THE FISK AWA RADIOLA

Model 63

FOUR VALVE, ONE BAND, DRY-CELL BATTERY OPERATED, (OPTIONAL POWER SUPPLY), PORTABLE SUPERHETERODYNE

Technical Information & Service Data

ELECTRICAL SPECIFICATIONS

TUNING RANGE
"Standard Medium Wave"—1600-550 Kc/s.

R.F. ALIGNMENT SETTINGS.
600 Kc/s. and 1500 Kc/s. (Osc. and Aer.).

INTERMEDIATE FREQUENCY ..... 455 Kc/s.

BATTERY COMPLEMENT
"A" Battery ..... 1.5 volts
"B" Battery ..... 90 volts

BATTERY CURRENT CONSUMPTION
"A" Battery ..... .25 amp.
"B" Battery ..... 9 M.A.

VALVE COMPLEMENT
(1) 1A7GT Frequency Converter
(2) 1P5GT I.F. Amplifier
(3) 1H5GT 2nd Det., A.V.C. and A.F. Amp..
(4) 1Q5GT Output Tetrode

LOUDSPEAKER (PERMANENT MAGNET) ..... 5-inch Type AC7
Loudspeaker Transformer ..... Type XA7
Voice Coil Impedance ..... 3 ohms at 400 c/s.

POWER UNIT SPECIFICATIONS

VOLTAGE RATING ..... 200-260 A.C.
FREQUENCY RATING ..... 40- 60 c/s.
POWER CONSUMPTION ..... 30 watts
RECTIFIER VALVE 5V4G

ALIGNMENT PROCEDURE.

Alignment should only be necessary when adjustments have been altered from the factory setting or when repairs have been made to the tuned circuits.

It is important to apply a definite procedure, as tabulated, and to use adequate and reliable test equipment. Instruments ideally suited to the requirements are the A.W.A. Junior Signal Generator, Type 2R3911, or the A.W.A. Modulated Oscillator, Type C1070. An output meter is necessary with both these instruments. If the Type C1070 test oscillator is used, see that a 250,000 ohms resistor is connected between the output terminals of the instrument.

During I.F. alignment connect the ground connection of the test instrument to the receiver chassis.

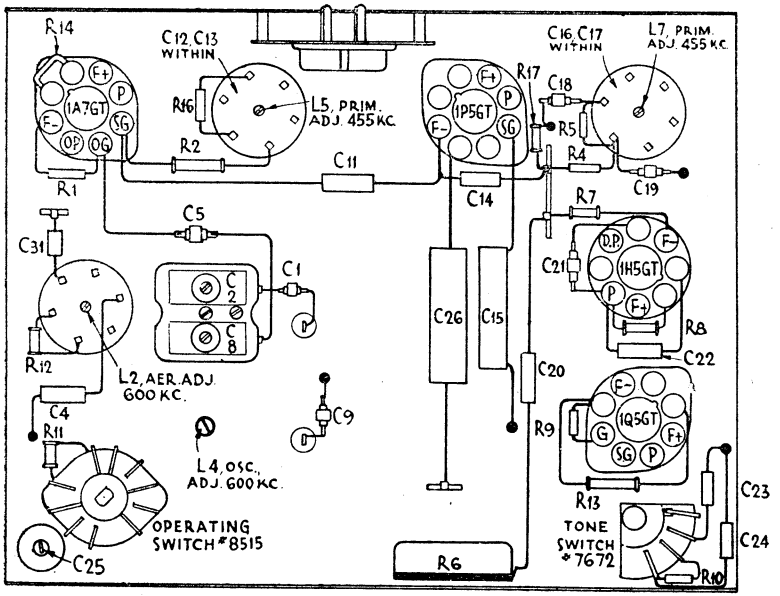
When aligning the aerial and oscillator circuits, place the loop aerial, which is incorporated in the case back, in approximately the same relative position to the receiver chassis as it is normally. If this is not done, the alignment may be upset when the chassis is installed in the case.

Although instructions for aligning the aerial and oscillator circuits employing a signal generator or test oscillator are given, satisfactory alignment of these circuits can usually be accomplished using the same procedure, but substituting broadcasting stations' signals to replace those of the test instrument.

Perform alignment in the proper order, starting with No. 1 and following all operations across, then No. 2, etc. Adjustment locations are shown in the layout diagrams. Keep the volume control set in a maximum clockwise position and regulate the output of the test instrument so that a minimum signal is introduced to the receiver to obtain an observable output indication. This will avoid A.V.C. action and overloading.

ADJUSTING TOOL:

A non-metallic screwdriver should be used for all adjustments. Such a tool (Part No. 5372) may be obtained from the Service Department of the Company.



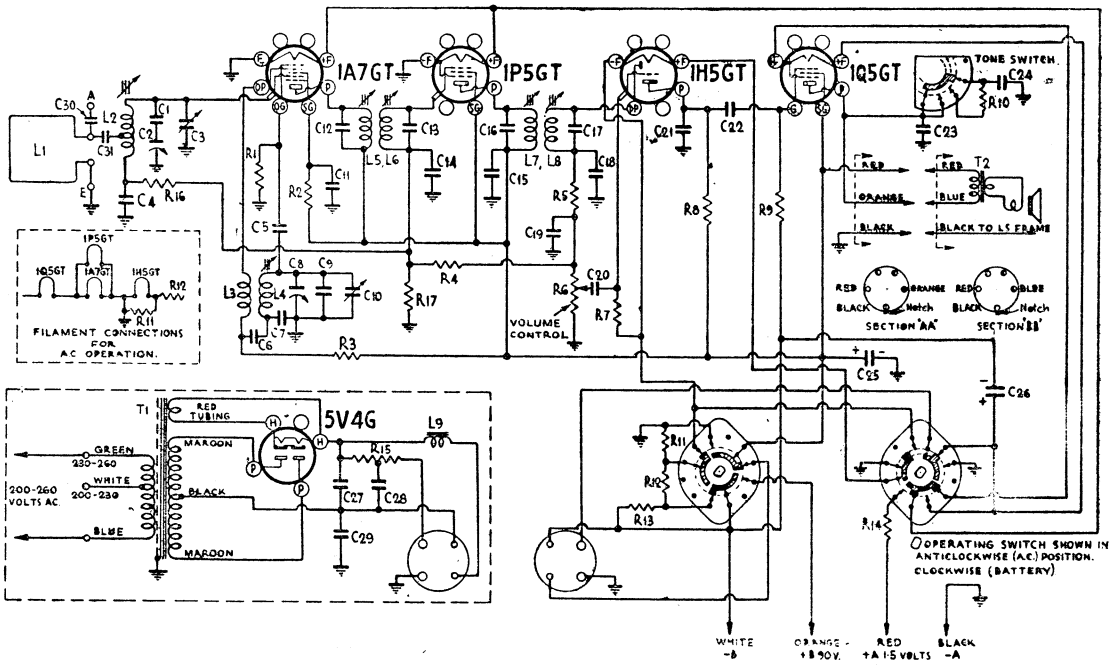
Layout Diagram .(Underneath View)

MECHANICAL REPLACEMENT PARTS.

DESCRIPTION.	Part No.
Dial Plate, with ON-OFF Indicator	8474
Tuning Drive Spindle Disc	4363
Main Tuning Drive Segment	1691
Dial Pointer	8048
Battery Switch	8515
Tone Switch	7672
Valve Sockets (3)	4794

DESCRIPTION.	Part No.
Valve Socket (Cushion)	7326
Valve Clips	7459
Celluloid Call-Sign Chart	8020
Loudspeaker Cable and Plug	8481
Loop Aerial Assembly	8693
Control Knobs	7667
Loudspeaker Cone Assembly	8330

CIRCUIT DIAGRAM AND CODE

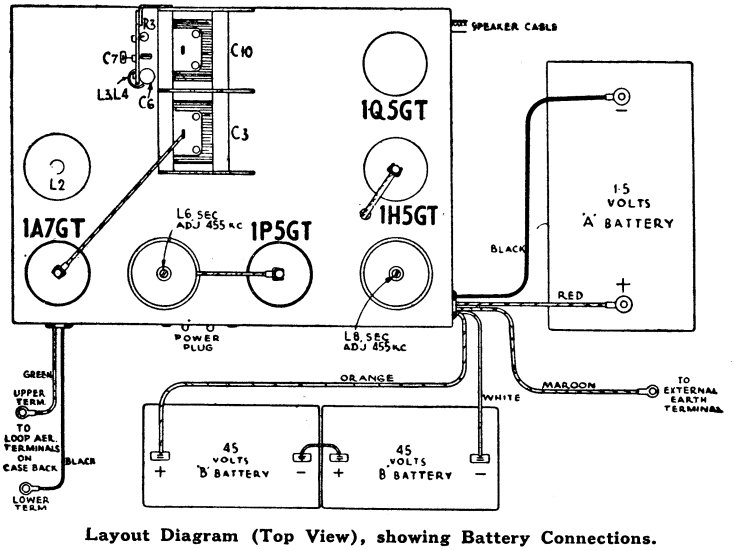


Code No.	Part No.	COILS.
L1	8483	Loop Aerial
L2	8477	Aerial Coil
L3, L4	7615	Osc. Coil
L5, L6	4753	1st I.F. Transformer
L7, L8	4754	2nd I.F. Transformer

		TRANSFORMERS.
T1	8486	Power Transformer 40-60 c/s.
T2	XA7	Loudspeaker Transformer

Code No.	Part No.	RESISTORS.
R1		200,000 ohms 1/3W
R2		70,000 ohms 1W
R3		40,000 ohms 1W
R4		1.75 megohms 1/3W
R5		20,000 ohms 1/3W
R6	8514	500,000 ohms Vol. Contr.
R7		2.3 megohms 1/3W.
R8		1 megohm 1W
R9		1.75 megohms 1/3W.
R10		10,000 ohms 1/3W
R11		26 ohms 3W
R12		34 ohms 3W
R13		600 ohms 1W
R14		0.4 ohms wire wound
R15		1040 ohms wire wound
R16		100,000 ohms 1/3W
R17		500,000 ohms 1/3W

Code No.	Part No.	CONDENSERS.
C1		70 mmfd mica (N)
C2	7625	8-50 mmfd mica trimmer
C3	7622	Tuning Condenser
C4		.05 mfd paper
C5		110 mmfd mica (L)
C6		.05 mfd paper
C7		450 mmfd mica (Pad)
C8	7625	8-50 mmfd mica trimmer
C9		9 mmfd mica (B)
C10	7622	Tuning Condenser
C11		.05 mfd paper
C12		70 mmfd mica (N)
C13		70 mmfd mica (N)
C14		.05 mfd paper
C15		.5 mfd paper
C16		70 mmfd mica (N)
C17		70 mmfd mica (N)
C18		110 mmfd mica (L)
C19		110 mmfd mica (L)
C20		.02 mfd paper
C21		200mmfd mica (J)
C22		.02 mfd paper
C23		.0025 mfd paper
C24		.02 mfd paper
C25		20 mfd 200 P.V. Electro
C26		400 mfd, 12 P.V. Electro
C27		20 mfd, 200 P.V. Electro
C28		20 mfd, 200 P.V. Electro
C29		400 mfd, 12 P.V. Electro
C30		1000 mmfd mica
C31		.05 mfd paper



Layout Diagram (Top View), showing Battery Connections.

SOCKET VOLTAGES.

VALVE.	Control Grid to Chassis Volts.	Screen Grid to Chassis Volts.	Plate to Chassis Volts.	Plate Current M.A.	Filament Volts Battery.	Filament Volts Power.
1A7GT Converter	0	35	90	0.3	1.4	+ 1.4
Oscillator	—	—	50	0.65	—	—
1P5GT I.F. Amp.	0	90	90	1.2	1.4	+ 1.4
1H5GT 2nd Detector	0	—	60*	.08	1.4	— 1.4
1Q5GT Output	-6*	90	89	5.6	1.4	+ 2.8
5V4G Rectifier	200/100V.		110 MA.—D.C.			

Total "B" Battery Current 9 M.A.

* Cannot be measured accurately with ordinary voltmeter. Measured with no signal input. Volume control at maximum clockwise.

ALIGNMENT TABLE

Alignment Order.	Test Inst. Connection to Receiver.	Test Inst. Setting.	Receiver Dial Setting.	Circuit to Adjust.	Adjustment Symbol.	Adjust to Obtain
1	*1A7GT Grid Cap	455 Kc/s.	Past 550 Kc/s.††	2nd I.F. Trans.	L8	Max. (Peak)
2	*1A7GT Grid Cap	455 Kc/s.	Past 550 Kc/s.††	2nd I.F. Trans.	L7	Max. (Peak)
3	*1A7GT Grid Cap	455 Kc/s.	Past 550 Kc/s.††	1st I.F. Trans.	L6	Max. (Peak)
4	*1A7GT Grid Cap	455 Kc/s.	Past 550 Kc/s.††	1st I.F. Trans	L5	Max. (Peak)
	Repeat the above adjustments before proceeding.					
5	**Inductively Coupled to Loop	600 Kc/s.	600 Kc/s.†	Oscillator	Core L4	Max. (Peak)
6	**Inductively Coupled to Loop	600 Kc/s.	600 Kc/s.	Aerial	Core L2	Max. (Peak)
7	**Inductively Coupled to Loop	1500 Kc/s.	1500 Kc/s.	Oscillator	C8	Max. (Peak)
8	**Inductively Coupled to Loop	1500 Kc/s.	1500 Kc/s.	Aerial	C2	Max. (Peak)

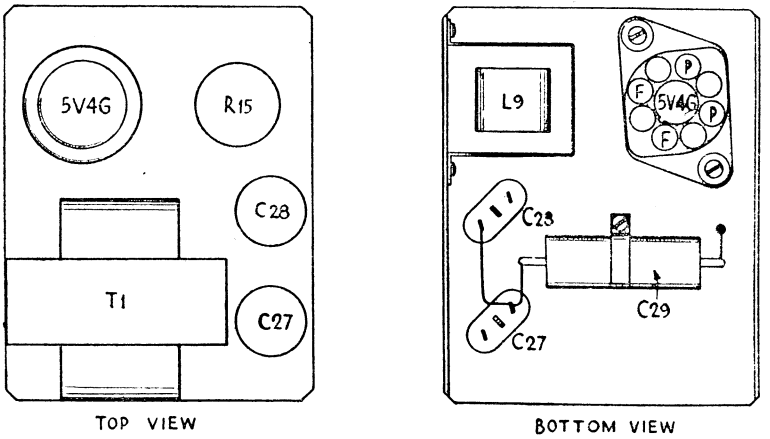
Repeat Adjustments 5, 6, 7, and 8.

* With grid clip connected. A .001 mfd. condenser should be connected in series with the active output lead of the test instrument.

† Rock the Tuning Control back and forth through the Signal. Reset the dial pointer to 600 Kc/s., if necessary.

†† With Tuning Condenser plates in full mesh.

** A coil comprising 5 or 6 turns of 16-gauge D.C.C. wire and about 6 inches in diameter should be connected between the output terminals of the test instrument and placed parallel to and approx. 3 inches from the loop.



Power Unit Layout Diagrams

POWER UNIT INSTALLATION.

IMPORTANT:

Make sure that all valves are in their sockets before attempting to operate the receiver from the power supply.

The Power Unit is a separate component, and is supplied with two cables—one black, for connection to the power point, and the other with socket attached, for plugging into the receiver.

Install the Power Unit as follows:—

(1) Open the shutter in the back of the receiver by pushing diagonally upwards, and attach the socket on the Power Unit Cable to the plug within the receiver.

(2) First make sure that the power point is switched OFF, then connect the Power Unit to the point with the black cable.

(3) Turn the receiver switch to the LEFT. The indicator pointer on the dial should be BROWN and pointing downwards to "Power."

EXTERNAL AERIAL AND EARTH TERMINALS:

These terminals are located in the upper left and right hand corners of the case back.

The loop aerial will give adequate reception in practically all localities. For reception of very weak signals it is advantageous to erect an external aerial and to use an earth wire.

BATTERY INSTALLATION:

The back of the case is fastened at the top by two knurled screws, which are also the external aerial and earth terminals. Loosen these screws, and by them pull the back out gently from the top. Do not disconnect the wiring from the loop aerial, just lay the back aside.

The battery equipment is as follows:—

1—Portable Tyle 1.5 volt Dry cell "A" battery.

2—Portable Type 45 volt "B" batteries.

The "B" batteries should be placed in the compartment beneath the chassis, as shown in the layout diagram, with the negative (—) terminal of the left-hand battery to the left, and the positive (+) terminal of the right-hand battery to the right.

The "A" battery fits in a space to the right of the chassis with its terminals upwards.

Make sure that the receiver switch is set in the "Power" position—the indicator pointer should be BROWN and pointing downwards—then connect the batteries according to the diagram.

NOTE:

It will be noticed that a maroon lead remains to be connected. This lead is the connection between the external earth terminal and the chassis. In replacing the back of the case, pass this lead between the aerial and the back, and place the lug attached to the lead on the earth terminal screw before placing the back in position.

LOOP AERIAL CONNECTIONS:

The loop aerial is connected by two leads—one green, the other black. The green lead should be connected to the upper terminal.