
THE FISK RADIOLA

Models 86, 197, 198 and 502

**FOUR VALVE, ONE BAND, BATTERY OPERATED
SUPERHETERODYNES**

Technical Information & Service Data

ELECTRICAL SPECIFICATIONS

TUNING RANGE	1600-550 K.C.	R.F. ALIGNMENT SETTINGS—600 K.C. (Osc.), 1500 K.C. (Osc. & Aer.)
INTERMEDIATE FREQUENCY		455 K.C.
CURRENT CONSUMPTION		
"A" Battery at 2 volts		0.54 amp.
"B" Battery at 135 volts		14 M.A.
REPLACEMENT FUSE		3/8 amp.
VALVE COMPLEMENT		
1C7G Converter		1K7G 2nd Det., A.V.C. and Audio Amplifier
1D5G I.F. Amplifier		1L5G Output Pentode
DIAL LAMPS		2.5 volt, .10 amp.
LOUDSPEAKER (Permanent Magnet)		
Mantel		5 inch, Type AC5
Console		7 inch, Type AY1
Loudspeaker Transformer		XA3
Voice Coil Impedance		3 ohms at 400 cycles
UNDISTORTED POWER OUTPUT		350 milliwatts

GENERAL DESCRIPTION.

The model 86 is a mantel type receiver housed in a compact moulded cabinet. The models 197, 198 and 502 are consoles.

The circuit arrangement of the chassis for the four models is practically identical, the only differences being in certain audio

components, which are dependent on the acoustical properties of the cabinets. Physically, the only difference is that in the Model 86 the loudspeaker (5 inch) is mounted on the chassis, while in the other models the loudspeaker (7 inch) is a separate unit mounted in the cabinet and connected by a cable and plug.

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. Climatic conditions should not seriously affect the receiver.

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 A.W.A. Type C1070 test oscillator is used, see that a 250,000 ohms resistor is connected between the output terminals of the instrument.

Connect the ground connection of the instrument to the receiver chassis.

Perform the 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 the 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 indication. This will avoid A.V.C. action and overloading.

ADJUSTING TOOLS.

Two tools are used in the alignment procedure; one is a combination tool for air-trimmer adjustment and locking (Part No. 5371), and the other is a non-metallic screwdriver specially constructed for adjusting the cores with the I.F. transformers and oscillator coil (Part No. 5372). These tools may be obtained from the Service Department of the Company.

OPERATION AND MAINTENANCE OF AIR-CELL.

WARNING.

Remove the dial lamps before connecting the air-cell. Dial illumination is not allowable when an air-cell is installed, as the added current drain would irreparably damage the cell.

To prepare an air-cell for service, proceed as follows:—

1. Unscrew caps and punch out the thin diaphragms which seal the bottoms of the filler holes. The pieces falling inside the cell will do no harm.
2. Fill each compartment with all the water it will hold without overflowing. Use cool drinking water. Avoid spilling by pouring from a vessel with a spout.

IMPORTANT.

Water spilled on the top of the battery must be removed immediately.

Only a single filling, if carried out as above, is required to prepare the cell for service. The solution will automatically recede to the correct level at the top of the indicator wires. Thereafter inspect the solution levels monthly, adding enough water to just cover the indicating wires inside each compartment.

3. Remove transparent coverings, as the air-cell cannot breathe with these in place. The air-cell is then ready for service.
4. If cell is carried any distance after filling, thoroughly wipe out filler caps before placing the battery in service.

To connect the air-cell, proceed as follows:—

The battery cable of the receiver is supplied fitted with two battery clips as standard equipment. Remove these clips so that the leads terminate with the two small connecting lugs. Take the air-cell resistor (found in an envelope supplied with the receiver). The resistor is fitted with two lugs, one round, the other in the form of a hook for connecting to the air-cell.

With the screw and nut supplied, connect the round lug to the lug attached to the positive (red) lead of the battery cable. Connect the hook lug on the other end of the resistor to the positive (+) clip on the air-cell and the negative (black) lead of the battery cable to the negative (—) clip. The correct air-cell resistor (part No. 4674) is coloured green so that it may be positively identified.

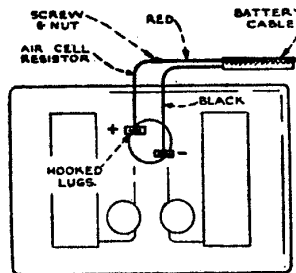
Refer to the diagram below for a complete illustration of the installation.

WARNING.

The air-cell will be quickly and permanently damaged:—

1. If short-circuited.
2. If current drain exceeds 650 M.A. (0.65 amps.).
3. If solution levels are not kept properly adjusted.
4. If vent holes in filler caps become plugged.

The air-cell contains caustic soda, which can be neutralised by acetic acid (vinegar).



Air-Cell Connections.

ALIGNMENT TABLE.

Alignment Order	TEST INSTRUMENT		RECEIVER		
	Test Inst. Connection to Receiver	Test Inst. Setting	Receiver Dial Setting	Circuit to Adjust	Adjust for Maximum Peak Output
1	*1C7G Grid Cap	455 K.C.	550 K.C.	2nd I.F. Trans.	L8
2	*1C7G Grid Cap	455 K.C.	550 K.C.	2nd I.F. Trans.	L7
3	*1C7G Grid Cap	455 K.C.	550 K.C.	1st I.F. Trans.	L6
4	*1C7G Grid Cap	455 K.C.	550 K.C.	1st I.F. Trans.	L5
Repeat the above adjustments before proceeding.					
5	Aerial Term.	600 K.C.	600 K.C.†	Oscillator	Core L4
6	Aerial Term.	1500 K.C.	1500 K.C.	Oscillator	C5
7	Aerial Term.	1500 K.C.	1500 K.C.	Aerial	C2

Repeat adjustments 5, 6 and 7.

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

† Rock the tuning control back and forth through the signal. Reset the dial pointer to 600 K.C. if necessary. The pointer is soldered to the control wire and may be moved by applying a hot soldering iron to the connection.

