Admiral

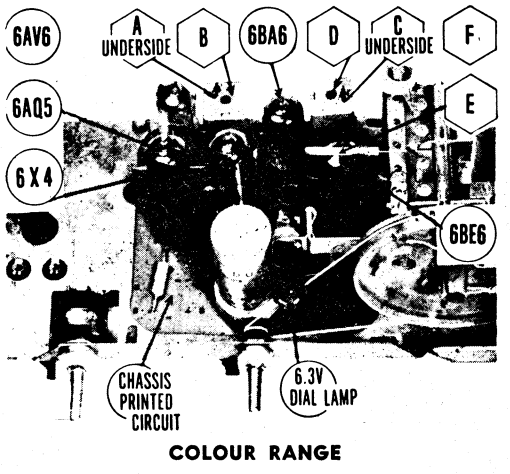
SERVICE DOCUMENT for MANTEL RADIO MODEL 5AW

ALIGNMENT PROCEDURE

1. Connect the earth clip of the signal generator to the chassis.
2. Set volume control full on.
3. Connect output meter across speaker voice coil.
4. Use lowest setting of signal generator capable of producing indication on lowest scale of output meter. (This should be no greater than 120 μVolts.
5. Use a non-magnetic, preferably non-metallic tool with ⅛in. flat tip for aligning I.F. transformers.
6. Repeat sequence of following adjustments to ensure best results.

Step	Connection of Signal Generator	Signal Gen. Frequency	Receiver Gang Setting	Adjustment and Remarks
1	To stator of tuning condenser at aerial input	455Kc/s.	Fully open	A*, B, C*, D in this order for maximum output
2	To stator of tuning condenser at aerial input	1700Kc/s.	Fully open	E Oscillator tuner on gang for maximum output
3	Place signal lead of generator close to aerial rod	1400Kc/s.	Tune in generator signal	F Aerial tuner on gang for maximum output

*Adjustments A and C are made on underside of Chassis.



COLOUR RANGE

Beige	with	Canyon Copper Trim.
Burgundy	„	Gold Trim.
Grey	„	White Trim.
Ivory	„	Gold Trim.
Primrose	„	Black Trim.
Tan	„	Canyon Copper Trim.

SPECIFICATIONS

Circuit. Superheterodyne receiver with five miniature tubes.

Frequency Range. Standard broadcast band, 535 to 1700 Kc/Sec.

Intermediate Frequency. 455 Kc/Sec.

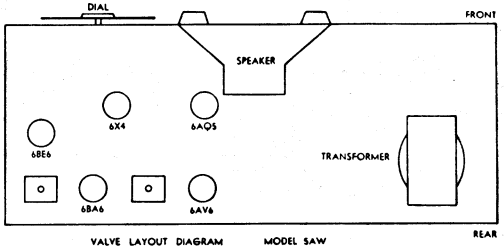
Power Supply. This receiver operates from the mains supply of 230 volts, 50 cycle alternating current.

Power Consumption. Approximately 30 watts.

Antenna. Built in Ferro. Scope Antenna.

Speaker. 4in. Permanent Magnet Voice Coil impedance 3.2 ohms.

REPLACING VALVES

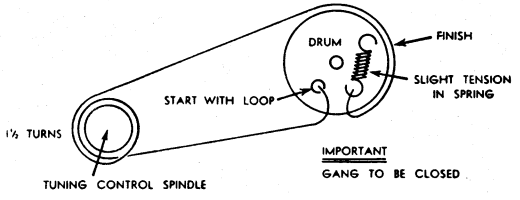


VALVE LAYOUT DIAGRAM MODEL 5AW

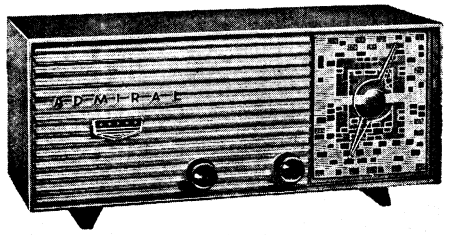
This set uses the following valves:—One 6BE6, one 6BA6, one 6AV6, one 6AQ5 and one 6X4. To reach valves for checking or replacement remove the four screws securing the back plate of the cabinet, and lift it clear of the set. A valve layout diagram is attached underneath the radio.

When replacing valves, make sure each valve is inserted in its correct socket or damage will result. The correct marking is engraved on the side of each valve and the positions must correspond with the markings shown in the illustration above.

TO REPLACE DIAL CORD



Cord length 21in.



GENERAL

This receiver employs the latest radio circuitry including the "printed" circuit wiring technique. This process eliminates the hook up wiring which has been in common use in the past. Figure 1 shows the lower view of this 5 valve receiver chassis. The "printed" circuit wiring is permanently bonded to the underside of the plastic chassis base. This results in uniformity of chassis wiring, fewer wiring troubles and simplified circuit tracing and trouble shooting. All circuit components are of standard size and design and readily available from normal sources. They are mounted on the upper side of the chassis board as shown in figure 2. Audio circuit components are contained in a couplate, which may be obtained through the Admiral Service Department.

Trouble shooting and parts replacement will, in general be along the same lines as for receivers wired with hook-up wire. However, when servicing, it is important to read the service information given in this manual with respect to the technique of servicing printed circuit receivers.

SERVICING THE SET

Servicing "printed" circuit sets is, in general, much the same as servicing ordinary receivers. However, certain tools and techniques are well suited for this type of work. It is particularly advised that good quality tools be purchased as these have greater durability and ensure more reliable service.

The following will be found most useful:

1. Pair of long-nose pliers.
2. Pair of flat-nose pliers.
3. Pair of diagonal side cutters.
4. ⅜in. "Spintite" socket spanner.
5. Pencil type soldering iron, 35 watt rating with fine angled tip.
6. 6in. screwdriver, ¼in. head.
7. 10in. tuning tool with ⅛in. flat head, to be made of a non ferrous, preferably non metallic, material.
8. Small stiff brush for removal of solder.

NOTE: Always use a multi-core low temperature solder for work on the chassis board, and do not use an iron in excess of a 35 watt rating. All operations can be suitably conducted within this limit, and damage to the board during component replacement is thereby avoided.

TEST EQUIPMENT

(a) Signal Generator.
(b) Multimeter (A.C.-D.C. Volts, Ohms, Amps).
(c) Output Meter.
(d) 3.2 ohm Speaker fitted with lead and 2 pin male plug.
(e) Valve tester.

COMPONENT REPLACEMENT

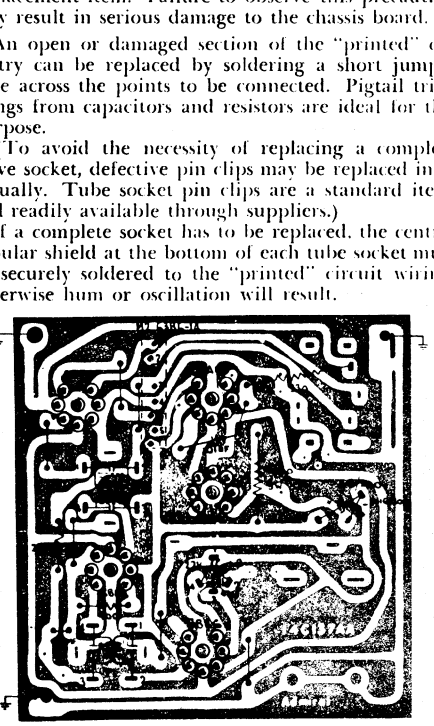
Resistors and capacitors should be replaced by clipping out the defective part and neatly soldering the new part to the connecting leads remaining from the original part. This precaution will eliminate any damage to under chassis wiring.

Should a unit such as the oscillator coil or an I.F. transformer have to be removed, the following procedure is to be adopted. Heat each mounting lug in turn with the soldering iron, and remove excess solder with a brush. Straighten each lug with long-nose pliers whilst the solder is molten, and remove the defective unit by lifting it off the chassis. CAUTION: After removal, ensure that the lug holes are open and free from solder before endeavouring to insert the replacement item. Failure to observe this precaution may result in serious damage to the chassis board.

An open or damaged section of the "printed" circuitry can be replaced by soldering a short jumper wire across the points to be connected. Pigtail trimmings from capacitors and resistors are ideal for this purpose.

(To avoid the necessity of replacing a complete valve socket, defective pin clips may be replaced individually. Tube socket pin clips are a standard item, and readily available through suppliers.)

If a complete socket has to be replaced, the central tubular shield at the bottom of each tube socket must be securely soldered to the "printed" circuit wiring, otherwise hum or oscillation will result.



ADMIRAL RADIO MODEL 5AW

TO REMOVE CHASSIS FROM CABINET

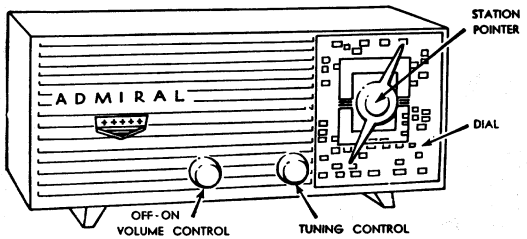
First ensure that the radio is disconnected from the power mains by removing the plug from the A.C. outlet. Pull the spring-clip control knobs off their spindles and unscrew the two brass hexagonal retaining bushes.

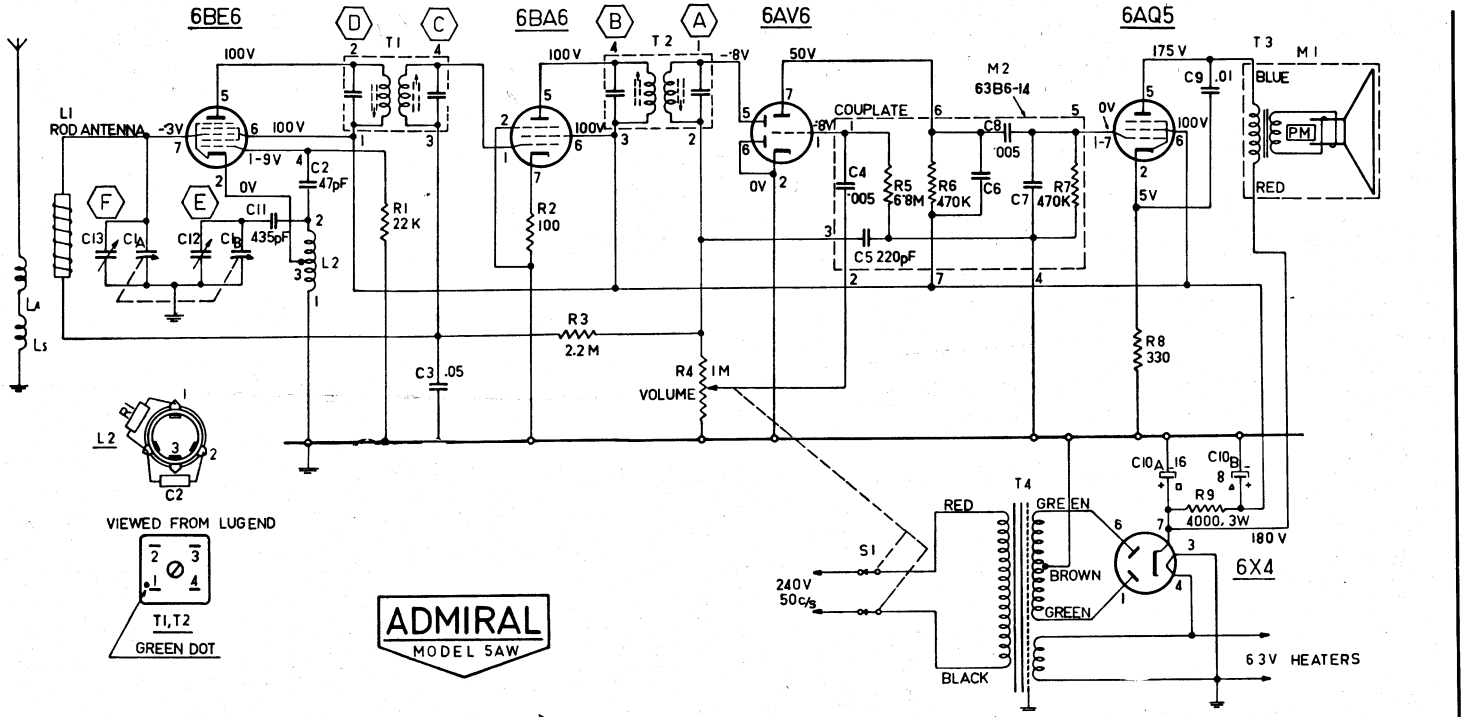
Gently remove the escutcheon by first lifting away from the spindles at the lower edge. The station pointer may now be drawn clear and the dial scale and gold card backing will now be free for removal.

Using the "Spintite" or equivalent tool, undo the hexagonal screw in the lower central front of the cabinet. By gripping the back plate of the cabinet the set may now be drawn clear. Next unplug the two loudspeaker connections to the chassis. These are the only wires retaining the chassis in position. They are blue and brown in colour, and are twisted together.

The chassis is now completely separate from the cabinet assembly, and is in a suitable condition for examination and repair.

OPERATING CONTROLS





RESISTORS

Symbol	Description	Part No.
R1	22 K ohms ½ watt 10% (on oscillator coil)	A60-02-223
R2	100 ohms ½ watt 10%	A61A10-101-4
R3	2.2 meg ohm ½ watt 10%	A60A11-225-4
R4	1 meg ohm volume control with D.P. switch	A75A05
*R5	6.8 meg ohm ½ watt 10% (Part of couplate .63B6-14.)	
*R6	470 K ohms ½ watt 10% (Part of couplate .63B6-14.)	
*R7	470 K ohms ½ watt 10% (Part of couplate .63B6-14.)	
R8	330 ohms ½ watt 10%	A61A10-331-4
R9	4000 ohms 3 watt W.W. 5%	A61A17-402-5

CAPACITORS

Symbol	Description	Part No.
C1A, C1B	2 gang condenser M.S.P. Miniature 18621	A68-01
C2	47 uuf. N750 Ceramicon 10% (On oscillator coil)	A65A27-54-4
C3	.05 uf 200V Upright	A64A26-155-4
*C4	.005 uf 450V.	
*C5	.220 uuf 450V.	
*C6, *C7	Together total 250 uuf. When replacing with individual components use combinations totalling 250 uuf or use 250 uuf across R6 in place of C7 and C8	Part of couplate 63B6-14
*C8	.005 uf 450V	
C9	.01 uf H1K Disc	A65A31-134-1
C10		
C11A	16 uf Dual Electrolytic 200 V.W.	A67-04
C11B	8 uf	
C12	435 uuf ± 2½%	A65A13-87-6
C13	Wire Trimmer	A66-02
C14	Compression Trimmer	A66-03

COILS TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Ferroscope Rod Antenna, F214	A71B03
L2	Oscillator Coil	A69-02
T1	1st I.F. Transformer	A72-01
T2	2nd I.F. Transformer	
T3	Speaker Transformer 16000/3 ohms	79A04
T4	Power Transformer	A80B05-1
M1	Speaker with Transformer T3 M.S.P. 4in. 16000 ohms	A78-03
M2	Couplate (includes R5, R6, R7, C5, C6, C7, C8, C9)	63B6-14
	Socket—valve 7 pin minature printed circuit type	A87-06
	Socket—valve 7 pin minature printed circuit type with earth tag	A87-07

VALVES

Valve Converter	6BE6
Valve I.F. Amplifier	6BA6
Valve 2nd Detector A.V.C. & A.F. Amplifier	6AV6
Valve Audio Output	6AQ5
Valve Rectifier	6X4

MISCELLANEOUS PARTS

Description	Part No.
Compression Ring (for knobs)	A19A05
Compression Ring (Dial Drum)	A17A01
Printed Circuit Assembly complete with valves	APC1
Dial Drum	A17A01
Spring—(Dial Cord)	A19-07
Spacer ¼in. x 3/16in. (Gang Mounting)	A29A02
Support—Plastic (Aerial Rod)	A33A04
Scale—(Radio Dial)	A21A07
Pointer (Dial)	A26A02
Instruction Book	A41-07
Grommet—A2 (Speaker Contacts)	A12-09
Grommet—A3 (Transformer Leads)	A12-08
Spindle—Dial Drive	A28A03
Bearing—Tuning Spindle	A27A02
Cord—Dial Drive	A50-01
Pilot Light Bulb (6.3V—150 m.a.)	A81-02
Socket—Pilot Light	A82-02
Speaker Contacts	A86-01
Fibre Clamp (Power Cord)	A11A02
Bush—Front Retaining	A27A01
Inlay (Knob and Pointer)	A15A02
Speaker Lead Pins	A88-03
Crest	A26B04
Dial Background	A22A03
Baffle Board	A43-03

CABINET PARTS

Description	Part No.
CABINET BODY:—	
Primrose	A34D01-7
Grey	-8
Burgundy	-9
Ivory	-10
Beige	-11
Tan	-12
CABINET FRONT:—	
Black	A34C06-15
White	-16
Gold	-17
Canyon Copper	-18
CABINET BACK:—	
Primrose	A34C07-7
Grey	-8
Burgundy	-9
Ivory	-10
Beige	-11
Tan	-12
KNOB (CONTROL):—	
Grey	A33B01-8
Burgundy	-9
Ivory	-10
Beige	-11
Tan	-12
Black	-15