



OPERATING AND SERVICE INSTRUCTIONS

R. M. McCUNG
RADIO RECEIVER
MODEL SX-62B

Posted

ERRATA SHEET
MODEL SX-62B

The following changes are to be incorporated in the MODEL SX-62B Operating and Service Instructions Manual.

Page 3 - GENERAL SPECIFICATIONS. Change:

Speaker Output to 3.2/8/500 ohms✓
External Power Connector not applicable to SX-62B✓

Page 4 - Delete second sentence of sixth paragraph.✓

Page 4 - INSTALLATION. Change SPEAKER CONNECTION paragraph to read as follows:

Four screw type terminals located on the rear chassis apron, are provided, for the speaker connection. The output impedances are 3.2, 8, and 500 ohms. Any suitable speaker unit which will operate with the available output impedances may be used with the Model SX-62B receiver. Hallicrafters Model R-48A speaker connects to the 3.2 ohm terminals (marked COM/3.2).✓

Page 5 - Figure 2. Change:

Speaker Connections to 3.2 - 8 - 500

Page 7 - Change MULTIPLEX OUTPUT paragraph to read as follows:

A jack, located on the rear panel, provides an output from the FM detector that may be used with a multiplex adapter and stereo system for reception of stereo broadcasts in the FM band.

Page 8 - Figure 5. Change 6H6 to 6AL5.

Page 13 - Figure 13. Change V9, 6H6, to 6AL5.

Form Number 094-903967
Pack with Instruction Manual
094-903945

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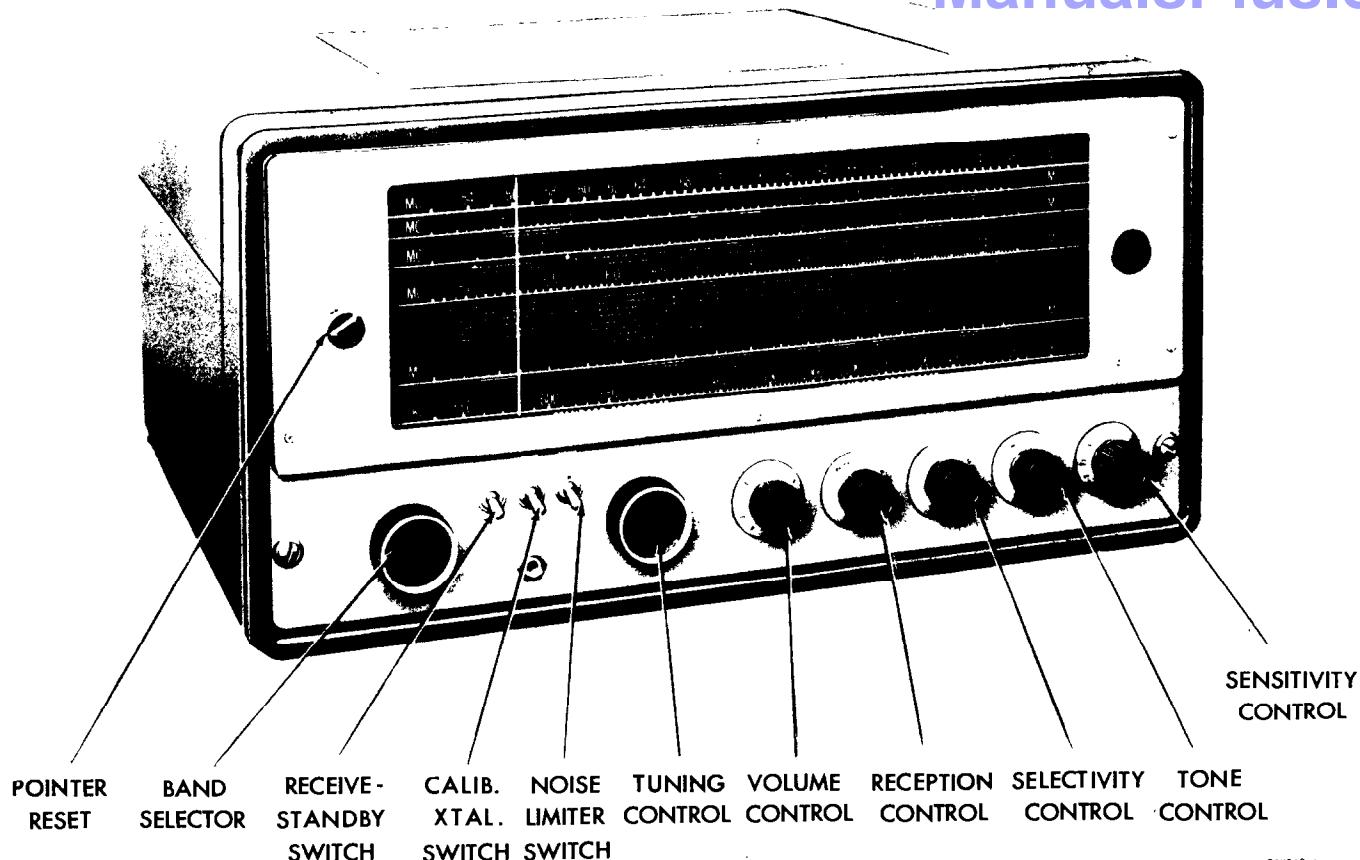


Figure 1. Radio Receiver Model SX-62B/62BU

92X519-A

GENERAL SPECIFICATIONS

Tubes Thirteen plus voltage regulator and rectifier

Speaker Output ~~3.2~~, ¹ ~~500~~ ⁴⁰⁰ ohms

Headset Output High impedance

Antenna Input For 50 to 600 ohm line or single wire lead-in

Phono Input High impedance
Not applicable to SX-62B

External Power Connector ~~Not applicable to SX-62B~~
~~Std. octal socket~~

Tuning Range See Frequency Coverage

Intermediate Frequency 455 kc/10.7 mc

Power Supply SX-62B 105-125V 60 Cycles AC
SX-62BU 105-250V 25/100 Cycles AC

Power Consumption 120 Watts

FREQUENCY COVERAGE

BAND	FREQUENCY RANGE	TYPE OF RECEPTION
1	550 KC - 1620 KC	AM/CW
2	1.62 MC - 4.9 MC	AM/CW
3	4.9 MC - 15 MC	AM/CW
4	15 MC - 32 MC	AM/CW
5	27 MC - 56 MC	AM/FM/CW
6	54 MC - 109 MC	AM/FM/CW

The Model SX-62B (SX-62BU, available on special order) receiver is a sensitive high fidelity superheterodyne receiver covering all of the broadcasting services between 540 kilocycles (KC) and 109 megacycles (MC). The receiver is capable of receiving both the FM (Frequency Modulation) and AM (Amplitude Modulation) broadcasts transmitted in this frequency range as shown in the FREQUENCY COVERAGE chart.

A built-in 500 kc crystal controlled calibrating oscillator and adjustable dial pointer permit accurate dial calibration on the large direct reading slide rule dial. Marker signals appear every 500 kc on the dial scale with this type of marker oscillator; hence, dial calibration may be held to very close limits over the entire dial scale by comparison with the marker signal.

This calibration feature of the Model SX-62 receiver makes it possible to log the most prominent shortwave stations by countries directly on the dial. In addition, many of the active communication channels; government, amateur, police, aviation, etc. are logged by bars to indicate their location on the dial. World-wide reception is accomplished simply by selecting the desired frequency band (band selector switch) and adjusting the tuning control so that the pointer is above the station locating dot.

The receiver selectivity is adjustable to accommodate the broad response required for high fidelity FM and AM broadcast reception to the sharpest crystal selectivity required for code reception in the crowded channels of the short wave bands. A FM-AFC position on the RECEPTION switch "locks" the receiver onto the station frequency.

The high fidelity tone compensated audio system provides four distinct tone ranges covering full range reception for entertainment purposes as well as the restricted range required for communication work in either voice or code.

An automatic noise limiter, operated by a toggle switch, permits the operator to reduce the background noise caused by severe electrical disturbances. Background noise is reduced in the model SX-62 with a minimum of audio distortion.

A RECEIVE-STANDBY switch permits receiver disabling for short standby periods without having to wait for the tube heaters to reach operation temperature when reception is again required.

The receiver normally operates from a 105-125 volt 60 cycle alternating current (AC) source. ~~A connector for operating the receiver with external batteries or equivalent power is provided to permit operation in areas where AC current does not exist.~~ A special model of the SX-62B receiver permits operation from 25/100 cycle alternating current sources operating at voltages ranging from 105-250 volts. The power requirements for your receiver must be checked carefully. Read over the installation section of this book before connecting to your power source.

IMPORTANT

Your careful attention is especially invited to the installation and operating instructions. They have been provided to insure the satisfaction you have a right to expect from a Hallicrafters "Precision Built" product. Your receiver has an unusually high degree of sensitivity necessary to receive weak and distant stations. Careless operation of a high sensitivity receiver may result in excess noise or background hiss. These undesirable effects can be held to a minimum by careful adjustment of the sensitivity, tuning and tone controls as well as proper selection and arrangement of the antenna.

INSTALLATION

UNPACKING - Check all shipping instruction tags carefully before removing them.

LOCATION - The receiver is equipped with rubber feet for table top or shelf mounting. When locating the receiver, avoid excessively warm locations such as near radiators, hot air registers, or confined dead air spaces such as are encountered in recessed installations.

POWER SOURCE - The receiver, as normally supplied, operates from a 105 to 125 volt, 50/60 cycle AC outlet. Power consumption is approximately 120 watts. If you are in doubt or unfamiliar with the voltage and frequency rating of your utility service, consult your local power company representative. Attempting to operate the receiver from other sources of power than specified may involve costly repairs.

A special model is available for operation from 115 V./130 V./150 V./220 V./250 V. 25/100 cycle AC sources. A selector switch on the power transformer permits operation on any of the line voltages shown.

CAUTION - When operating the universal model, it is necessary to check, and set if necessary, the selector switch on the power transformer before connecting the receiver to the source of power.

Four
SPEAKER CONNECTION - ~~Three~~ screw type terminals, located on the rear chassis apron, are provided for the speaker connection. The output impedances available ~~are 500 and 1000 ohms~~ are 500 and 1000 ohms. Any suitable speaker unit which will operate with either of these output impedances may be used with the Model SX-62B receiver. Hallicrafters Model PM-23 speaker connects to the 5000-ohm terminals (marked "COM/5000"); the Model R-42 and R-44 speaker units connect to the 500-ohm terminals (marked "COM/500").

R-48A connects at 3.2

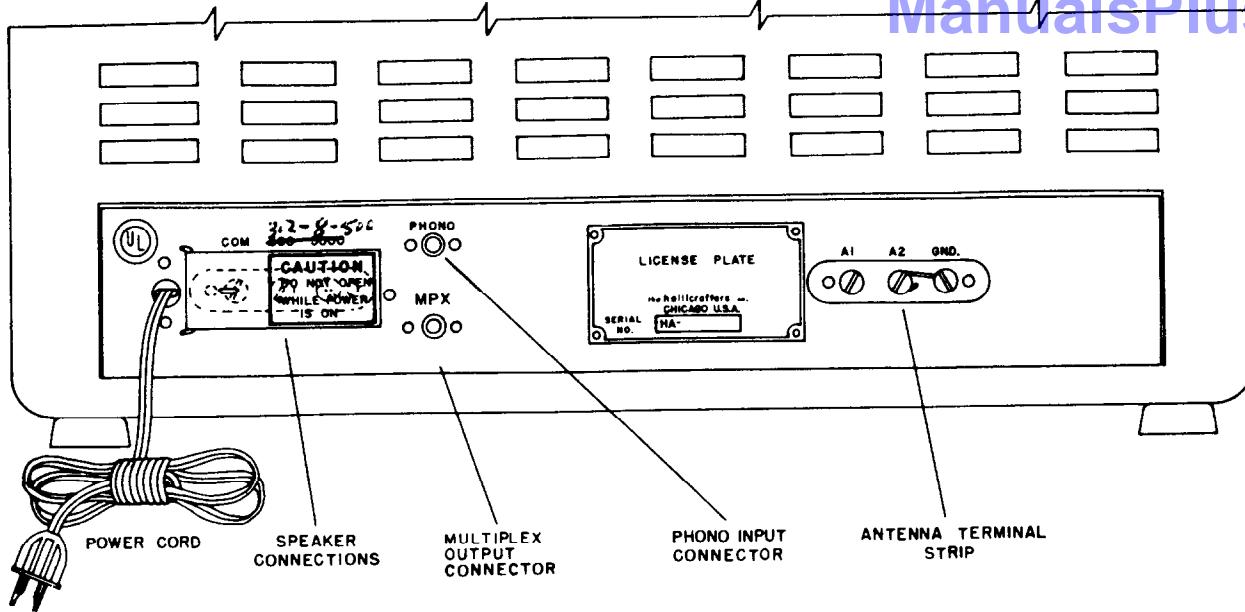


Figure 2. Rear View

ANTENNA - The terminals marked A1, A2, and G on the back of the receiver are for the antenna and ground connections. Satisfactory results can be obtained in most localities with the 15 foot antenna wire included with your receiver. Simply uncoil this wire, connect one end of it to terminal A1, and then connect the jumper between terminals A2 and G. An outside antenna 50 to 100 feet long (ordinary copper wire) may be necessary if the receiver is located in a difficult reception area or steel constructed building. In some locations, reception may be improved by connecting a lead from terminal G to a cold water pipe or outside ground rod.

Doublet Antenna - For really top performance, there is no substitute for an outside doublet antenna. When properly constructed and installed, the doublet antenna will provide not only optimum shortwave reception but excellent standard broadcast reception as well. The overall length (in feet) of the doublet is determined by dividing 468 by the frequency (in megacycles) at the high end of the range to which you wish to listen. A doublet antenna is directional broadside to its length and should be so oriented with respect to a desired station for maximum signal pickup.

By feeding the doublet antenna with a 300 ohm transmission line, a broader frequency response is obtained than that possible with a 50-75 ohm line. If a ribbon type transmission line is used, connect the line to terminals A1 and A2 and disconnect the jumper between A2 and G. When using a coaxial transmission line, connect the inner conductor to A1, the outer conductor to A2, and place the jumper between A2 and G.

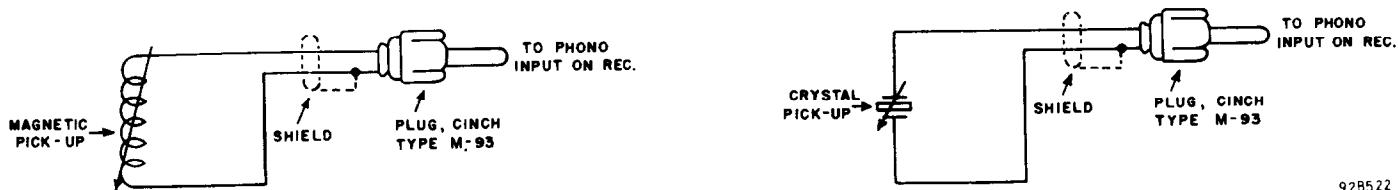


Figure 3. Wiring Diagram, Record Player Connection.

RECORD PLAYER CONNECTION - A shielded type receptacle is provided at the rear chassis apron to accommodate a record player pickup cable connector. Any record player employing a crystal cartridge or high level magnetic pickup in its tone arm may be used with the receiver. Refer to Figure 3. for wiring details.

OPERATION

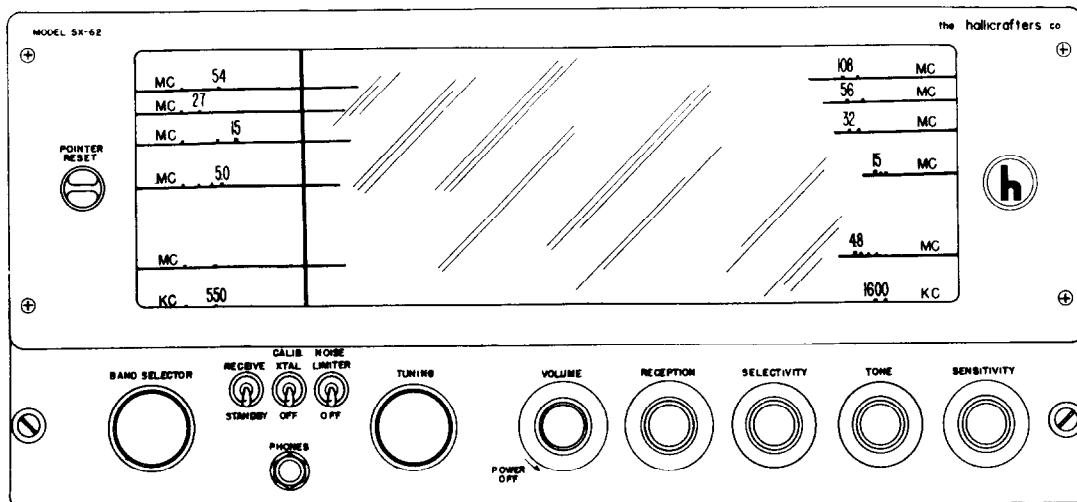


Figure 4. Front View, Location of Controls.

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GENERAL BROADCAST RECEPTION - Certain front panel controls have been color coded to simplify the tuning procedure for general entertainment purposes. High fidelity reception in the standard broadcast (AM) and frequency modulation (FM) bands may be accomplished as follows: Turn the volume control clockwise beyond the tell tale click of the switch. This turns the receiver on as indicated by the illumination of one of the dial scales. Similarly the receiver is turned off by turning the control counter-clockwise beyond the click of the switch. At this point the three "bat-handle" switches may be set at "RECEIVE" and "OFF" and forgotten. To receive standard broadcast (AM) services; set the BAND SELECTOR for the position that illuminates the 550-1620 kilocycle scale (bottom scale), set the RECEPTION, SELECTIVITY, TONE and SENSITIVITY controls per the red dot, and adjust the TUNING and VOLUME controls in the normal manner, tuning for clearest reception as usual.

OPERATION FOR RADIO TELEPHONE AND CW

CONTROL	RADIO-TELEPHONE	<u>CW</u>
VOLUME control -	This control turns the receiver on and off in addition to controlling the volume. Turn the control clockwise to turn on the receiver or increase volume, and counter-clockwise to reduce volume or turn off the receiver.	Same
RECEIVE/STANDBY switch -	Normally set at "RECEIVE". May be set at "STANDBY" to disable the receiver for short standby periods and yet keep the tube heaters at operating temperature for instant use.	Same
RECEPTION control -	Set at "AM" for reception of amplitude modulated stations located in the standard broadcast band or any of the shortwave bands, or at "FM" to tune FM stations located in the two highest frequency ranges (two top dial scales), then set at "FM-AFC" to lock onto the station frequency.	Set at "CW"
BAND SELECTOR -	Set for position that illuminates the dial scale covering the desired band of frequencies. Extreme left hand position of this control illuminates the lowest dial scale.	Same
TUNING control -	The tuning control sets the frequency of reception, tuning the band of frequencies shown on the illuminated dial scale. The frequency of reception is shown in kilocycles (KC) on the standard broadcast range and in megacycles (MC) on the shortwave and FM ranges. The frequencies of the local stations are generally listed in newspapers. AM stations in kilocycles and FM stations in megacycles. Information on short wave stations, not identified directly from the dial, may be obtained from published log books available at most book stores or radio supply houses. When tuning for the station, tune carefully for the clearest reception and obtain top performance from your receiver.	The tuning control sets the frequency of reception, tuning the band of frequencies shown on the illuminated dial scale. The frequency of reception is shown in megacycles (MC) on the shortwave bands used by code transmitters. When tuning for the station, tune for the pitch of the code signal found easiest to copy. The pitch of the code signal will usually run approximately 1000 cycles.

CONTROL

RADIO-TELEPHONE

SELECTIVITY control -

Normally set at "NORMAL/BROAD" for high fidelity reception in the standard broadcast and FM bands. Use the "NORMAL/MED." or "NORMAL/SHARP" for the more crowded conditions existing in most of the shortwave ranges. Note that as the receiver is made more selective, the background noise and interference from nearby stations is reduced. The setting of the selectivity control is generally best determined by receiving conditions, using just enough selectivity to isolate the desired stations. The "CRYSTAL/BROAD" position may be used when the frequency of reception is extremely congested.

This control may be set at "NORMAL/MED." OR "NORMAL, SHARP" for the reception of code stations not suffering local interference. Congested receiving conditions may be handled by increasing selectivity, switching to one of the three crystal positions for the degree of selectivity required. Note that in the crystal position the tuning of the receiver changes, i.e. the desired station will be very loud on one side of zero beat and very weak (crystal slot) on the other side.

SENSITIVITY control -

Normally set maximum clockwise. Local high powered stations may overload the receiver, showing up as distortion, hence conditions may require that this control be turned counter-clockwise to reduce the sensitivity of the receiver accordingly.

The receiver sensitivity must be controlled manually for code reception, hence the SENSITIVITY control must be advanced just enough to keep the code stations from blocking the receiver.

TONE control -

Normally set at "HI-FI" or "BASS" for AM or FM entertainment purposes. The "LOW" and "MED." positions will be found desirable when listening on the shortwave bands.

Normally set at "LOW" or "MED." for code reception.

USE OF THE CALIBRATING CRYSTAL - A built-in secondary frequency standard and adjustable dial pointer permits accurate frequency calibration over any portion of the receiver dial. Three degrees of dial calibration accuracy may be had as follows:

1. General Dial Indexing - Run the dial pointer down to the left hand end of the dial scale, turning the TUNING knob until the left hand dial stop is reached. Line up the dial pointer with the index line using the small POINTER RESET knob located to the left of the dial escutcheon.
2. Average Dial Calibration - Index the dial pointer as described above. Set the CALIB. XTAL switch at "CALIB. XTAL", RECEPTION switch at CW, and tune the receiver to zero beat with the calibrating oscillator signal, i.e. the pitch of the whistle or beat note will pass through zero cycles at the exact center of the marker signal. The oscillator signals will be found at multiples of 500 kilocycles on the lower 5 dial scales, i.e. 1000 kc and 1500 kc; 2 mc, 2.5 mc, 3 mc etc.; 5 mc, 5.5 mc, 6 mc, etc.; 15 mc, 15.5 mc, 16 mc, etc.; or 27 mc, 27.5 mc, 28 mc, etc. After setting the TUNING control for zero beat, center the dial pointer exactly on the half-mega-cycle dial division. For best results, the receiver sensitivity must be held to a minimum while making calibration adjustments.
3. Precise Dial Calibration - To obtain a precise dial calibration the procedure outlined above should be repeated for the particular section of the dial in use rather than merely checking calibration at either end of the dial scale. Since the calibration signals appear every 500 kc along the dial, a calibration point may easily be obtained on either side of the frequency of reception at any point along the dial.

After calibrating the receiver dial with the calibrating crystal, the oscillator is switched OFF and the RECEPTION switch returned to the desired setting for normal reception.

RECORD PLAYER OPERATION - With a record player connected to the receiver it is merely necessary to set the RECEPTION control at PHONO and operate the VOLUME and TONE controls as for normal radio reception.

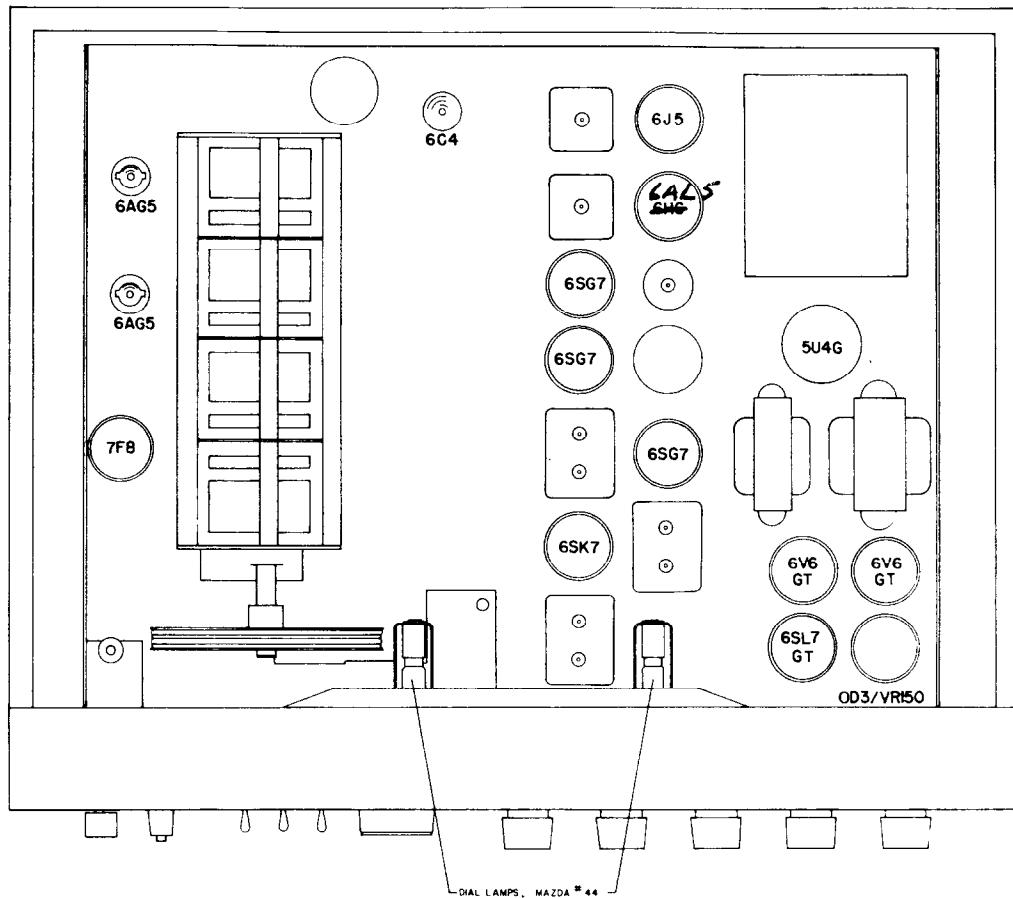
CAUTION - The receiver will not respond if the RECEIVE/STANDBY switch is set at "STANDBY". The setting of the remaining controls, except those mentioned above, is immaterial as they are not in use for record player operation.

MULTIPLEX OUTPUT - A jack, located at the rear panel, ~~permits operation into any standard high-fidelity system.~~ provides an output from the FM detector that may be used with a multiplex adapter and stereo system for reception of stereo broadcasts in the FM band.

HEADPHONE RECEPTION - A headset jack, located at the front panel, provides for headphone reception. Insertion of the headset plug disables the speaker. Any high impedance headset, magnetic or crystal, will work with the receiver.

SERVICE

TUBE REPLACEMENT - The types of tubes required and their relative position in the receiver are shown in the illustration, Fig. 5. When installing a replacement tube, insert the center guide pin into the center hole of the tube socket; rotate the tube until the key on the guide pin drops into the notch in the socket hole; and push down until the base of the tube rests firmly on the socket. A slightly different technique must be used on the miniature tubes. They have seven small pins which have to be lined up with the socket holes before pushing into place. Handle with care as all tubes are considered fragile and do not tolerate much mechanical abuse.



92D524-A

Figure 5. Top View Showing Location of Tubes and Dial Lamps

DIAL LAMP REPLACEMENT - Refer to Fig. 5 for the location of the dial lamps used in the receiver. To gain access to defective lamps, open the cabinet cover, remove the light shield (four screws) and unclip the dial lamp socket by compressing the side springs. The socket may then be brought out into the open to change the defective lamps. Replace all lamps with 6-8 volt Mazda No. 44 (blue bead) or equivalent.

SERVICE OR OPERATING QUESTIONS - For further details regarding operation or servicing of the receiver, contact your dealer. Make no service shipments directly to the factory before first writing for authorization and instructions.

The factory cannot accept responsibility for unauthorized shipments.

The Hallicrafters Co. reserves the privilege of making revisions in current production of equipment and assumes no obligation to incorporate these revisions in earlier models.

POSITIONING CONTROL KNOBS

BAND SELECTOR . . . As required by flat on shaft
 VOLUME Set at 10 for full clockwise rotation
 RECEPTION As required by markings

SELECTIVITY . . . As required by markings
 TONE As required by markings
 SENSITIVITY . . . Set at 10 for full clockwise rotation

Restring the tuning capacitor drive with a 45 inch length of 30 lb. test dial cord. Tie one end of the cord to the tension spring at position A and follow the stringing sequence A through J as shown. At position J stretch the tension spring and tie the cord securely to the spring. Note that the dial cord is wrapped around the tuning drive shaft two and three-quarters times for proper traction.

Restring the dial pointer drive with a 75 inch length of 30 lb. test dial cord. Tie one end of the cord to the tension spring at position 1 and follow the stringing sequence 1 through 12 as illustrated. At position 12 stretch the tension spring and tie the cord securely.

Index the dial pointer by setting the tuning gang at maximum capacity, the RESET control in the middle of its range, and aligning the pointer with the left hand dial index marker.

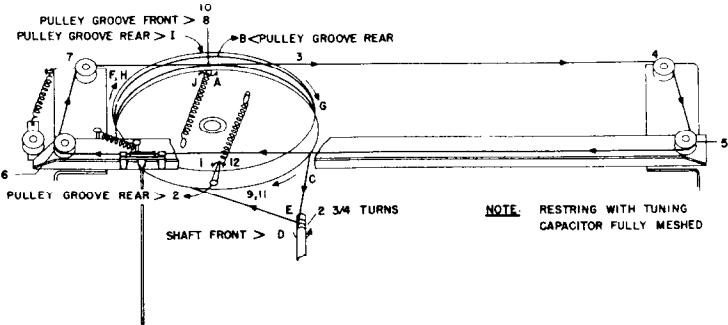


Figure 6. Dial Cable Stringing Procedure

ALIGNMENT PROCEDURE

IF AMP ALIGNMENT (455 kc) - Set the controls as follows:

BAND SELECTOR 550/1620 kc range
 RECEIVE/STANDBY switch . . RECEIVE
 CALIB. XTAL switch OFF
 NOISE LIMITER switch OFF
 VOLUME control Near Maximum

Connect high side of signal generator through an 0.1 mfd. capacitor to pin #1, of the 7F8 converter tube. With signal generator set at approximately 455 kc align slugs S-1, 3, 5, 10, 12 and 14 for maximum output.

Set RECEPTION control at CW and adjust slug S-8 for a 1,000 cycle note.

Set the SELECTIVITY control at CRYSTAL/BROAD. While slowly turning slug S-10 in one direction across the resonant setting obtained above, "rock" the signal generator tuning and observe the dip in the output meter reading as the adjustment passes through the response of the crystal filter. The correct setting of the slug S-10 is in the center of the observed dip. Set the signal generator at the weaker of the two responses obtained on either side of zero beat and adjust the crystal phasing trimmer C-57 for the null.

Set the SELECTIVITY control at CRYSTAL/SHARP and with trimmer C-61 set near minimum capacity, slowly increase its capacity while "rocking" the signal generator and adjust for maximum output. It may be necessary at this point to reduce the signal generator input and the receiver sensitivity to prevent overloading. After peaking the adjustment turn the trimmer in until a drop in output of about 2 db occurs. At this point the sharp crystal will have very good selectivity without sacrificing too much gain.

Tune the signal generator to exact crystal frequency and note output meter reading. Set the SELECTIVITY control at CRYSTAL/BROAD and note the drop in output, and output meter reading. Now switch to CRYSTAL/MEDIUM and with trimmer C-60 near minimum capacity, slowly increase its capacity, while "rocking" the signal generator, until the output meter indicates about midway between the output readings obtained in sharp crystal and broad crystal position.

Set the SELECTIVITY control at CRYSTAL/SHARP and reset signal generator for the exact crystal frequency. Switch to NORMAL/SHARP and reset slugs S-1, 3, 5, 12, 14 and trimmer C-58 for maximum output.

Set the RECEPTION control at CW and adjust the BFO slug S-8 for zero beat.

IF AMP. ALIGNMENT (10.7 mc) - Set the controls as follows:

BAND SELECTOR 27/56 mc range
 RECEIVE/STANDBY switch . . RECEIVE
 CALIB. XTAL switch OFF
 NOISE LIMITER switch OFF
 VOLUME Near Maximum

Connect the high side of the signal generator through an 0.1 mfd. capacitor to pin #1 of the 7F8 converter tube. Set signal generator at 10.7 mc and adjust slugs S-4, 6, 9, 13 and 15 for maximum output. Now set slugs S-2 and S-11 for maximum output but do not readjust slugs S-4, 6, 9, 13 and 15.

Set RECEPTION control at CW and adjust slugs S-17 for zero beat.

Set RECEPTION control at FM and adjust slug S-16 for maximum output. Now set Slug S-7 for the null or minimum output as indicated on the output meter. Check the discriminator by slowly tuning the signal generator through 10.7 mc and observe the two maximum audio level readings on the output meter. If the two peaks are equal the job is done; if not it may be necessary to reset Slug S-16 until a reasonable balance is obtained.

RF AMP ALIGNMENT

After completing the alignment of the IF amplifier stages the RF amplifier stages may be aligned according to the following chart. Connect the high side of the signal generator to terminal A-1 through the dummy antenna specified and connect a jumper between antenna terminal A-2 and GND. Use just enough signal generator output to obtain a 500 milliwatt audio output level for best results.

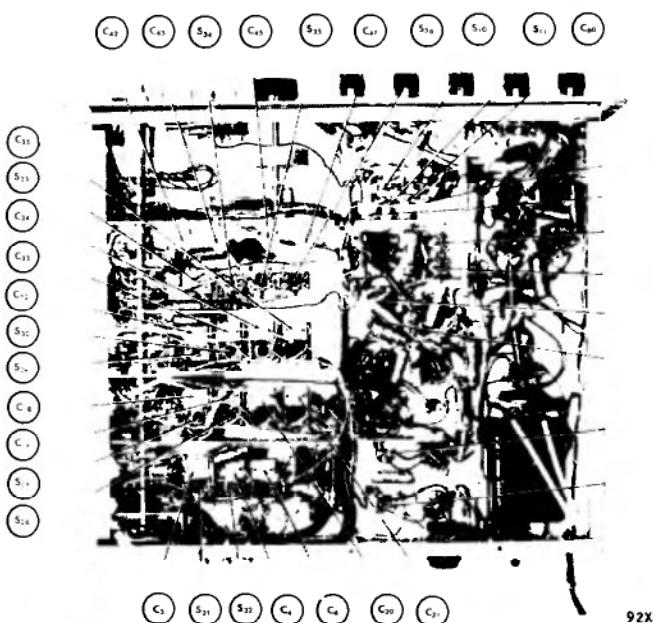


Figure 7. Alignment Adjustments, Bottom View

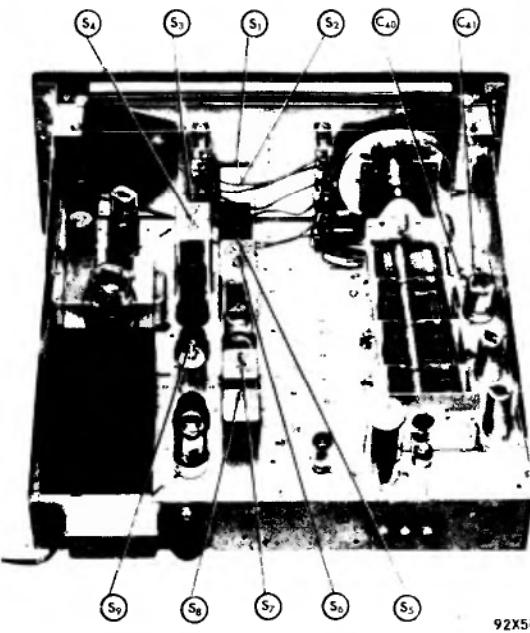


Figure 8. Alignment Adjustments, Top View

ALIGNMENT CHART

Dummy Antenna	Signal Generator Frequency	Band Selector Range	Radio Dial Setting	Adjust	Remarks
RMA	1500 kc	550-1600 kc	1500 kc	C-47*, 6, 21, 35	Adjust for max. output
	600 kc		600 kc	S-36*	
RMA	4.5 mc	1.62-4.9 mc	4.5 mc	C-45*, 20, 34	Adjust for max. output
	2.0 mc		2.0 mc	S-35*	
RMA	14.0 mc	4.9-15 mc	14.0 mc	C-43*, 4, 19, 33	Adjust for max. output
	7.0 mc		7.0 mc	S-34*, 22, 26, 30	
RMA	28 mc	15-32 mc	28 mc	C-42*, 3, 18, 32	Adjust for max. output
	18 mc		18 mc	S-33*, 21, 25, 29	
300-ohm non- inductive resistor	50 mc	27-56 mc	50 mc	C-41*, 2, 17, 31	Adjust for max. output
	30 mc		30 mc	S-32*, 20, 24, 28	
300-ohm non- inductive resistor	105 mc	54-109 mc	105 mc	C-40*, 1, 16, 30	Adjust for max. output
	60 mc		60 mc	S-31*, 19, 23, 27	

* Note - Calibration adjustment.

Note - The standard RMA dummy antenna mention in the alignment chart consists of a 200 mmf condenser in series with a 20 uh r-f choke which is shunted by a 400 mmf condenser in series with a 400 ohm carbon resistor.

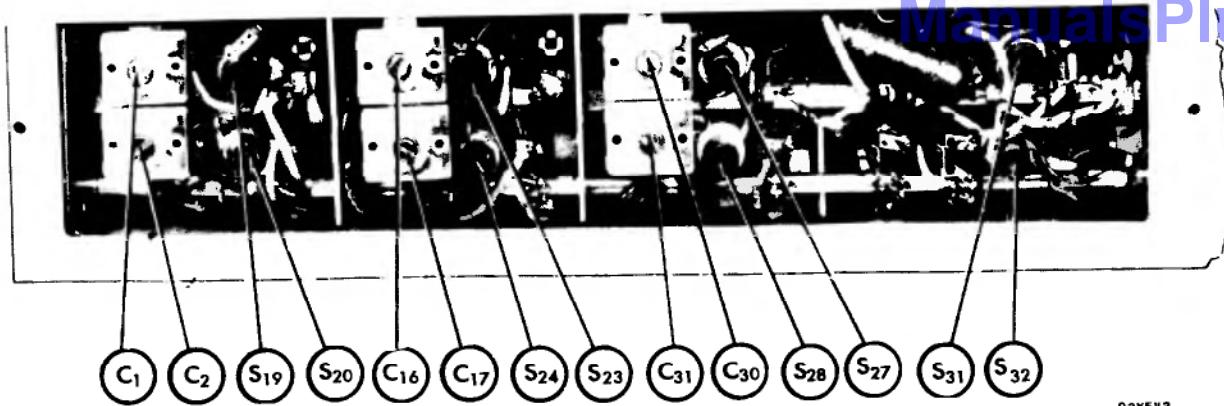


Figure 9. Alignment Adjustments, Left Side View

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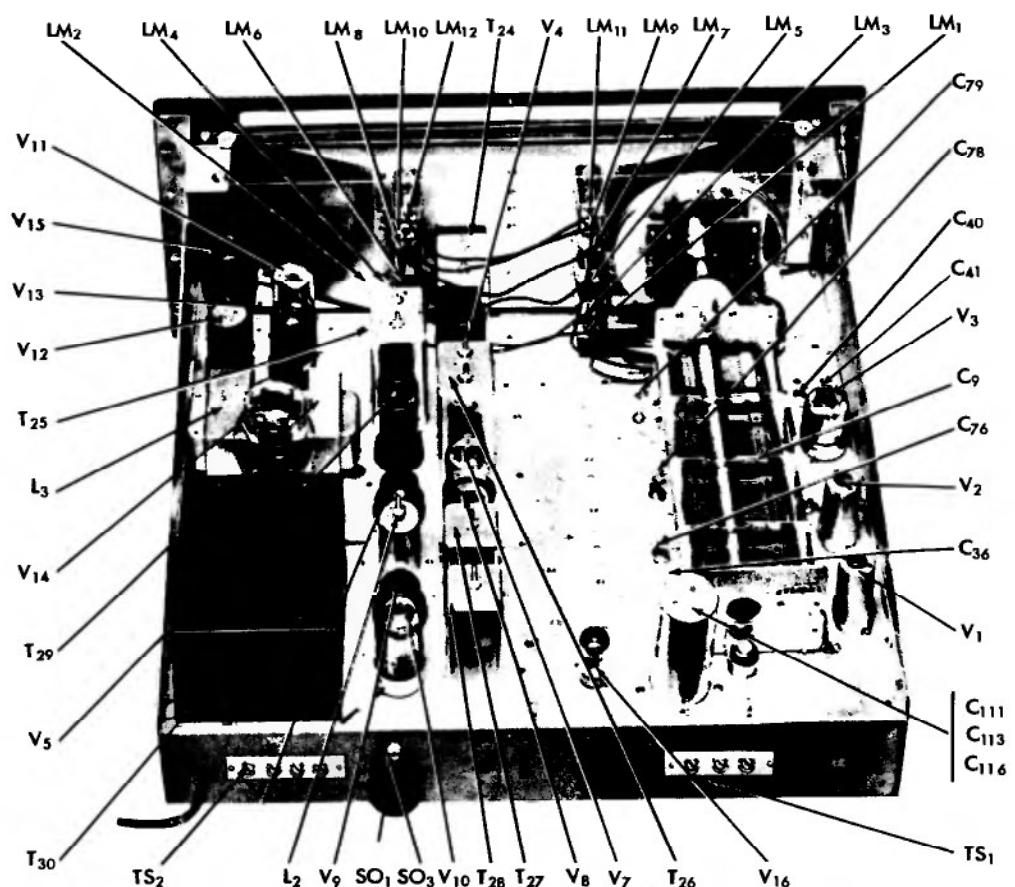
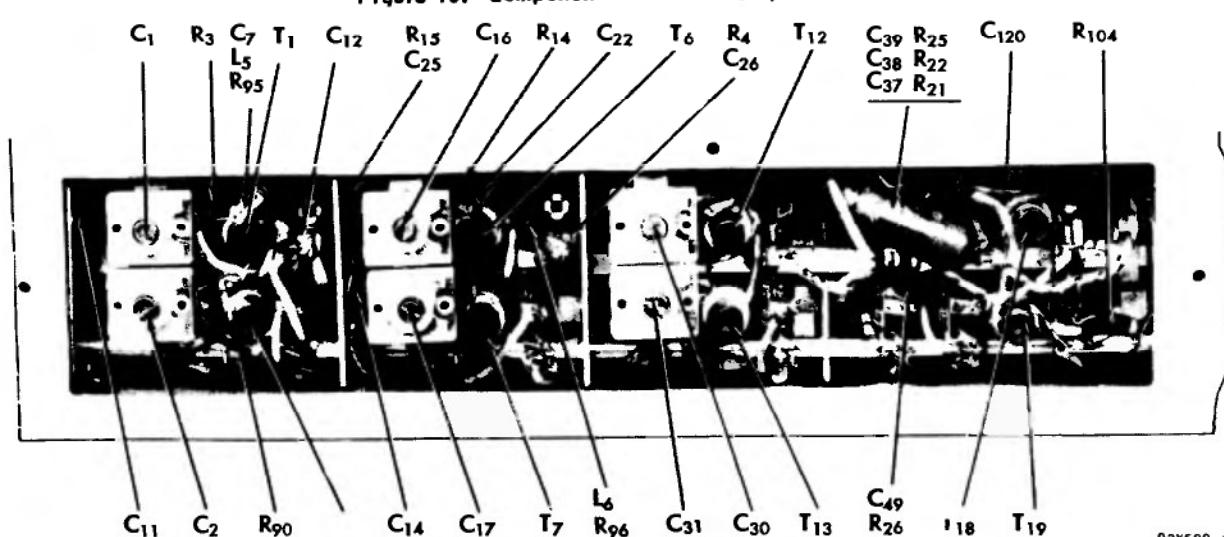


Figure 10. Component Locations, Top View

92X544-A



92X580-A

Figure 11. Component Locations, Left Side View

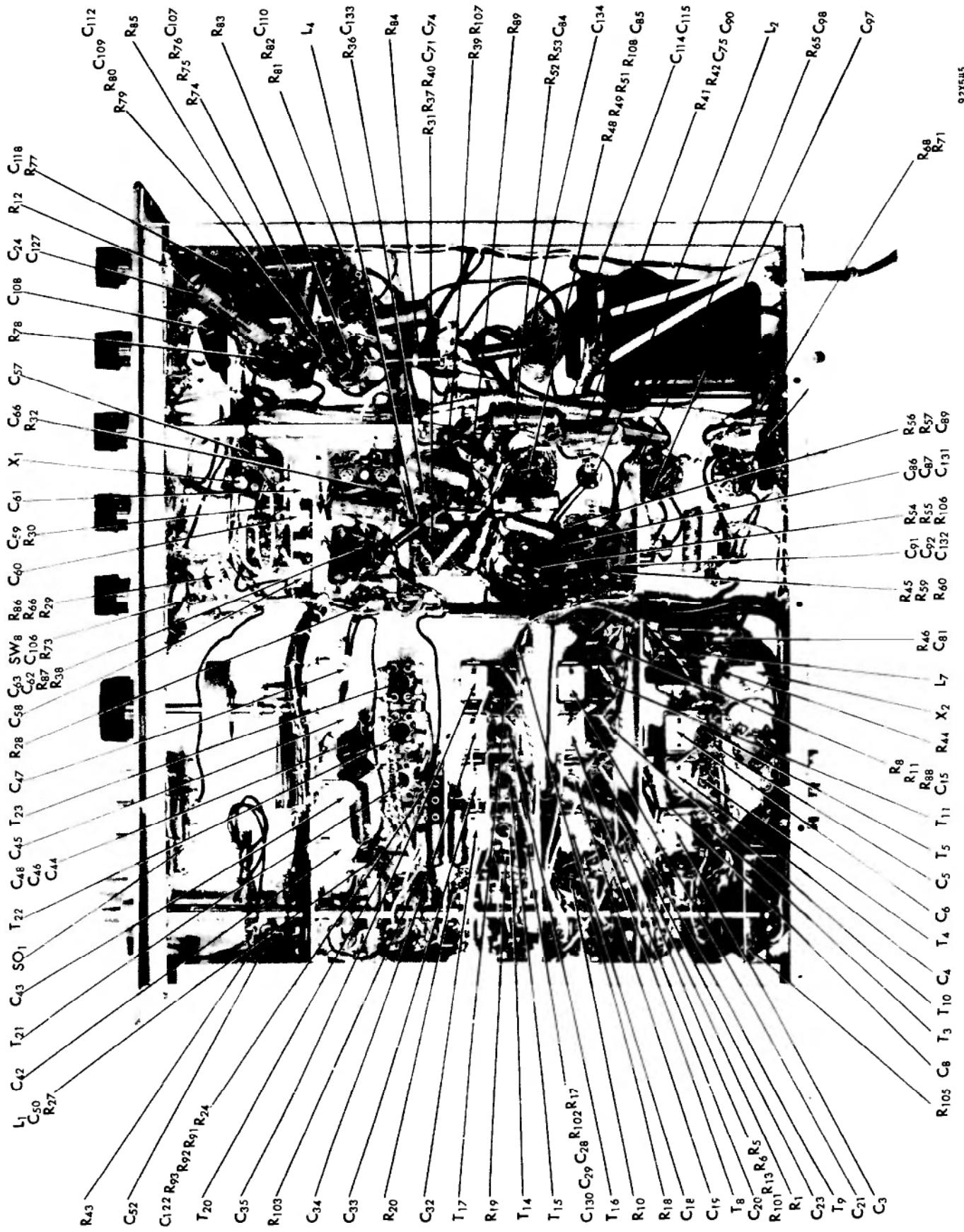


Figure 12. Component Locations, Bottom View

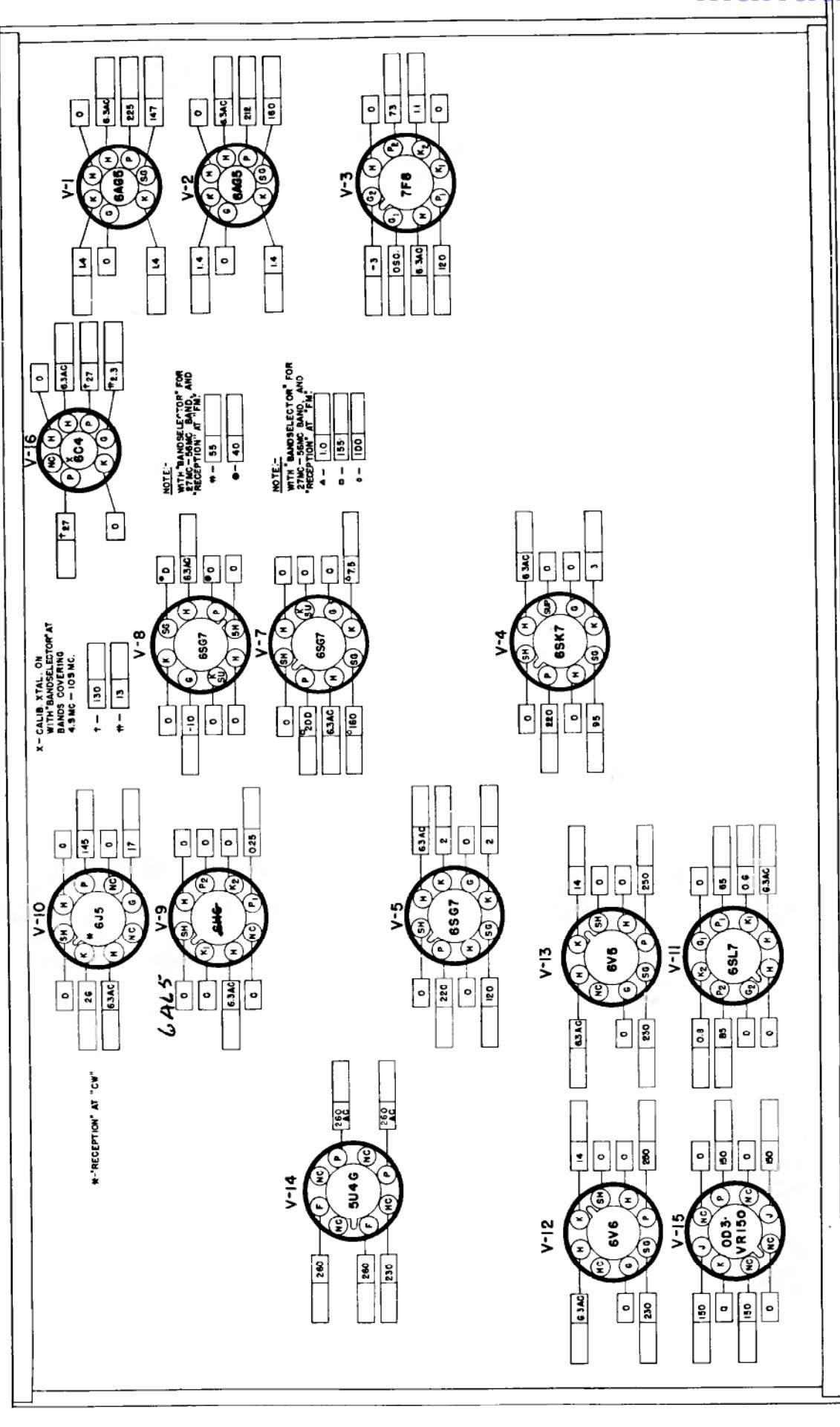


Figure 13. Tube Socket Voltage Chart

NOTES

NOTES	1. SOCKET VIEWS ARE BOTTOM VIEWS.	2. ALL VOLTAGES MEASURED BETWEEN TUBE	SOCKET	TERMINALS AND GROUND.
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2. ALL VOLTAGES MEASURED BETWEEN TUBE SOCKET TERMINALS AND GROUND.

ALL VOLTAGES SHOWN ARE DC UNLESS OTHERWISE SPECIFIED.

5 VOLTMETERS SHOWN WERE MEASURED WITH A 20,000 OHM/VOLT METER.

6. "HC" — NO CONNECTION.

7 THE BLANK SPACES ARE PROVIDED FOR THE SERVICE MAN.
FILL IN THE ACTUAL READING AS TAKEN WITH YOUR OWN EQUIPMENT.
A NORMAL OPERATING RADIO SHOULD BE USED FOR THESE MEASUREMENTS.

NOTES (CONT.)

"BAND SELECTOR" AT BAND 1.

"RECEPTION" AT "AM".

"CALIB. XTAL" AT "OFF."

NOISE LIMITER AT "OFF"

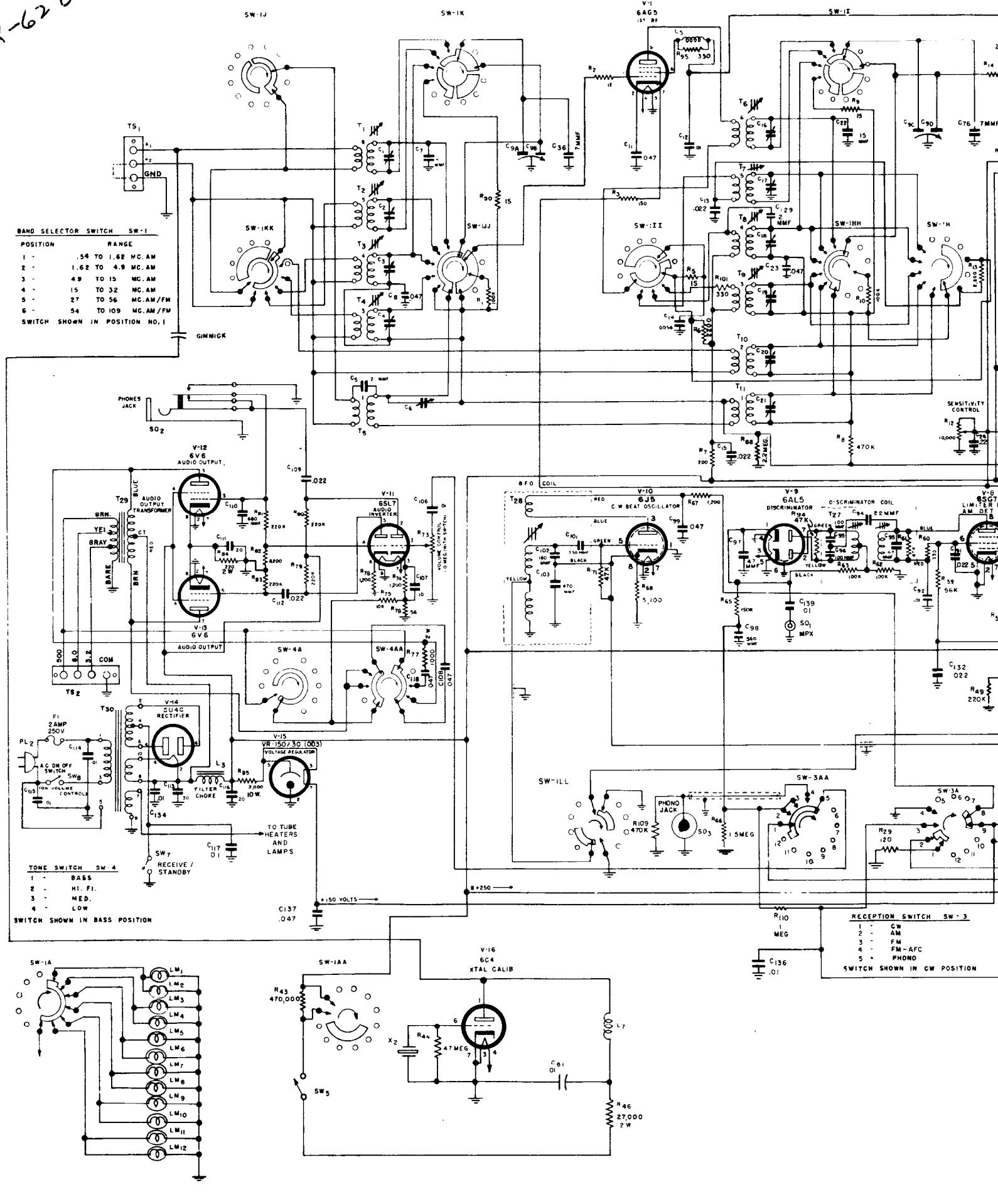
RECEIVE — STANDBY : AT RECEIVE :
RETRANSMIT AT MAXIMUM GAIN

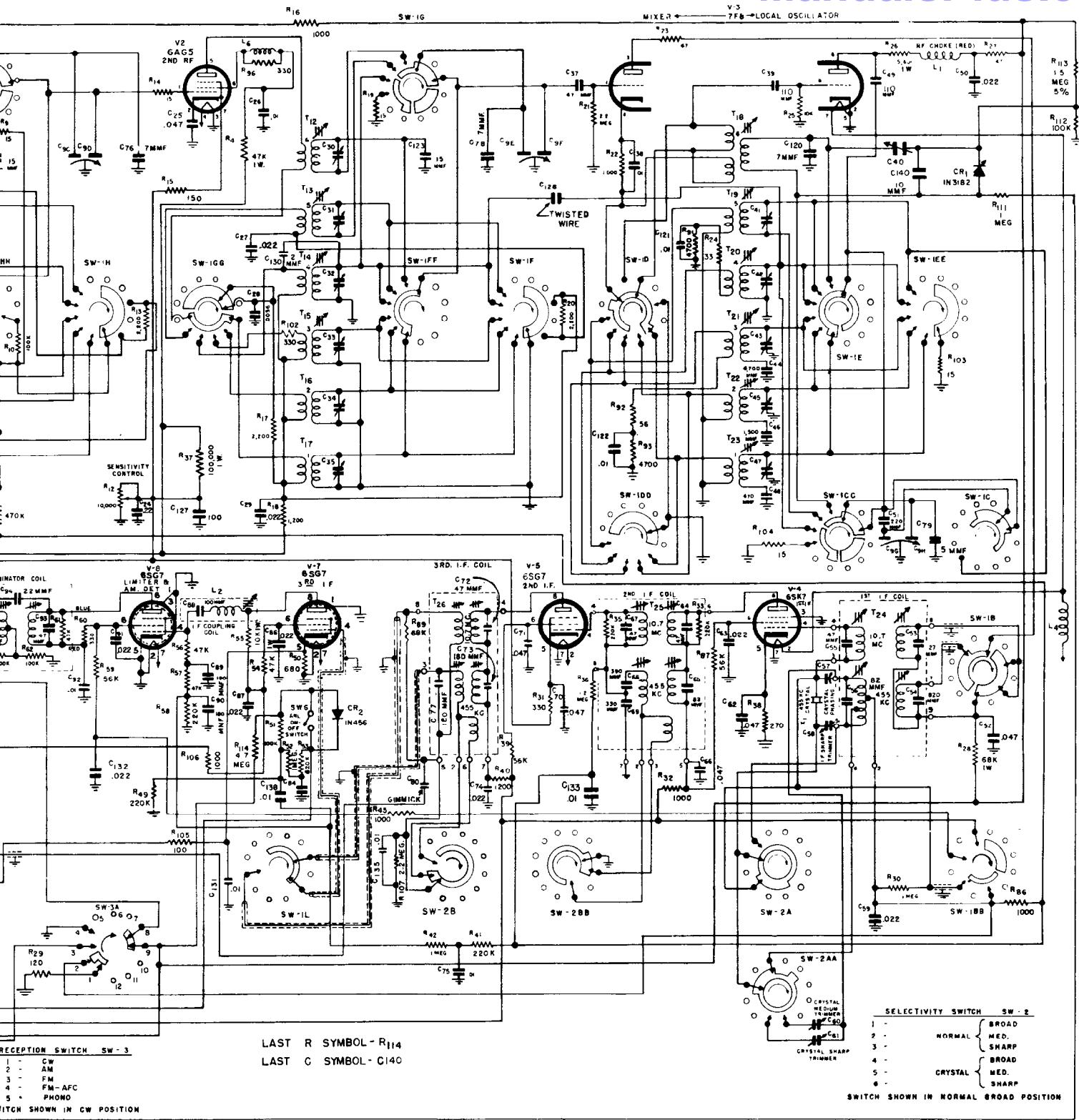
SENSITIVITY AT MAXIMUM

• SELECTIVITY. At "NORMAL" / "BOARD",

SERVICE PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number	Schematic Symbol	Description	Hallicrafters Part Number	Schematic Symbol	Description	Hallicrafters Part Number			
CAPACITORS											
*RESISTORS (Cont)											
C1,2,16,17,30,31	Trimmers, adjustable; 2 section; antenna, RF amp, and mixer stages	044-200165	R26	5.6K ohms, 1 watt	451-352562	T27	Transformer, FM detector	050-300191			
			R27	470 ohms 20%	451-253471	T28	Transformer, BFO	050-300655			
C3,4,18,19,20,21,32,33,34,35	Part of transformers T3,4,5,8, 9,10,11,14,15, and 17 respectively	-----	R28	68K ohms, 1 watt	451-352683	T29	Transformer, audio output	055-300213			
C5,12,9,130	2.2 mmf. 500V., bakelite	047-100180-04	R29	120 ohms	451-252121	T30	Transformer, power; 115V. 50/60 cycles	052-300141			
C7,79	5 mmf. 500V., ceramic	491-002050-95	R30,42,52	1 meghm 20%	451-253105	L1	RF choke (coded red)	053-200008			
C8,11,25	.047 mfd. 200V., molded tubular	499-014473	R31,80	330 ohms	451-252331	L2	IF coupling coil	053-200104			
C9	Capacitor, main tuning	048-300204	R36	1.2 meghms	451-252125	L3	Choke, filter	056-200067			
C13,15,27,29,50,59,63,74,86,87,91, 109,112,132	0.022 mfd. 600V., molded tubular	499-031223	R37	100K ohms, 1 watt	451-352104	L4	RF choke; filament	053-100009			
C14,28	5600 mmf. 500V., mica	470-514582	R38	270 ohms	451-252271	L5,8	RF choke; screen (wound on R95 & R98)	053-100117			
C22,123	15 mmf. 500V., ceramic	491-006150-95	R39,59,87	56K ohms	451-252563	L7	RF choke; plate	053-100139			
C23,62,70,84	.047 mfd. 200V., molded tubular	499-011473	R41,49,58,79,80,81,83	220K ohms	451-252224	TRANSFORMERS AND COILS (Cont)					
C24	.22 mfd. 200V., molded tubular	499-011224	R44,114	4.7 meghms	451-252475	V1,2	Type 6AG5, 1st and 2nd RF amplifiers	090-900791			
C36,76,78,120	7 mmf. 500V., ceramic	491-008070-95	R46	27K ohms, 2 watts	451-552273	V3	Type 7F8, oscillator/mixer	090-901145			
C37,97	47 mmf. 500V., mica	470-213470	R50	880 ohms	451-252681	V4	Type 6SK7, 1st IF amplifier	090-901233			
C12,26,38,75,81,92,106,114,115,117, 121,122,131,133,134,135	.01 mfd. 600V., molded tubular	499-031103	R53	820K ohms	451-252824	V5	Type 8SG7, 2nd IF amplifier	090-901181			
C39,49	110 mfd. 500V., ceramic	491-025111-95	R55	10K ohms, 1 watt	451-352103	V7,8	Type 6SG7, 3rd IF amplifier & AM detector	090-901181			
C40,41,57	Trimmer, adjustable; oscillator section bands 5 and 8; crystal phasing	044-100078	R56,57,71,94	47K ohms	451-252473	V9	Type 6AL5; discriminator	090-901183			
C42	Trimmer, adjustable; oscillator section, band 4	044-100347	R65	150K ohms	451-252154	V10	Type 6J5, BFO	090-901141			
C43,45	Trimmer, adjustable; oscillator section, bands 2 and 3	044-100077	R66	1.5 meghms	451-252185	V11	Type 8SL7GT, phase inverter	090-901219			
C44	4700 mmf. 2%, 500V., silver mica	470-521472	R66	5.1K ohms, 5%	451-251512	V12,13	Type 8V8GT, AF power amplifier	090-901221			
C46	1500 mmf. 2%, 500V., silver mica	470-421152	R73	Variable; Volume Control	025-100549	V14	Type 5AU4G, rectifier	090-900719			
C47	Trimmer, adjustable; oscillator section band 1	044-100076	R76,92	56 ohms	451-252580	V15	Type OD3/VR150, voltage regulator	090-901234			
C48	470 mmf. 2%, 500V., silver mica	470-231471	R77	1K ohm, 2 watts	451-552102	V16	Type 8C4, calibration oscillator	090-900830			
C51	220 mmf. 2%, 500V., silver mica	470-341221	R82	8.2K ohms	451-252822	LM1,2,3,4,5,6,7,8,9,10,11,12	Lamp; pilot; 8-8V	039-100003			
C52,68,71,99,108,118,137	.047 mfd. 800V., molded tubular	499-031473	R84	220 ohms, 2 watts	451-552221	TUBES AND LAMPS					
C58,60,61	Trimmer, adjustable; crystal phasing	044-200164	R85	28 ohms, 5%, 10 watts, WW	453-061202	V1,2	Type 6AG5, 1st and 2nd RF amplifiers	090-900791			
C89,90	180 mmf. 500V., mica	470-213181	R88	2.2 meghoms 20%	451-253225	V3	Type 7F8, oscillator/mixer	090-901145			
C98	580 mmf. 500V., mica	470-313561	R89	68K ohms	451-252883	V4	Type 6SK7, 1st IF amplifier	090-901233			
C107	10 mfd. 25V., electrolytic	045-100121	R91,93	4.7K ohms	451-252472	V5	Type 8SG7, 2nd IF amplifier	090-901181			
C110	680 mmf. 500V., mica	470-313881	R101,102	330 ohms 20%	451-253331	V7,8	Type 6SG7, 3rd IF amplifier & AM detector	090-901181			
C111,113,116	20 mfd. 25V., 30-20 mfd. 450V. electrolytic	045-100041	R105	100 ohms	451-252101	V9	Type 6AL5; discriminator	090-901183			
C127	100 mfd. 25V., electrolytic	045-100116	R110,111	1 meghms	451-252105	V10	Type 6J5, BFO	090-901141			
C136	.01 mfd. 20%, 500V., ceramic	047-100354	R112	100K ohms	451-252104	V11	Type 8SL7GT, phase inverter	090-901219			
C138,139	.01 mfd. +80-20% 600V., ceramic	047-100217	R113	1.5 meghoms, 5%	451-251155	V12,13	Type 8V8GT, AF power amplifier	090-901221			
C140	10 mmf. 500V., ceramic	491-002100-092	SWITCHES								
*All Resistors are 10%, 1 2 watt, carbon type unless otherwise noted.									SWITCHES		
TRANSFORMERS AND COILS									SWITCHES		
T1	Transformer, antenna stage; band 8	051-200829	SW1	Switch, BAND SELECTOR	060-400329						
T2	Transformer, antenna stage; band 5	051-200828	SW2	Switch, SELECTIVITY	060-100234						
T3	Transformer, antenna stage; band 4	051-200990	SW3	Switch, RECEPTION	060-02673						
T4	Transformer, antenna stage; band 3	051-200826	SW4	Switch, TONE	060-300236						
T5	Transformer, antenna stage; band 1	051-200823	SW5,6,7	Switch, toggle; SPST	060-100138						
T6	Transformer, RF stage; band 6	051-200833	SW8	Switch, power (part of volume control R73)	-----						
T7	Transformer, RF stage; band 5	051-200832	PLUGS AND SOCKETS								
T8	Transformer, RF stage; band 4	051-200989	PL2	Plug and cord, power	087-100078						
T9	Transformer, RF stage; band 3	051-200987	SO2	Jack, PHONE	036-200004						
T10	Transformer, antenna stage; band 2	051-200825	SO3	Jack, PHONO	038-100041						
T11	Transformer, RF stage; band 1	051-200824	Socket, dial lamp	086-200073-01							
T12	Transformer, mixer stage; band 6	051-200833	Socket, octal; black molded	006-200296							
T13	Transformer, mixer stage; band 5	051-200844	Socket, octal; mica	008-100223							
T14	Transformer, mixer stage; band 4	051-200989	Socket, miniature 7 pin; mica	008-100266							
T15	Transformer, mixer stage; band 3	051-200988	Socket, miniature 7 pin; molded bakelite	006-100292							
T16	Transformer, mixer stage; band 2	051-200986	Socket, octal	006-100250							
T17	Transformer, mixer stage; band 1	051-200985	Socket, miniature 7 pin	006-001122							
T18	Transformer, oscillator stage; band 6	051-200839	MISCELLANEOUS								
T19	Transformer, oscillator stage; band 5	051-200838	X1	Clip, dial scale & window mtg.	076-100403						
T20	Transformer, oscillator stage; band 4	051-200991	X2	Crystal, 455 KC	019-100123						
T21	Transformer, oscillator stage; band 3	051-200836	CR1	Crystal, calibration; 500KC	019-101211						
T22	Transformer, oscillator stage; band 2	051-200835	CR2	Dial cord (specify length)	038-100026						
T23	Transformer, oscillator stage; band 1	051-200834	F1	Dial pointer	082-300301						
T24	Transformer, 1st IF amp. stage	050-300198		Dial scale (calibrated)	022-400215						
T25	Transformer, 2nd IF amp. stage	050-300190		Diode, Type 1N3182	019-003316						
T26	Transformer, 3rd IF amp. stage	050-300373		Diode, Type 1N456	019-002984						
				Escutcheon	007-400078						
				Flywheel, dial drive	071-100178						
				Fuse, 2 amp. 250V; type 3AG	039-100428						
				Fuse holder	008-100451						
				Knob, BAND SELECTOR OR TUNING	015-001593						
				Knob, POINTER RESET	015-001609						
				Knob, RECEPTION, SELECTIVITY, TONE, VOLUME & SENSITIVITY control	015-001801						
				Lock, line cord; male section	078-000397-01						
				Lock, line cord; female section	076-000397-02						
				Mounting foot; rubber	016-100029						
				Pulley, Assembly	028-300111						
				Shaft, general coverage dial	074-100252						
				Shaft index control	074-002650						
				Spring, 3/4 in. Lg.	075-100012						
				Spring, 7/8 in. Lg.	075-100893						
				TS1	Terminal strip, antenna	088-200978					
				TS2	Terminal strip, speaker	088-200936					
					Ring, Retaining; index control shaft	078-100552					
					Window, dial	per W-12947					
						022-300214					





NOTE -

RESISTOR VALUES ARE IN OHMS.

ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE SPECIFIED.

CAPACITOR VALUES ARE IN MFD. UNLESS OTHERWISE SPECIFIED.

$\kappa = 1000$

SWITCH SHOWN IN NORMAL OPERATING POSITION

Fig. 14. Schematic diagram