General Electric Co.

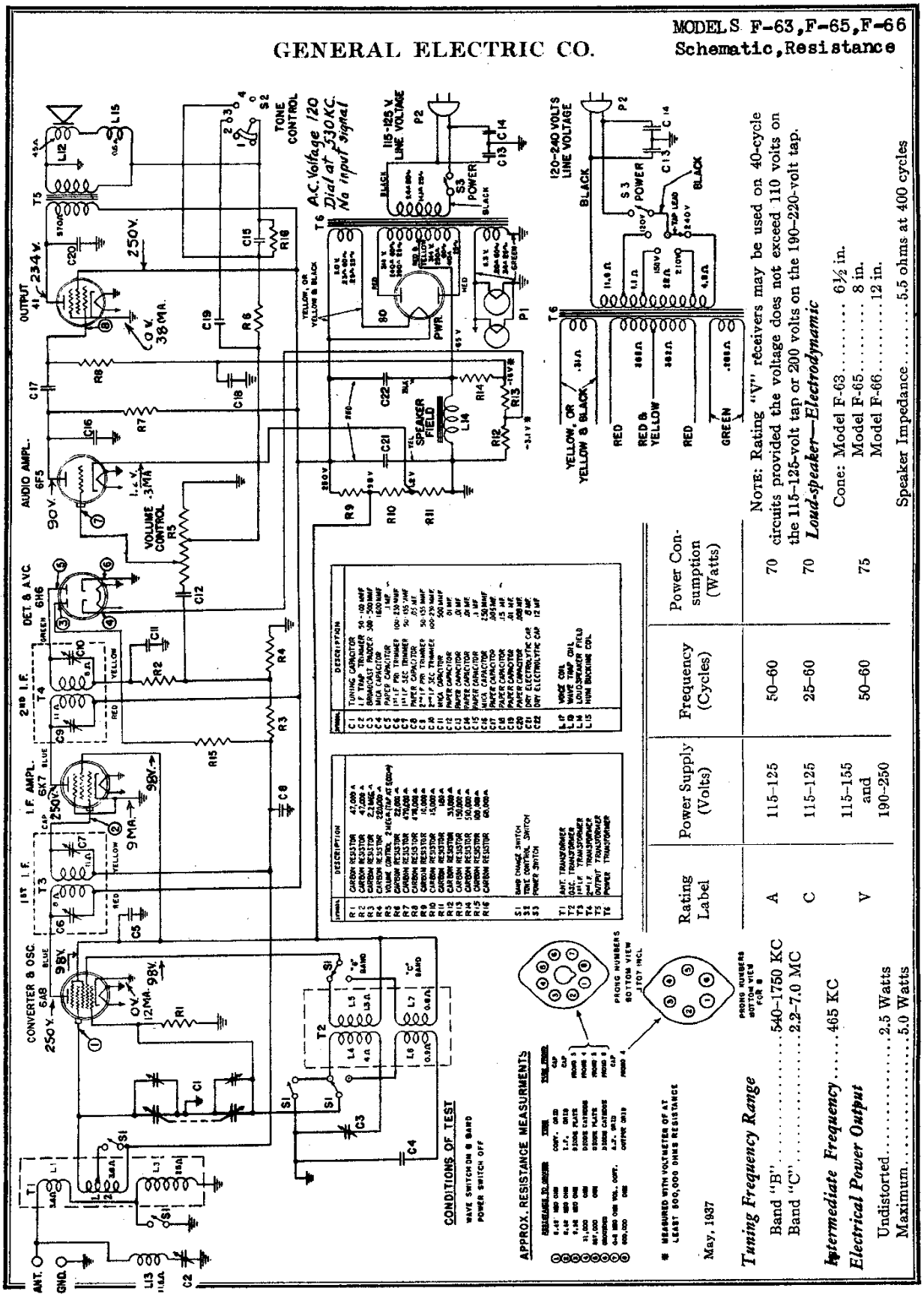
	Model: F65	Chassis:	Year: Pre October 1937
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		

Resources

- Riders Volume 8 - GE 8-27
- Riders Volume 8 - GE 8-28

GENERAL ELECTRIC CO.

MODELS F-63, F-65, F-66
Schematic, Resistance



SYMBOL	DESCRIPTION
R1	CARBON RESISTOR 47,000 A
R2	CARBON RESISTOR 47,000 A
R3	CARBON RESISTOR 2.2 MEG. A
R4	CARBON RESISTOR 220,000 A
R5	VOLUME CONTROL 2 MEG TAP AT 650 OHMS
R6	CARBON RESISTOR 470,000 A
R7	CARBON RESISTOR 470,000 A
R8	CARBON RESISTOR 10,000 A
R9	CARBON RESISTOR 15,000 A
R10	CARBON RESISTOR 150 A
R11	CARBON RESISTOR 35,000 A
R12	CARBON RESISTOR 150,000 A
R13	CARBON RESISTOR 340,000 A
R14	CARBON RESISTOR 100,000 A
R15	CARBON RESISTOR 60,000 A
R16	CARBON RESISTOR 60,000 A
S1	BAND CHANGE SWITCH
S2	TONE CONTROL SWITCH
S3	POWER SWITCH
T1	ANT. TRANSFORMER
T2	OSC. TRANSFORMER
T3	1ST I.F. TRANSFORMER
T4	2ND I.F. TRANSFORMER
T5	OUTPUT TRANSFORMER
T6	POWER TRANSFORMER

SYMBOL	DESCRIPTION
C1	TUNING CAPACITOR
C2	I.F. TRAP TRIMMER 50 - 100 MMF
C3	BROADCAST PADDER .001 - .500 MMF
C4	MICA CAPACITOR 1500 MMF
C5	PAPER CAPACITOR .1 MF
C6	1ST I.F. PRI. TRIMMER 100 - 350 MMF
C7	1ST I.F. SEC. TRIMMER 100 - 350 MMF
C8	PAPER CAPACITOR .05 MF
C9	2ND I.F. PRI. TRIMMER 50 - 155 MMF
C10	2ND I.F. SEC. TRIMMER 100 - 330 MMF
C11	PAPER CAPACITOR .006 MF
C12	PAPER CAPACITOR .01 MF
C13	PAPER CAPACITOR .05 MF
C14	PAPER CAPACITOR .1 MF
C15	PAPER CAPACITOR .25 MF
C16	MICA CAPACITOR 250 MMF
C17	PAPER CAPACITOR .005 MF
C18	PAPER CAPACITOR .01 MF
C19	PAPER CAPACITOR .006 MF
C20	PAPER CAPACITOR 8 MF
C21	DRY ELECTROLYTIC CAP. 8 MF
C22	DRY ELECTROLYTIC CAP. 12 MF
L1F	VOICE COIL
L9	WAVE TRAP COIL
L14	LOUDSPEAKER FIELD
L15	HUM BUCKING COIL

Tuning Frequency Range	Rating Label	Power Supply (Volts)	Frequency (Cycles)	Power Consumption (Watts)
Band "B" ..... 540-1750 KC	A	115-125	50-60	70
Band "C" ..... 2.2-7.0 MC	C	115-125	25-60	70
Intermediate Frequency ..... 465 KC				
Electrical Power Output	V	115-155 and 190-250	50-60	75
Undistorted ..... 2.5 Watts				
Maximum ..... 5.0 Watts				

NOTE: Rating "V" receivers may be used on 40-cycle circuits provided the voltage does not exceed 110 volts on the 115-125-volt tap or 200 volts on the 190-220-volt tap.

Loud-speaker—Electrodynamic

Cone: Model F-63 ..... 6½ in.
Model F-65 ..... 8 in.
Model F-66 ..... 12 in.

Speaker Impedance ..... 5.5 ohms at 400 cycles

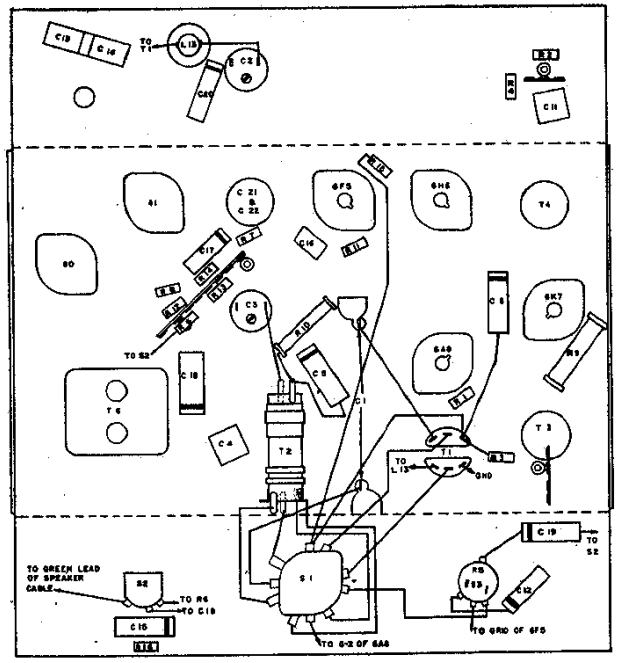


Fig. 2. Chassis Parts Layout

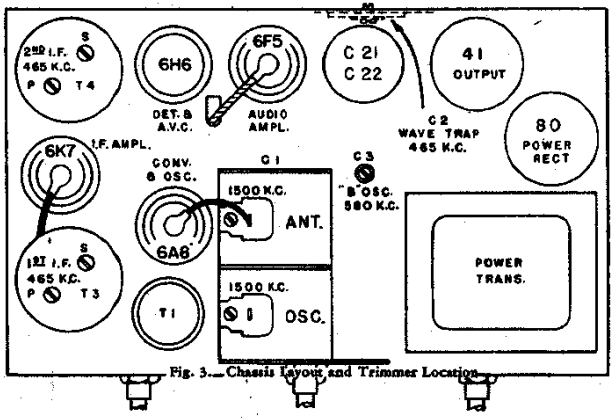


Fig. 3.—Chassis Layout and Trimmer Location

I. F. ALIGNMENT WITH OSCILLOSCOPE

Band Switch Setting	Input Freq.	Point of Input	Dummy Antenna	Trimmer	Comments
1. Band "B"	465 K.C. Sweep	I.F. Grid	.05 Mfd. or Larger	2nd I.F. Sec. (C-10) 2nd I.F. Pri. (C-9)	Gang condenser plates wide open—connect audio input of oscilloscope to ground and to the junction of R-3 and R-4 of the 2nd I.F. transformer—Adjust trimmers in order mentioned for a single symmetrical curve of maximum amplitude.
2. Band "B"	465 K.C. Sweep	Converter Grid	.05 Mfd. or Larger	1st I.F. Sec. (C-7) 1st I.F. Pri. (C-6)	
3. Band "B"	465 K.C. Sweep	Antenna Post	250 Mmf. 400 ohms	Wave Trap Trimmer (C-2)	Adjust trimmer for minimum amplitude.

I. F. ALIGNMENT WITH OUTPUT METER

1. Band "B"	465 K.C. with Modulation	I.F. Grid	.05 Mfd. or Larger	2nd I.F. Sec. (C-10) 2nd I.F. Pri. (C-9)	Gang condenser plates wide open—connect output meter across voice coil—keep input signal low and volume control on as far as possible. Adjust all trimmers for maximum output
2. Band "B"	465 K.C. with Modulation	Converter Grid	.05 Mfd. or Larger	1st I.F. Sec. (C-7) 1st I.F. Pri. (C-6)	
3. Band "B"	465 K.C. with Modulation	Antenna Post	250 Mmf. 400 ohms	Wave Trap Trimmer (C-2)	Adjust trimmer for minimum output.

R. F. ALIGNMENT

1. Band "B"					Close gang plates—Adjust pointer to first line at left end of tuning scale.
2. Band "C"	No adjustments necessary				
3. Band "B"	1500 K.C. with Modulation	Antenna Post	250 Mmf. 400 ohms	Osc. trimmer (Front sect. of gang cond.) Ant. trimmer (Rear sect. of gang cond.)	Connect output meter across voice coil—tone control on "bass" position—peak trimmers for maximum output with a low input signal.
4. Band "B"	580 K.C. with Modulation	Antenna Post	250 Mmf. 400 ohms	Osc. padder (C-3)	Adjust padder for a maximum output meter indication in vicinity of 580 K.C. while rocking the gang condenser.
5. Band "B"	Repeat operation No. 3				

L1, L2 and L3 are the components of the "B" band antenna coil and are wound on the same coil form. When operating in the "C" band, L3 and a part of L2 are shorted out by the wave change switch. L4–L5 and L6–L7 are the "B" and "C" band oscillator coils respectively and are wound on the same coil form. The "B" band oscillator grid coil is shorted out by a contact of S-1 when the set is operating on the "C" band.

The intermediate frequency amplifier consists of a 6K7 tube and two transformers, both of which have tuned primaries and secondaries. The output of this amplifier is applied to one plate of the 6H6 diode which is a combined detector, initial bias and automatic volume control tube.

Volume is controlled by the variable potentiometer R-5 in the grid circuit of the 6F5 1st audio amplifier tube. The output of the 6F5 tube is resistance coupled to the grid of the type 41 power amplifier pentode. The plate circuit of the 41 tube is suitably matched to the loud-speaker by means of a step-down output transformer.

Proper bias voltages for the various tubes are obtained by the use of a tapped bleeder circuit across the speaker field L14. One of the cathodes of the 6H6 diode is returned to —3.1 volts on this bleeder circuit in order to provide initial bias to all the tubes controlled by the A.V.C.

Tone Control

When the tone control switch is in the "normal" position, a portion of the output voltage of the receiver is fed back through a resistor-capacitor network consisting of C-15, R-16 and R-6 to a tap on the volume control. This feed back voltage is out of phase with the input and the resulting degeneration improves the frequency characteristic and reduces distortion. In the "bass" position, the tone control switch connects C-19 in parallel with the above network. The value of C-19 is such that more degeneration of the high than the low frequency notes occurs, thereby increasing the bass response. The "foreign" position of the switch shorts out C-15 and R-16 and places C-19 and R-6 in parallel which gives a frequency response best suited for short-wave reception. In the "speech" position, C-15 and R-16 are shorted out, C-19 is removed from the circuit, leaving R-6, thereby providing flat degeneration at all frequencies which is the most desirable condition for the reception of programs predominating in speech. The tone control switching described can be traced on the schematic diagram shown in Fig. 1.

Tubes

Oscillator and Converter	6A8 Pentagrid converter
IF Amplifier	6K7 Triple-grid Super-control Amplifier
Detector and AVC	6H6 Twin Diode
First Audio Amplifier	6F5 High-gain Triode
Audio Power Amplifier	41 Power Amplifier Pentode
Rectifier	80 Full-wave Rectifier
Dial Lamp	MAZDA No. 46