

# SERVICE MANUAL

# FOR

# Marconiphone

## MODEL 42 (A.C. MAINS MODEL)

### THE MOVING COIL TRANSPORTABLE III

#### GENERAL ARRANGEMENT.

Model 42 is a 3-tuned circuit band pass radio receiver. The band pass tuning consists of an aerial tuning circuit (L 1, L 2, VC 1) and a grid tuning circuit (L 3, L 4, VC 2) the High Frequency signal being passed to the grid of the detector valve with a choke capacity arrangement (CK 1 & C 2). The grid circuit of the detector valve being also tuned (L 5, L 6, VC 3), 2 fixed reaction coils (L 7, L 8) being wound on former of L 5, L 6 (Fig. 1).

#### VALVES.

**Screen Grid High Frequency Valve**—MS 4 B Marconi.

**Metallised Detector Valve**—MH 4 Marconi.

**Pentode Output Valve**—MPT 4 Marconi.

**Rectifier Valve**—U 10 Marconi.

Reaction is applied by the same knob as the volume control, by means of the variable resistance VR 1, which varies the screen volts on the screen grid High Frequency Valve.

#### POWER SUPPLY.

**Voltage Rating**.—95 to 164.  
190 to 250.

**Frequency Rating**.—Standard Model—50 to 60 cycles.

**Note**.—Enquiries may be accepted for different frequencies of supply. A direct current model is available for voltages of 195 to 250.

#### CIRCUIT.

Screen Grid High Frequency—detector—pentode output.

**Type of Detector**.—Power Grid.

**Type of Volume Control**.—Variation of screen grid volts—reaction winding fixed coupled to detector grid coils.

**Type of Rectifier**.—Full wave valve—U 10 Marconi.

**Type of Loudspeaker**.—Permanent magnet moving coil.

**Output Stage**.—Undistorted output 1.4 watts.

#### PHYSICAL SPECIFICATIONS.

Height	....	....	....	....	....	....	....	....	....	....	....	17 inches	43 cm.
Depth	....	....	....	....	....	....	....	....	....	....	....	11 $\frac{3}{4}$ ins.	28 $\frac{1}{2}$ cm.
Width	....	....	....	....	....	....	....	....	....	....	....	20 inches	52 cm.
Weight packed	....	....	....	....	....	....	....	....	....	....	....	51 $\frac{1}{2}$ lbs.	23.3 kg.
Weight unpacked	....	....	....	....	....	....	....	....	....	....	....	32 $\frac{1}{2}$ lbs.	14.75 kg.

**Colour Code**.—The instrument is colour coded according to the standard Marconiphone colour wiring code. See page 3.

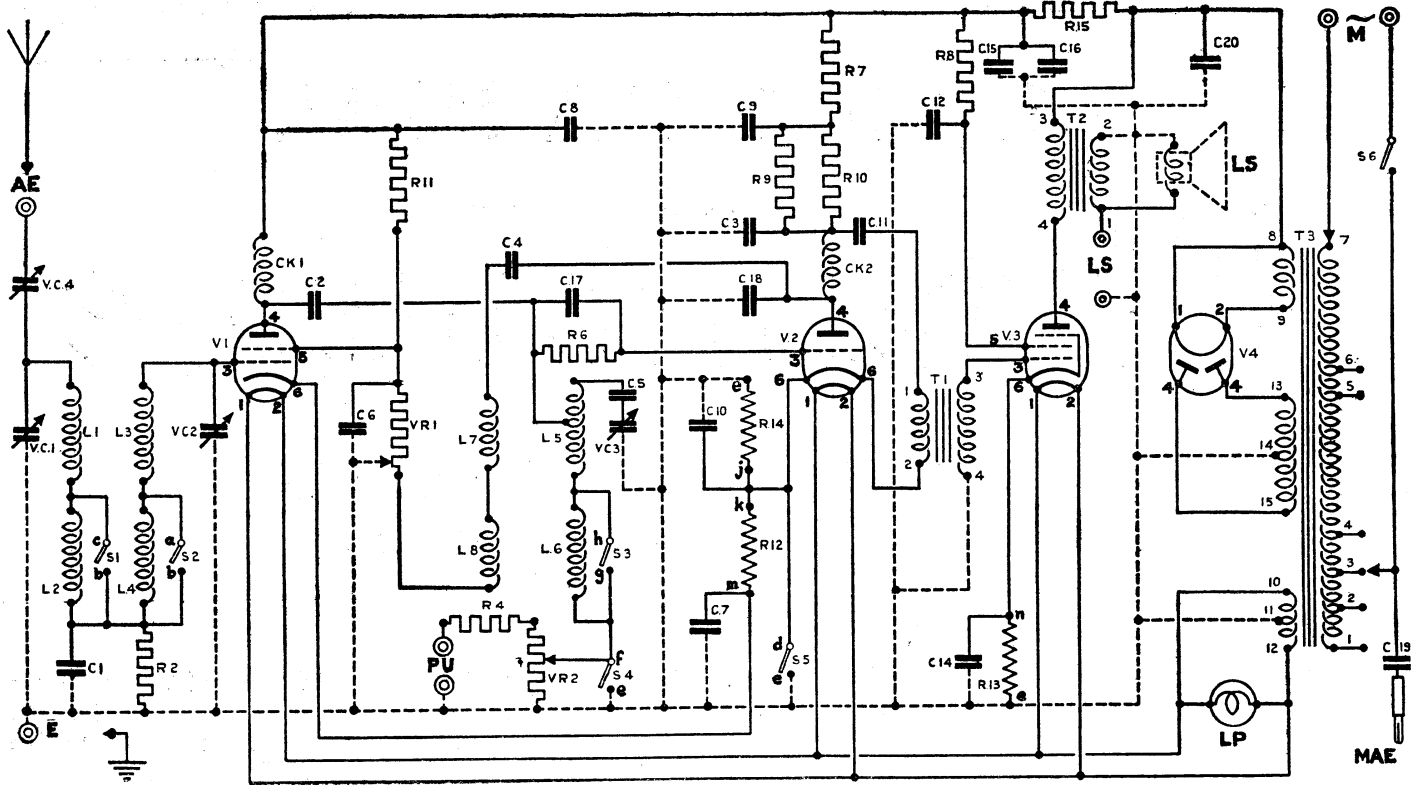


Fig. 1.

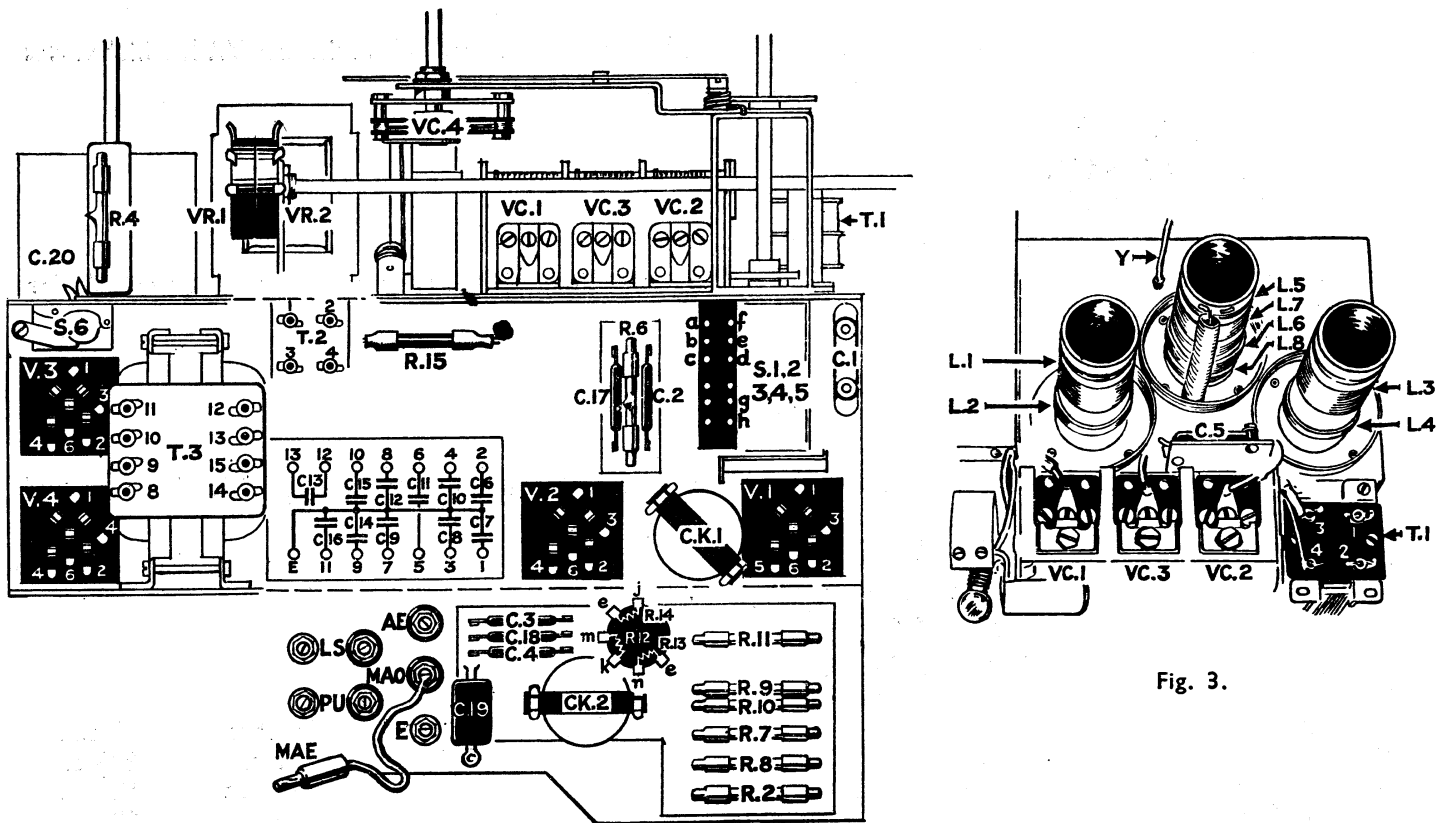


Fig. 2.

Fig. 3.

Note re Fig. 2.—  
Resistances R.11, 9, 10, 7, 8, and 2 may be found slightly re-arranged on Rack.

## COLOUR CODE WIRING SYSTEM FOR ALL RADIO AND RADIO-GRAMOPHONE UNITS.

Black	....	....	....	....	True Earth Circuit.
White	....	....	....	....	Cathode when not at Earth Potential.
Red	....	....	....	....	H.T. positive. D.C. Circuit.
Yellow	....	....	....	....	Anode.
Brown	....	....	....	....	Heaters A.C. and D.C. (not battery).
Green	....	....	....	....	Grid (All grid circuits in A.C. and D.C. Mains).
Blue	....	....	....	....	Pick-up.
Purple or Violet	....	....	....	....	Aerial.
Pink	....	....	....	....	L.S. Output after condenser or transformer.
Orange	....	....	....	....	Mains.
Yellow with black tracer	....	....	....	....	Pentode screen.
Yellow with red tracer	....	....	....	....	Screen of screen grid valve.
Green with black tracer	....	....	....	....	Bottom of grid circuit not direct to earth.
Green with white tracer	....	....	....	....	Mid position of tuning coil.

**Grey.**—To be used for leads not falling within the usual colour code.

### INSTALLATION.

#### Aerial.

**Inside.**—Keep away from walls as far as possible.

**Outside.**—An outside aerial is preferred with at least two good quality insulators at either end.

PARTICULAR CARE SHOULD BE TAKEN OVER THE INSULATION OF THE POINT WHERE THE AERIAL ENTERS THE BUILDING.

The aerial should be as high as possible, particularly the end distant from the building. Keep wire well away from buildings or walls so that there is no possibility of the wire coming into contact with trees or any part of the building during high winds.

THE INSTRUMENT SHOULD BE INSTALLED AS CLOSE TO THE POINT WHERE THE AERIAL ENTERS THE BUILDING AS POSSIBLE.

**Length.**—This band pass receiver is sufficiently selective to allow for an aerial of from 60 to 80 ft. being employed. In localities where really severe interference from a nearby high power transmitter is experienced, the aerial may be shortened.

**Material.**—Use copper or phosphor-bronze wire, preferably enamelled.

DO NOT USE A RUSTABLE MATERIAL.

**Note.**—If possible instal aerial so that it is one continuous length. If joints have to be made, scrape clean, solder, and bind with insulating tape.

**Mains Aerial.**—If hum is experienced on very bad supplies the supply socket should be reversed in the wall or line fitting to get the best position. The mains aerial device renders the instrument transportable from room to room, providing an earth can be connected.

#### Earth.

**Inside.**—Good clean contact to RISING MAIN. Use a satisfactory earth clip and bind joint with insulating tape in such a way that no strain can be applied to the joint.

**Outside.**—An outside earth is preferred both from the point of view of efficiency in reception, reduction in humming and protection from lightning. Use a copper plate or earthing pin situated in moist ground.

**Length of Earth Lead.**—As short as possible.

**Material.**—Take copper wire or tape in one continuous length if possible, bind joint carefully with insulating tape.

DO NOT USE A RUSTABLE MATERIAL.

## VARIABLE MAINS SUPPLIES.

**Important Note.**—With regard to variable electricity supplies, penalties may, under certain circumstances, be imposed on electricity supply organisations for exceeding their statutory limits of voltage variation. Serious voltage variation should be immediately notified to the supply company. It is understood that details of the statutory limits allowed are available from the

ELECTRICITY COMMISSION,  
SAVOY COURT,  
LONDON,  
W.C.2.

## ADJUSTMENT OF MAINS INPUT CIRCUIT.

On the upper surface of the chassis, at the extreme right-hand side (viewed from back), are two valve-holders: on the left of these is the panel carrying the tapplings from the mains transformer primary. Adjust the two plugs in the sockets as follows:—

When the mains voltage is between	Put the red plug into the socket numbered	Put the black plug into the socket numbered
95 and 102	4	5
103 „ 110	4	6
111 „ 118	3	5
119 „ 127	3	6
128 „ 136	2	5
137 „ 145	2	6
146 „ 155	1	5
156 „ 164	1	6
190 „ 205	4	7
206 „ 222	3	7
223 „ 240	2	7
241 „ 260	1	7

## REMOVAL OF CHASSIS.

**Note.**—When ordering spare parts or corresponding, the chassis number, which will be found on an aluminium plate on the top of the chassis near the U 10 valve holder, **MUST** be quoted in addition to the serial number of the instrument.

1. Remove valves and put in safe place.
2. Remove control knobs by gently levering off (no grub screw).
3. Remove moulded volume control plate.
4. Remove 4 chassis retaining screws from bottom of cabinet (do not loose nuts and washers for 2 back screws).
5. Cut Loudspeaker leads at about the middle.
6. Slide chassis out **taking care not to bend volume control spindle.**
7. Turn tuning control (left-hand spindle) so that moving plates of ganged condenser are fully engaged with the fixed plates (to protect them).

**Note.**—The greatest possible care should be taken of the ganged condenser.

To examine unit turn on side so that unit rests on side nearest U 10 holder. **NOT** on coil cans.

## DESCRIPTION OF CHASSIS CIRCUIT.

**H.T. Supply.**—Full wave valve rectifier (U 10).

Resistance smoothing (R 15, C 15, C 16, C 20).

**H.T. Positive**—(Red) is fed from fil. lug of valve holder (V 4), via R 15, via main dropping resistances R 7 and R 8 to anodes and screens of valves. (See Figs. 1 and 2.)

**H.T. Supply Chart.**—Satisfactory operation of U 10 D.C. output may be tested at **MAIN H.T. TEST POINT** (primary lug 3 of output transformer T 2) by detaching Red wire from transformer. Voltage from wire to frame should be about 380 volts D.C. (measured on Avometer, 1,200 volt scale). **H.T.** is fed from centre point of High Voltage mains transformer secondary (lug 14).

**Frame of Chassis** is at Earth potential and H.T. negative. Smoothing condensers may therefore be tested from frame to lug indicated in H.T. chart, for breakdown or leakage.

## FILAMENT AND HEATER ARRANGEMENTS.

**U 10.**—Receives via brown wires 4.5 volts A.C. from lugs 8 and 9 of T 3 (Mains transformer). Resistance of winding (valve out) 0.3 ohm.

**MPT 4, MH 4, Pilot Lamp.**—Common 4.5 volt A.C. supply to valve heaters and fil. of Pilot lamp (all in parallel) via brown wires from lugs 10 and 12 of T 3 (mains transformer). Resistance of winding (valves and lamp out 0.1 ohm).

## HIGH TENSION SUPPLY AND ARRANGEMENTS OF U 10 RECTIFIER VALVE.

“Outers” of high voltage secondary of T 3 (lugs 13 and 15) pass to anodes of U 10 via yellow wires. Resistance of winding (13 to 15) 1250 ohms.

**H.T.(—).**—Centre tap of winding (lug 14), black wire is connected to earth socket and frame of chassis.

**H.T.(+).**—See chart.

## LOUDSPEAKER.

**Type.**—Low resistance moving coil.

**Electrical Data.**—Resistance of coil approximately 8.5 ohms. (measured with coil disconnected from chassis).

**Adjustment of.**—See Service Manual for loudspeaker Model 132.

**Suitable extra Loudspeakers.**—Low resistance moving coil.

**Number of extra Loudspeakers.**—One additional loudspeaker may be attached without noticeable reduction in volume. If slight reduction in volume is acceptable, up to two additional loudspeakers may be connected in parallel with extra loudspeaker sockets.

**Transformer.**—(Incorporated in radio unit). Resistance of output winding taken between tag 1 of T 2 and Earth 0.9 ohm.

**Type number of Loudspeaker Unit.**—4480 B stamped on top portion of loudspeaker frame.

**Note.**—This number must be quoted when corresponding or ordering spare parts.

**CONNECTION OF ELECTRICAL PICKUP.**—Employ the Marconiphone pickup (no additional volume control is necessary).

**Important.**—The leads from the pickup must be carefully metal screened. See Pickup Instruction Book.

## TUNING ARRANGEMENTS (See Figs. 1 and 3).

Signals are received from aerial via variable condenser VC 4 (centre knob on front of instrument).

**Note.**—This condenser is valuable not only as a variable selectivity control but also as a final tuning and reaction control.

### Band Pass Tuning.

**Aerial Coils.**—L 1 (M.W.) and L 2 (long wave) are tuned by VC 1 of ganged condensers. L 2 being shorted out for M.W. operation by S 1.

**Grid Coils.**—L 3 (M.W.) and L 4 (long wave) are tuned by VC 2 of ganged condensers. L 4 being shorted out for M.W. operation by S 2.

**Note.**—Biassing resistance R 2 for H.F. valve.

Resistances of L 3 and L 4 if measured across VC 2 will include R 2 (2000 w.). Measure from coil side of R 2 to cond. lug —. See table of coil continuity tests to check continuity of coils and contacts of S 1 and S 2 in long wave and med. wave positions.

H.F. signal is passed by C 2 to grid circuit of detector valve (green wire).

### Detector Grid Tuning.

Coils L 5 and L 6 tuned by VC 3 of ganged condensers.

L 6 (long wave coil) shorted out in M.W. position by S 3.

Fixed condenser C 5 prevents D.C. resistance of coils being taken across VC 3.

R 6 is grid leak (1 megohm).

C 17 grid cond. (.0003 mfd.).

**INTERFERENCE : SPECIAL NOTE.**—In cases of interference, either by oscillation or from electrical apparatus such as fans and signs, it is recommended that a copy of the latest pamphlet on oscillation be obtained from the B.B.C., and if necessary passed to the user of the receiver.

## SERVICE TESTS.

### COIL CONTINUITY TESTS.

To check continuity of :—

#### L 1 and L 2, and Switch Contact S 1) :—

Switch set for "M.W." or "Gram" .. 4.5 ohms.  
 Switch set for "L.W." .. 26.0 ohms.  
 (Measured between green lug terminal of C 1 and green lug of VC 1.)

#### L 3 and L 4, and Switch Contact S 2) :—

Switch set for "M.W." or "Gram" .. 4.5 ohms.  
 Switch set for "L.W." .. 27.0 ohms.  
 (Measured between green terminal of C 1 and grid lug of MS 4 B holder.)

To check continuity of :—

#### L 5 and L 6, and Switch Contacts S 4 and S 3 :—

Switch set for "M.W." .. 4.5 ohms.  
 Switch set for "L.W." .. 27.0 ohms.  
 Switch set for "Gram" .. Open circuit  
 (Measured between chassis frame and green shielded lug of C 5.)

L 7 and L 8 (Reaction Coils) .. 15.0 ohms.  
 (Measured between two outer yellow lugs on former in coil can.)

### COMPONENT TESTS.

#### Electrical Values ( $\pm 10\%$ ).

DO NOT MEASURE RESISTANCES :—

- A. With set "Live."
- B. Component Unisolated from the Circuit.
- C. Valves or pilot lamp in.

COMPONENT.	D.C. RESISTANCE.	COMPONENT	D.C. RESISTANCE.
CK 1 .. .. .	85 ohms.	<b>Mains Transformer (T 3).</b>	
CK 2 .. .. .	85 ohms.	Primary Sockets :—	
R 14 (frame and white lug j 2nd from black lug or switch contact "e") ..	1,000 ohms.	Continuity { 7 to 5 .. .. .	34.0 ohms.
R 13 (frame and white lug. Next to n & e black wire) .. .. .	280 ohms.	{ 7 to 4 .. .. .	50.0 ohms.
R 12 (White switch lug, and 3rd white m & k lug from black lug on bobbin) ..	600 ohms.	{ 7 to 3 .. .. .	52.0 ohms.
<b>Intervalve Transformer (T 1).</b>		{ 7 to 2 .. .. .	54.0 ohms.
Primary (Lugs 1 and 2) .. .. .	1,000 ohms.	{ 7 to 1 .. .. .	57.0 ohms.
Secondary (Lugs 3 and 4) .. .. .	10,000 ohms.	Secondary lugs (valves and lamp out).	
<b>Output Transformer (T 2).</b>		Valve Heater and Pilot Lamp Winding :—	
Primary .. .. .	1,000 ohms.	(Lug 10 to 12) .. .. .	$\frac{1}{2}$ ohm. (Valves and lamp out)
Secondary (dis Loudspeaker) (detach black wire) .. .. .	0.5 ohm.	Rectifier Valve Filament Winding :—(Lug 8 to 9) .. .. .	$\frac{1}{2}$ ohm. (Valve out)
<b>Mains Transformer (T 3).</b>		High Voltage Winding :—(Centre tapped at lug 14 to E).	
Primary Sockets :—		Lug 13 to 15 (yellow) .. .. .	1,250 ohms. approx.
7 to 6 .. .. .	32.0 ohms.	13 to E .. .. .	725 ohms. approx.
6 to 5 .. .. .	1.5 ohms.	15 to E .. .. .	525 ohms. approx.
Sections { 5 to 4 .. .. .	16.0 ohms.		
{ 4 to 3 .. .. .	2.5 ohms.		
{ 3 to 2 .. .. .	2.5 ohms.		
{ 2 to 1 .. .. .	2.5 ohms.		

NOTE.—The D.C. Resistance difference between the two halves of the Secondary winding of T 3 (200 ohms.) is due to increased No. of turns on one half of winding to compensate for distance from core.

**SPECIAL NOTE.**—Either or both condensers C 8 and C 13 may be found disconnected, these may be used as spares and can be substituted in case of breakdowns. Great care should be exercised in wiring up these spares. In the case of C 8 one side of condenser is connected to E by wiring in interior of condenser block. Condensers C 8 and C 13 can be used in place of condensers C 6 and C 7.

## VALVE TABLE.

(Volume Control Full On.)

Readings Approximate. Valves in and alight unless stated otherwise.

Valves	Location from Rear	Appearance	Temp.	Function	Anode Current	Avo Scale	Anode Volts to Frame(D.C.)	Avo Scale	Screen Current D.C. m/A.	Avo Scale	Screen to Frame Volts(D.C.)	Avo Scale	Grid Bias Volts	Avo Scale	Fil. or Heater Volts
MS 4 B	Left	No glow	Just warm	Screened grid H.F.	1.2 m/A (between tag and top terminal of valve)	.012	150.0 (tag to frame of chassis)	1200V	.5 m/A. (anode socket of holder to anode pin of valve) (adaptor)	.012	40.0	1200V	-1 Grid to Cathode	120	4.5 A.C.
MH 4	Centre	No glow	Warm	Detector	2.0 m/A. signal tuned in	.012	70.0	1200V	—	—	—	—	.2 Grid to Cathode	12V	4.5 A.C.
MPT 4	Top Right	Slight glow	Hot	Pentode Output valve	25.0 m/A.	.12	280.0	1200V	3.5 m/A.	.012	150.0	1200V	1.3	12V	4.5 A.C.
U 10	Bottom Right	No glow	Warm	Rectifier	16.0 m/A. each anode	.12	A.C.								4.5 A.C.

**NOTES.**—Values especially of grid bias are not necessarily "Actual," but are as indicated on Avo-Scale given.







**SPARE PART LIST—continued.**

Description.	Part No.	Description.	Part No.
<b>ELECTRICAL COMPONENTS</b>		<b>LEADS, PLUGS, PINS AND SOCKETS, ETC—continued.</b>	
<b>Ref. No. OF UNIT—continued.</b>			
T 1 Interval Transformer .. .. .	4512-A	Socket for coloured plugs .. .. .	8208-A
T 2 Output Transformer .. .. .	4518-A	Coloured insulating bush (thick) .. .. .	3343
T 3 Mains Transformer .. .. .	4516-A	Coloured insulating bush (thin) .. .. .	1483
S 1 and	} Change Over Switch Unit complete .. .. .	Black insulating washer .. .. .	3341
S 2 and		Transformer adjustment plugs (red) .. .. .	3475-A
S 3 and		Plugs short (state colour) .. .. .	8207-A
S 4 and		Special long coloured plug .. .. .	1544-A
S 5		Soft rubber bush for wire holes, large .. .. .	4714
S 6 Mains Switch .. .. .	1477-A	Soft rubber bush for wire holes, small .. .. .	4713
V 1 MS4B. Met. Screen Grid Valve .. .. .		Insulating bush for VC 4 .. .. .	4770
V 2 MH4 Met. Detector Valve .. .. .		Coloured insulated wire .. .. .	S. 562
V 3 MPT4 Pentode Valve .. .. .		Coloured insulated wire for filament leads .. .. .	S. 563
V 4 U10 Rectifier Valve .. .. .			
Dial illuminating lamp .. .. .	1575-A		
Instruction Card .. .. .	846-A		
<b>LEADS, PLUGS, PINS AND SOCKETS, ETC.</b>		<b>NUTS, BOLTS, SCREWS AND WASHERS.</b>	
Mains lead with plug .. .. .	3999-B	Screws securing T 1, T 2, switch unit plate and volume control bracket 5-44 x $\frac{1}{4}$ R.H.L .. .. .	1552
Mains plug bracket .. .. .	4878	Screws securing T 3 .. .. .	1568
Mains plug pin .. .. .	4877	Strap for T 3 .. .. .	4719
Mains plug pin nut .. .. .	4864	Shakeproof washer for screws 1552, 1568 .. .. .	3166
Washer .. .. .	4875	Screws securing large condenser block .. .. .	2412
Insulating Block for Mains Plug Pins .. .. .	4863	Shakeproof washer for condenser block or mains switch .. .. .	3165
Insulating bush for Mains plug pin (between blocks) .. .. .	4924	Screw for mains switch .. .. .	2706
		Screw for indicator frame .. .. .	5250

**Note.**—When ordering spare parts, always quote :—

1. Type and serial number of instrument.
2. Description of part.
3. Spare part number.

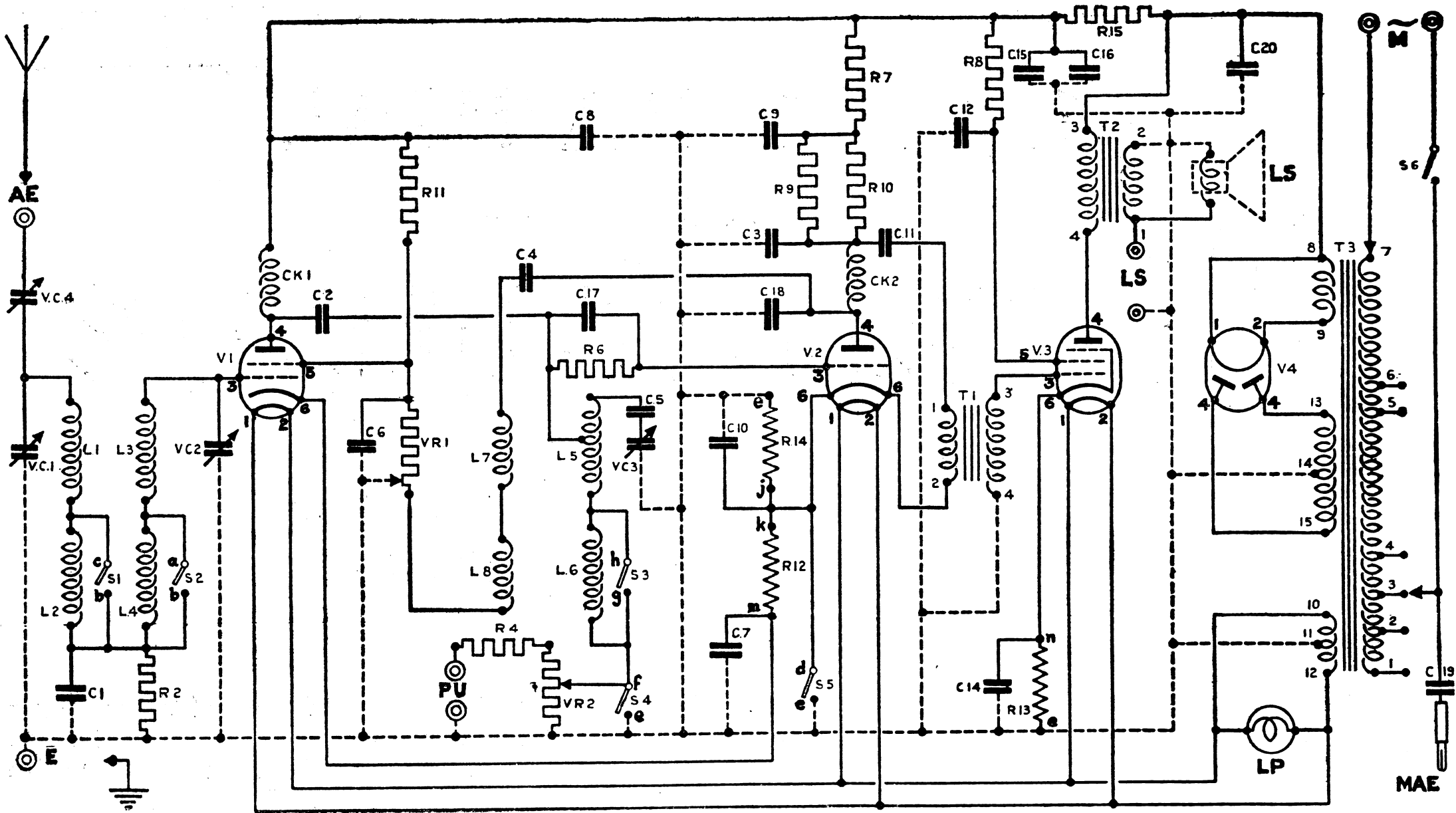
To facilitate despatch, order spare parts from :—

THE SERVICE DEPARTMENT,  
THE MARCONIPHONE COMPANY, LTD.,

DAGENHAM, ESSEX.

Telephone : Romford 870.





**Please note the following modifications.  
MODEL 42 for A.C. MAINS.**

- Page 4.**                    Adjustment of Mains input Current.  
Instruments are now supplied with two red plugs in place of one red and one black plug for adjusting the tapplings on the input transformer panel. It is immaterial how these plugs are inserted in the specified sockets.
- Page 9.**                    Electrical components of unit. (*Spare part list*). Please note that C 15 and C 16 should read 4 mfd. and not .4 mfd.  
Please note that C.20 should read 8 mfd. and not .8 mfd.  
Also C 9, C 10, C 12 and C 14 should read 1 mfd. each and not .1 mfd.

***Important. Change in Frequency Range.***

(Frequency Range for Model 42, now 50 to 100 cycles)

- Details of Change**    A potentiometer has been connected across the Radio Valve heater supply secondary of mains transformer, the variable centre of which is connected to Earth (chassis) by the fixing screw.
- Situation of Potentiometer**    On edge of mains transformer adjustment panel.
- Method of Adjustment**    Slacken screws and adjust contact for minimum hum.
- Notes**                    The Part Number of this potentiometer is 10201C. This number *must* be used when ordering for fitting to instruments not already fitted

December, 1931.

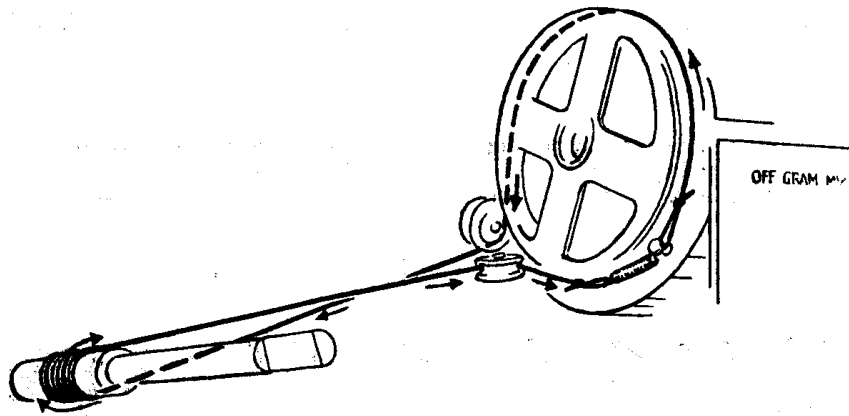
## SERVICE SHEET

FOR

## Marconiphone

## SUPPLEMENT TO SERVICE MANUAL FOR MODEL 42 FOR A.C. MAINS.

Symptom.	Suggested Remedy.
<p>Pilot Lamp fails to light or flickers.</p> <p>To replace lamp.</p>	<p>The presence of a defective Pilot Lamp may be indicated by no illumination of the dial or crackle due to a loose lamp. In addition, the lamp may have fallen completely out of the holder.</p> <p>The Part Number of this Lamp for the 42 A.C. is 1575-A, and it is of the 6-volt screw-in type consuming .5 amps. For the 42 D.C. 4966-A (6 volts 0.1 amp.) it may not be necessary to remove the chassis, although in cases of crackle it is advisable to do so to examine the contacts and wiring to the Pilot Lamp Holder. To re-insert a new lamp without removing the chassis, proceed as follows:—Remove back and by inserting one hand round right-hand side of chassis, and other round towards the left, under the Loudspeaker Unit (where the Lamp Bracket is not permanently welded on to the Condenser Chassis) it may be slid off the Clip and removed far enough to examine and if necessary to re-insert the new lamp. In certain instruments this bracket may be found welded, in which case it will be necessary to remove the chassis and rotate the tuning scale until the lamp is available.</p>
<p>Condenser Vanes will not rotate beyond a certain point on the scale.</p>	<p>This is probably due to the fact:—(1) That the Moving Condenser vanes may have fouled the switch indicator plate and that the knob in an effort to turn the scale has been turned so that the string drive has slipped. (2) If difficulty is experienced in securing a minimum reading on the Condenser Scale, one of the small earthing clips inside the variable condenser chassis may be touching the moving plate. Proceed as follows:—</p> <ol style="list-style-type: none"> <li>(1) Remove chassis and slack-off lower grub screw of tuning knob driving spindle.</li> <li>(2) Carefully and without damaging the moving plates in the condenser, open them to their fullest extent.</li> <li>(3) Turn the tuning knob in an anti-clockwise direction as far as it will go.</li> <li>(4) Re-tighten the lower grub screw.</li> </ol> <p><b>Note.</b>—It is not wise to force the tuning knob in the reverse direction, as this may damage the rotating stops on the tuning knob spindle. Failure to rotate the tuning scale completely or stiffness at any one point on the scale may be due to the fact that one of three stops is either over-riding the next one or jamming on it; if so, bend in slightly.</p>
<p>Complete failure of tuning dial to operate on moving tuning knob.</p>	<p>Probably due to a broken driving cord. To replace cord proceed as follows:—</p> <ol style="list-style-type: none"> <li>(1) Employ a superior flax fishing line having a breaking strain of approximately 40 lbs.</li> <li>(2) Supplies of cord may be obtained from:—</li> </ol> <p style="text-align: center;">THE SERVICE DEPARTMENT, THE MARCONIPHONE COMPANY LIMITED, DAGENHAM, ESSEX.</p> <p>Telephone: Seven Kings 2801. Quote Specification S.515.</p> <ol style="list-style-type: none"> <li>(3) Approximate length for one instrument—31 inches.</li> <li>(4) Double back 1 in. of cord and tie a knot so that a loop end is formed.</li> <li>(5) Fully disengage condenser vanes and turn tuning control spindle as far as possible in a clockwise direction.</li> <li>(6) Put the loop end of cord over small stud on condenser drum and wind cord in the direction indicated by arrows.</li> </ol>



Symptom.	Suggested Remedy.
Complete failure of tuning dial to operate on moving tuning knob— <i>continued.</i>	<p>A STIFF PIECE OF COPPER WIRE WITH A HOOKED END WILL BE FOUND USEFUL IN MANIPULATING THE CORD.</p> <p>There should be six complete turns on the tuning control spindle which should not overlap one another.</p> <p><b>IMPORTANT.</b>—The tuning control spindle must be kept to its anti-clockwise stop position while cord is being assembled.</p> <p>(7) Pull the cord tight, double back 1 in. of same and tie a knot so that a loop is formed on end. The loop end should be made so that the coils of tension spring are opened when the spring is assembled on to stud.</p>
Complete failure of radio reproduction, or noisy movement of selectivity control, on centre of panel.	<p>This may be due to one of two things—</p> <p>(1) The insulating washers, insulating the spindle of this condenser from the bracket on which it is mounted, being cracked or displaced.</p> <p>(2) The Condenser having been overturned and the contacts touching the casing of the Electrolytic Condenser, C 20, thus shorting the aerial terminal to earth.</p>
	<p>Remove chassis and carefully examine mounting of Condenser, seeing that insulating bushes are intact. Remove lead from Condenser, having finally mounted it, and make a test from bracket of the chassis to the moving and fixed vanes, before replacing lead. There should be no continuity. Be careful to screw up the single nut securing the Condenser on the bracket as firmly as possible without damaging the insulating washers, finally testing washers again to see that they are not broken or causing a short circuit between the spindle and the bracket. <b>Note.</b>—In the event of fresh washers not being immediately available, the Condenser may be temporarily insulated by winding some insulating tape round the shaft and carefully screwing up the securing nut and washers. This must, however, be considered as only a temporary expedient. The Part Number of the Insulating Washers required for this Condenser is 4770.</p>
Crackle and apparently faulty valves.	<p><b>Important Note.</b>—Before re-assembling the chassis the Switch Indicator Plate should be examined to see whether there is any possibility of it fouling the moving vane of the variable condenser; if so, it should be slightly bent forward, but not so far that it will foul on the interior of the cabinet.</p>
Buzz on radio and gramophone.	<p>Carefully examine valve legs to see that wires passing to valve legs from interior of valve are correctly soldered on to legs. Also examine valve holder clips and, if necessary, slightly pinch together.</p> <p>See that this is not due to over use of volume control. Carefully examine Loudspeaker air gap between magnet poles and for a coil out of centre. Insert small lamp on underside of poles, to facilitate seeing specks of dust or filings between the magnet poles and clean carefully with plasticine. Also examine coil former, and see that it is not distorted.</p>
Buzz on Gramophone.	<p>Examine Pick-up for filings. See Pick-up Manual. If necessary, check whether buzz is in Loud-speaker or Pick-up by temporarily substituting another Pick-up.</p>

