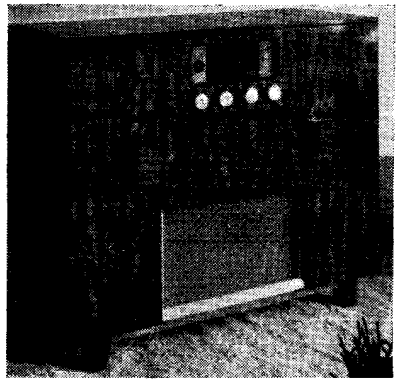
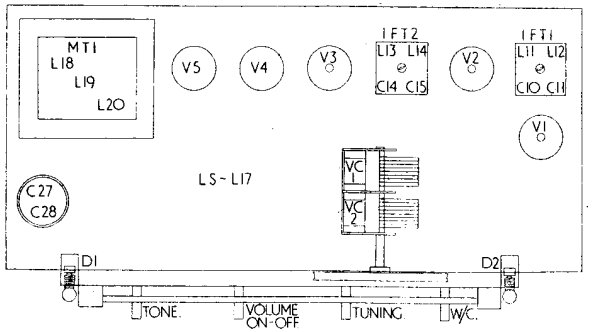
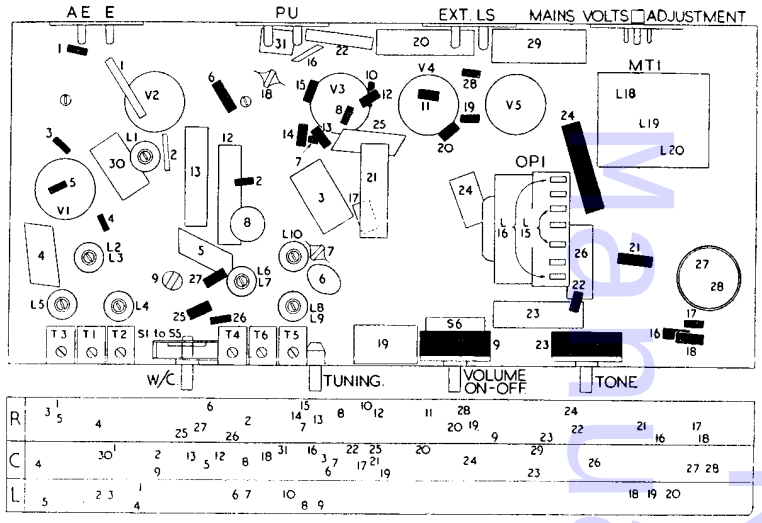
ACE 'MAYFAIR'

MRG635, MRGS635



Five valve, three-waveband radiogram incorporating Garrard RC70 single-speed, or RC72 three-speed, record changer. Australian walnut and eucalyptus veneer cabinet with two shelved record storage compartments and sliding auto-changer drawer. For 190-250V 50c/s AC. Manufactured by Ace Radio, Ltd., Tower Works, Tower Road, London, NW10.





RESISTORS

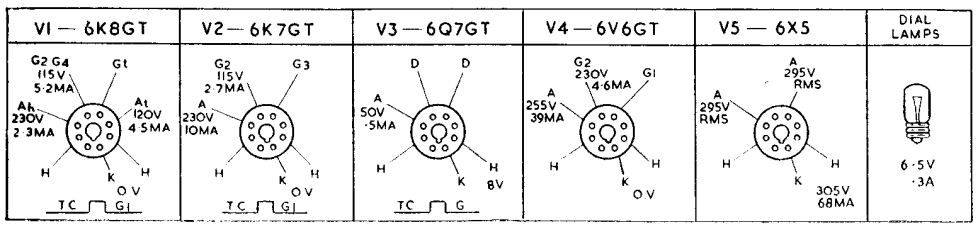
R	Ohms	Watts
1	2.2K	
2	10K	
3	22K	
4	120	
5	47K	
6	15K	
7	47K	
8	470K	
9	1M Potr. with switch	
10	2.4K	
11	68K or 100K	
12	220K	
13	1M	
14	1M	
15	1M	
16	150	
17	47	
18	1M	
19	470K	
20	68K or 100K	
21	1.5K	
22	680	
23	50K	Potr.
24	500	3W
25	120	
26	2.2K	
27	4.7K	
28	47	

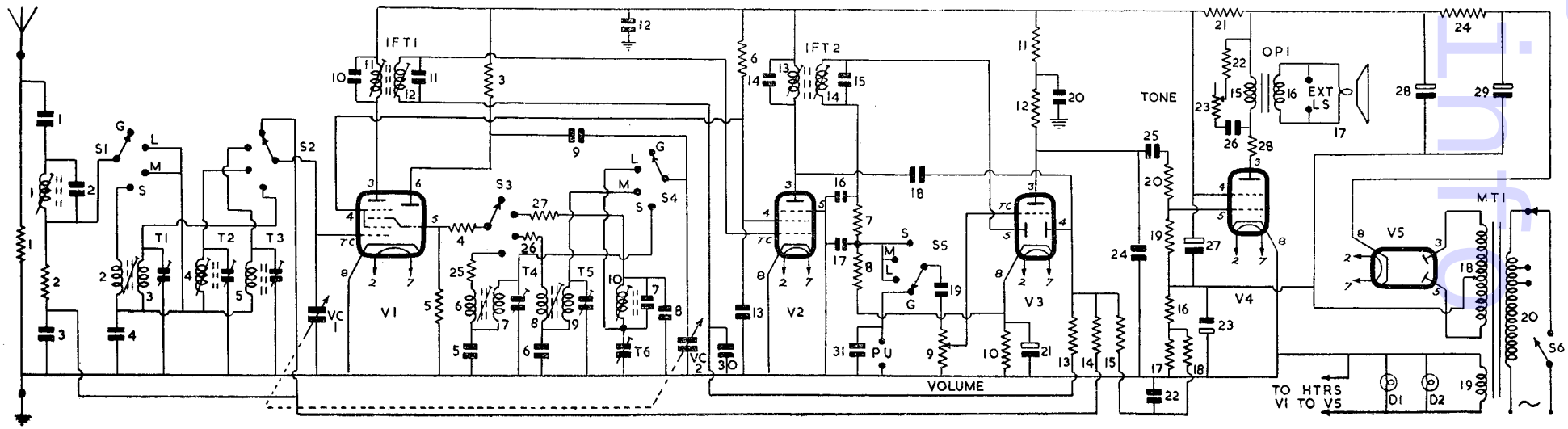
INDUCTORS

L		Ohms
1	... ...	1.5
2	... ...	Very Low
3	... ...	Very Low
4	... ...	1.5
5	... ...	45
6	... ...	.5
7	... ...	Very Low
8	... ...	1.25
9	... ...	6.5
10	... ...	17.5
11	... ...	8
12	... ...	8
13	... ...	5.5
14	... ...	5.5
15	... ...	425
16	... ...	Very Low
17	... ...	2
18	... ...	475
19	... ...	Very Low
20	... ...	35

CAPACITORS

C	Capacity	Type
1	500pF	Silver Mica
2	820pF	Silver Mica
3	.01	Mica
4	3300pF	Silver Mica
5	2200pF	Silver Mica
6	380pF	Silver Mica
7	25pF	Ceramic
8	150pF	Silver Mica
9	50pF	Ceramic
10	100pF	Silver Mica
11	100pF	Silver Mica
12	.1	Tubular 500V
13	.1	Tubular 500V
14	100pF	Silver Mica
15	100pF	Silver Mica
16	120pF	Silver Mica
17	120pF	Silver Mica
18	25pF	Ceramic
19	.05	Mica
20	.1	Tubular 500V
21	50 Electrolytic 12V or 25 Electrolytic 12V	
22	.01	Mica
23	50 Electrolytic 12V or 25 Electrolytic 12V	
24	250pF	Mica
25	.01	Mica
26	.04	Tubular 500V
27	16 Electrolytic	450V
28	16 Electrolytic	
29	8 Electrolytic	500V
30	.01	Mica
31	250pF	Silver Mica





ACE 'MAYFAIR'—*Continued*

AERIAL signal is fed through C1 to IF filter L1 C2 and then switched by S1 to SW aerial coupling coil L2 or to bottom end of MW and LW grid tuned coils L4 L5. R1 is static drain between aerial and earth sockets.

Grid coils L2 (SW), L4 (MW), L5 (LW), trimmed by T1 T2 T3, are switched by S2 to aerial tuning capacitor VC2 and to gl of triode-hexode frequency changer V1. Cathode V1 is connected down to chassis, a small standing bias together with AVC voltages, decoupled by R14 C3, being applied through R2 S1 and grid tuned coils and S2 to gl.

On gram position of wavechange switch, aerial and gl of V1 are disconnected from tuned circuits, the latter being connected down to AVC line by S2 to maintain bias. Screen (g2, g4) voltage is obtained from R6 decoupled by C13. Primary L11 C10 of IFT1 is in the hexode anode circuit.

Oscillator is triode section of V1 in a shunt-fed anode-tuned circuit. Anode coils L7 (SW), L9 (MW), L10 (LW), which are trimmed by T4 T5 T6-C7 and padded by C5 C6 C8 respectively, are switched by S4 to oscillator tuning capacitor VC2 and thence coupled by C9 to oscillator anode, of which R3 is the load. Grid reaction voltages, developed inductively from L6 (SW), L8 (MW) and capacitively from padder C8 on LW, are fed through limiters R25 R26 R27 to S3 and switched through a common limiter R4 to oscillator grid of V1, R5 being leak resistor.

IF amplifier operates at 472 kc/s. Secondary L12 C11 of IFT1 feeds IF signal, AVC voltage and a small standing bias, decoupled by R13 C30, to gl of IF amplifier V2. Cathode and suppressor electrode are connected to chassis. Screen voltage is obtained in common with that of V1.

Primary L13 C14 of IFT2 is in the anode circuit.

Signal rectifier. Secondary L14, C15 of IFT2 feeds signal to one diode anode of V3. R8 is its load and R7 C16 C17 an IF filter.

AVC. Signal at anode of IF amplifier is fed by C18 to second diode anode of V3. Bottom of load resistor R15 is connected to junction of R16 R17 in negative HT return to chassis to provide AVC delay voltage and standing bias for grids V1 V2. Bias is decoupled by R18 C22 and AVC is decoupled by R13 C30 and R14 C3.

Pick-up. Sockets are fitted at rear of chassis for connection of pick-up on auto-changer unit. Signal is fed to S5 which in Gram position switches it through C19 to volume control R9. Radio breakthrough is prevented by disconnecting aerial, gl and oscillator grid and anode of V1 from their tuned circuits.

AF amplifier. Rectified audio signal across R8, or alternatively pick-up signal, is switched by S5 through C19 to volume control R9 in grid triode amplifier section of V3. Cathode bias is by R10 decoupled by C21. R12 is anode load and C24 anode RF by-pass capacitor. HT feed is decoupled by R11 C20.

Output Stage. Signal at anode V3 is fed by C25 through R20 to grid of beam-tetrode output amplifier V4. Cathode is earthed to chassis, hence valve is biased by connecting bottom end of grid load R19 to R16 R17, decoupled by C23, inserted in negative HT return to chassis. Screen voltage is from HT line to V1-V3, decoupling being by C27.

Primary L15 of output matching transformer OP1 is in the anode circuit.

Variable top-cut tone control is by R23 in conjunction with R22 C26 which are shunted across L15. Secondary L16 of OP1 feeds a 10in. pm speaker L17.

Sockets fitted to L16 allow connection of any low-impedance extension speaker.

HT is provided by indirectly-heated fullwave rectifier V5. Anode voltages are obtained from HT secondary L18. Heater current, in common with that of other valves, from LT secondary L19.

Resistance-capacity smoothing is by R24 C28 C29 and by R21 C27. RF decoupling of HT line to V1-V3 is provided by C12. Reservoir smoothing capacitor C29 should be rated to handle 100mA ripple.

Primary L20 of MT1 is tapped for inputs of 190-210, 210-230, 230-250V 50 c/s.

S6, ganged to volume control spindle, is the ON/OFF switch.

Auto-changer. Model MRG635 is fitted with a Garrard RC70 single-speed changer fitted with plug-in standard magnetic pickup and suitable for playing ten 10in. or ten 12in. records. Model MRGS635 is fitted with a Garrard RC72 three-speed changer with turnover plug-in high-fidelity magnetic pickup having permanent sapphire stylus. For maintenance and adjustments to either of the above units reference should be made to the appropriate Garrard booklet.

Chassis removal. Pull off four control knobs and remove rear panel by undoing six wood screws. Unsolder LS leads from tags on speaker. Loosen two chassis and base-cover fixing bolts accessible from front of cabinet through opened auto-changer drawer. Undo nuts securing rear section of chassis shelf to support rails on sides of compartment.

With auto-changer drawer fully open and record spindle removed, carefully slide chassis with rear panel attached backward sufficiently to give clearance to control spindles. Then lower and tilt chassis and withdraw from cabinet. Finally, unsolder gram motor leads—one from OP1 tag panel and the other from ON/OFF switch.

TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune receiver to	Trim in order stated for maximum output
(1) 472 kc/s to gl of V1 via .01mF	S/C VC2	Cores L14, L13, L12, L11
(2) 150kc/s to aerial socket via dummy AE	2000m	Core L10, L5
(3) 300kc/s as above	1000m	T6,T3
(4) 600kc/s as above	500m	Cores L8/9, L4
(5) 1.5mc/s as above	200m	T5, T2
(6) 6 mc/s as above	50m	Cores L6/7, L2/3
(7) 15mc/s as above	20m	T4, T1

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on a mild steel platform pivoted on a bracket held in place by the two lower motor cradle fixing bolts. Platform is spring retained in its OFF position and coupled by Bowden cable to pump control knob on control panel (Fig. 5). When control knob is moved to its ON position the pump platform is pulled over to make rubber-tyred drive wheel engage with outer face of pulley fixed to motor shaft.

Inlet of pump is coupled by ribbed rubber hose to tub drain outlet. Pump outlet is fitted with 6ft. of hose terminating in a chromium-plated tap union, which can be attached to hot water tap for filling tub.

Three-core rubber-covered mains cable is fed through rubber-bushed brass grommet at bottom of rear panel to terminal junction block on side of pump bracket. From thence mains wiring is continued by rubber-covered cable to Venner time switch and to motor. A 15W miniature BC indicator lamp of same voltage as motor is wired to time switch to show when power is on to motor —it also provides illumination of control panel.

Wringer is a standard Acme model A75 with 11in. rollers. Drive shaft inside support column below gearbox is slotted to accept flat on end of wringer drive bar inside socket on washing machine.

Wringer support column is fitted with spring loaded stud, operated by a small knob on outside, which fits into any one of five locating holes around socket flange, permitting wringer to be locked in any of these positions.

MAINTENANCE

Lubrication. Since gearbox is oil filled and motor has oil reservoirs, these components should not require attention throughout normal life of machine. If, however, washer is used every day, as in boarding houses or hotels, the motor oil-pad reservoirs should be replenished every 2,000 hours with Shell Vitre 27 oil. To do this it is necessary to remove tub as described below to give access to motor.

Oiling is carried out by removing grub screw in periphery at each end of motor and slowly filling with oil until it seeps out through overflow holes on end faces.

Should replacement of any part become necessary it can be removed for return to the manufacturers by the procedure outlined below.

Removal of tub. First remove wringer, tub lid, agitator and filter plate. Undo and remove the eight surround fixing screws and lift off surround. Finally undo and remove the four hexagon-headed bolts in bottom of tub and carefully loosen and ease up clamp plate and sealing gasket and withdraw them from agitator column. Tub can now be lifted out. With tub removed access is available to motor and wringer drive bar and socket, etc. (Fig. 4).

Removal of motor. Undo nuts and remove bolts and half clips securing flexible hose coupling to motor shaft and gearbox drive spindle. Lay machine on its back, remove baseplate and disconnect motor leads from terminal box. Finally loosen fully the screw securing each motor end clamp—slip off clamps and withdraw motor.

Removal of pump unit. Lay machine on its back and uncouple hoses from pump inlet and outlets by loosening screws in Terry hose clips. Undo and remove hexagon-headed bolt to which tension spring is anchored on pump platform—this also allows Bowden cable to be withdrawn from its

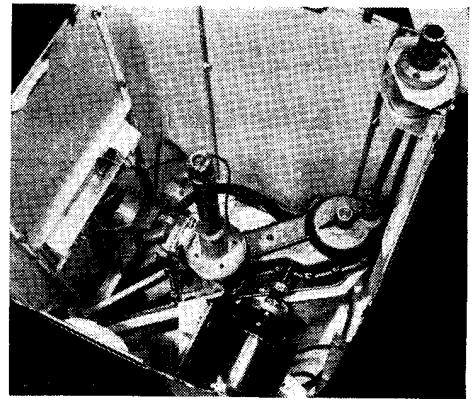

Fig. 4.—With tub removed access is available to the motor, the wringer drive shaft and drive socket

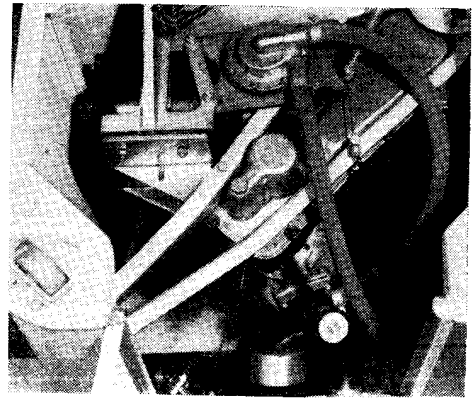

Fig. 5.—This view of the mechanism with the washing machine inverted shows the pump and the method of mounting the gearcase

hole in hexagon post. Remove nut and lock nuts on the bottom left and upper right guide bolts and finally undo and remove nut and lock nut on pivot bolt at bottom righthand side of platform. Pump on its platform can now be withdrawn.

Removal of gearbox and chassis. With machine upright remove circlip around bottom knuckle joint on wringer drive bar and push out connecting pin. Lift drain outlet assembly from agitator column. Lay machine on its back, remove Bowden cable from guide and stop post on underside of upper chassis stay. Undo and remove the two bolts securing terminal box from pump support bracket. Remove the two hexagon bolts clamping chassis end brackets to semi-circular receptacles in bottom left and top right corners of cabinet.

Place machine upright, lift wringer bar knuckle joint off gearbox drive shaft and allow it to hang loosely in corner. Gearbox and chassis can now be withdrawn through top of cabinet. If gearbox oil is to be replenished the gearbox must be unbolted from chassis to give access to gearbox lid bolts.