

CAPACITORS		Values (μF)
C1	A1 series coupling ...	0.000022
C2	Aerial isolator ...	0.001
C3	Earth isolating capacitors	0.02
C4		0.02
C5	Aerial coupling capacitor	0.003
C6	Isolating capacitor	0.001
C7	V1 hex. C.G. capacitor ...	0.0001
C8	H.T. circuit R.F. by-pass	0.05
C9	V1 S.G. decoupling ...	0.05
C10	V1 osc. C.G. capacitor ...	0.0001
C11	A.V.C. line decoupling ...	0.05
C12	Osc. L.W. fixed trimmer ...	0.000039
C13	Osc. M.W. fixed tracker ...	0.0001
C14	Osc. circ. S.W. tracker ...	0.00395
C15	Reaction coupling	0.005
C16*	V1 osc. anode decoupling	8.0
C17	V2 S.G. decoupling ...	0.05
C18	I.F. by-pass ...	0.0003
C19*	V3 cathode by-pass ...	25.0
C20	A.F. coupling to V3 triode	0.02
C21	Pick-up isolating capacitors	0.01
C22	...	0.01
C23	A.V.C. diode coupling ...	0.000022
C24*	H.T. line decoupling ...	4.0
C25	V3 anode I.F. by-pass ...	0.0005
C26	A.F. coupling to V4 ...	0.02
C27	Part of tone correcting circuits ...	0.0002
C28	...	0.0015
C29	...	0.01
C30*	V4 cathode by-pass ...	25.0
C31	Part variable tone control	0.1
C32*	H.T. smoothing capacitors	16.0
C33*		32.0
C34	Mains R.F. by-pass ...	0.01
C35†	Aerial circ. S.W. trimmer	—
C36†	Aerial M.W. tuning coil	—
C37†	Aerial circ. L.W. trimmer	—
C38†	Aerial circuit tuning	—
C39†	Oscillator circuit tuning	—
C40†	Osc. circ. S.W. trimmer	—
C41†	Osc. circ. M.W. trimmer	—
C42†	Osc. circ. L.W. trimmer	—
C43†	Osc. circ. L.W. tracker	—
C44†	Osc. circ. M.W. tracker	—
C45†	1st I.F. trans. pri. tuning	—
C46†	1st I.F. trans. sec. tuning	—
C47†	2nd I.F. trans. pri. tuning	—
C48†	2nd I.F. trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values (ohms)
R1	V1 hex. C.G. resistor ...	1,000,000
R2	V1 osc. C.G. resistor ...	100,000
R3	Oscillator circuit damping resistors ...	68
R4		470
R5		6,800
R6	V1 S.G. and osc. anode H.T. feed potential divider ...	6,800
R7	...	8,200
R8	...	22,000
R9	V2 S.G. H.T. feed ...	47,000
R10	I.F. stopper ...	56,000
R11	V3 signal diode load ...	470,000
R12	Manual volume control ...	1,000,000
R13	H.T. line decoupling ...	10,000
R14	V3 triode anode load ...	100,000
R15	V3 triode G.B. resistor ...	2,200
R16	A.V.C. line decoupling ...	1,000,000
R17	A.V.C. diode load ...	470,000
R18	Part tone corrector ...	150,000
R19	V1, V2 fixed G.B. resistor, A.V.C. delay ...	39
R20	Part tone corrector ...	680,000
R21	V4 C.G. resistor ...	330,000
R22	V4 S.G. stopper ...	100
R23	V4 G.B. resistor ...	220
R24	Variable tone control ...	55,000

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial circuit shunt ...	60.0
L2	Aerial coupling and image rejector coils, total	0.36
L3		0.36
L4		0.36
L5	Aerial S.W. tuning coil ...	0.06
L6	Aerial M.W. tuning coil ...	2.8
L7	Aerial L.W. tuning coil ...	19.5
L8	Osc. S.W. tuning coil ...	0.06
L9	Osc. M.W. tuning coil ...	3.4
L10	Osc. L.W. tuning coil ...	7.7
L11	Osc. S.W. reaction coil ...	0.32
L12	1st I.F. trans. { Pri. ...	7.0
L13		{ Sec. ...
L14	2nd I.F. trans. { Pri. ...	4.0
L15		{ Sec. ...
L16	Speaker speech coil ...	2.3
L17	H.T. smoothing choke ...	380.0
L18	Mains R.F. filter chokes ...	2.7
L19		2.7
T1	Output trans. { Pri. ...	210.0
	{ Sec. ...	0.36
S1-S6	Waveband switches ...	—
S7	Mains switch ...	—

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 X61M	158	1.5	85	3.0
	Oscillator	—		
V2 KTW61	115	3.7	55	2.2
V3 DH63	75	0.7	—	—
V4 KT33C	200	53.0	210	8.5
V5 U31	†	—	—	—

† Cathode to chassis, 250 V, D.C.

G.E.C. BC4655

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Switch Table and Diagram

Button Pressed	Switches Closed	Switches Open
OFF ...	S1, S2, S5	S3, S4, S6
L.W. ...	S1	S2, S3, S4, S5, S6
M.W. ...	S2, S5	S1, S3, S4, S6
S. W. and P. U. ...	S1, S2, S3, S4, S5, S6	—

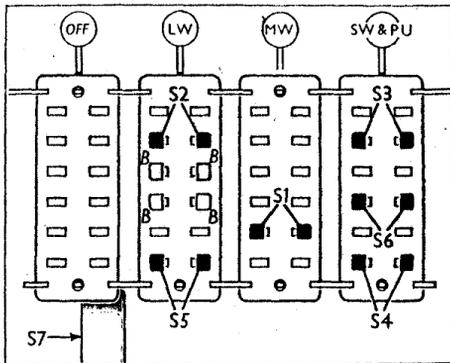


Diagram of the press-button switch unit, drawn as seen in our under-chassis view. The "OFF" plunger operates the attached Q.M.B. switch S7.

DRIVE WIRE REPLACEMENT

Before the drive wire can be replaced the pointer and speaker sub-baffle must be removed. Suitable drive wire is available from the manufacturers at 3d per length (about 33 inches).

Release the pointer by holding its spindle, with the aid of a screwdriver inserted in the slot at the rear end, and removing the lock-nut, when the pointer can be unscrewed in an anti-clockwise direction. The sub-baffle is held by four set screws (with washers and lock washers), two each side immediately beneath the scale lamps. The lamp holders should first be withdrawn from their brackets on the sub-baffle.

Facing the front of the chassis, turn the gang to *minimum* capacitance, and turn the pointer wheel so that its anchor screw is at about 9 o'clock. The position of each wheel should now be as shown in the drawing in the next column.

Fasten one end of the drive wire under the head of the anchor screw marked "Start" in the sketch (on the front of the lower (drive) wheel, at about 8 o'clock), pass the wire round the groove in an anti-clockwise direction for about half a turn, then away up to the upper pointer wheel. Take it round the groove something over one complete turn anti-clockwise, through the slot and round the anchor screw on the rear face of the wheel, and tighten up the screw.

Return through the slot to the groove, continue in the original direction for about one-quarter turn, then down under the drive wheel and round its groove, still anti-clockwise, to the third anchor screw, (on the rear face at about 10 o'clock), where it should be securely clamped.

CIRCUIT ALIGNMENT

I.F. Stages.—Connect signal generator leads via a 0.1 μ F capacitor to control grid (top cap) of V1, leaving original connector in position, and chassis. Turn the volume control to maximum, and the tone control fully clockwise. Press the L.W. button, and turn the gang to maximum.

Feed in a 456 kc/s (657.8 m) signal, and adjust C48, C47, C46 and C45 in that order for maximum output.

R.F. and Oscillator Stages.—Transfer signal generator leads to A2 and E sockets, via a suitable dummy aerial. Check concentricity of pointer as follows: Turn gang to maximum, and set pointer

S.W.—Press S.W. button, tune to 16.7 m (spot on scale), feed in a 16.7 m (18 Mc/s) signal, and adjust C40, then C35, for maximum output. Two peaks should be found for C40, and that involving the lesser trimmer capacitance should be selected. Both trimmers should then be readjusted while rocking the gang slightly about the correct tuning point to overcome "pulling" between circuits.

All trimmers should finally be sealed with a dab of paint. The makers use a substance called "Necol," and they suggest that it should be well spread over the upper plates of C40, C41 and C42 to damp down microphonic vibration, which may otherwise set up a "howl."

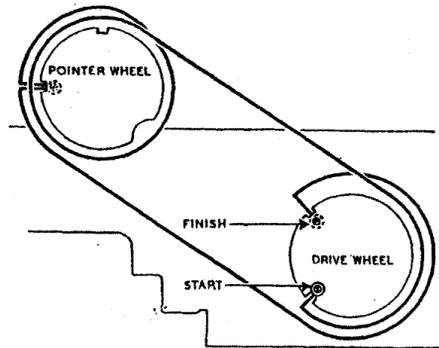


Diagram showing the course taken in fitting a new pointer drive wire. It is drawn as seen from the front of the set.

horizontally, pointing to the left. The short tail point of the pointer should now be directly over a small spot on the scale, and the point of the long arm over the centre of letter "I" in "Medium." With the gang at minimum, the pointer should again lie along the centre-line of the top line of lettering, its long point lying over the centre limb of the letter "E" in "Medium," and its tail point lying over a second small spot on the scale.

If the scale requires adjustment, this can be performed after slackening the six fixing screws. If the pointer requires adjustment, the lock-nut at the rear end of its threaded spindle must be slackened. This is best done with a long narrow-bladed screwdriver inserted through a box spanner, the nut first being heated with a soldering iron.

M.W.—Press M.W. button, tune to 214 m (spot on scale), feed in a 214 m (1,400 kc/s) signal, and adjust C41, then C36, for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and adjust C44 for maximum output, rocking the gang slightly either way for optimum results. Repeat 214 m adjustments.

L.W.—Press L.W. button, tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust C42, then C37, for maximum output. Tune to 1,818 m (spot on scale), feed in an 1,818 m (165 kc/s) signal, and adjust C43 for maximum output, rocking the gang again for optimum results. Repeat 1,000 m adjustments.

