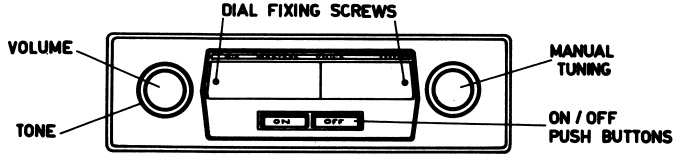
HIS MASTER'S VOICE service manual

CAR RADIO RECEIVER
model R7– 6 volt operation – convertible to 12 volt



R7

INSTALLATION

EARTHING POLARITY

This model is wired for a six volt negative earth. For polarity and 12 voltage conversion - see Circuit Diagram.

AERIAL INPUT:

The aerial input circuits have been designed to operate with up to 130 pF total aerial and lead capacity, i.e., with standard lead (10 pF per foot) up to a maximum of 8 feet. Lengths greater than 8 feet can be accommodated by adding a series 220 pF to the aerial input.

The Aerial Trimmer should be adjusted on a weak signal at approximately 1300 KHz.

Where a fully retractable aerial is used, the bottom segment of the aerial should be fully extended before adjusting the aerial trimmer.

SERVICE NOTES

Printed Circuit Board Removal: Remove top and heat sink section of receiver case, and disconnect output transistor.

Remove the two PK screws from the top corners of the board, then pull the bottom edge of the circuit board out of the slots in the chassis. Note: Do not strain tuner leads.

To replace the board, reverse the above procedure.

Replacing Components on the Printed Circuit Board:

(a) When replacing transistors or diodes, use a small iron and work quickly, to prevent overheating these components.

(b) To unsolder multi-terminal components (IF transformers, etc.) it is best to apply heat simultaneously to all terminals, using a special iron tip, or a deliberate excess of solder if a normal tip is used. Otherwise apply the iron to each joint in turn and brush away the solder with a stiff brush.

CAUTION: Before using a soldering iron, ensure that:

(a) The set is switched off.

(b) All testing and earthing leads are removed.

(c) The soldering iron gives adequate but not too much heat. A low voltage soldering iron is preferred; applying heat for only a short period of time to avoid copper damage.

Ensure that all screws removed during servicing are replaced.

Output Transistor Type 2N301 Replacement:

1. Disconnect base and emitter leads, undo screws and remove suspect transistor from the heat sink.
2. Check that lead washer (if used) and heat sink are free of burrs which could pierce the mica insulator, as this will earth the collector and result in blowing the fuse.
3. Apply a coating of silicone grease to each side of the mica insulator to ensure maximum heat transfer.
4. Place mica insulator in position on heat sink. Place the transistor in position and firmly tighten the fixing screws to ensure maximum heat transfer. Ensure that the fixing screws are insulated from the heat sink by the sleeves provided.
5. Check for short-circuits to heat sink with no leads connected to the trans sistor.
6. Re-connect the leads to the transistor.

SERVICE NOTES(cont.)

I.F. ALIGNMENT

Use a Signal Generator modulated 30% at 455Hz.

IF Alignment:

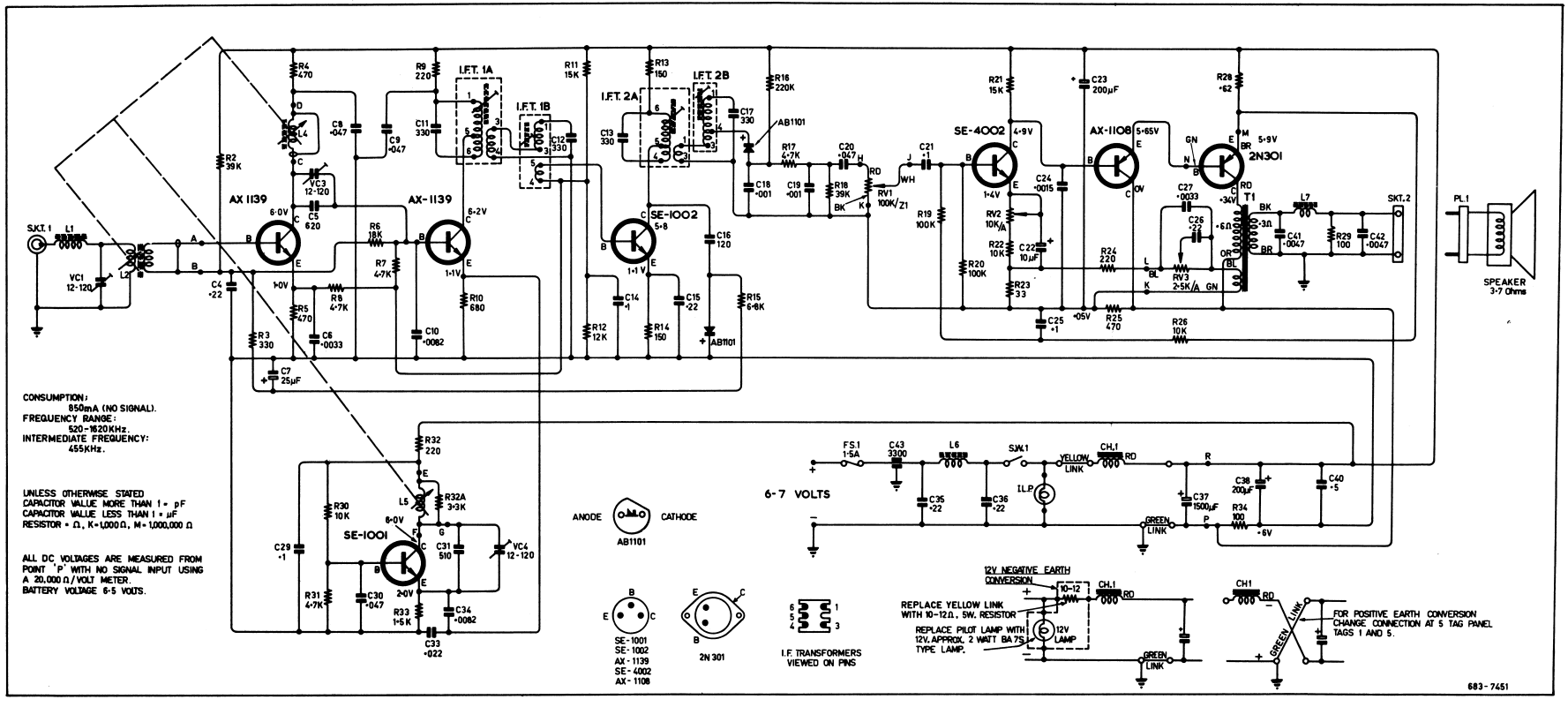
1. Remove top and heat sink section of receiver case.
2. Connect a 47K resistor across the primary of IFT1A.
3. Connect signal generator, via a .1uF capacitor, to point C adjacent to RF trimmer.
4. Turn volume and tone controls fully clockwise.
5. Tune to extreme LF end of the band (tuning carriage fully in).
6. With signal generator tuned to 455 KHz. adjust the cores of IFT2B, IFT2A, IFT1B and IFT1A in that order for maximum reading on the output meter. Start alignment of each IF transformer by first screwing its core well out, and then screwing the core into the coil until resonance is obtained.
7. Repeat sequence for optimum alignment.
8. Disconnect 47K resistor.

When tuning the coils:

1. The tuning tool should be a small plastic screwdriver with a tip which fits cleanly into the tuning core.
2. When tuning the core, do not use any downward pressure, as the threaded former has enough resilience to detune the circuit, after the pressure is released.

R.F. ALIGNMENT

Operation	Set Generator To	Set Receiver To	Adjust for Maximum Output	
1	1620 KHz	HF end of band	VC4 Oscillator Trimmer	
2	1550 KHz	1550 KHz	VC1, VC3 Aerial and RF Trimmers	
3	600 KHz	600 KHz	L2, L3, L4 Aerial and RF Tuning Cores	Only if New Cores or Coils are fitted
4	Between limits; 510-525 KHz	LF end of band	L5, Oscillator Tuning Core	
5	1620 KHz	HF end of band	VC4, Oscillator Trimmer	
6	Repeat operations 2-5 for optimum alignment			



CIRCUIT DIAGRAM – MODEL R7

NOTE: 1. In early receivers C31 is 590pF ± 5% 100V Styroseal (E.M.I. Part No. 280-3341).

2. R19 has been changed to 68K.