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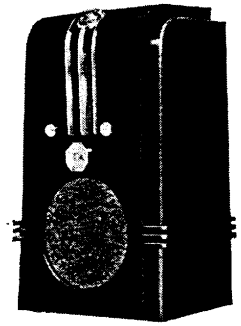
SERVICE MANUAL

Price 6d.

For the Information of Ekco Registered
Dealers only.

NOT TO BE COPIED.

EKCO



MODEL AC97
HIGH FIDELITY CONSOLE SET

GENERAL DESCRIPTION.

Model AC97 is a nine stage five valve superheterodyne for 200/250 volt 40-80 cycle A.C. mains.

Valves: See Fig. 2. **I.F.:** 126.5 kc/s. **Consumption:** 65 watts. **Scale lamps:** Osram 6.2 volt .3 amp. screw cap type.

This receiver incorporates a special high fidelity circuit of which the features are:—

Broadened I.F. acceptance band. Obtained by introducing damping (R5, R6) in primary and secondary circuits of 1st I.F. transformer.

Tone compensated volume control. A specially designed choke (L15) in conjunction with capacity network (C25-C27) and variable resistance (VR2) maintains tone balance at low volume levels.

Tuned rejector at 9 kc/s. Special triple tapped air cored choke (L16-18) in conjunction with condensers (C39, C40) introduces a sharp cut-off above 8 kc/s.

Note. In early models a low pass filter was used in place of L16-18, together with a tapped air cored choke and pre-set condenser combination across the input to V4.

"MYSTIC EYE" TUNING INDICATOR.

A negative voltage proportional to signal strength causes the "eye" to open. The metal sleeve around the Tuning Indicator is to shield it from scale lamp illumination. Ensure that the sleeve is pushed to the top of the tube and that the lengthwise opening faces away from scale lamps.

PRESS BUTTON NOISE SUPPRESSOR.

The Press Button Noise Suppressor operates by pressure on the main tuning control closing the leaf type switch (S11, S12), which shortcircuits the input to V4 and applies a paralysing negative bias (about 35 volts) to the grid of V3. The momentary pressure silences the set for about two seconds, thus giving complete Noise Suppression while tuning is carried out with the "Mystic Eye."

IMAGE REJECTOR.

When the instrument is operated within about fifty miles (distance depends on local reception conditions) of:

1. London Regional 2. West Regional 3. Radio Normandie
a second channel whistle may be heard on Brussels (483.9 metres), Budapest (549.5 metres) or Strasbourg (349.2 metres) respectively. A *non-metallic* screwdriver, such as a piece of appropriately shaped wood, must be used when setting the Image Rejector (C5 Fig. 2) for minimum whistle.

Note. C5 is correctly set at the factory, and should not be adjusted unless a whistle seriously interferes with reception from one of the stations indicated.

RE-CALIBRATING.

Turn gang condenser to maximum. Pointer should normally coincide with top of scale aperture when at limit of its travel.

If it does not, remove chassis from cabinet and check that drive disc is against its stop. (Disc may be adjusted on gang condenser spindle after loosening grub screws in boss). If necessary, the pointer should be adjusted on the cord to cover centre of reflector plate fixing screw when the gang condenser is at minimum setting.

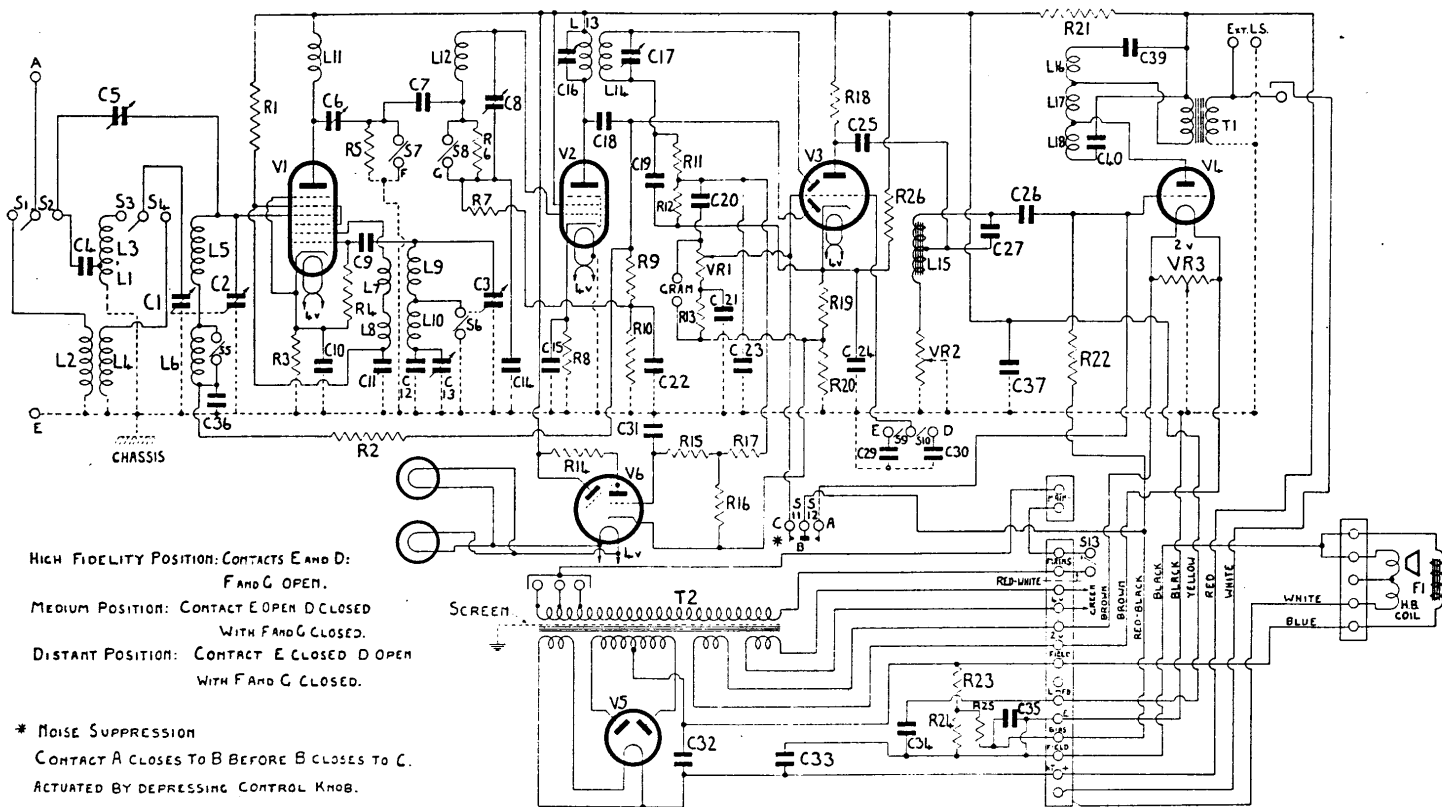


Fig. 1. Circuit diagram of Ekco AC97.

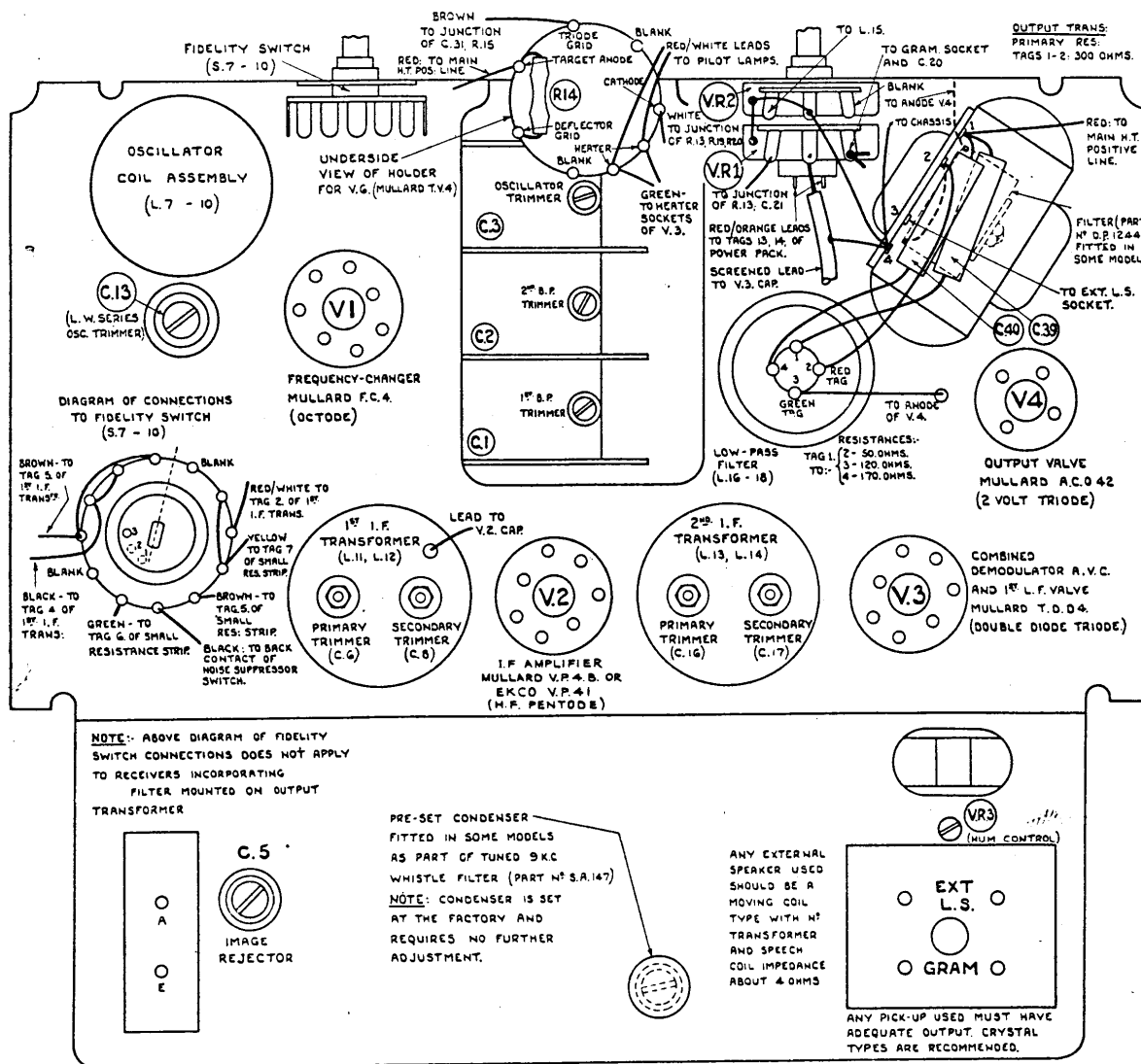


Fig. 2. Top of chassis.

CIRCUIT KEY AND PRICE LIST.

| Ref. No. | Description. | Part No. | Price. | Ref. No. | Description. | Part No. | Price. |
|-------------------------------|--------------------------------|---|--------|------------------------------|--|----------------------|--------|
| L1 | M.W. aerial primary | | | C31 | .1 mfd. condenser | A3844 | 9d. |
| L2 | L.W. aerial primary | | | C32 | 8 " wet electrolytic condenser | B6217 | 5/6 |
| L3 | 1st B.P. M.W. coil | B.P. filter (including SA143 wave switch) | 9/6 | C34 | 4 " } dry electrolytic | B6218 | 5/6 |
| L4 | 1st B.P. L.W. coil | | | C33 | 8 " } condenser block | | |
| L5 | 2nd B.P. M.W. coil | | | C35 | 4 " dry electrolytic condenser | A4280 | 2/3 |
| L6 | 2nd B.P. L.W. coil | | | C36 | .1 " condenser | A3844 | 9d. |
| L7 | M.W. anode coil | Osc. coil ... SA160 | 5/6 | C37 | .1 " " " " | A3844 | 9d. |
| L8 | L.W. anode coil | | | C39 | .01 " " " " | B6869 | 9d. |
| L9 | M.W. grid coil | | | C40 | .01 " " " " | B6869 | 9d. |
| L10 | L.W. grid coil | | | R1 | 20,000 ohm resistance | A6449 | 9d. |
| L11 | Primary | 1st I.F. trans. ... SA145 | 5/6 | R2 | 1 megohm " " | A6123 | 9d. |
| L12 | Secondary | | | R3 | 300 ohm " " | A6129 | 9d. |
| L13 | Primary | 2nd I.F. trans. ... SA144 | 5/6 | R4 | 100,000 " " " | A6122 | 9d. |
| L14 | Secondary | | | R5 | 3,000 " " " | A6122 | 9d. |
| L15 | Bass boost choke | DP979 | 5/6 | R6 | 6,000 " " " | A6122 | 9d. |
| L16-18 | Low pass filter | DP1250 | 6/6 | R7 | 1 megohm " " " | A6123 | 9d. |
| C1 | 1st B.P. section | Gang condenser (including D6162 S11-12) | 19/6 | R8 | 300 ohm " " " | A6129 | 9d. |
| C2 | 2nd B.P. section | | | R9 | $\frac{1}{4}$ megohm " " " | A6129 | 9d. |
| C3 | Oscillator section | | | R10 | $\frac{1}{2}$ " " " " | A6122 | 9d. |
| C4 | .0008 mfd. condenser | A5274 | 9d. | R11 | 50,000 ohm " " " | A6122 | 9d. |
| C5 | Image rejector condenser | DP977 | 1/3 | R12 | $\frac{1}{2}$ megohm " " " | A6122 | 9d. |
| C6 | 1st. I.F. primary trimmer | | | R13 | 2 " " " " | A6121 | 9d. |
| C7 | .0003 mfd. condenser | A5747 | 9d. | R14 | 2 " " " " | A6121 | 9d. |
| C8 | 1st I.F. secondary trimmer | | | R15 | $\frac{1}{2}$ " " " " | A6123 | 9d. |
| C9 | .0001 mfd. condenser | A5747 | | R16 | $\frac{1}{2}$ " " " " | A6123 | 9d. |
| C10 | .1 " " " | A3844 | 9d. | R17 | 1 " " " " | A6123 | 9d. |
| C11 | .1 " " " | A3844 | 9d. | R18 | 50,000 ohm " " " | A6449 | 9d. |
| C12 | .0008 " " " | A5274 | 9d. | R19 | 600 " " " " | A6126 | 9d. |
| C13 | L.W. series osc. trimmer | DP927 | 1/3 | R20 | 2,000 " " " " | A6122 | 9d. |
| C14 | .1 mfd. condenser | A3846 | 9d. | R21 | 4,000 " " " " | A6449 | 9d. |
| C15 | .1 " " " | A3844 | 9d. | R22 | 100,000 " " " " | A6121 | 9d. |
| C16 | 2nd I.F. primary trimmer | | | R23 | 100,000 " " " " | A6121 | 9d. |
| C17 | 2nd I.F. secondary trimmer | | | R24 | 30,000 " " " " | A6121 | 9d. |
| C18 | 15 cm. condenser | A5422 | 1/- | R25 | 100,000 " " " " | A6123 | 9d. |
| C19 | .00012 mfd. condenser | A3841 | 9d. | R26 | 100,000 " " " " | A6450 | 9d. |
| C20 | .1 " " " | A3844 | 9d. | VR1 | $\frac{1}{2}$ megohm variable resistance | volume control B6177 | 8/6 |
| C21 | .5 " " " | A6221 | 1/- | VR2 | 50,000 ohm " " " | | |
| C22 | .1 " " " | A3841 | 9d. | VR3 | 30 ohm "Humdinger" " | | |
| C23 | .00015 " " " | A3841 | 9d. | T1 | Output transformer | SA169 | 7/6 |
| C24 | 25 mfd. electrolytic condenser | A3265 | 2/3 | T2 | Mains transformer | SA164 | 17/6 |
| C25 | .25 mfd. condenser | A5220 | 9d. | S1-6 | Wave switch (see B.P. filter) | | |
| C26 | .25 " " " | A5220 | 9d. | S7-10 | Fidelity switch | B6187 | 2/6 |
| C27 | .2 " " " | A6220 | 9d. | S11- | | | |
| C29 | .0015 mfd. condenser | A5274 | 9d. | 12 | Noise suppressor switch | | |
| C30 | .0005 " " " | A5274 | 9d. | S13 | On/off switch (ganged to VR1/VR2) | | |
| Cabinet (walnut) | | DP1011 | 30/- | Wave switch knob (walnut) | | C6184 | 9d. |
| " (black) | | DP1011/1 | 37/6 | " " " (ivory) | | C6184/1 | 1/- |
| Escutcheon (walnut) | | D6719 | 2/6 | Back cover " " " | | E6215 | 2/6 |
| " (ivory) | | D6179/1 | 3/6 | Mains lead assembly | | DP196 | 2/6 |
| Tuning knob (walnut) | | DP1015 | 1/6 | Scale | | C6235 | 2/6 |
| " (ivory) | | DP1015/1 | 2/6 | Reflector plate | | C6228 | 1/- |
| Volume control knob (walnut) | | C6184 | 9d. | Pilot lamp | | P2445 | 9d. |
| " (ivory) | | C6184/1 | 1/- | Speaker | | D6581 | 35/- |
| Fidelity switch knob (walnut) | | C6183 | 9d. | Pointer | | A6097 | 6d. |
| " " (ivory) | | C6183/1 | 1/- | Cable and tag strip assembly | | DP1080 | 2/6 |

All prices quoted in this manual are retail. They are subject to alteration without notice.

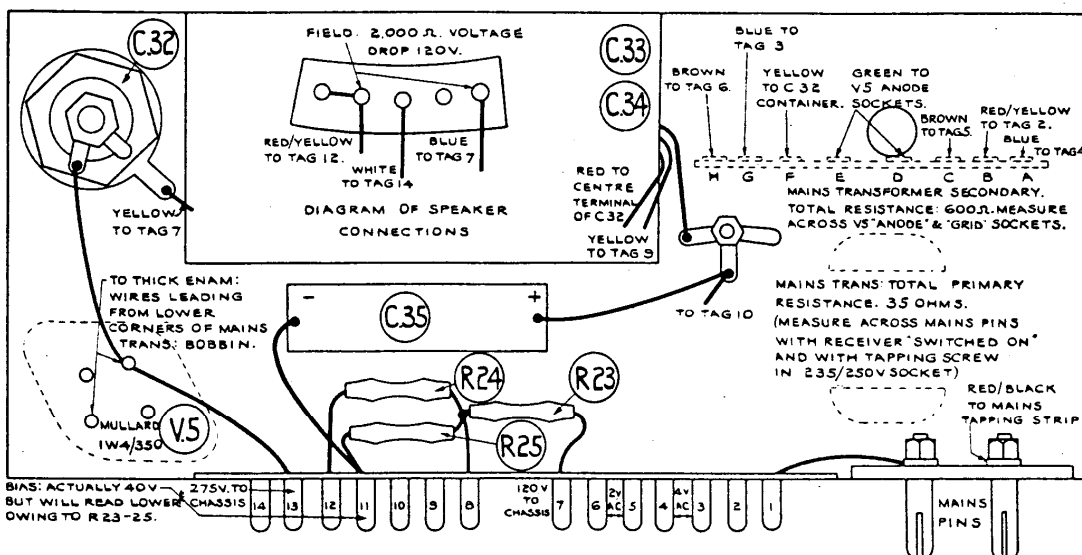


Fig. 3. Underside of power pack.

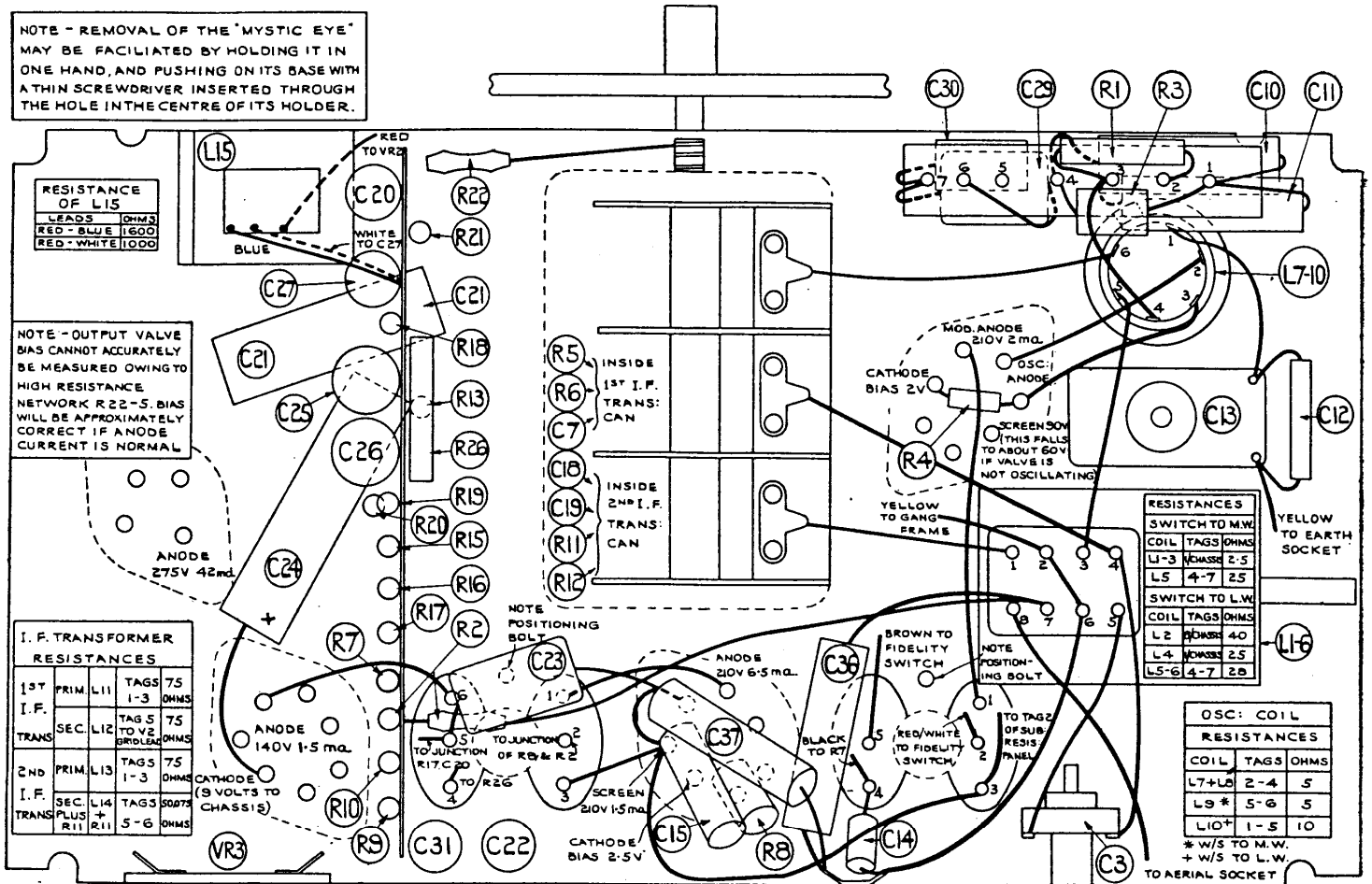


Fig. 4. Underside of chassis.

RE-ALIGNING AND RE-GANGING.

An accurately calibrated service oscillator, 0-5 volt output meter and 6 B.A. insulated trimming tool are required.

Note. Always use the minimum oscillator input consistent with reliable meter reading. Excessive input will actuate the A.V.C. and make it difficult to "peak" the various trimmers accurately.

Re-aligning.

Connect output meter across EXT. L.S. sockets. Set service oscillator to 126.5 kc/s. Connect one lead to "E" socket, and the other through a .02 mfd. condenser to the cap. of V1 (leave grid lead connected). Turn volume control to maximum.

Adjust C6, C16, C8 and C17 (Fig. 2) in that order to obtain maximum meter reading. After adjusting C17, re-check adjustment of all four.

Re-ganging.

Check calibration (see page 1). Connect service oscillator to "A" and "E" sockets. Tune receiver to 200 metres (1,500 kc/s.).

Fully unscrew oscillator trimmer (Fig. 2); then screw it in slowly until maximum meter reading is obtained.

Set service oscillator to 250 metres (1,200 kc/s.) and tune receiver for maximum meter reading. Adjust second and first bandpass trimmers (Fig. 2) in that order for maximum meter reading.

Set both oscillator and receiver to 1,700 metres (170.6 kc/s.). Adjust L.W. series trimmer (C13 Fig. 2) for maximum meter reading, meanwhile "rocking" gang condenser.

Important Note. The speaker has an exceptionally wide frequency response, and is capable of reproducing harmonics caused by overloading of V4 which would not be heard on an ordinary speaker.

In early models, with Fidelity Control at position 1 and volume in excess of domestic requirements, this becomes apparent as a slight "rattle," which should not be confused with the mechanical rattle caused by an uncentred speech coil.

"SERVICE," E. K. COLE LTD., EKCO WORKS, SOUTHEND-ON-SEA.

Scottish Service Depot: 27, Cadogan Street, Glasgow, C.2.

Manchester Service Depot: Bombay House, 59, Whitworth Street.
(Goods address: 7, Bombay Street.)

Bristol Service Depot: 14, Redcross Street.

Telephone: Southend 49491.

Telephone: Central 5357/8.

Telephone: Central 6711/2.

Telephone: Bristol 22269.