GEC 4045

Four-valve, plus rectifier, twowaveband superhet with manual and mechanical push-button tuning. Suitable for 200-250-volt AC or DC supplies. Made by General Electric Co., Ltd., Kingsway, London, W.C.2.

Circuit.—As the set is a universal model the aerial and earth are isolated by Cl and C22 for safety. The signal is injected via L7 and C2 in parallel to single-tuned circuits in the grid of V1, the frequency-changer.

The oscillator section of V1 is tuned grid and there are separate trimmers and padders for each band. Feed-back is increased by returning the decoupler C6 to the top of the padder T7.

Trimmer-tuned IF transformers with iron-dust cores link up V2, the IF triode. R9 and C11 form an IF filter, R10 being the load which passes LF via C12 to the volume control R16.

V3 triode grid is biased by ret. Ing R16 to the junction of R13 and R14 which form a potentiometer across R15, the appropriate button to its fullest extent common cathode bias resistor of V3 and and relock the shaft screw. Test for

The AVC diode of V3 is fed via C10 from the anode of V2 and the control necessary. voltages are applied from R11 to the grids of V1 and V2 through decoupling GANGING components. Standing bias for V1 and V2 is derived from R12.

V3 is resistance-capacity coupled to V4, an output tetrode which has a variable shunt tone circuit in R20 and

made for connecting an extra LS of similar resistance (2 ohms) in parallel.

HT is obtained from the usual halfwave rectifier, V5, via a smoothing choke.

Valve heaters and dial lamp are in series with a barretter across the mains input so that no mains voltage adjustment is necessary. RF "noise" is supply by chokes in each line.

PB ADJUSTMENT

First release the locking screw by amplifier, and V3, the double diode inserting a screw-driver through the hole the end of the shaft extension. This frees the control action on each button.

Tune the desired station accurately by the manual tuning knob. Then depress accuracy by tuning in the station with the press button and readjust if

IF Circuits:—Switch to LW, volume control at max., tone control to "brilliant," gang to maximum setting.

Inject modulated 456 kc to grid of V1 via a .1 mfd condenser. Chassis may be "live," so use .1 mfd between chassis The speaker is a PM type. Provision is and "earthy" output of oscillator. Keep output low to prevent AVC working.

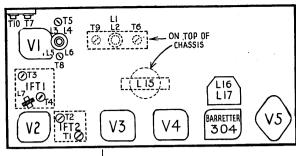
Adjust trimmers T1, T2, T3, T4 (underneath the chassis) in that order to give maximum reading on an output meter.

MW Band.—First check that junction of drive cord and indicator ribbon coincides with mark on scale when gang prevented from entering from the mains is at max. capacity. Tune to and inject 214m via dummy aerial to A and E sockets. Adjust T5 and T6 for maximum.

Tune to and inject 500m and adjust T7 while rocking gang. Check T5 and T6 adjustments.

LW Band.—Tune to and inject in the side of the case. The screw is at 1,000m. Adjust T8 and T9. Adjust T10 at 1818m rocking gang and then go over T8 and T9 adjustments.

Lavout diagram of the G.E.C. chassis showing the positions of the valves, trimmers and certain coils.



WINDINGS

L		Ohms	L		Ohms
1 2 3	• • • • • • • • • • • • • • • • • • • •	$\frac{2.2}{22.0}$	10 11		4
3 4 5	• •	$\begin{array}{c} 3.0 \\ 6.0 \\ 1.3 \end{array}$	12 13 14	::	$\begin{array}{c} 297 \\ 0.32 \\ 2.2 \end{array}$
6 7	• •	$\frac{1.3}{1.9}$ $\frac{60.0}{1.9}$	15 16		$\frac{2.2}{380}$ 2.7
8 9	::	7	17		2.7

RESISTANCES

Ohms	R		Ohms
 1 meg	12		40
 5,500	13		1 meg
 99,000	14		220,000
 22,000	15		200
 15,000	16		1 meg
 66,000	17		9,900
 33,000	18		77,000
 1 meg	19		440,000
 330,000	20		55,000
 99,000	21		100
 440,000	22		77,000
	1 meg 5,500 99,000 22,000 15,000 66,000 33,000 1 meg 330,000 99,000	1 meg 12 5,500 13 99,000 14 22,000 15 15,000 16 66,000 17 33,000 18 1 meg 19 330,000 20 99,000 21	1 meg 12 5,500 13 99,000 14 22,000 15 15,000 16 66,000 17 33,000 18 1 meg 19 330,000 20 99,000 21

VALVE READINGS

(Taken with 0-1,200 v meter total resistance

Type	Electrode	Volts	Ма
X63	Anode	186	1.4
		72	2.8
		113	3.3
KTW61		192	5.5
111 1101		67	1.9
D1.63		88	0.36
		175	53.5
RIOGO	Screen ·	192	9.0
	Type X63 KTW61 DL63 KT33C	X63 Anode	X63 Anode 186 Screen 72 Osc anode 113 KTW61 Anode 192 Screen 67 DL63 Anode 88 KT33C Anode 175

Barretter: Type 304 Osram.
Dial lamp: Type S, 6.5 v, 0.3 amp, Osram,
10 mm MES round.

CONDENSERS

7		Mfds	C		Mfds
ī		.005	14		30
2		.003	15		.0005
2		20 mmfds	16		4
		.05	17		.02
4 5		50 mmfds	18		.005
6		.005	19		24
7		.05	20		.1
8		.5	21		16
9		.05	22		.05
Ö	• •	20 mmfds	23		.0005
ĭ	• •	.0003	24	٠	.01
	••	.02	25		.0005
2		.25	1		

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Inject and tune to 160 kc, rock gang and adjust T9 padder for maximum output. Repeat 290 kc and then 160 kc adjustments for best results.

MW Band.—Switch to MW and tune to 1,400. Inject 1,400 kc signal and trim T10, T11, T12 in that order. (T10 and T11 are in parallel.) Inject and tune at 600 kc, rock gang and pad T13 for maximum output. Repeat trimming and padding until no improvement is obtained.

SW Band.—Switch to SW. Substitute a 400-ohm resistance for the dummy aerial and inject an 18 mc signal. Set pointer to 18 mc. Screw T14 full in (maximum capacity) and then adjust T14 very carefully for the second signal, heard as it is slowly unscrewed.

The setting of T15 will tend to "pull" the oscillator frequency. It is recommended that a .00035 mfd variable condenser be connected across VC2 so that the second harmonic instead of the fundamental beats with the signal

frequency.
Connect the shunt condenser across VC2, and tune it (about half its capacity) to 18 mc. Trim T15 for maximum output. Disconnect shunt condenser and readjust T14.

Check that the 18 mc image is tuned in at about 17.1 mc on the scale.

Inject and tune at 6 mc, rock gang and pad T16 for maximum output. Retrim and pad for best results.

BARRETII LIGE RF CHOKE V/C SHAFT 200 - 250 V MAINS LITE RF * THESE CONDENSERS HAVE COMMON NEGATIVE FOIL CHASSIS