VI -X6IM

S.95v. OG.

2.9ma./ OA.

# HALE PWR 2/3

Five valve, three-band AC superhet for overseas use; fully tropicalised. Walnut cabinet; provision for external speaker and pickup. Made by Hale Electric Co., Ltd., Radio Works, Talbot Road, West Ealing, London, W13.

TIRCUIT: A triode-hexode frequency changer and local oscillator VI feeds a variable-mu HF tetrode IF amplifier V2. The IF signal is demodulated and amplified by a double-diode triode V3, which supplies AVC voltages to V1 and V2. Output stage, a power amplifying tetrode V4, drives an 8-in. energised speaker. V5 is a directly-heated rectifier.

Aerial Circuit-Three separate aerial transformer coils are employed. The MW coil is a variable iron-dust core type, but SW1 and SW2 are air core type. VCl is acrial tuning capacitor. Cathode bias for V1 is derived from R2, decoupled by C2. AVC is applied to grid of V1 on MW only, C1 being isolating and decoupling capacitor.

V2-KTW61

2.5mg

S. 95v

T2 14 L

8

S1 and S2 switch the aerial and grid connections of the coils.

Oscillator.—Three separate oscillator coils are connected in a parallel-fed tuned anode circuit; VC2 is oscillator tuning.

The MW coil has a variable iron-dust core; SW1 and SW2 have air cores. They are switched by S3 and S4. On MW and SW1 grid feedback voltages are developed across padders C7 and C6 and also inductively by means of L12 and L10. On SW2 inductive coupling only is provided by L8, the padder C5 being in series with the tuned anode coil L7. Leak-condenser bias is developed by R3 C3.

R4, a limiter resistor, is shown in the circuit diagram but may not be fitted on all models.

IF Amplifier operates at 465KC. IFT1 and 2 are capacity tuned iron-dust core transformers. AVC is fed in series with secondary L14 of IFT1, to grid of IF amplifier V2. Cathode bias is derived from R6 and decoupled by C9. The screen voltages for V1 and V2 are supplied from R1 and decoupled by capacitor C8.

Signal Rectification and AVC.—The two diodes of V3 are strapped together and fed from L16, the secondary of IFT2. R9, the volume control, is the diode load. R7, C10 and C11 comprise an

V5--U50

DIAL

LAMPS

IF filter network.

V4-KT6!

8ma.

S.245v.

AVC voltage is taken from the top of R9, R8 with C1 provides decoupling for the AVC line to grid of V1 and V2. PU sockets are fitted across R9.

LF Amplifier.—Triode portion of V3 is used as an LF amplifier. C12 feeds the rectified signal to the grid. R10 is its grid resistor.

Bias is developed by R10 C12, the cathode being

connected direct to chassis. R11 is the anode load of V3; C14 is anode HF filter capacitor.

Output Stage is a high-mu tetrode V4. Signals are applied by C13. R12 is the grid resistor and R13 a grid stopper. Cathode bias is derived from R16 and decoupled by C16. Screen voltage is taken from HT line via R14, a stopper resistor.

OPI, the LS output transformer, is in the anode circuit. R15 and C15 are a variable tone control. Secondary of OP1 drives an 8-in. energised speaker. L19, a hum bucking coil, is in series with L20 the LS speech coil. Extension LS sockets are fitted across the secondary of OP1.

HT Supply is from a directly-heated full-wave rectifier V5. Anode voltages are supplied from L23, the HT secondary of MT1, the mains input transformer. L22 supplies filament voltage for V5. L21, the field coil of the LS, together with C17 and C18, provide the HT smoothing.

Heaters of V1-V4 and Dial Light are supplied from L24.

Mains Input Voltages .- Primary L25 of mains input transformer is tapped for voltages from 200-250V AC 50cps. C19, C20 from a modulation hum filter. S5, ganged to the tone control, is the mains on/off switch.

Removal of Chassis.—Unfasten the four chassis bolts underneath the cabinet. Chassis complete with speaker may now be withdrawn from cabinet.



.001 Tubular 1,000V ....001 Tubular 1,000V 21 .. .1 Tubular 500V

INDUCTORS Ohms

Very low

Very low CAPACITORS 1.25 2.25 Mfds Very low .1 Tubular 500V 50 .1 Tubular 500V Very low 50pF Mica 14.5 .002 Mica 2,400pF Silver Mica 5,000pF Silver Mica 600pF Silver Mica .5 .1 Tubular 500V .. 4.5 Tubular 500V 100pF Mica 100pF Mica 290 Very low 17 .002 Mica Very low .01 Tubular 1,000V 20 1,000

500K Potentiometer

₫W

₫W

ψW

ΞW

Potentiometer

with Switch

10M

270K

470K

.. 47K

15 .. 50K

16 .. 100

120

300pF Silver Mica 21 22 .02 Tubular 750V Very low 25 Electrolytic 25V 23 .. 500 16 Electrolytic 450V 24 .. Very low

A. 245v. A. 235v 65ma Sup. 250 v. 1-8 ma 4-lma. ·85ma 235v. 43ma:/ C.Ov. C.4.25v. 3ISV DC 6.5 v TOP CAP GRID All readings taken on Model 7 Avometer. TOP CAP GRID  $\mathcal{M}$ 

V3-DH63

D. diodes D. strapped.

25 .. 23 Total primary TRIMMING NOTES OVERLEAF. 18 .. 8 Electrolytic 450V ≷RII L21 1793 Cu6 LI7 CI3 R5 i i i #C15 S2 54 \$3 мw SWI ≸RI2 RIO SW L23 S **≡**C2O ₩ R 15 C 21 CI2 0000 **≡**C8 T5 , 300 T6 ≝v¢i ●230 V L9r L8 .R6 HEATERS C2 🛎 C16 CIO -250 V C 6 🚍

ΜW

SW 2

LH

SWI

1L2

#### HALE PWR 2/3-Contd.

OSC.GRID via C3

chassis inverted

chassis-gang cond! fully

DRUM

g rne

S/M. DRUM

ON GANG

CONDE

SPRING

CORD DRIVE

Viewed from rear of

Viewed front of

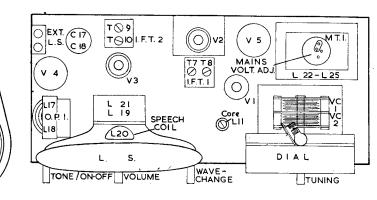
opened.

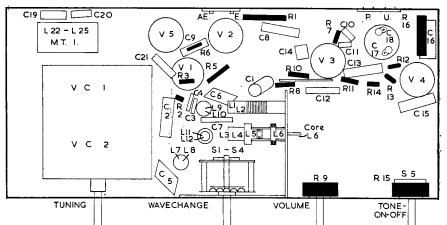
### WAVECHANGE AERIAL AND OSCILLATOR TRIMMERS REAR WAVECHANGE KNOB FRONT

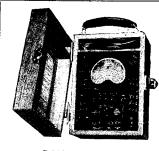
#### TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune receiver to	Trim in order stated for Max.
(1) 465 Ke to top cap V1 via .01 capa- citor		T10, T9, T8, T7
(2) 600 Kc to AE socket via dummy aerial	500 metres	Core of L11, L6
(3) 1.5 Mc as above	200 metres	16, 13. Repeat (2) & (3) until at both points Max. output is obtained without further adjustment being necessary.
(4) 7.5 Mc as above	40 metres (SW2)	T4, T1
(5) 15 Mc as above	20 metres (SW1)	T5, T2

After (4) & (5) have been carried out sensitivity and leaibration should be checked over each waveband







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"Hey quick!

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