

MODEL S-72L

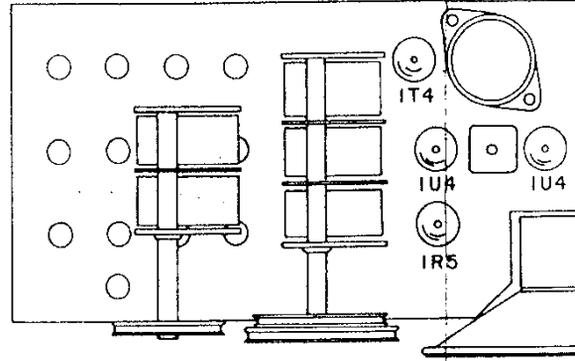
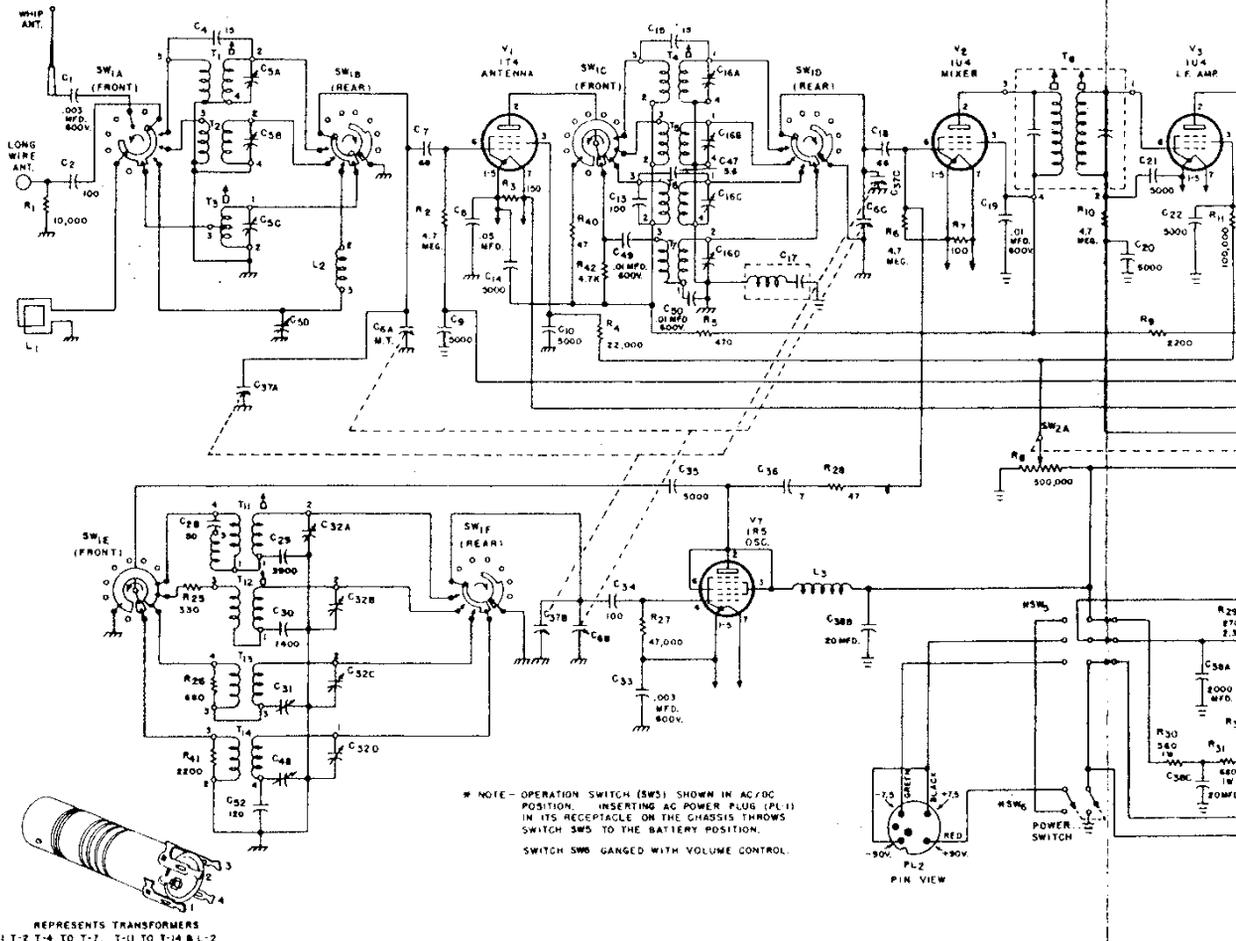
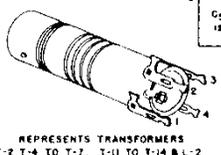


Fig. 8. Top view, location of tub

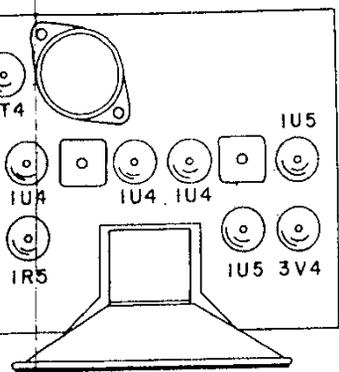


\* NOTE - OPERATION SWITCH (SW5) SHOWN IN AC/DC POSITION. INSERTING AC POWER PLUG (PL1) IN ITS RECEPTACLE ON THE CHASSIS THROWS SWITCH SW5 TO THE BATTERY POSITION. SWITCH SW6 GANGED WITH VOLUME CONTROL.



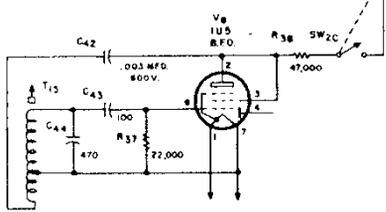
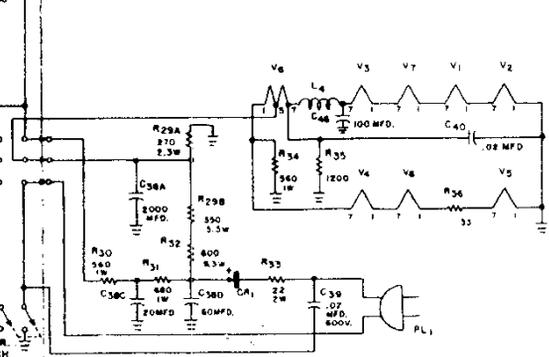
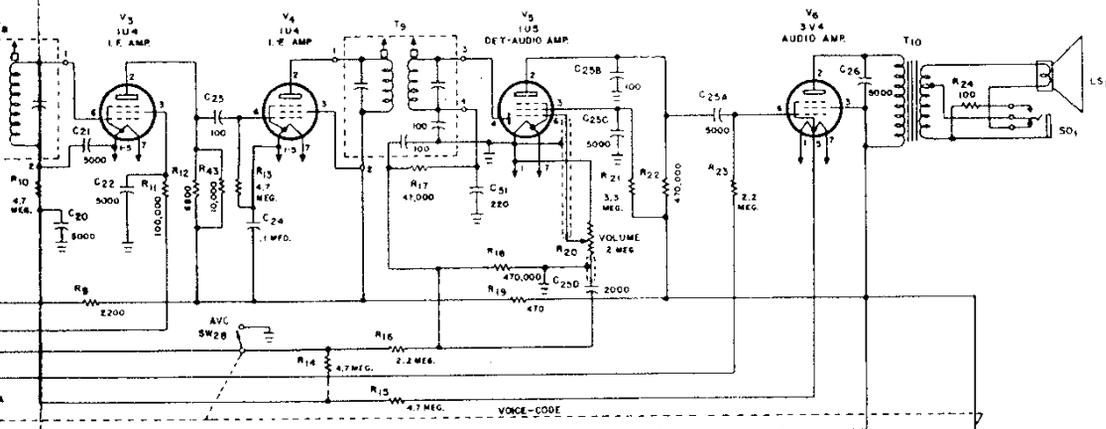
REPRESENTS TRANSFORMERS  
T-1, T-2, T-4 TO T-7, T-11 TO T-14 & L-2

Fig. 9. Schematic diagram.



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Location of tubes



NOTE - ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.  
 CAPACITOR VALUES ARE IN MMF UNLESS OTHERWISE SPECIFIED.  
 ⊥ INDICATES ELECTRICAL GROUND BUSS.  
 ⌚ INDICATES CHASSIS GROUND.  
 BAND SWITCH SHOWN IN NO. 1 BAND POSITION.

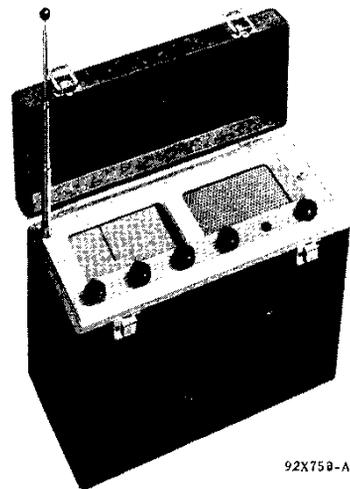
LAST RESISTOR SYMBOL - R43  
 LAST CAPACITOR SYMBOL - C53

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emantic diagram.

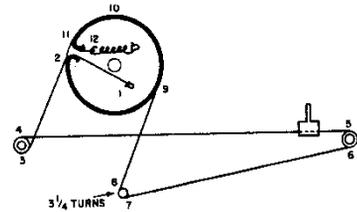
**GENERAL**

- Tubes . . . . . Eight plus selenium rectifier
  - Speaker . . . . . 5-inch PM
  - Speaker V.C. Impedance . . . 3.2 ohms (100 ohm headset tap)
  - Headset Output . . . . . For 500 to 5000-ohm phones
  - Antenna . . . . . Loop for bands 1 and 2.  
Whip for bands 3 and 4.  
Provisions for connection to an external antenna
  - Tuning . . . . . Manual
- | Tuning Range . . . . . | Band Selector Position | *Frequency Range |
|------------------------|------------------------|------------------|
|                        | 1.                     | 180 kc - 400 kc  |
|                        | 2.                     | 550 kc - 1600 kc |
|                        | 3.                     | 1.6 mc - 4.4 mc  |
|                        | 4.                     | 4.5 mc - 11.5 mc |
- \*First and last dial calibration.
- Intermediate Frequency . . . 455 kc.
  - Power Supply . . . . . 105-125 V. DC/60 cycles AC or Battery Pack
  - Power Consumption . . . . . 25 Watts



**BAND SPREAD DIAL**

To restring the bandspread tuning dial drive, cut an 18-inch length of 30 lb test dial cord and tie one end to the pulley anchor at position "1" shown in Fig. 2. String up the drive following the sequence "1" through "12" and at position "12" stretch the tension spring and tie the cord securely. Set the bandspread gang at minimum capacity and attach and index the pointer at "0" on the bandspread scale.



NOTE- DIAL DRIVE SHOWN FOR MINIMUM GANG CAPACITY OR INDEXING POSITION.

Fig. 2. Cable stringing procedure, band spread

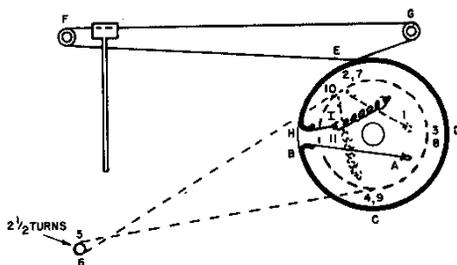
**RESTRINGING DIAL CORD**

**GENERAL COVERAGE DIAL**

The general coverage dial drive is a two string system, one between the drive shaft and the rear gang drum and the other between the front gang drum and the general coverage dial pointer. The drive shaft system requires a 30-inch length of 30 lb test dial cord, and the pointer system requires a 24-inch length of the same type cord.

To restring the drive shaft system, tie the string at position "1" (Fig. 1) and follow the sequence, "1" through "11". Stretch the tension spring at "11" and tie the cord securely.

To restring the general coverage pointer drive system, tie the string at position "A" (Fig. 1) and follow the Sequence "A" through "I". Stretch the tension spring at "I" and tie the cord securely. Set the general coverage gang at maximum capacity and attach and index the pointer with the left hand reference mark on the dial scale.



NOTE- DIAL DRIVE SHOWN FOR MAXIMUM GANG CAPACITY OR INDEXING POSITION.  
DASHED LINES INDICATE CONDENSER DRIVE SYSTEM.  
SOLID LINES INDICATE POINTER DRIVE SYSTEM.

Fig. 1. Dial cable stringing procedure, general coverage

**BATTERY REPLACEMENT**

A strip of canvas webbing and a hold down screw are used to keep the battery in the cabinet. To replace the battery, disconnect the battery plug and loosen the hold down screw. Refer to Fig. 3.

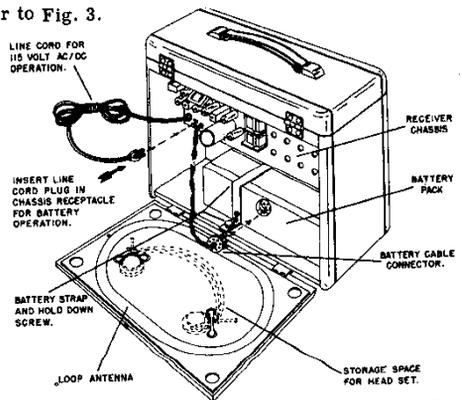


Figure 3. Battery compartment

MODEL S-72L

Suitable replacement packs can be found from the list shown below.

REPLACEMENT BATTERY LIST

Manufacturer	Type No.	Manufacturer	Type No.
BRIGHT STAR	.66-50	OLIN	0615 0614
BURGESS	G6M60 F6A60	RAY-O-VAC	AB878 AB994
DELCO	.8760	RCA	VS018 VS019
EVERREADY	.754 753	SEARS	
GENERAL	60BF65 60A6F65	ROEBUCK	67E605
MONTGOMERY		USALITE	680
WARD	62A35M 62A33	WESTERN	
NATIONAL UNION	N808	WIZARD	60B6F6/5 60A6F6/5

NOTE - Only one battery pack of the type listed above is required.

CAUTION - When the receiver is to operate on batteries it is necessary to insert the line cord plug in the chassis receptacle as shown in Fig. 3.

ALIGNMENT PROCEDURE

It will be necessary to remove the battery and receiver chassis from the cabinet to make the I.F. alignment adjustments. To do this remove the knobs and jack nut from the control panel; remove the panel escutcheon and unfasten the phone jack; unsolder the antenna connections, two for the loop antenna and one for the whip antenna; and remove the two wood screws anchoring the angle brackets of the chassis to the cabinet and lift out of the case.

The primaries of the I.F. transformers are adjusted from the bottom of the chassis and the secondaries are adjusted from the top of the chassis.

Before making any alignment adjustments, check the general coverage dial pointer and bandspread dial pointer for proper index. The general coverage dial pointer should index with its gang condenser set at maximum capacity and the bandspread dial pointer should index at zero with its gang condenser set at minimum capacity.

Set the following controls before alignment.

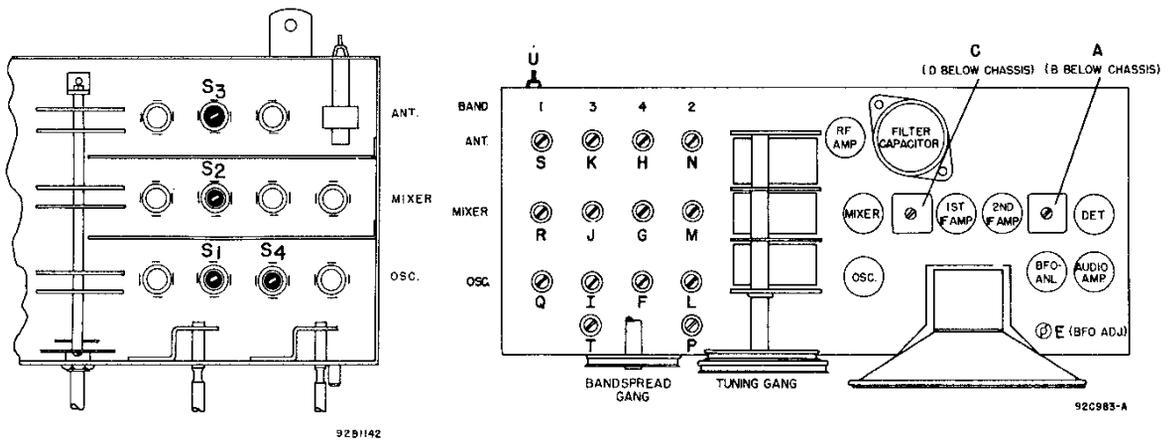
- VOLUME . . . . . Set at maximum
- VOICE/CODE . . . . . Set max. clockwise (VOICE)
- BAND SPREAD . . . . . Set at 0

ALIGNMENT CHART

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Setting	Receiver Dial Setting	Adjust	Remarks
1.	None	Stator plates in center section of tuning gang	455 kc	"1"	1000 kc	A,B,C,D	Maximum audio output at speaker voice coil. Use just enough signal generator output to obtain a 50 mw signal level.
2.	None	See step 1.	455 kc (No mod.)	"1"	1000 kc	E	With the VOICE/CODE control set for code reception, adjust E for a 1000 cycle note.
3.	10 mmf from ext. antenna lead to chassis.	Couple the generator to the ext. ant. lead thru a 15 mmf capacitor	11.5 mc 5 mc	"4"	11.5 mc 5 mc	*F,G,H *S1,S2,S3	Maximum output as in step 1.
4.	See step 3	See step 3	4.4 mc 1800 kc	"3"	4.4 mc 1800 kc	*I,J,K *S4	Maximum output as in step 1.
**5.	See step 3	See step 3.	1500 kc 600 kc	"2"	1500 kc 600 kc	*L,M,N *P	Maximum output as in step 1.
**6.	See step 3.	See step 3.	400 kc 180 kc	"1"	400 kc 180 kc	*Q,R,S *T,U	Maximum output as in step 1.

NOTES -

- \*Calibration adjustment.
- \*\*Loop must be connected for this step.



Bottom view alignment points.

Figure 4. Alignment points

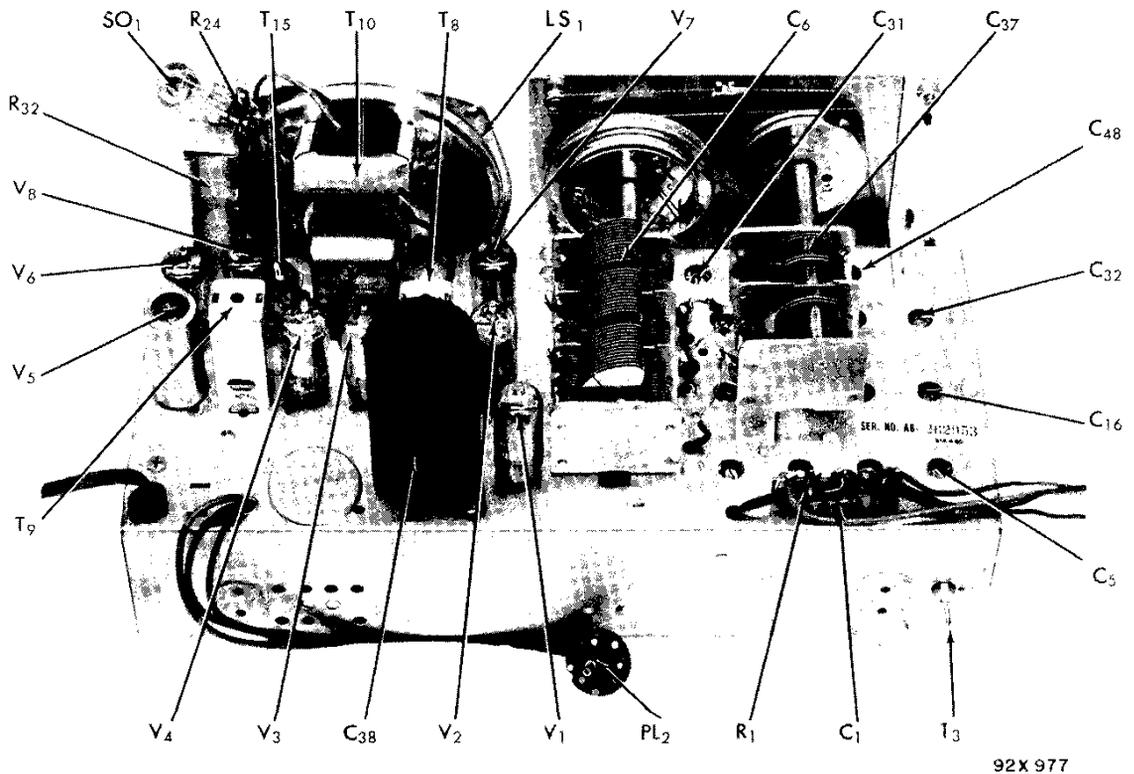
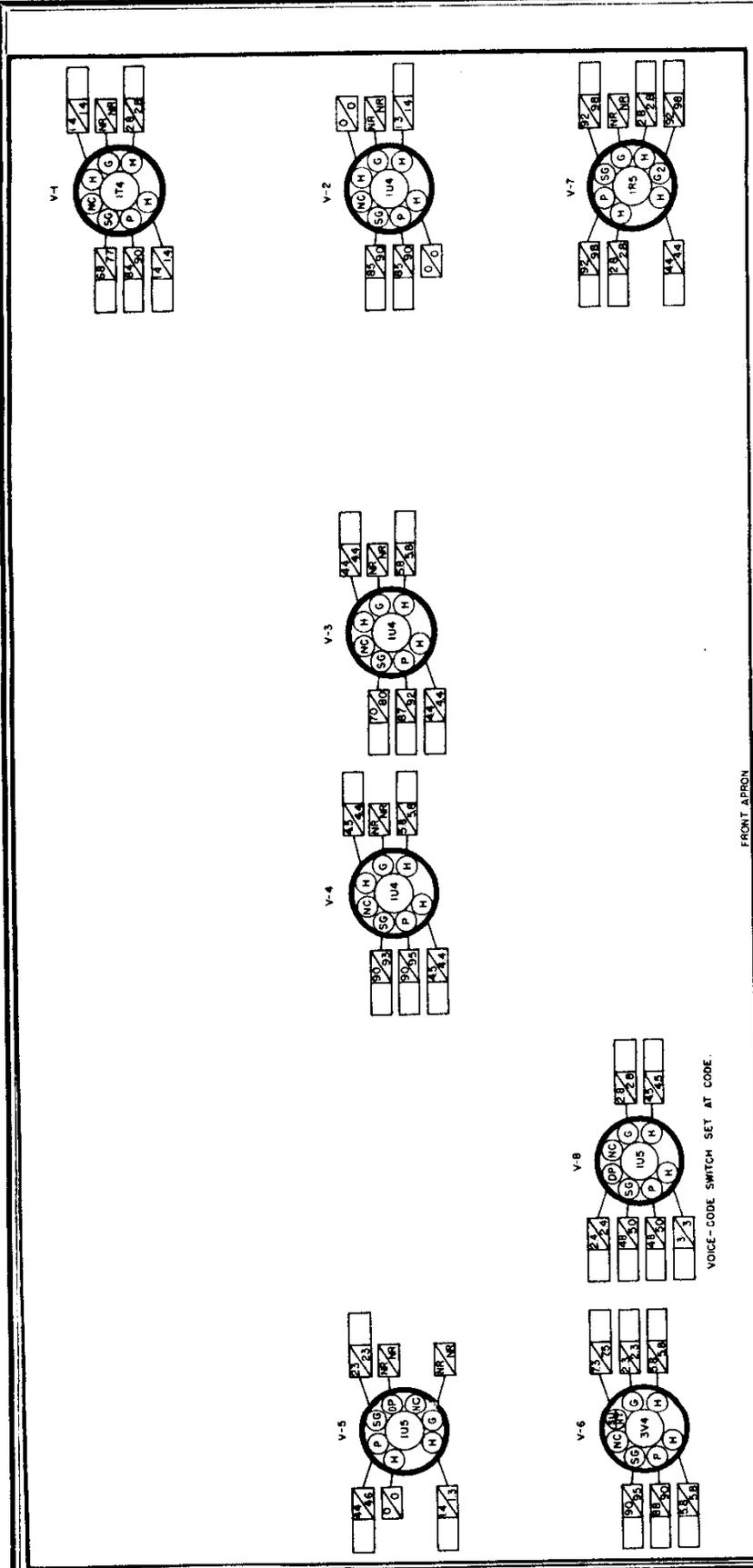


Figure 5. Top view, component location





FRONT APRON  
BOTTOM VIEW OF CHASSIS

VOICE-CODE SWITCH SET AT CODE.

- NOTES -
- 1 SOCKET VIEWS ARE BOTTOM VIEWS
  - 2 ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS & THE ELECTRICAL GROUND BUSS (NOT CHASSIS) WITH ZERO SIGNAL INPUT
  - 3 LINE VOLTAGE - 117V AC BATTERY VOLTAGES TAKEN WITH FRESH BATTERY PACK
  - 4 ALL VOLTAGES SHOWN ARE DC UNLESS OTHERWISE SPECIFIED
  - 5 DC VOLTAGES SHOWN WERE MEASURED WITH AN ELECTRONIC VOLTMETER
  - 6 "NC" - NO CONNECTION
  - 7 "NR" - NOT READABLE (READING GENERALLY MEANINGLESS)
  - 8 SPACE PROVIDED FOR SERVICE METER READINGS
  - 9 UPPER VOLTAGE READINGS IN INDICATOR SPACE SHOW BATTERY OPERATION
  - 10 VOLTAGES FOR TUBE V-8 ARE SHOWN WITH VOICE-CODE SWITCH IN CODE POSITION
  - 11 ALL READINGS TAKEN WITH LINE PLUG POLARIZED SO THAT GROUND BUSS & CHASSIS ARE AT SAME POTENTIAL AS THE CHASSIS GROUND

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Figure 7. Tube socket voltage chart

MODEL S-72L

## SERVICE PARTS LIST

Ref. No.	Description	Manufacturer's Part Number	Ref. No.	Description	Manufacturer's Part Number
<b>CAPACITORS</b>					
C-1,33,42	.003 mfd., 600 V., tubular	46A Z302J	T-1	Transformer, antenna stage, band 4	51B1250
C-2,13,23,34	100 mmf., 500 V., ceramic	47B20101K5	T-2	Transformer, antenna stage, band 3	51B1137
C-4,15	15 mmf., 500 V., ceramic	47B20150K5	T-3	Transformer, antenna stage, band 1	51B1191
C-5	Trimmer, ant. ass'y., 4 sections (Bands 1,2,3,4)	44B385	T-4	Transformer, mixer stage, band 4	51B1253
C-6	Tuning capacitor, 3 sections	48C 221	T-5	Transformer, mixer stage, band 3	51B1248
C-7,18	68 mmf., 500 V., ceramic	47B20680K5	T-6	Transformer, mixer stage, band 2	51B1247
C-8	.05 mfd., 200 V., tubular	46AU503J	T-7	Transformer, mixer stage, band 1	51B1192
C-9,10,14,20 21,22,26 35	5000 mmf., 500 V., ceramic	47A168	T-8	Transformer, 1st I.F.	50C 233
C-16	Trimmer, mixer ass'y., 4 sections, (Bands 1,2,3,4)	44B386	T-9	Transformer, 2nd I.F.	50C 234
C-17	Capacitor, resonant (455KC)	46A174	T-10	Transformer, audio output (part of speaker ass'y. LS-1)	
C-19,49,50	.01 mfd., 600 V., tubular	46AY103J	T-11	Transformer, osc. stage, band 4	51B1254
C-24	.1 mfd., 200 V., tubular	46AU104J	T-12	Transformer, osc. stage, band 3	51B1255
C-25	Capacitor, composite; .002, .005, .0001, .005 mfd., 500 V., ceramic	47A203	T-13	Transformer, osc. stage, band 2	51B1144
C-28	50 mmf., 500 V., ceramic	47B20500K5	T-14	Transformer, osc. stage, band 1	51B1193
C-29	3900 mmf., 500 V., mica	47X35A392J	T-15	Transformer, B.F.O. (With mtg. clip)	50B402
C-30	1400 mmf., 500 V., mica	47X30A142J	L-1	Loop antenna	57C 125
C-31	Padder, adjustable (Band 2)	44A376	L-2	Coil, antenna loading band 2	51B1136
C-32	Trimmer, osc. ass'y., 4 section (Bands 1,2,3,4)	44B387	L-3	Choke, R.F.	53A008
C-37	7 mmf., 500 V., ceramic	47X20UK070K	L-4	Choke, filament	53A121
C-36	Capacitor, band spread	48C 227	<b>SWITCHES</b>		
C-38	60-20-20 mfd., 150 V., 2000 mfd., 15 V., electrolytic	45B162	SW-1	Switch, band (6 section ass'y. complete)	60C 380
C-39	.02 mfd., 600 V., moulded paper	46BR203L6	SW-2	Switch, VOICE/CODE, (Part of r-f gain control, R-8)	
C-40	.02 mfd., 200 V., tubular	46AU203J	SW-5	Switch, AC/DC - battery change over	60A363
C-43	100 mmf., 500 V., mica	47X20A101M	SW-6	Switch, ON-OFF (D.P.S.T. power switch, part of volume control R-20)	
C-44	470 mmf., 500 V., mica	47X20A471K	<b>PLUGS AND SOCKETS</b>		
C-46	100 mfd., 25 V., electrolytic	45A116	PL-1	Line cord	87B1683
C-47	5.6 mmf., 500 V., composition	47A160-7	PL-2	Battery plug, 6 prong	10A344
C-48	Padder, adjustable (Band 1)	44A384	SO-1	Jack, phone	36A036
C-51	220 mmf., 500 V., ceramic	47B20221K5	<b>TUBES AND RECTIFIERS</b>		
C-52	120 mmf., 500 V., mica	47X20B121K	V-1	Type 1T4, r-f amplifier	90X1T4
<b>RESISTORS</b>					
R-1,43	10,000 ohms, 1/2 watt, carbon	23X20X103K	V-2,3,4	Type 1U4, mixer, 1st and 2nd i-f amplifier	90X1U4
R-2,6,10, 13,14,15	4.7 megohms, 1/2 watt, carbon	23X20X475M	V-5,8	Type 1U5, detector and B.F.O.	90X1U5
R-3	150 ohms, 1/2 watt, carbon	23X20X151K	V-6	Type 3V4, audio power amplifier	90X3V4
R-4,37	22,000 ohms, 1/2 watt, carbon	23X20X223K	V-7	Type 1R5, oscillator	90X1R5
R-5,19	470 ohms, 1/2 watt, carbon	23X20X471K	CR-1	Rectifier, selenium	27A151
R-7,24	100 ohms, 1/2 watt, carbon	23X20X101K	<b>MISCELLANEOUS</b>		
R-8	Resistor, variable, 500,000 ohms, VOICE/CODE control	25B847	Socket, 7 prong miniature (tube)		
R-9,41	2200 ohms, 1/2 watt, carbon	23X20X222K	Lock, line cord (Female)		
R-11	100,000 ohms, 1/2 watt, carbon	23X20X104K	Lock, line cord (Male)		
R-12	6800 ohm, 1/2 watt, carbon	23X20X682K	Escutcheon		
R-16,23	2.2 megohms, 1/2 watt, carbon	23X20X225M	Escutcheon, dial		
R-17,27,38	47,000 ohms, 1/2 watt, carbon	23X20X473K	Plate, dial (calibrated)		
R-18,22	470,000 ohms, 1/2 watt, carbon	23X20X474K	Knob		
R-20	Resistor, variable, 2 megohms, VOLUME control	25B839	Knob (with dot)		
R-21	3.3 megohms, 1/2 watt, carbon	23X 20X335M	Pointer, main tuning		
R-25	330 ohms, 1/2 watt, carbon	23X20X331K	Pointer, band spread		
R-26	680 ohms, 1/2 watt, carbon	23X20X681K	Cord, dial drive		
R-28,40	47 ohms, 1/2 watt, carbon	23X20X470K	Cord, pointer drive		
R-29	270 ohms, 2.3 watts; 350 ohms, 5.5 watts; WW	24A912	Spring, dial drive		
R-30,34	560 ohms, 1 watt, carbon	23X30X561K	Pulley, idler		
R-31	680 ohms, 1 watt, carbon	23X30X681K	Shaft, tuning		
R-32	600 ohms, 9.3 watts, WW	24A913	Antenna, whip		
R-33	22 ohms, 2 watts, WW	24BV 220E	Antenna, insulator		
R-35	1200 ohms, 1/2 watt, carbon	23X20X122K	Speaker		
R-36	33 ohms, 1/2 watt, carbon	23X20X330K	Strap, battery		
R-42	4700 ohms, 1/2 watt, carbon	23X20X472K	Cabinet		