

Models 52, 52A

Portable Multi-Wave Radio Receivers

Specifications

Frequency Range:

Broadcast—540 to 1760 K.C.

Short Wave—2.35 to 6.4 megacycles

I.F.:

462.5 K.C.

Tubes:

Type	Position
2A7	Autodyne Detector Oscillator
58	I.F. Amplifier
2B7	2nd Detector, A.V.C., and 1st A.F. Amplifier
45	Power Amplifier
80	Power Rectifier

Power Supply:

Model 52—105 to 125 volt A.C. 60 cycles

Model 52A—105 to 125 volt A.C. 60 or 25
cycles

A.V.C.:

on Types 2A7 and 58 tubes

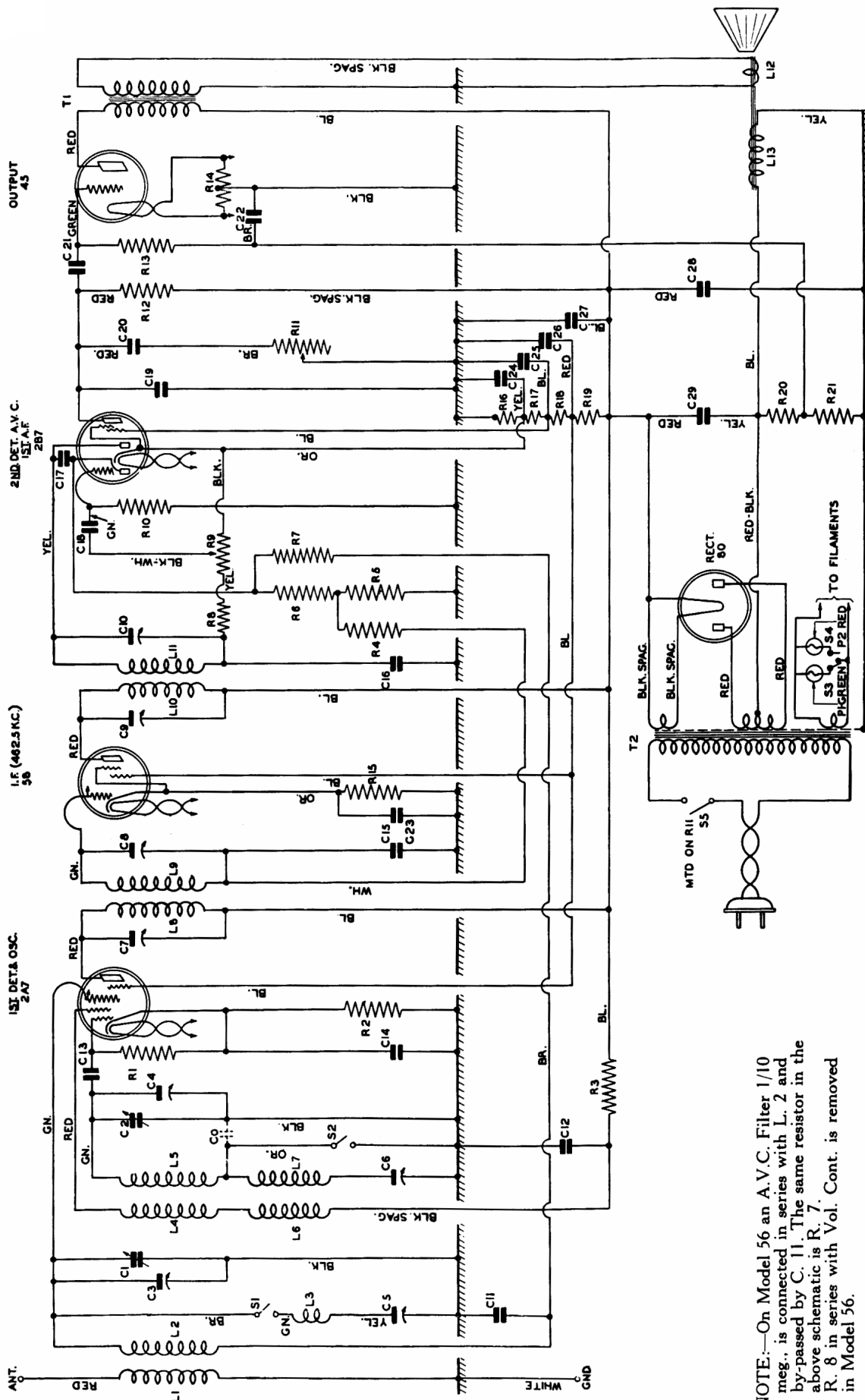
Controls:

Left—A.C. Switch and Tone Control

1st to Right—Volume control

2nd to Right—Tuning control

Extreme right—Wave change switch



Chassis Layout—Model 52 Receiver

NOTE:—On Model 56 an A.V.C. Filter 1/10 meg., is connected in series with L. 2 and by-passed by C. 11. The same resistor in the above schematic is R. 7. Cont. is removed R. 8 in series with Vol. Cont. is removed in Model 56.

REPLACEMENT PARTS LIST

CAPACITORS:

	Part No.
C-1 Main Tuning, R.F. Transformer Secondary.....	Main Tuning unit with trimmers. Total capacity 472 mmfds. K-1006
C-2 Main Oscillator Tuning.....	
C-3 Trimmer, Antenna Tuning.....	
C-4 Trimmer, Oscillator Tuning (Parallel Pad; 1400 K.C. aligning).....	
C-5 Trimmer, 600-1600 mmfd, Short Wave Shunt Coil.....	K-1028-2
C-6 Trimmer, 300-750 mmfd, Oscillator, 600 K.C. aligning.....	K-1028-4
C-7 Trimmer, 7-80 mmfd. 1st I.F. Transformer Primary.....	K-1018-2
C-8 Trimmer, 7-80 mmfd. 1st I.F. Transformer Secondary.....	
C-9 Trimmer, 7-80 mmfd. 2nd I.F. Transformer Primary.....	K-1018-2
C-10 Trimmer, 7-80 mmfd. 2nd I.F. Transformer Secondary.....	
C-11 First Detector Grid By-Pass, .05 mfd., 175 volts.....	K-2227-8
C-12 Plate By-Pass, .05 mfd., 350 volts.....	K-2228-8
C-13 Blocking (Grid) 100 mmfd. Mica.....	K-1611-2
C-14 First Detector Cathode By-Pass, .05 mfd. 175 volts.....	K-2227-8
C-15 I.F. Grid Filter, .05 mfd. 175 volts.....	K-2227-8
C-16 2nd Detector I.F. Filter, 100 mmfd, Mica.....	K-1611-2
C-17 D.C. Blocking (diode parallelling) 100 mmfd. Mica.....	K-1611-1
C-18 Blocking, .005 mfd. 175 volts. Mounted in.....	K-1101
C-19 2nd Det. Plate By-Pass .0005 mfd. Mica.....	K-1611-6
C-20 Tone Control, .005 mfd. 350 volts.....	Mounted in K-1103
C-21 D.C. Blocking, .005 mfd. 350 volts.....	Mounted in K-1103
C-22 Filter, .05 mfd. 175 volts.....	All Mounted in K-1101
C-23 I.F. Cathode By-Pass, .05 mfd. 175 volts.....	
C-24 2nd Det. Cathode By-Pass, .5 mfd. 175 volts.....	
C-25 2nd Det. Screen By-Pass, .1 mfd. 175 volts.....	
C-26 Screen By-Pass, .25 mfd. 175 volts.....	K-1103
C-27 Plate By-Pass, .25 mfd. 350 volts.....	
C-28 Filter, 8 mfd. 450 volts.....	K-1003-2
C-29 Filter, 8 mfd. 300 volts.....	

RESISTORS:—

R-1 Oscillator Grid, 25,000 ohms, 1/2 watt.....	K-2226-7
R-2 First Det. Cathode By-Pass, 250 ohms, 1/2 watts.....	K-2226-21
R-3 A.V.C. Filter, 20,000 ohms, 1/2 watt.....	K-2226-8
R-4 A.V.C. Filter, 500,000 ohms, 1/2 watt.....	K-2226-3

RESISTORS (Cont'd.)

	Part No.
R-5 A.V.C. Load, 250,000 ohms, 1/2 watt.....	K-2226-4
R-6 A.V.C. Load, 1 meg. 1/2 watt.....	K-2226-1
R-7 A.V.C. Filter, 100,000 ohms, 1/2 watt.....	K-2226-5
R-8 Grid Filter, 50,000 ohms, 1/2 watt.....	K-2226-6
R-9 Volume Control, 0-500,000 ohms, Variable.....	K-1092-2
R-10 Second Detector Grid, 1 meg. 1/2 watt.....	K-2226-2
R-11 Tone Control, 0-500,000 ohms, variable.....	K-1142
R-12 2nd Det. Plate, 250,000 ohms, 1/2 watt.....	K-2226-4
R-13 Audio Grid, 500,000 ohms, 1/2 watt.....	K-2226-3
R-14 Centre-tap, 6 ohms.....	K-1025-1
R-15 I.F. Cathode Bias, 400 ohms, 1/2 watt.....	K-2226-19
R-16 2nd Det. Cathode Bias, 500 ohms, 1/2 watt.....	K-2226-18
R-17 Screen, 7000 ohms, 1/2 watt.....	K-2226-50
R-18 2nd Det. Screen 7,000 ohms, 1/2 watt.....	K-2226-50
R-19 1st Det. & I.F. Screen, 15000 ohms, 2 watts.....	K-1095-2
R-20 Divider, 400,000 ohms, 1/2 watt.....	K-2226-57
R-21 Divider, 440,000 ohms, 1/2 watt.....	K-2226-58

COILS:—

L-1 Antenna R.F. Transformer Primary.....	K-1001
L-2 Antenna R.F. Transformer Secondary.....	
L-3 Antenna S.W. Shunt.....	K-1094
L-4 S.W. Oscillator Plate.....	K-1064-1 Oscillator I.F. Coil Assembly
L-5 S.W. Oscillator Grid.....	
L-6 Broadcast Oscillator Plate.....	
L-7 Broadcast Oscillator Grid.....	
L-8 1st I.F. Transformer Primary.....	K-1004-1
L-9 1st I.F. Transformer Secondary.....	
L-10 2nd I.F. Transformer Primary.....	
L-11 2nd I.F. Transformer Secondary.....	
L-12 Voice Coil & Diaphragm (4 ohms).....	Parts of Loud-speaker Assy. K-1022-2 K-1021-2
L-13 Field Coil, 1570 ohms.....	

TRANSFORMERS:

T-1 Output Transformer.....	K-1023-2
T-2 Power Transformer—60 cycles.....	K-1007-1
25 cycles.....	K-1007-2

SWITCHES:—

S-1 Wave Change Switch.....	K-1214
S-2 Wave Change Switch.....	
S-3 Wave Change Switch.....	
S-4 Wave Change Switch.....	
S-5 A.C. Power Switch (Mounted on Tone Control).....	K-1142
P-1 Dial Lamp 3 volt (Broadcast: Green shade).....	K-1024-1
P-2 Dial Lamp 3 volt (S.W.: Red shade).....	K-1024-1

(NOTE:—Celluloid Shades are not included in K-1024-1)

NOTE:—"C.O." is not a capacitor but represents only a capacitance between leads.

MODEL 52—52-A PORTABLE MULTI-WAVE RECEIVERS

SOCKET VOLTAGE AND CURRENT READINGS

The following readings were taken with a Weston Type 665 Selective Analyser together with the 666 Selector units concerned. The line pressure was 112 volts, 60 cycles frequency. The Volume Control was turned to maximum and the tone control to treble for all readings.

Tube	Position	Filament	Plate	Screen	Control Grid or "C" Bias	Cathode	Plate Current	
							Normal Bias	Reduced Bias
2-A-7	Autodyne Detector		(1) (2)					
	Oscillator.....	2.2	175	90	* .5	2.7	3.8	5.1
58	I.F. Amplifier.....	2.2	255	90	3.0	3.0	6.5	14.0
2-B-7	2nd Detector A.V.C. and		(3) (4)					
	first A.F. Amplifier....	2.2	*65	42	.1	3.5	.65	1.1
45	Power Amplifier.....	2.2	235	—	*38	..	28	34
80	Power Rectifier.....	4.4	A.C. Plate to Plate 660 Volts				One Plate 28	

* Varies due resistance of meter.

- (1) No. 3 Grid to cathode equals 180 volts.
- (2) No. 2 Grid to cathode equals 12.5 volts.
- (3) No. 1 Diode Plate to cathode equals —.6 volt.
- (4) No. 2 Diode Plate to cathode equals —.2 volt.

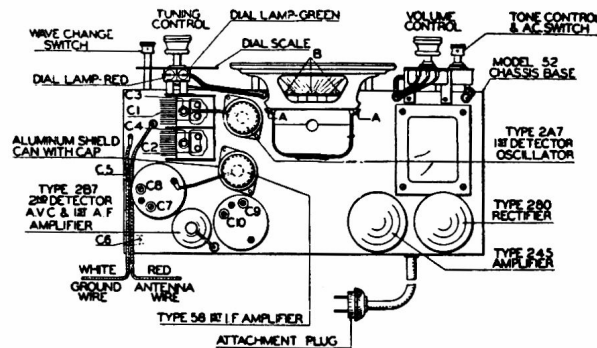
REALIGNING DETAILS

In realigning the Model 52 Receiver an I.F. of 462.5 K.C. is used. Proceed as follows:—

1. (a) Set signal generator at 462.5 K.C.
(b) Couple to control grid type 2-A-7 first detector and oscillator tube.
(c) Align C-7, C-8, C-9 and C-10.
2. (a) Set signal generator at 1500 K.C.
(b) Set dial at 1500 K.C. (Switch "IN")
(c) Connect generator to antenna lead of receiver.
(d) Align C-3 and C-4.
3. (a) Set signal generator at 600 K.C.
(b) Set dial at 600 K.C. (Switch "IN").
(c) Align C-6.
4. (a) Set signal generator at 1500 K.C.
(b) Set dial at 1520 K.C. (Switch "IN").
(c) Re-align C-3 and C-4.
5. (a) Set signal generator at 2500 K.C.
(b) Set dial at 2550 K.C. (Switch "OUT").
(c) Align C-5.
6. (a) Check alignment at 6.0 megs. Signal will read at 6.1 to 6.2 on dial.

NOTE:—"C" of No. 2 applies on Nos. 3, 4 and 5 also.

The location of the trimming condensers mentioned above is shown on cut below.



Chassis Layout—Model 52 Receiver