500kc/s and adjust L1 for max.

Press Car and LW buttons, tune to 1500m, inject 200kc/s and adjust L2 for max.



OUTPUT TRANSFORMERS

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