

GENERAL ELECTRIC LB-673

Single waveband, 540-1,700 kc (555-176 m), six-valve superhet for operation on 105-125 volt AC or DC mains or on dry batteries (9 volts low tension: 90 volts high tension). A suitable external line cord is supplied with the set to allow it to work on 230-volt AC or DC mains. This line cord must not be cut.

The receiver is equipped with a removable aerial coil connected with a flexible cable. Normally this "Interceptor Beam-a-Scope" is inserted between two slide rails on the back of the cabinet. It is fitted with two hinged suction cups

and it may be attached to the window of a car or train, the hinges allowing it to be set at the angle giving best reception.

Inside the cabinet the aerial is directional and the receiver should be turned until maximum volume is obtained from the desired station. No earth connection is necessary.

When the rear door of the cabinet is opened a slide switch will be seen on the chassis. With the slide button in the "BATT" position the receiver will operate on batteries. For mains operation the slide button is moved to "LINE" and the mains lead from the set (which is itself a resistance line cord) connected to AC or DC mains through the external line cord.

On batteries the receiver will play as soon as it is switched on, but on the mains sufficient time must be allowed for the rectifier to heat up. If the mains are DC and no signals are heard after the set has been on for about a minute reverse the supply at the power point.

The aerial circuit, which includes an iron-cored choke L2, is tuned by C1 (C4).

The HF transformer L3 is tuned by C2 (C5) and the oscillator coil L4 by C3 (C6).

The IF transformers T1 and T2 are peaked at 455 kc.

AVC voltage is applied to the frequency changer and IF valves. The single diode triode is resistance-capacity coupled to the beam power output valve by R6, C16, R7 and tone corrected by C17.

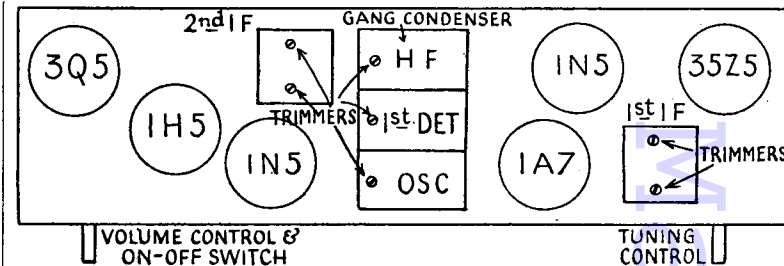
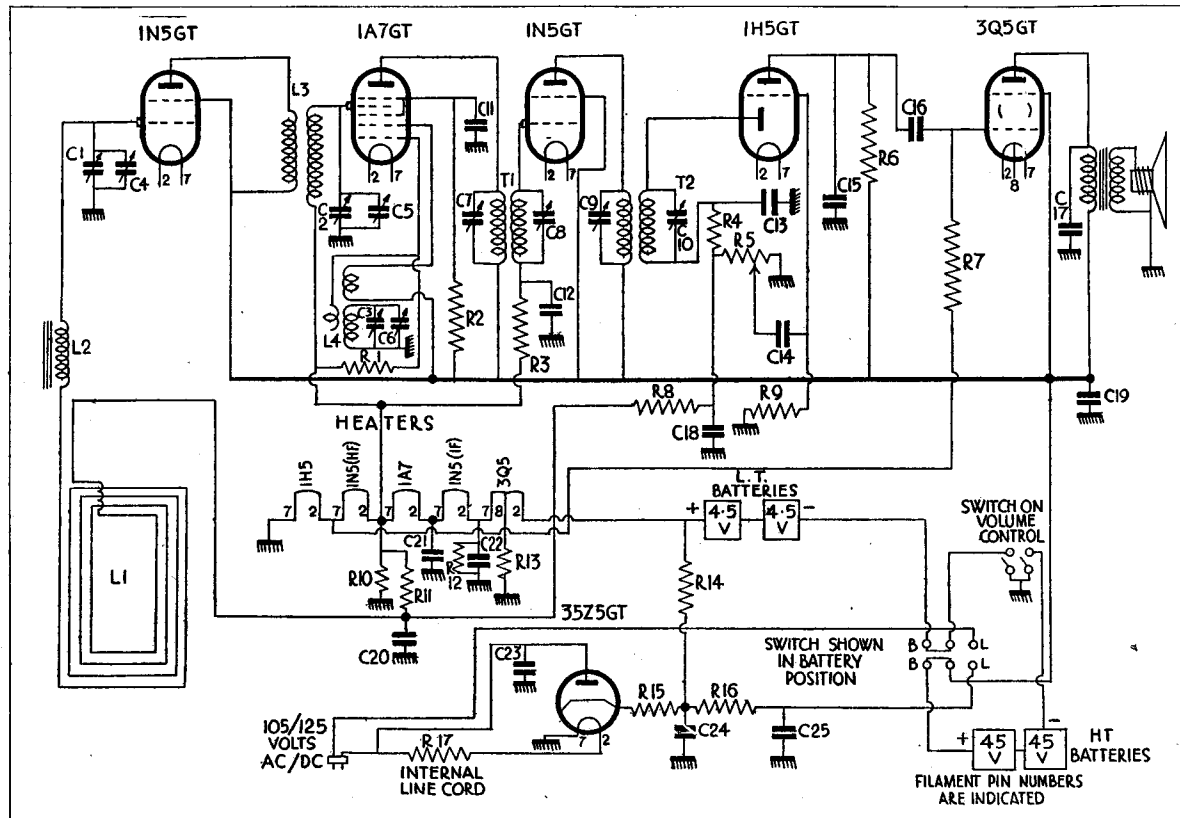
The heater circuit has all the valves (except the rectifier) in series and, when used on the mains, both the LT and HT supplies are derived from the rectifier output. There is no dial light.

The batteries are: LT, two (American) Ever Ready No. 746, 4.5 v each; HT, two (American) Ever Ready No. 482, 4.5 v. each.

GANGING

IF Circuits.—Connect an output meter across the speech coil of the speaker. With the volume control at maximum volume apply 455 kc from a signal generator to the signal grid of the 1A7GT valve through a .05 mfd condenser.

Continued in end col.



VOLTAGE ANALYSIS

Readings taken with a 1,000 ohm-per-volt-meter voltages listed are from the point indicated to common earth with the volume control at full volume and no signal. The mains voltage (after the line cord) for these readings was 117 volts AC. Measurements on DC and battery supplies will be appreciably lower.

V.	Valve.	Anode.	Screen.	Osc. Anode.	Fil.†
1	1N5GT	90	90	90	1.35
2	1A7GT	90	90	—	1.35
3	1N5GT	90	90	—	1.35
4	1H5GT	25	—	—	1.35
5	3Q5GT	90	90	—	2.7*
6	35Z5GT	—	—	cathode	36-120 42

* With centre tap.

† Measured across filament pins.

COILS

- L1 Loop aerial.
- L2 Aerial choke.
- L3 HF inter-stage coil.
- L4 Oscillator coil.
- T1 1st IF transformer.
- T2 2nd IF transformer.

CONDENSERS

- C1, C2, C3 Variable condenser, 3 gang.
- C4, C5, C6 Trimmers on variable condenser.
- C7, C8, C9, C10 Trimmers on IF transformers.
- C11, C20, C23 .05 mfd tubular 400 volts.
- C12 .05 mfd tubular 200 volts.
- C13 .00025 mfd mica.
- C14 .001 mfd tubular 400 volts.
- C15, C18 .0001 mfd mica.
- C16 .002 mfd tubular 400 volts.
- C17 .008 mfd tubular 400 volts.
- C19 .25 mfd tubular 200 volts.
- C21 .25 mfd tubular 200 volts.
- C22 150 mfd electrolytic.
- C24, C25 40 + 20 mfd electrolytic.

RESISTANCES

- R1 200,000 ohm 1/2-watt.
- R2 50,000 ohm 1/2-watt.
- R3, R7, R8, R11 3 megohm 1/2-watt.
- R4 68,000 ohm 1/2-watt.
- R5 1 megohm volume control.
- R6 1 megohm 1/2-watt.
- R9 10 megohm 1/2-watt.
- R10 1,500 ohm 1/2-watt.
- R12, R13 2,100 ohm 1/2-watt.
- R14 70 ohm wire-wound.
- R15 70 ohm wire-wound.
- R16 1,000 ohm 1/2-watt.
- R17 550 ohm internal line cord.

Above, the chassis layout identifying the main features and showing trimmer positions. Right, base connections of the 35Z5GT rectifier.

Adjust the second IF transformer trimmers first and then the first IF transformer trimmers for maximum response.

HF Circuits.—Place the "Beam-a-Scope" aerial in the same relative position to the chassis as when mounted in the cabinet. With the dial pointer at 170 feed 1,700 kc from the signal generator into a loop of wire about 12 in. in diameter. Hold this radiating loop about 12 in. from and parallel with the internal aerial and increase the output of the signal generator until a satisfactory deflection is obtained on the output meter.

Adjust the oscillator trimmer (front section of gang) for maximum response.

Set the signal generator to 1,400 kc and tune the receiver to this signal. Adjust the HF and first detector trimmers for maximum response.

EMERSON 424 *Continued*

GANGING

IF Circuits.—Rotate the variable condenser to the minimum capacity position. Feed 262 kc from a signal generator to the control grid of the 1A7GT valve through a .01 mfd condenser. Adjust the three trimmers for maximum response.

HF Circuits.—Set the dial pointer at 140. Feed 1,400 kc from the signal generator into a loop of wire about 12 in. in diameter. Hold this radiating loop about 12 in. away from and parallel with the aerial coil and increase the output of the signal generator until a satisfactory reading is obtained on the output meter.

Adjust first the oscillator trimmer (middle section of the gang), then the HF trimmer (front section) and finally the aerial trimmer (rear section) for maximum response.

Turn the dial pointer to 60 and feed 600 kc into the radiating loop. Adjust the series padding condenser (while rocking the variable condenser) for maximum response.

Realign at 1,400 kc.