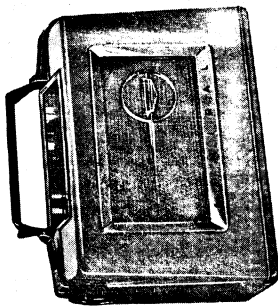


# Admiral

## SERVICE MANUAL FOR MODEL 5AK

### DE-LUXE A/C BATTERY PORTABLE



**Colour Range:** Forest Green, Burgundy, Beige, Grey, London Tan.

#### SPECIFICATIONS

**Circuit:** Superheterodyne receiver with 5 miniature tubes and a selenium rectifier.

**Frequency Range:** Standard broadcast band, 535 to 1620 KC.

**Intermediate Frequency:** 455 KC.

**Power Supply:** This receiver is designed to operate on either 90V battery pack or the normal main supply of 240V, 50 cycle alternating current.

**Power Consumption:** Approximately 20W on 240V, 50 cycle, A.C. supply.

**Antenna:** Detachable 3-way Aeroscope (iron core) antenna.

**Speaker:** 4in. x 6in. PM Rola model F. Voice coil impedance 3.2 ohms.

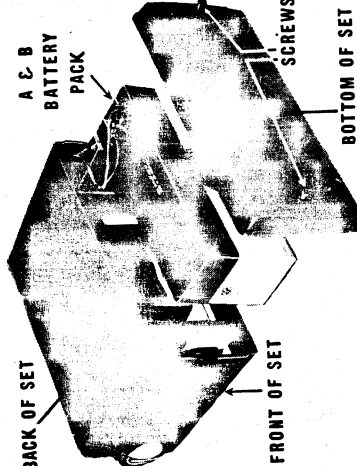
#### BATTERY REPLACEMENT

A combined battery pack is used in this portable radio. Only one connecting plug is used and this can be inserted ONE WAY only. Do not endeavour to force it in position if it does not fit easily.

Under normal conditions the battery life is about 180 operating hours. Batteries deteriorate more rapidly in excessive heat. Therefore, do not leave this set on or near a radiator or other source of heat. Also note that all batteries will run down with age even when not in use.

It is important that a run-down battery pack be removed IMMEDIATELY because the chemical action inside the cells will cause some of them to leak when they are worn out. The electrolyte which leaks from a run down battery may damage parts of the set or the cabinet because of its corrosive action. Replacement battery packs of the following type may be used:—Eveready No. 753 or equivalent.

#### TO INSTAL BATTERY PACK



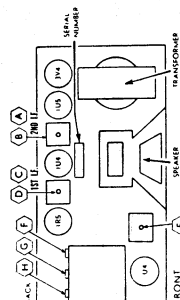
Turn set over so that it lies on its face and unscrew the two captive screws in base. The bottom of the cabinet may now be lifted clear to expose the battery pack. Remove the connection plug, and the battery may now be fitted clear of the set. Replace with a

#### ALIGNMENT PROCEDURE

- Battery Power is preferable for alignment. Use FRESH batteries for this operation.
- Use lowest setting of signal generator capable of producing indication on lowest scale of output meter.
- Use a non-metallic alignment tool for I.F. transformers.
- Set volume control full on.
- Connect output meter to primary of speaker transformer.
- Repeat adjustments to ensure good results.

STEP	CONNECTION OF SIGNAL GENERATOR	SIGNAL GENERATOR FREQUENCY	RECEIVER GANG	ADJUSTMENT & REMARKS
1	Through a .1 mfd capacitor to Centre tap of R/F coil secondary	455 Kc/s	Gang fully open	*A, B, *C, D in this order for maximum output
2	Through a .1 mfd capacitor to Centre tap of R/F coil secondary	1620 Kc/s	Gang fully open	F oscillator trimmer on gang for maximum output
3	Through a .1 mfd capacitor to pin 6 of the 1U4 RF amplifier tube	600 Kc/s	Tune to generator signal	Rock gang while adjusting *E for maximum output
4	Through a .1 mfd capacitor to pin 6 of the 1U4 RF amplifier tube	1400 Kc/s	Tune to generator signal	G for maximum output
5	Through a .1 mfd capacitor to pin 6 of the 1U4 RF amplifier tube	600 Kc/s	600 Kc/s (DO NOT rock gang)	*E for maximum output
†6	Radiated Signal	1400-1620 Kc/s	1400-1620 Kc/s	H for maximum output

Adjustments marked \* are from underside of chassis.  
 † Operation 6 is effected with the chassis in the cabinet. Tune receiver to a weak station at the high frequency end of the broadcast band.  
 Adjustment H is made through a hole in the cabinet. See illustration "Back of set" on inside page.



Adjustments A, C and E are made from underside of chassis

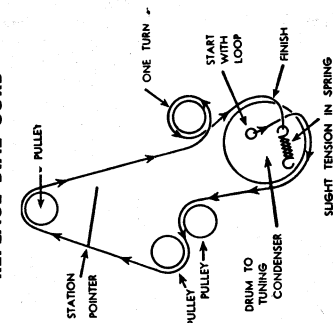
#### VOLTAGE DATA

Voltages are shown at relevant points on circuit diagram.

- All voltages are taken between valve socket terminals and B minus.
- Dial set at low frequency end (gang fully meshed) volume control at minimum.

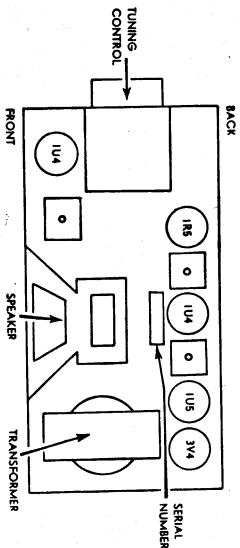
- Voltages measured with a vacuum-tube voltmeter, using 240 volts A.C.

#### REPLACE DIAL CORD



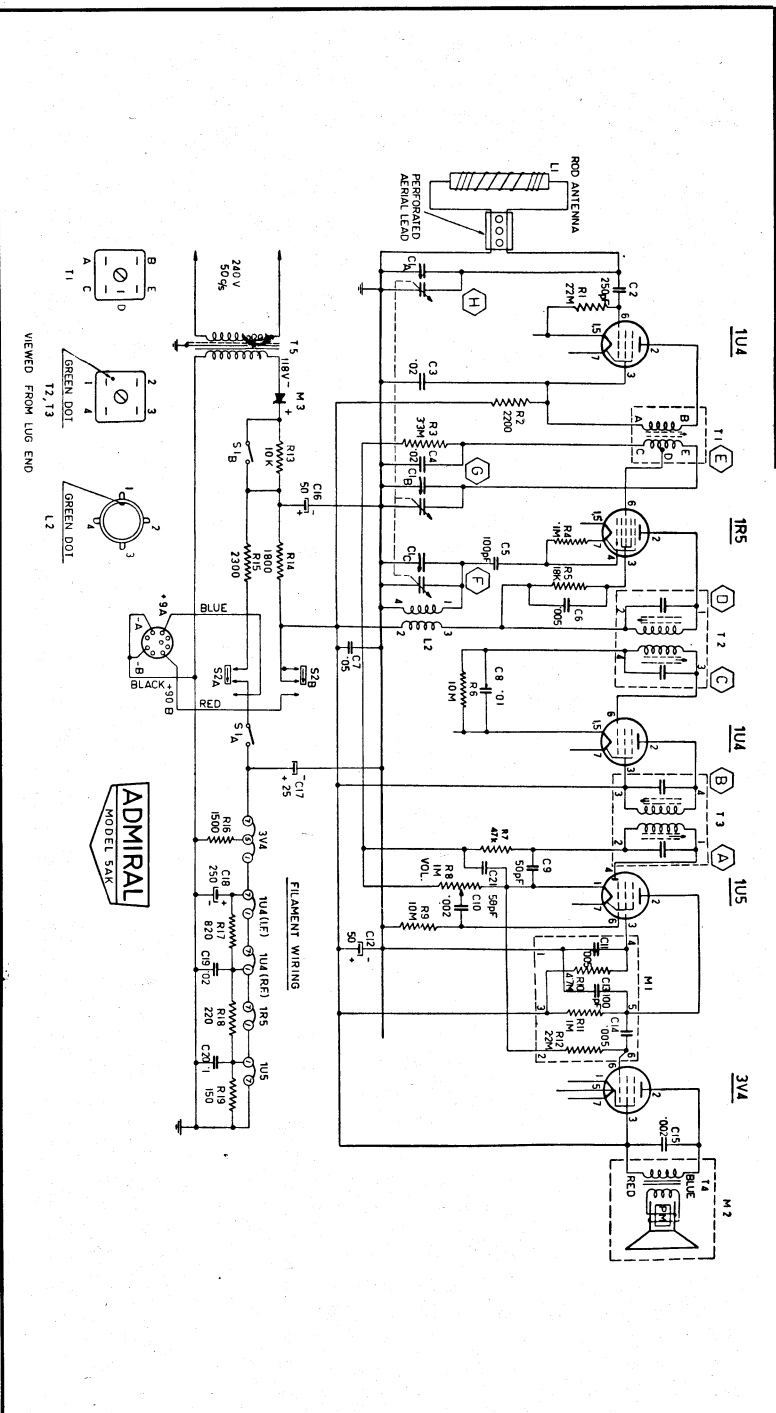
new battery pack and insert it in the space provided. Secure the bottom by means of the locating screws.

**REPLACING VALVES**



All tubes readily accessible when the cabinet is removed from the chassis. This is achieved by first removing the tuning and volume control knobs, each of which is spring fitted, then remove the two screws securing the carrying handle and lift this clear from the set. Below the end plates will be seen a further two screws which when removed will enable the cabinet to be drawn clear of the chassis.

**NOTE:** To facilitate cabinet removal, lift the aeroscope clear of its housing so that its lead can readily feed through the opening provided. It is not necessary to disconnect the chassis from the scope lead-in. The valve lay-out diagram will be clearly visible in the cabinet, and in any event valve type numbers are stamped on the chassis.



**RESISTORS**

Symbol	Description	Part No.
R1	2.2 megohms 0.5 watt 10%	A60A10-225-4
R2	22,000 ohms 1 watt 10%	A60A12-222-4
R3	3.3 megohms 0.5 watt 10%	A60A10-335-4
R4	100,000 ohms 0.5 watt 10%	A60A10-104-4
R5	18,000 ohms 0.5 watt 10%	A60A12-183-4
R6	10 megohms 0.5 watt 10%	A60A10-106-4
R7	47,000 ohms 0.5 watt 10%	A60A10-473-4
R8	1 megohm Volume Control & Switch	A75-04
R9	10 megohms 0.5 watt 10%	A60A10-106-4
*R10	4.7 megohms 0.5 watt 10%	A60A12-473-4
*R11	1 megohm 0.5 watt 10%	A60A10-106-4
*R12	2.2 megohms 0.5 watt 10%	A60A12-103-4
R13	18,000 ohms 1 watt 10%	A60A12-182-4
R14	23,000 ohms 5 watt 5%	A61A15-232-5
R15	15,000 ohms 5 watt 10%	A60A12-152-4
R16	820 ohms 5 watt 10%	A60A10-821-4
R17	220 ohms 0.5 watt 10%	A60A10-221-4
R18	220 ohms 0.5 watt 10%	A61A10-151-4
R19	150 ohms 0.5 watt 10%	A61A10-151-4

**RESISTORS**

Symbol	Description	Part No.
C9	47 uuf. 200V D.C. AEE	A64A22-54-3
C10	.002 uuf. 600V. AEE	A64A44-108-3
*C11	.005 uuf. 150V. Electrolytic	A67-06
C12	50 uuf. 150V. Electrolytic	A67-06
*C13	100 uuf.	A67-06
*C14	.005 uuf. 600V. AEE	A64A24-108-3
C15	.002 uuf. 600V. Electrolytic	A67-06
C16	50 uuf. 150V. Electrolytic	A67-06
C17	25 uuf. 40PV. Electrolytic	A67-07
C18	250 uuf. 10V. Electrolytic	A67-06
C19	.02 uuf. 200V. AEE	A64A22-141-3
C20	.1 uuf. 200V. Milsel	A64-10-167-3
C21	47 uuf. 200V D.C. AEE	A64A22-54-3

**COILS, TRANSFORMERS**

Symbol	Description	Part No.
L1	Antenna Rod	C68-06
L2	Coil Oscillator	C69A04
T1	R.F. Transformer	C69B05
T2	I.F. Transformer	C72-04
T3	I.F. Transformer	C72-04
T4	Transformer, Output	A80B02
T5	Transformer, Power	A80B02

**CAPACITORS**

Symbol	Description	Part No.
C1A	420 uuf. max. ANT	A65A10-77-4
C1B	193.8 uuf. max. R.F.	A64A22-141-3
C1C	90 uuf. max. OSC.	A64A22-141-3
C2	250 uuf. Simplex M.S.	A65A10-67-4
C3	42 uuf. 200V. AEE	A64A22-141-3
C4	42 uuf. 200V. AEE	A65A10-67-4
C5	100 uuf. Simplex. M.S.	A64A22-122-3
C6	405 uuf. 200V. AEE	A64A11-153-3
C7	45 uuf. 200V. Milsel	A64A22-134-3
C8	41 uuf. 200V. AEE	A64A22-134-3

**MISCELLANEOUS PARTS**

Symbol	Description	Part No.
M1	Complete—includes R10, R11, R12 and C11, C13, C14	A69A4-3
M2	Speaker 4.5F Bolt (includes output Transformer 10 Kohm prim.)	A78-07
M3	Rectifier 18RA 1-1.8-1	A38-01
S1A	Switch "On-Off"	Part of R8 Vol. Cont.
S2B	Switch "On-Off"	Part of R8 Vol. Cont.

**RESISTORS**

Symbol	Description	Part No.
S2A	Switch Power Change—Slide Oak	A77-01
S2B	Switch	A43B02
Bolt	4.5F Bolt	15A1087
Bracket	Volume Control	15A1089
—	—Tuning Control	15A1089
—	—Chassis Support	A13B05
Chassis Base	Chassis Support Mounting	A14C03
Chassis Cover	Chassis Support Mounting	A14C03
Clip I.F. Mounting	Chassis Support Mounting	A18-05
Dial Cord	Chassis Support Mounting	A50-01
Dial Drum	Chassis Support Mounting	A18A01
Compressor Ring—Dial Drum	Chassis Support Mounting	A18A01
Grommet Tuning Spindle	Chassis Support Mounting	A17B04
Instruction Book	Chassis Support Mounting	A12A11
Lead and Plug Assembly	Chassis Support Mounting	A49-10
Lead and Socket Assembly	Chassis Support Mounting	A89-12
Tuning Spindle	Chassis Support Mounting	A27A05
Spring, Dial Cord Tension	Chassis Support Mounting	A19-07
Valve Socket—7 pin—733-215	Chassis Support Mounting	A73-09
Wooden Pulley Dial Cord	Chassis Support Mounting	A17A02

**CABINET PARTS**

Symbol	Description	Part No.
Dial Scale	Dial Scale	A31A05
Metal Grille	Metal Grille	365B9
Handle Mounting	Handle Mounting	A33B02
Compression Ring (Knob)	Compression Ring (Knob)	A18A09
Medallion	Medallion	23B179
Screw (Handle Mounting)	Screw (Handle Mounting)	A1A40-3-16-0
Stud (Aeroscope Mounting)	Stud (Aeroscope Mounting)	A27A14
Aeroscope Retaining Clip	Aeroscope Retaining Clip	18A62-2
Transmission Lead Line	Transmission Lead Line	A85-05
Suction Cup	Suction Cup	A12A06
Rubber Strip (Aerosc. Front)	Rubber Strip (Aerosc. Front)	A12-03
Aeroscope Mounting Stud	Aeroscope Mounting Stud	A27A14