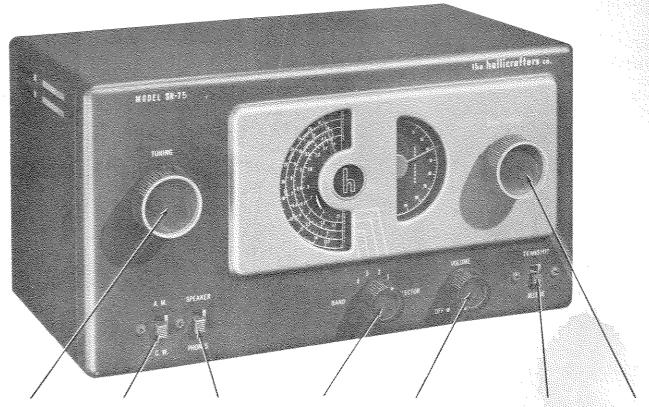


SR-75

the hallicrafters co.



MAIN TUNING CONTROL

AM/CW SPEAKER/PHONES SWITCH

BAND **SELECTOR** 

CONTROL

OFF-ON-VOLUME TRANSMIT/RECEIVE BAND SWITCH

SPREAD

92X1314

FIG. 1. SR-75 TRANSMITTER - RECEIVER

### **GENERAL SPECIFICATIONS**

.... Five plus rectifierıbes . . . . . . doubler oice Coil Impedance. 3.2 ohms

ntenna..... Provisions for external antenna with trans-

mission line or single

wire feed ıning. . . . . . . . . . . Manual

Power Supply . . . . . . . 105-125 volts, 60

cycles AC

Speaker . . . . . . . . 5 inch PM

Headset Output ..... High impedance 1500 te 5000 ohms

Intermediate . . . . . . . 455 KC

Frequency

Power Consumption . . . 50 watts

#### TUNING RANGE

### RECEIVER

### TRANSMITTER

ınd Selector Position	Frequency Range	Crystal Frequency	Output Frequency
1	550 KC - 1650 KC	3.5 MC - 3.85 MC	3.5 MC - 3.85 MC
2	1.65 MC - 5.1 MC	7.0 MC - 7.2 MC	7.0 MC - 7.2 MC 14.0 MC - 14.4 MC 28.0 MC - 28.8 MC
3	5 MC - 14.5 MC	6.74 MC - 6.8 MC	26.96MC - 27.2 MC
4	13 MC - 31 MC	Emission Power Input Power Output	A1 (CW) 10 Watts $7\frac{1}{2}$ Watts on 80 Meters to $4\frac{1}{2}$ Watts on 10 Meters

 $\mathbf{p}_{i}$ 

### INSTALLATION

**UNPACKING** - Check all shipping tags and labels for instructions before removing or destroying them. The SR-75 is shipped with the cabinet back held in place with four self-tapping hex head screws. Before placing the set in operation, remove these screws and replace them with the four thumb screws which are packed with the set.

**LOCATION** - The SR-75 is equipped with protective feet for table top or shelf mounting. Avoid exexcessively warm locations such as outlets for the heating system or recessed locations which prevent circulation of air. If the SR-75 is placed with its back to the wall, leave about an inch or two of clearance between the back of the cabinet and the wall for proper ventilation.

### **OPERATION AS A RECEIVER**

CONTROL	BROADCAST RECEPTION	SHORTWAVE RECEPTION		
RECEIVE/TRANSMIT switch	Set at RECEIVE	Same		
VOLUME control	Turn clockwise	Same		
SPEAKER/PHONES switch	Set at SPEAKER or PHONES	Same		
AM/CW switch	Set at AM	Set at AM for phone and CW for code		
BAND SELECTOR	Set at 1	Set at 2, 3 or 4.		
TUNING control	Tune for the loudest clearest reception.	See BAND SPREAD TUNING		

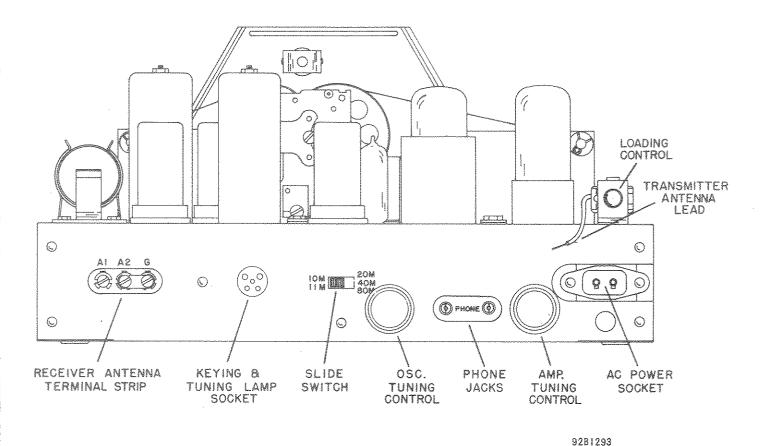
BAND SPREAD TUNING - Any narrow range of frequencies in the frequency spectrum covered by the SR-75 may be spread out electrically with the BAND SPREAD control. To use the band spread dial, set the band spread dial pointer to zero, set the main tuning dial pointer at the high frequency limit of the range of frequencies to be covered and then tune in the stations with the BAND SPREAD control. For example: Assume that the 40 meter amateur band is to be covered. Set the BAND SELECTOR to position "3", the main tuning dial pointer to 7.3 MC (megacycles) and tune in the stations with the BAND SPREAD control.

NOTE - The main tuning dial calibration will be true only when the band spread dial pointer is set at zero.

### 10 AND 11 METER OPERATION

Adjust the OSC. TUNING control (see fig. 2) for resonance as indicated by minimum brilliance of the tuning lamp or minimum current on the D.C. milliammeter if one is used.

Proceed as outlined above for 80, 40, and 20 METER OPERATION.



\* 47 m \* 38

FIG. 2. REAR VIEW, CONTROLS AND CONNECTIONS

"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."

### **OPERATION AS A TRANSMITTER**

Before applying power, remove the back cover and insert the appropriate crystal into the crystal socket ( $\frac{1}{2}$  inch pin spacing, .093 inch diameter pin). Insert the proper coil into the banana jacks PL-4 (refer to fig. 8). An 80 meter crystal is used for 80 meter operation and a 40 meter crystal is used for operation on 40, 20, and 10 meters. The 11 meter band may be used with a crystal in the range of 6.74 to 6.8 MC.

Insert two standard #2,  $1\frac{1}{2}$  volt flashlight cells (not supplied) in the holder on the top of the chassis. These cells are necessary to actuate the keying relay.

Replace the back cover making certain that the AC line cord interlock is properly seated in the socket on the rear of the chassis.

If the crystal and coil for either 80, 40 or 20 meter operation have been installed, set the slide switch on the rear of the chassis to the position indicating 80, 40 and 20 meter operation. If the crystal (40 meters) and coil for 10 or 11 meter operation have been installed, set the slide switch to the position indicating 10 and 11 meter operation.

Connect plug PL-3 on the keying and tuning lamp cable to socket SO-3 (see fig. 2). Connect a telegraph key to the two brown leads. A pilot bulb (Type #49), used for tuning purposes, is connected to the red and black leads. If desired, a 0-100 milliampere D.C. meter may be used in place of the tuning lamp, the red lead being connected to the plus terminal.

Connect the proper antenna. (Refer to page 6).

CAUTION: When switching from RECEIVE to TRANSMIT it is important that: (1) the shorting switch on the telegraph key is left open and (2) the key is not held down. A current transient great enough to burn out the tuning lamp results if these precautions are not observed.

Set the TRANSMIT-RECEIVE switch to the TRANSMIT position.

Turn the VOLUME control sufficiently clockwise to close the power switch.

Turn the LOADING control (see fig. 2) fully clockwise.

#### 80, 40 AND 20 METER OPERATION

Close the key and adjust the AMPLIFIER TUNING (see Fig. 2) to resonance as indicated by a pronounced dip in the brilliance of the tuning lamp or current meter reading. (Inserting a 0-500 milliampere thermocouple R.F. ammeter or a suitable pilot bulb\* in series with the antenna lead is a good indicating device to assure maximum transfer of energy into the antenna, since under certain conditions maximum power output and the resonance dip may deviate slightly. If a pilot bulb is used in the antenna lead, it should be shorted out or removed with transmitting.)

Turn the LOADING control counter-clockwise in small steps, each time adjusting the AMP. TUNING for a minimum indication on the tuning lamp or D.C. meter. It will be noted that as the LOADING control is turned farther clockwise the dip becomes less pronounced. When the transmitter is properly loaded, the minimum of the dip should not go below 40 milliamperes. Maximum transfer of energy into the antenna circuit is indicated by a maximum indication of the pilot bulb or R.F. ammeter in series with the antenna lead.

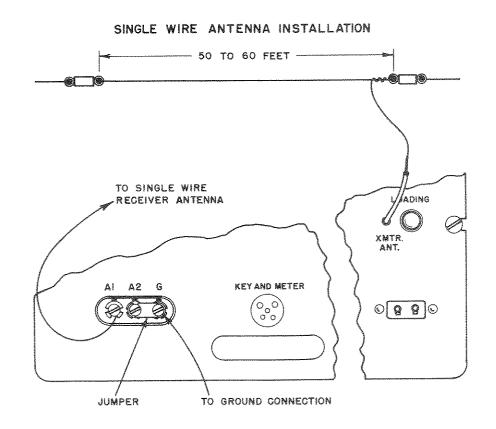
<sup>\*</sup> Use any bulb that will give a suitable indication. The current rating, as indicated by the color of the bead, will be determined by the type of antenna and frequency used. For pilot bulb data, refer to the 'Miscellaneous Data' section in the ARRL "FADIO AMATEURS HANDBOOK".

### TRANSMITTING ANTENNA

The transmitting antenna may be in the form of a single wire installation or half-wave doublet. It is recommended that the doublet be used when transmitting on the higher frequency bands. Antenna neights between 35 to 70 feet are usually suitable for all bands. Keep the antenna clear of surrounding objects insofar as possible. For further information concerning antennas refer to the "ARRL ANTENNA HANDBOOK".

#### INGLE WIRE ANTENNA

If a single wire antenna is to be used, the overall length (including lead-in), should be between 50 and 60 feet. It is then connected to the phenolic covered antenna lead located at the rear of the set. For details of construction see fig. 3.



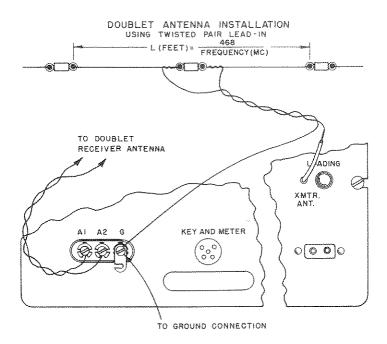
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FIG. 3. SINGLE WIRE ANTENNA CONSTRUCTION DETAILS AND CONNECTIONS

#### DOUBLET ANTENNA

The construction of the half-wave doublet antenna is as shown in fig. 4. The antenna length (feet) is determined by dividing the constant 468 by the operating frequency in megacycles. No. 12 or No. 14 enameled wire is generally used for the antenna.

Since the impedance at the center of a doublet antenna is approximately 75 ohms it should be fed with a 75-ohm Twin-Lead, twisted pair, or coaxial transmission line. The transmission line should be run away at right angles to the antenna if possible; one conductor being connected to the antenna lead at the rear of the set and the other to terminal "G" on terminal strip TS-1. If a coaxial line is used, connect the outer conductor to terminal "G".



9281306

FIG. 4. DOUBLET ANTENNA CONSTRUCTION DETAILS AND CONNECTIONS

### RECEIVING ANTENNAS

A short single wire antenna (15 to 20 feet including lead-in) is recommended for general CW reception. A full size antenna of either of the types illustrated for transmitting may be used for transmitting may be used for receiving modulated or weak code signals. CAUTION: The same antenna should never be connected to the transmitter and receiver simultaneously. Also, the transmitting and receiving antennas should be located as far apart as possible.

For further information concerning antennas refer to the "ARRL ANTENNA HANDBOOK".

If special problems such as BCL or TVI are present because of your particular location, consult your HALLICRAFTERS dealer or authorized service center.

### SERVICE

### RESTRINGING DIAL CORD

To restring the main tuning dial cord cut a 17-inch length of 30 lb. test dial cord and tie one end to the tension spring at position "1" on the diagram. Follow the sequence "1" through "15", and at position "15" stretch the tension spring and tie the cord securely.

To restring the band spread tuning dial cord, cut a  $13\frac{1}{2}$ -inch length of dial cord and follow the procedure as above, starting at position "A" on the diagram. Note that the tuning drive shafts are wrapped with two and a fraction turns of dial cord for proper traction.

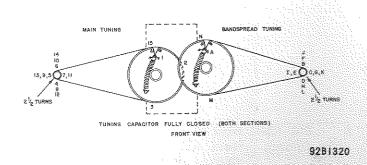


FIG. 5. DIAL CABLE STRINGING PROCEDURE

#### TUBE REPLACEMENT

The types of tubes required and their relative position in the receiver are shown in the illustration, Fig. 8. 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.

#### DIAL LAMP REPLACEMENT

Refer to fig. 8 for location of the dial lamp. To replace a defective lamp, reach in through the rear of the cabinet and unclip the dial lamp socket by compressing the side springs. The socket and defective lamp may then be brought out into the open for service. Make replacement with 6-8 volt Mazda #47 (brown bead) lamp.

### SERVICE OR OPERATION QUESTIONS

For further details regarding operation or servicing of the SR-75 contact your dealer. Make no service shipments directly to the factory before first writing for authorization and instructions.

### RECEIVER ALIGNMENT PROCEDURE

Holes in the bottom cover permit minor adjustment of the oscillator and mixer stage trimmers, however for complete alignment, the chassis will have to be removed from the cabinet. To separate the chassis from the cabinet, remove the back cover and bottom plate. The chassis is fastened to the cabinet by four front panel screws located near the slide switches and two cabinet screws located at the bottom rear of the cabinet.

CAUTION - The four rubber grommets insulate the chassis from the cabinet. Check the condition of these grommets and replace if necessary.

The standard RMA dummy antenna specified 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.

Set the following controls before alignment.

AM/CW ..... Set at AM SPEAKER/PHONES . . Set at SPEAKER VOLUME ..... Set at maximum

RECEIVE/TRANSMIT.... Set at RECEIVE

BAND SPREAD ..... Set at zero

For the settings of the remaining controls, see alignment chart.

#### ALIGNMENT CHART

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Selector Setting	Receive Dial Setting		st Remarks
1	,01 mfd cap.	Stator plates, front section of tuning gang	455 kc	quond.	1000 kc	A,B, C,D	Adjust for max, audio output at speaker voice coil. Use just enough signal generator output to obtain a suitable output indication.
2**	See step 1	See step 1	455 kc (No modula- tion)	1	1000 kc	E	Set the AM/CW switch at CW. (Reset the switch at AM when step 2 is completed.) Correct BFO operation is obtained by varying the coupling between the wire "E" and the 12SK7 tube grid and plate terminals (Pins 4 and 8.) Pushing the wire toward the grid terminal increases the capacity and the strength of the beat.
<b>C</b>	Std. RMA dummy	High side to term. A1 on antenna strip. Jumper wire between A2 and G	30 mc	4	30 mc	*F,G	Max. output as in step 1.
4		See step 3.	14 mc	3	14 mc	*H,J	Max. output as in step 1.
5	dummy Std. RMA dummy	See step 3.	5 mc	2	5 mc	*K,L	Max. output as in step 1.
6		See step 3.	1500 kc 600 kc	Money.	1500 kc 600 kc	*M,N *P	Max. output as in step 1.

<sup>\*</sup> Note - Calibration adjustments.

<sup>\*\*</sup> Note - This step is generally unnecessary. Adjustment should be made if a weak beat note is obtained on strong c-w signals indicating lack of coupling between wire "E" and tube socket wiring.

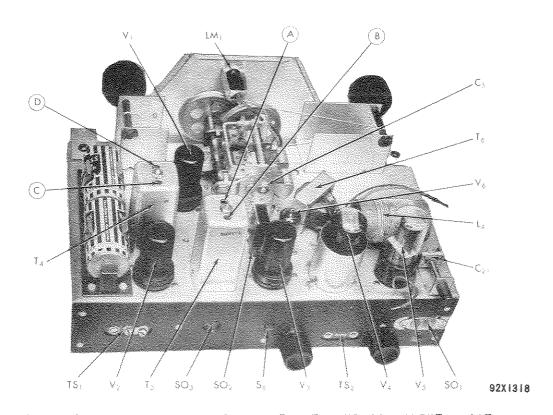
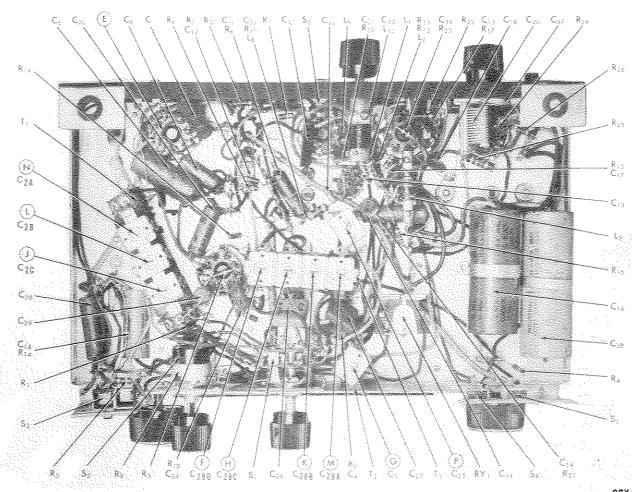


FIG. 6. TOP VIEW, ALIGNMENT ADJUSTMENTS AND COMPONENT LOCATION



92X1319

FIG. 7. BOTTOM VIEW, ALIGNMENT ADJUSTMENTS AND COMPONENT LOCATION

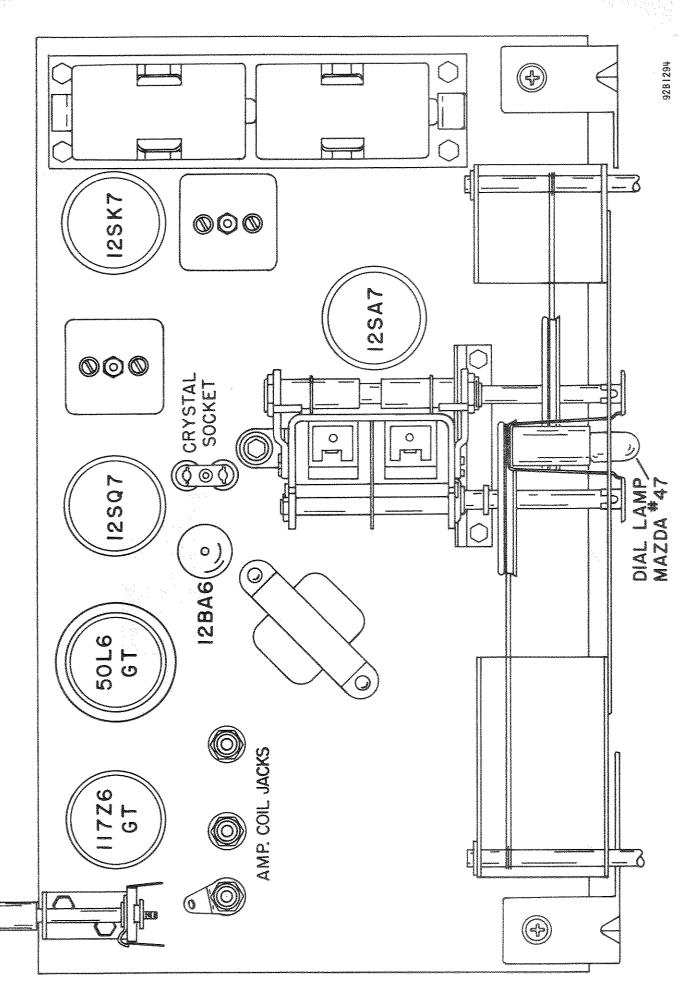


FIG. 8. TOP VIEW, LOCATION OF TUBES, DIAL LAMP, CRYSTAL SOCKET AND AMP. COIL JACKS

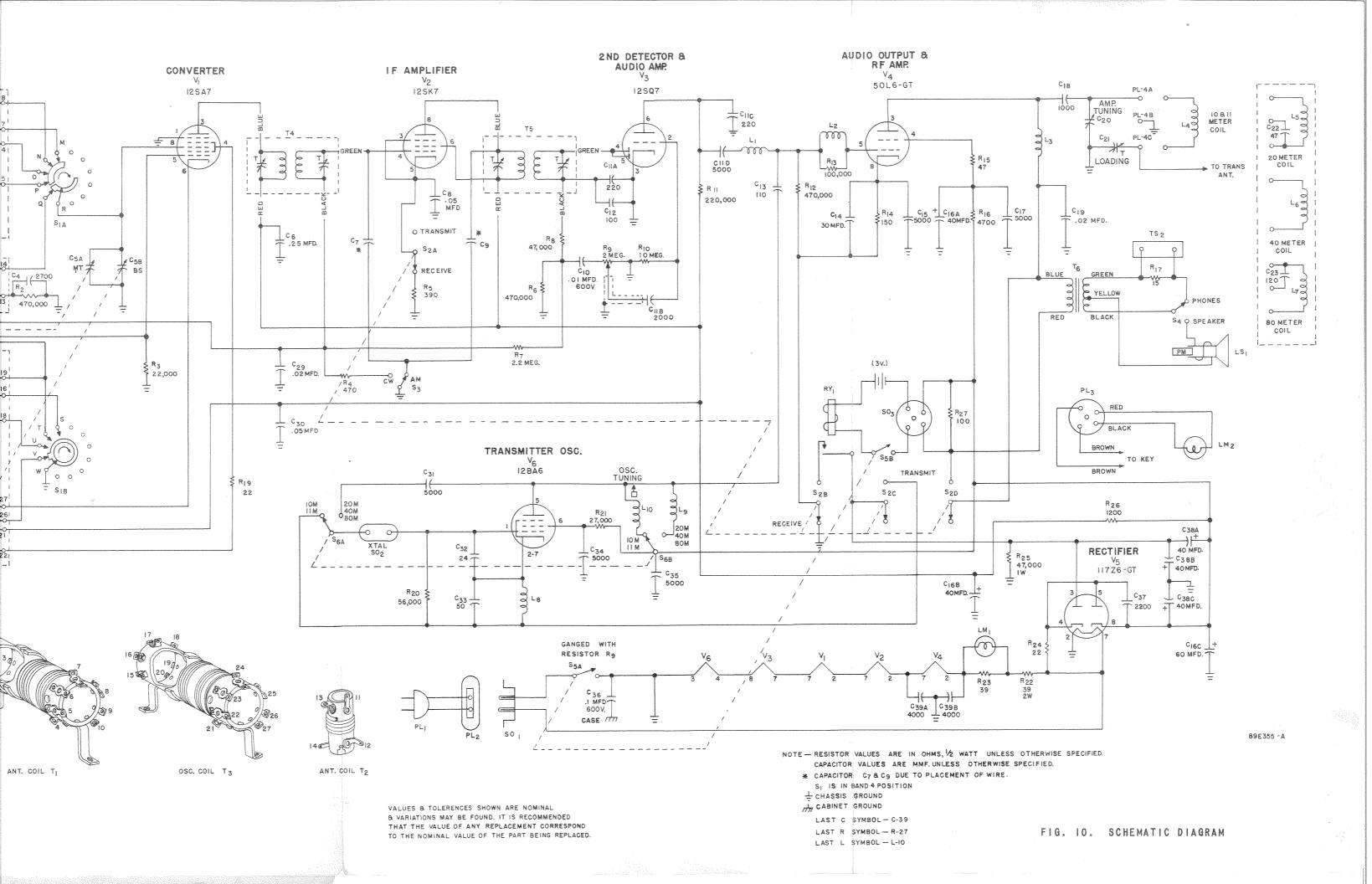
### SERVICE PARTS LIST

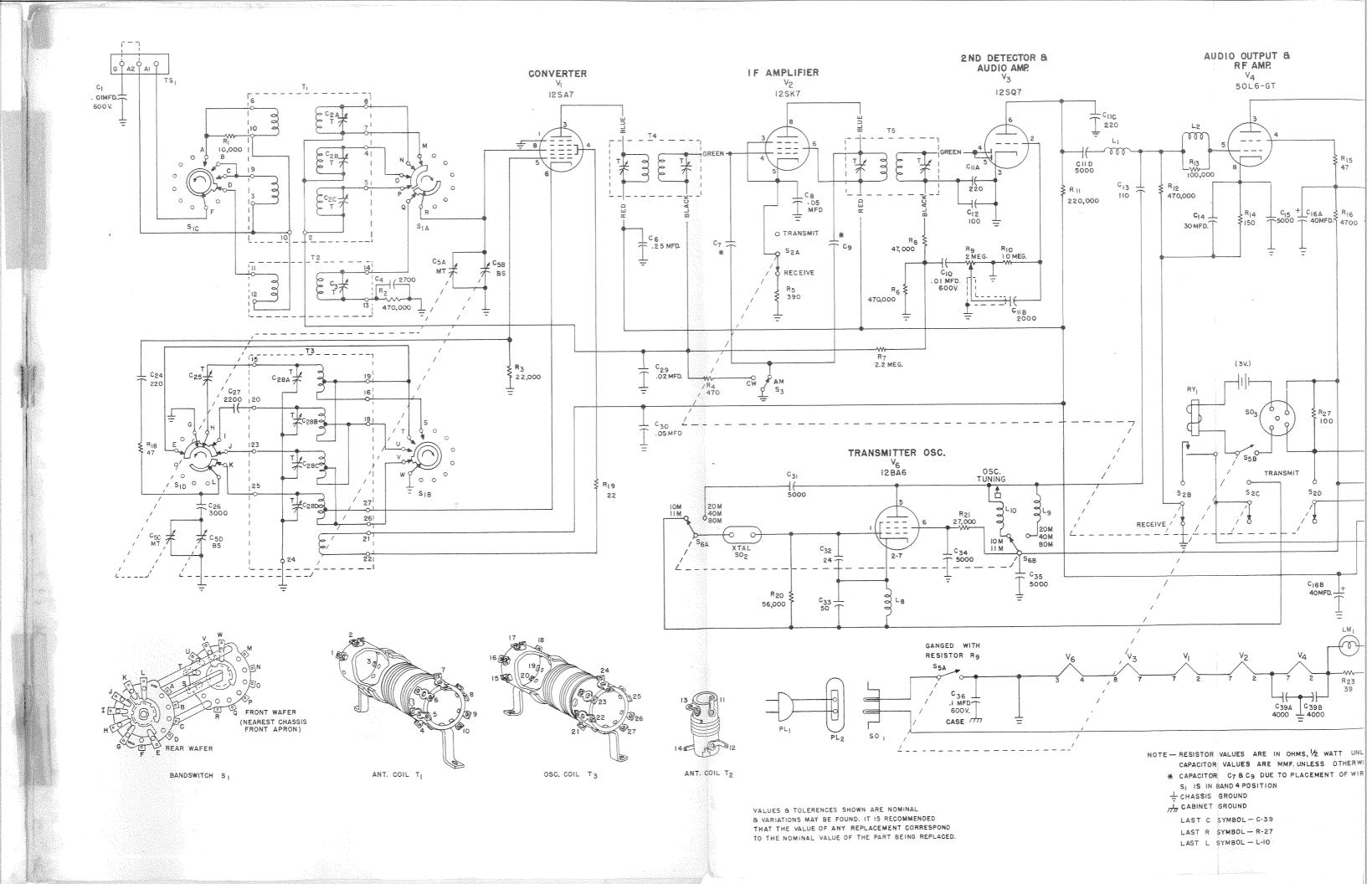
Ref. No.	Description	Manufacturer's Part Number	Ref. No		Manufacturer's Part Number
	CAPACITORS			TRANSFORMERS AND COILS (Cont.)	
C-1,10 C-2 C-3 C-4	.01 mfd. 600 V., tubular Trimmers, adj. (part of T-1) Trimmer, adjustable (for T-2) 2700 mmf. 500 V., mica	46AZ103J 44A039 47X30B272K	L-5 L-6 L-7 L-8	Coil, amplifier (20 meters) Coil, amplifier (40 meters) Coil, amplifier (80 meters) Choke, cathode reactor	51B1292 51B1293 51B1294 56A123
C-5 C-6 C-7,9	Main tuning and bandspread capacitor assembly .25 mfd. 200 V., tubular Wiring capacity	48C162-1 46AT254J	L-10	Coil, variable; OSC. TUNING  SWITCHES	51B1295
C-8,30 C-11	.05 mfd. 200 V., tubular Capacitor, composite; 5000, 2X220, and 2000 mmf; 500 V., ceramic	46AT503J 46A151	S-1 S-2	Switch, rotary wafer; BAND SELECTOR Switch clide: ADDT: TRANSMIT-	60C393
C-12 C-13 C-14	100 mmf. 500 V., mica 110 mmf. ceramic 30 mfd. 25 V., electrolytic	47X20B101K 47X30UJ111K	S-3	Switch, slide; 4PDT; TRANSMIT- RECEIVE Switch, slide; SPDT; CW-AM	60A396-C 60A243
C-15,17, 31,34,3	5000 mmf. 450 V., ceramic	45A034 47A168	S-4 S-5	Switch, slide; SPDT; PHONES- SPEAKER Switch, power (part of VOLUME	60A243
C-18 C-19 C-20	1000 mmf. 450 V., ceramic .02 mfd. 600 V., tubular	45B091 47A229 46AZ203J	S-6	control R-9) Switch, slide; DPDT (10,11M - 20, 40, 80M)	60A381
C-21	100 mmf. variable air; AMP. TUNING LOADING capacitor assembly	48A249-B 44B393	RY-1	Relay, SPDT PLUGS, SOCKETS AND TERMINAL TRIPS	21A116
C-22 C-23 C-24 C-25	47 mmf. (part of L-5) 120 mmf. (part of L-7) 220 mmf. 500 V., mica Padder, adjustable (Band 1)	47X20B221K 44A349	PL-1 PL-3 PL-4	Line cord and plug PL-2 Plug, keying and tuning lamp Jack assembly, banana type	87B1668 10A197 36A001
C-26 C-27,37 C-28 C-29	3000 mmf. 500 V., mica 2200 mmf. 500 V., mica Trimmers, adjustable (part of T-3) .02 mfd. 400 V., tubular	47X30B302K 47X30B222K 46AW203J	TS-1 TS-2 SO-1	Terminal strip, receiving antenna Strip, phone jack Socket, dial light Socket, a-c power	88A671 88A071 86A011 10A286
C-32 C-33 C-36	24 mmf. ceramic 50 mmf. ceramic (part of L-8) .1 mfd. 600 V., tubular	47X20UJ240K 46AZ104J	SO-2 SO-3	Socket, crystal Socket, keying and tuning lamp Socket, octal (Tubes V-1,2,3,5) Socket, 7 pin min. (Tube V-6)	6A346 6A246 6A250 6B297
C-38 C-39	40 mfd. 300 V., 40 mfd. 150 V., 40 mfd. 150 V.; electrolytic 2X4000 mmf. 450 V., ceramic	45B176 47A218		Socket, octal (Tube V-4) Socket, tuning lamp (includes leads)	6A317 86A103
	RESISTORS		37 1	TUBES, RECTIFIERS AND LAMPS	00-1-1-1-
R-1 R-2,6,12 R-3 R-4 R-5 R-7 R-8	10,000 ohms 1/2 watt, carbon 470,000 ohms 1/2 watt, carbon 22,000 ohms 1/2 watt, carbon 470 ohms 1/2 watt, carbon 390 ohms 1/2 watt, carbon 2.2 megohms 1/2 watt, carbon 47,000 ohms 1/2 watt, carbon 2 megohms, VOLUME control	23X20X103K 23X20X474K 23X20X223K 23X20X471K 23X20X391K 23X20X225K 23X20X473K 25B914	V-1 V-2 V-3 V-4 V-5 V-6 LM-1 LM-2	Type 12SA7, converter Type 12SK7, I.F. amplifier Type 12SQ7, 2nd detector; AVC Type 50L6GT, audio/R.F. amp. Type 117Z6GT, rectifier Type 12BA6, transmitter oscillator Lamp, dial; GE #47 (brown bead) Lamp, tuning; Mazda #49 (pink bead)	90X12SA7 90X12SK7 90X12SQ7 90X50L6GT 90X117Z6GT 90X12BA6 39A004 39A017
R-10 R-11 R-13	10 megohms 1/2 watt, carbon 220,000 ohms 1/2 watt, carbon 100,000 ohms (part of L-2)	23X20X106K 23X20X224K		MISCELLANEOUS  Baffle, speaker	78B198
R-14 R-15,18 R-16 R-17 R-19,24 R-20	150 ohms 1/2 watt, carbon 47 ohms 1/2 watt, carbon 4700 ohms 1/2 watt, carbon 15 ohms 1/2 watt, carbon 22 ohms 1/2 watt, carbon 56,000 ohms 1/2 watt, carbon	23X20X151K 23X20X470K 23X20X472K 23X20X150K 23X20X220K		Bracket, switch mtg. (L.H.) Bracket, switch mtg. (R.H.) Cabinet Cabinet back Cabinet bottom	67B1309 67A1349-B 66B628 8C1183-B 8C1184
R-21 R-22 R-23 R-25 R-26 R-27	27,000 ohms 1/2 watt, carbon 39 ohms 2 watts, carbon 39 ohms 1/2 watt, carbon 47,000 ohms 1 watt, carbon 1200 ohms 1/2 watt, carbon 100 ohms 1/2 watt, carbon	23X20X563K 23X20X273K 23X40X390K 23X20X390K 23X30X473K 23X20X122K 23X20X122K 23X20X101K		Clip, battery Clip, battery mtg. Dial cord Dial scale Knob, TUNING and BANDSPREAD Knob, VOLUME, BAND SELECTOR and AMP. TUNING	76A634 76A635 38A019 83C378 15A047 15A049
	TRANSFORMERS AND COILS			Knob, OSC. TUNING Mounting foot, rubber	15A058 16A007
T-1 T-2 T-3	Coil, antenna (Bands 1, 2 and 3) Coil, antenna (Band 4) Coil, oscillator (Bands, 1, 2, 3 and 4)	51C821 51B1015 51C822		Pointer, bandspread Pointer, main tuning Retainer, spring Shaft, bandspread Shaft, main tuning	82A103 82A177 75A062 74A319 74A318
L-1,9	Transformer, 1st I-F Transformer, I.F. (Diode) Transformer, audio output Choke, plate and grid	50B183. 50B184 55A127 53A205		Shell, plug (part of PL-3) Spring, dial cord Speaker, 5 inch PM Strip, battery mounting	10A052 75A012 85C030 8B1181
L-2 L-3	Choke parasitic Choke, R.F. Coil, amplifier (10 and 11 meters)	53A206 53A038 51B1291		Window, dial Wrench, Allen #6 Grommet, insulating; rubber Insulator, nylon (fits in insulating	22B311 33-035 16A008 4A647
				grommet) Washer, insulating	4A646 Page 11

BOTTOM VIEW OF CHASSIS

# NOTES

- SOCKET VIEWS ARE BOTTOM VIEWS
- ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS & CHASSIS, WITH ZERO SIGNAL INPUT,
- LINE VOLTAGES 117V. AC. ALL VOLTAGES SHOWN ARE DC UNLESS OTHERWISE SPECIFIED. DC VOLTAGES SHOWN WERE MEASURED WITH A VTVM.
- . NO CONNECTION (VOLTAGES SHOWN FOR THIS TERMINAL ONLY WHEN TERMINAL IS USED AS A TIE LUG. Z N N
  - "NR" . NOT READABLE (READING GENERALLY MEANINGLESS).
- 20 64 15 65 7 8
- READING IS WITH THE SAME SWITCH SET AT "RECEIVE". ALL TRANSMITTER VOLTAGE MEASUREMENTS WERE MADE WITH THE TRANSMIT/RECEIVE SWITCH IN THE "TRANSMIT" POSI. WHERE TUBE SOCKET VOLTAGES CHANGE FROM RECEIVE TO TRANSMIT OPERATION TWO READINGS ARE SHOWN. THE UPPER READING IS WITH THE TRANSMIT/RECEIVE SWITCH SET AT "TRANSMIT" WHILE THE LOWER TRANSMIT RECEIVE
  - rion, the key closed and the transmitter tuned to resonance with an 80 meter coil and crystal. DUMMY ANTENNA WAS USED AS SHOWN IN THE TABLE. ð
- VOLTAGE READINGS FOR V.1, 2 & 3 WERE TAKEN WITH THE TRANSMIT/RECEIVE SWITCH IN THE "RECEIVE" POSITION, THE BAND SELECTOR SWITCH AT BAND 4 POSITION AND THE AM/CW SWITCH AT "AM". 0
- VOLTAGE READINGS FOR V-6 WERE TAKEN WITH THE TRANSMIT/RECEIVE SWITCH IN THE "TRANSMIT" POSITION ONLY, TRANSMITTER VOLTAGE READINGS SHOWN ARE FOR 80 METER OPERATION AND MAY VARY SLIGHTLY ON THE OTHER BANDS. 7.





# NOTES

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### **Warranty**

"The Hallicrafter's Company warrants each new radio product manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect, provided the unit is delivered by the owner to our authorized radio dealer, wholesaler, from whom purchased, or, authorized service center, intact, for examination, with all transportation charges prepaid within ninety days from the date of sale to original purchaser and provided that such examination discloses in our judgment that it is thus defective.

This warranty does not extend to any of our radio products which have been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, or to use in violation of instructions furnished by us, nor extend to units which have been repaired or altered outside of our factory or authorized service center, nor to cases where the serial number thereof has been removed, defaced or changed, nor to accessories used therewith not of our own manufacture.

Any part of a unit approved for remedy or exchange hereunder will be remedied or exchanged by the authorized radio dealer or wholesaler without charge to the owner.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our radio products."

Form No. 94X622

the Hallicrafters co.