

THE FISK RADIOLA

Models 65, 65-Z, 66 and 66-Z

FOUR VALVE, ONE BAND, BATTERY-A.C. OPERATED (65, 65-Z),
AND FIVE VALVE, TWO BAND, BATTERY-VIBRATOR-A.C.
OPERATED (66, 66-Z), PORTABLE SUPERHETERODYNES

Technical Information & Service Data

NOTE: The data given in this booklet mainly concerns the Models 66 and 66-Z. For data on the Model 65 refer to the Technical Information and Service Data booklet for the Model 63, which used the same chassis and equipment.

The Model 65-Z is a modification of the Model 65, and differs from that model only as detailed in this booklet under the heading "Modification Details 65-65-Z."

The models 66 and 66-Z are electrically identical, the only difference being in cabinet design.

ELECTRICAL SPECIFICATIONS

TUNING RANGES.

"Standard Medium Wave" 1600—550 Kc.
"Short Wave" 13.6—43 M.

R.F. ALIGNMENT SETTINGS.

"Standard Medium Wave" 600 Kc. (Osc.) 1500 Kc. (Osc. and Aer.)
"Short Wave" 15 M. (Osc. and Aer.).

INTERMEDIATE FREQUENCY

455 Kc.

BATTERY COMPLEMENT: Battery Operation:

"A" Battery—One 1.5V. Portable Type Dry Cell.
"B" Battery—Two 45 volt Portable Type "B" Batteries.

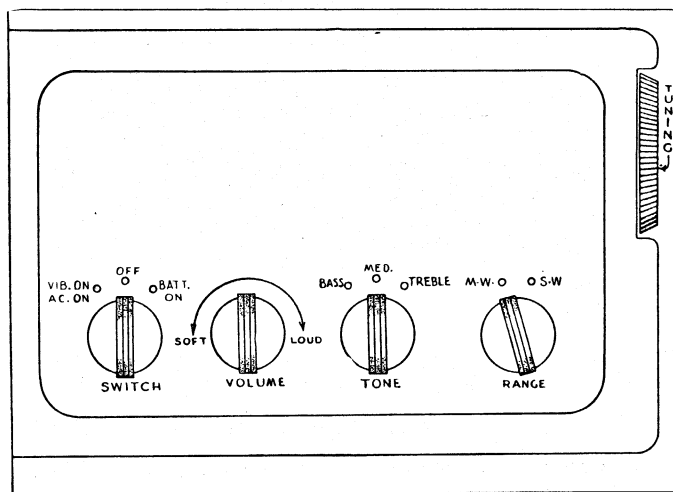
Vibrator Operation:

6 volt Accumulator.

CURRENT CONSUMPTION:

"A" Battery at 1.5 volts3 amp.
"B" Battery at 90 volts 12 M.A.
6 volt Accumulator (Vibrator Operation)6 amp.

CONTROLS.



A.C. POWER UNIT:

Model 65 Type 8491
Model 65-Z Type 8491-Z.
Model 66 Type 9904
Voltage and Frequency Rating 200-260 volts, 40-60 C.
Power Consumption 30 watts.

VIBRATOR POWER UNIT

Type 9902

VALVE COMPLEMENT:

(1) 1A7GT Converter (4) 1H5GT Det., A.V.C. and A.F. amp.
(2) 1P5GT I.F. Amplifier. (5) 1Q5GT Output.
(3) 1P5GT I.F. Amplifier. A.C. Power Unit Rectifier—5V4G.

REPLACEMENT VIBRATOR

Oak, Type V5211.

REPLACEMENT FUSE (VIBRATOR UNIT)

5 amp.

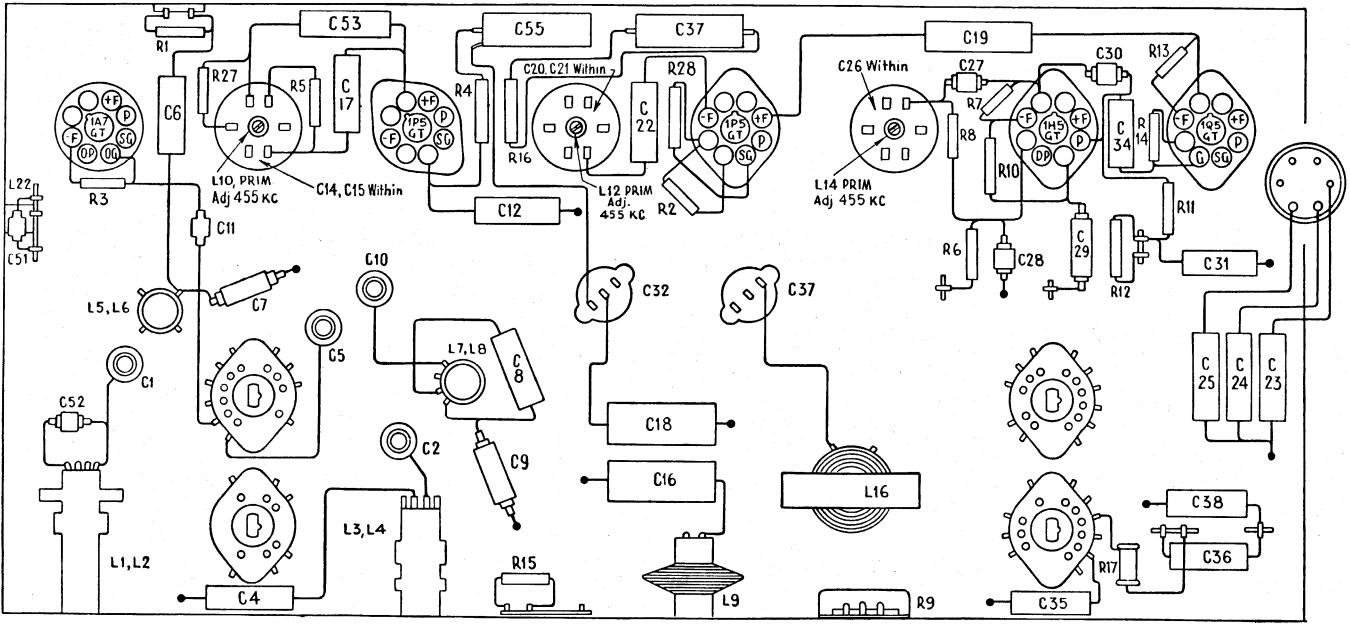
LOUDSPEAKER: Type—AY9.

Transformer—XA7/1.

Voice Coil Impedance—3 ohms at 400 C.

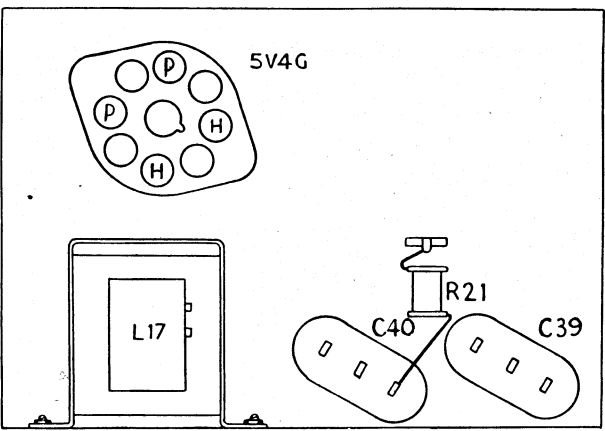
UNDISTORTED POWER OUTPUT

200 Milliwatts.

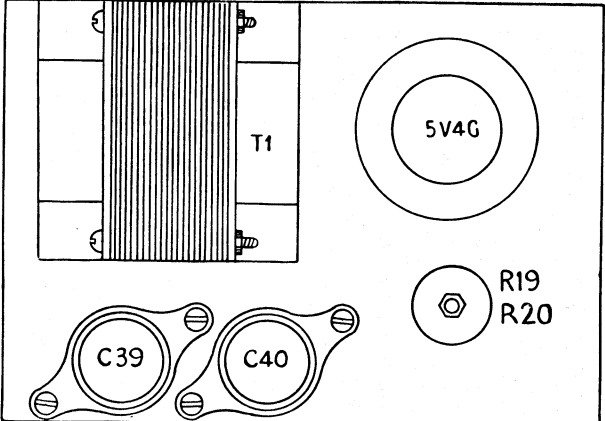


Layout Diagram (Underneath View)

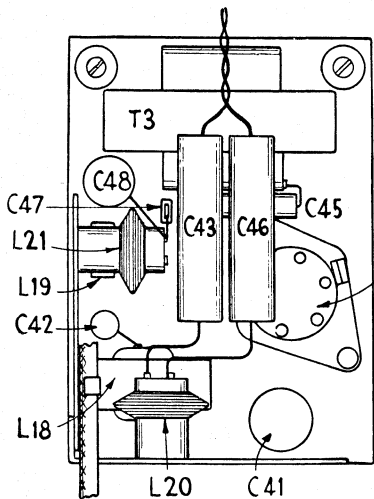
BOTTOM VIEW



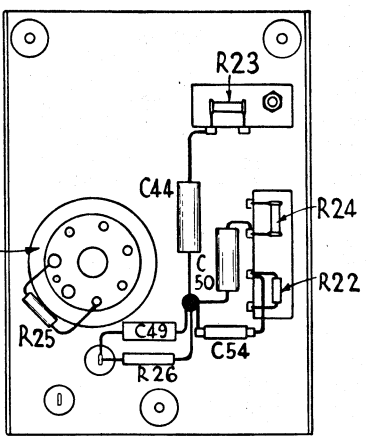
TOP VIEW



A.C. Power Unit Layout Diagram.



TOP VIEW



BOTTOM VIEW

Vibrator Power Unit Layout Diagram.

ALIGNMENT PROCEDURE.

Alignment should be necessary only when adjustments have been altered from the factory setting or when repairs have been made in the tuned circuits. Climatic conditions should not seriously affect the Receiver.

It is important to apply a definite procedure, as given in this booklet, and to use adequate and reliable test equipment. Instruments ideally suited to the requirements are either the A.W.A. Junior Signal Generator, Type 2R3911, or the A.W.A. Modulated Oscillators, Types J6726 and C1070. If either of the latter instruments is used, see that a 250,000 ohms resistor is connected between the output terminals of the instrument, and for Short Wave

alignment a 400 ohms non-inductive resistor in series with the "hot" output lead of the instrument.

Perform alignment in the proper order as shown in the chart starting from 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 give a standard indication on the output meter. This will avoid A.V.C. action and overloading.

When the Receiver has been satisfactorily aligned, seal the adjusting screws with a small quantity of celluloid cement to eliminate the possibility of their shifting.

ALIGNMENT TABLE

Alignment Order	Test Inst. Connection to Receiver	Test Inst. Setting	Receiver Calibration Scale Setting	Circuit to adjust	Adjust for max. peak output	
1	*1A7GT Grid Cap	455 Kc.	0°	3rd. I.F. Trans.	L14	
2	*1A7GT Grid Cap	455 Kc.	0°	2nd. I.F. Trans.	L13	
4	*1A7GT Grid Cap	455 Kc.	0°	2nd. I.F. Trans.	L12	
3	*1A7GT Grid Cap	455 Kc.	0°	1st. I.F. Trans.	L11	
5	*1A7GT Grid Cap	455 Kc.	0°	1st. I.F. Trans.	L10	
		Repeat the above adjustments.				
6	Aerial	600 Kc.	†	Oscillator	Core L6	
7	Aerial	1,500 Kc.	155.2°	Oscillator	C5	
8	Aerial	1,500 Kc.	155.2°	Aerial	C1	
		Repeat adjustments 6, 7 and 8.				
9	Aerial	15 M.	156°	Oscillator	C10**	
10	Aerial	15 M.	156°	Aerial	C2***†	

* With grid clip connected. .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.

** Use Minimum capacity peak if two peaks can be obtained.

*** Use Maximum capacity peak if two peaks can be obtained.

‡ Tune for image signal by tuning the Receiver to approximately 144° on the calibration scale. It should be necessary to increase the output of the Test Instrument to receive the signal.

SOCKET VOLTAGES.

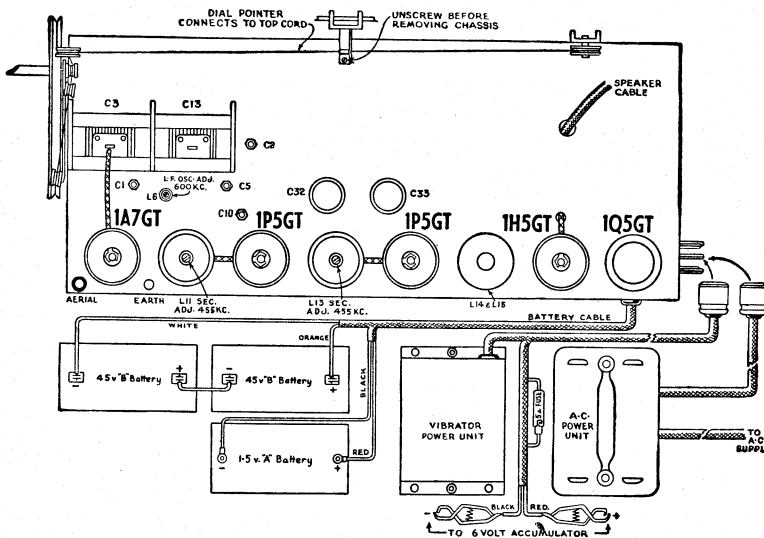
VALVE	Bias Volts	Screen To Chassis Volts	Grid Plate to Chassis Volts	Plate Current M.A.	Filament Volts
1A7GT Converter	0	40	84* 90‡	.2	1.4* — 1.4‡
Oscillator M.W. S.W.	—	—	50	.8	—
			75	1.1	—
1P5GT I.F. Amp.	0	84* 90‡	84* 90‡	1.5	1.4* + 1.4‡
1P5GT I.F. Amp.	0	84* 90‡	84* 90‡	1.5	1.4* + 1.4‡
1H5GT Detector	0	—	50	.03	1.4* — 1.4‡
1Q5GT Output	-6* -4.5†‡	84* 90‡	80* 85‡	6* 9‡	1.4* + 2.8‡
5V4G Rectifier	200/100 V.,	110 M.A.	D.C.		

Measured with Volume Control maximum clockwise. No signal input.

† Cannot be measured accurately with ordinary voltmeter.

* Battery Operation.

‡ A.C. or Vibrator power operation.



Layout Diagram (Top View).

MODIFICATION DETAILS RADIOLA 65—65-Z.

The A.C. Power Unit is rated to operate on supply voltages of 200-230 and 230-260 volts A.C.

When the Model 65 was operated from the Mains in circumstances where the supply voltage approached the minimum of each voltage range, low filament voltages resulted. It was found that the 1Q5GT valve did not operate satisfactorily at this reduced voltage and a modification was made to the circuit arrangement of both the Receiver chassis and the A.C. Power Unit to ensure correct filament voltages over the entire input voltage range of the transformer.

The modification which resulted in Receivers embodying it being titled Model 65-Z is as follows:—

RECEIVER CHASSIS.

- (1) R11 in the circuit code was changed from a 26 ohms to a 20 ohms, 3 watt resistor.

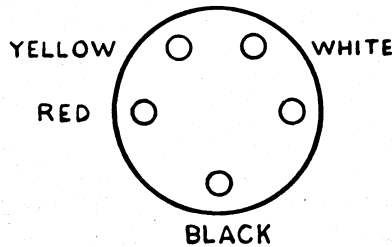
- (2) A 200 ohms 1/3 watt resistor was connected from the negative filament tag of the 1Q5GT valve socket to chassis.

A.C. Power Unit.

The filament dropping resistor R15 was changed from a 1,040 ohms to a 940 ohms wire wound.

In order to prevent a Model 65-Z A.C. Power Unit being fitted to a Model 65, Receiver chassis, which may damage the valves, the Model 65-Z is fitted with a five prong connecting plug for A.C. Power Unit operation, and by this it may be identified. The connections of the five pin plug (viewed from within the Receiver) are shown in the accompanying diagram.

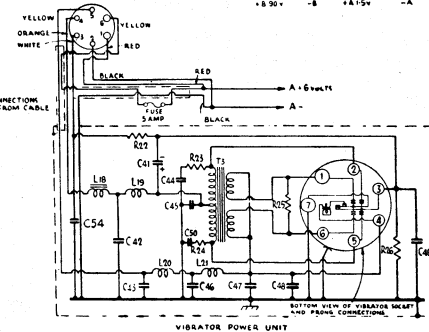
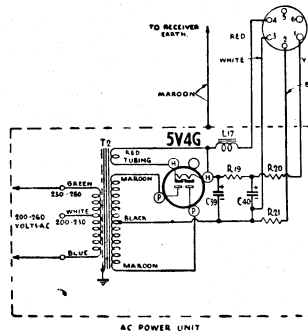
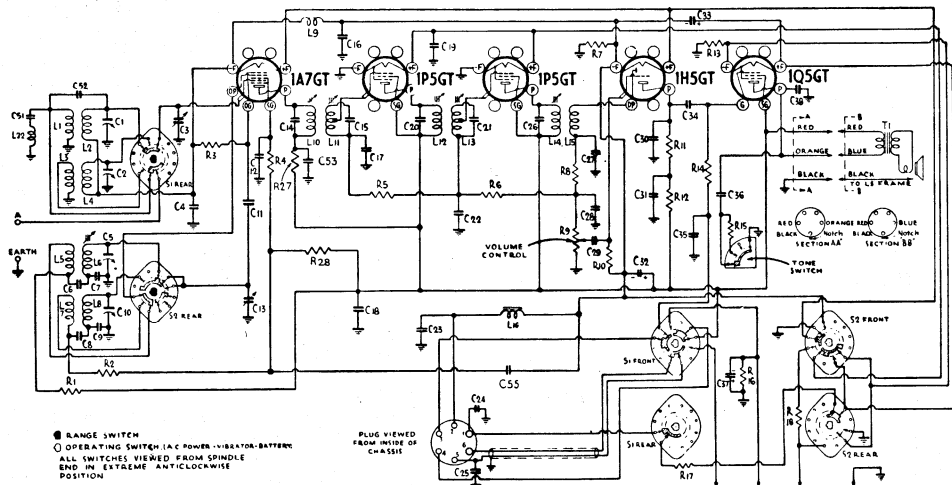
This modification applies only to A.C. Power Unit operation, due to the filaments being connected series—parallel, and is irrelevant to battery operation since in the latter case the filament current depends on the condition of the "A" battery.



MECHANICAL REPLACEMENT PARTS.

DESCRIPTION.	PART No.
Dial Frame Assembly	9907
Dial Scale	9783
Dial Pointer Drive Cord	9576A
Dial Pointer Drive Cord Spring	6641
Calibration Scale 0-180°	9409
Pointer Drive Drum	9090
Tuning Control Knob	8075
Small Knobs	4589
Valve Sockets (4)	4704
Valve Socket (Cushion)	7326
Valve Shields	8147
Valve Clips	7459
Range Switch	9495
Operating Switch	9494
Loudspeaker Cone Assembly	9356
Tone Switch	9496

CIRCUIT DIAGRAM AND CODE



Code No.	Part No.	Description	Code No.	Part No.	Description	Code No.	Part No.	Description
COILS.								
L1, 2	7974	Aerial Coil 1600-550 K.C.	R14		1.75 meg. 1/3 watt	C20		115 mmfd Silvered Mica
L3, 4	9569	Aerial Coil 13.6-43 M.	R15		10,000 ohms 1/3 watt	C21		130 mmfd Silvered Mica
L5, 6	7638	Oscillator Coil 1600-550 K.C.	R16		500 ohms 1 watt	C22		.05 mfd Paper
L7, 8	9570	Oscillator Coil 13.6-43 M.	R17		20 ohms 3 watt	C23		.01 mfd Paper
L9	8569	Filament Choke	R18		.33 ohms Wire-Wound	C24		.01 mfd Paper
L10, 11	6076Z	1st I.F. Transformer	R19 } R20 }		940 ohms 30 watt	C25		.01 mfd Paper
L12, 13	5688Z	2nd I.F. Transformer	R21		20 ohms 3 watt	C26		70 mmfd Silvered Mica
L14, 15	5759Z	3rd I.F. Transformer	R22		200,000 ohms 1/3 watt	C27		110 mmfd Mica (L)
L16	TU20	Filament Choke	R23		100 ohms 1/3 watt	C28		110 mmfd Mica (L)
L17	8321	Filter Choke	R24		100 ohms 1/3 watt	C29		1500 mmfd Mica
L18	8321	Filter Choke	R25		400 ohms 1/3 watt	C30		110 mmfd Mica (L)
L19	3036	R.F. Choke	R26		150 ohms 1 watt	C31		.1 mfd Paper
L20	8569	R.F. Choke	R27		400 ohms 1/3 watt	C32		20 mfd 200 P.V. Electro.
L21	8569	R.F. Choke	R28		5000 ohms 1 watt	C33		400 mfd 12 P.V. Electro.
L22, C51	9382	Filter Unit						
TRANSFORMERS.								
T1	XA7/1	Loudspeaker Transformer						
T2	8486	Power Transformer 40-60c.						
T3	9338	Vibrator Transformer						
RESISTORS.								
R1		40,000 ohms 1 watt						
R2		400 ohms 1/3 watt						
R3		100,000 ohms 1/3 watt						
R4		70,000 ohms 1 watt						
R5		100,000 ohms 1/3 watt						
R6		1.75 meg. 1/3 watt						
R7		200 ohms 1/3 watt						
R8		20,000 ohms 1/3 watt						
R9	6491	500,000 ohms Vol. Cont.						
R10		10 meg. 1 watt						
R11		1 meg. 1 watt						
R12		250,000 ohms 1 watt						
R13		400 ohms 1/3 watt						
CONDENSERS.								
C1	3661	2-20 mmfd Air-trimmer						
C2	5435	6-24 mmfd Air-trimmer						
C3	9575	Tuning Condenser						
C4		.05 mfd Paper						
C5	3411	11-29 mmfd Air-trimmer						
C6		.05 mfd Paper						
C7		440 mmfd Mica (Padder)						
C8		.05 mfd Paper						
C9		4000 mmfd Mica (Padder)						
C10	3658	2-10 mmfd Air-trimmer						
C11		50 mmfd Mica (D)						
C12		.1 mfd Paper						
C13	9575	Tuning Condenser						
C14		115 mmfd Silvered Mica						
C15		130 mmfd Silvered Mica						
C16		.5 mfd Paper						
C17		.05 mfd Paper						
C18		.5 mfd Paper						
C19		.5 mfd Paper						
C20		115 mmfd Silvered Mica						
C21		130 mmfd Silvered Mica						
C22		.05 mfd Paper						
C23		.01 mfd Paper						
C24		.01 mfd Paper						
C25		.01 mfd Paper						
C26		70 mmfd Silvered Mica						
C27		110 mmfd Mica (L)						
C28		110 mmfd Mica (L)						
C29		1500 mmfd Mica						
C30		110 mmfd Mica (L)						
C31		.1 mfd Paper						
C32		20 mfd 200 P.V. Electro.						
C33		400 mfd 12 P.V. Electro.						
C34		.005 mfd Paper						
C35		.1 mfd Paper						
C36		.02 mfd Paper						
C37		400 mfd 12 V. Electro.						
C38		.0025 mfd Paper						
C39		20 mfd 200 P.V. Electro.						
C40		20 mfd 200 P.V. Electro.						
C41		8 mfd 525 P.V. Electro.						
C42		.01 mfd Paper						
C43		.25 mfd Paper						
C44		.02 mfd Paper						
C45		.01 mfd Paper						
C46		.25 mfd Paper						
C47		300 mmfd Mica						
C48		.5 mfd Paper						
C49		200 mmfd Mica (J)						
C50		.02 mfd Paper						
C51		50 mmfd Silvered Mica						
C52		4 mmfd Mica						
C53		.1 mfd Paper						
C54		200 mmfd Mica (J)						
C55		20 mfd 200 V. Electro.						