

SECTION II

TECHNICAL DATA

FREQUENCY COVERAGE:

Eight-band capability — Full coverage provided for 80, 40, 20, 15, and one segment of the 10-meter band. Provisions made and crystals available for the remaining three segments of the 10-meter band. Other frequencies are available on request.

OPERATION:

Single Sideband — VOX or MOX (push-to-talk).
CW — Manual or break-in.

FRONT PANEL CONTROLS:

Tuning; Band Selector; Final Tuning; RF Level - Mic Gain; Preselector; RIT; RF Gain - AF Gain; Operation (Off/Standby/MOX/VOX); Function (CW/USB/LSB); Cal; Cal Adj.

GENERAL:

Dial Calibration — 5-KC increments (Built-in, 100-KC crystal calibrator).
Calibration Accuracy — Less than 2 KC between 100-KC points after indexing.
VFO — 500 KC tunable range.
Stability — Less than 300 CPS after warmup.
Tubes — 18 plus one voltage regulator, ten diodes, and one varicap.
Ambient Temperature Range — Minus 20° to plus 50° C.
Construction — Rugged, lightweight aluminum.
Dimensions (HWD) — 6-1/2 inches by 15 inches by 13 inches.
Net Weight — 17-1/2 pounds.
Shipping Weight — 22 pounds (approximately).

TRANSMITTER:

Output Tubes — Two 12DQ6B tubes in parallel.
Output Impedance — Fixed, 50-ohm pi-network.
Power Input — SSB 150 watts PEP MAX.
CW. 125 watts MAX.
Carrier and Unwanted Sideband Suppression — 50 DB.
Distortion Products — 30 DB.
Audio Response — 600 CPS to 2800 CPS @ 3 DB.
Microphone Input — High impedance.

RECEIVER:

Sensitivity — 1 microvolt for a 20-DB signal-to-noise ratio.
Audio Output — 2 watts.
Output Impedance — 3.2 ohms and 500 ohms.
Overall Gain — 1 microvolt for 1/2 watt output.
Antenna Input — 50 ohms.
IF — Dual Conversion:

First IF 6.0 MC to 6.5 MC variable (tunes with the VFO).

Second IF . . . 1650 KC, crystal-lattice filter.

ACCESSORIES:

Mobile Mounting Rack Model MR-150 — Quick release design adaptable to transmission hump or floor mount... all connections made simultaneously... access holes for VOX controls.

Net Weight — 10 pounds.

Shipping Weight — 12-3/4 pounds (approximately).

12-volt DC Power Supply Model PS-150-12 — Designed for out-of-the-way trunk installation ... terminal strip provides for quick-and-easy connection to the cable from the mounting rack ... contains five silicon diode rectifiers and four transistors.

Dimensions (HWD) — 3-3/4 inches by 10 inches by 6-3/4 inches.

Net Weight — 5-1/2 pounds.

Shipping Weight — 9 pounds (approximately).

117-volt AC Power Supply Model PS-150-120 — Styled as a companion unit to the Model SR-150 Transceiver, this supply also contains a 4-inch by 6-inch speaker ... one-cable connection carries power to an audio from the transceiver ... may be plugged into any 115-volt wall outlet... contains five silicon diode rectifiers.

Dimensions (HWD) — 6-1/4 inches by 7-1/2 inches by 10 inches.

Net Weight — 22 pounds.

Shipping Weight — 28-1/2 pounds (approximately).

TUBES AND FUNCTIONS

V1	6AZ8	Receiver RF Amplifier and Calibrate Oscillator.	V11	6T8A	Receiver First Audio, AGC Detector, VOX Diode, and QT Diode.
V2	12BA7	Receiver and Transmitter First Mixer.	V12	OA2	Voltage Regulator.
V3	6EA8	6.0-MC to 6.5-MC IF Amplifier and Audio Cathode Follower.	V13	6AQ5A	Receiver Audio Output.
V4	12BA7	Receiver Second Mixer.	V14	12DQ6B/ 12GW6	Power Amplifier.
V5	6EA8	Receiver Second 1650-KC IF Amplifier and AALC Amplifier.	V15	12DQ6B/ 12GW6	Power Amplifier.
V6	12BE6	Product Detector.	V16	12BY7A	Transmitter Driver.
V7	6AH6	Transmitter Second Mixer.	V17	6EA8	Receiver and Transmitter 1650-KC IF Amplifier and Meter Amplifier.
V8	12AT7	Heterodyne Oscillator and Cathode Follower.	V18	12AX7	First and Second Microphone Amplifier.
V9	6EA8	VFO and Cathode Follower.	V19	12AT7	VOX Amplifier and VOX Relay Amplifier.
V10	12AT7	Carrier Oscillator/BFO.			

SECTION III INSTALLATION

3.1 UNPACKING

Carefully remove this equipment from its carton and packing material and examine it for any possible damage which may have occurred during transit. Should any sign of damage be apparent, immediately file a claim with the carrier stating the extent of the damage. Check all shipping labels and tags for special instructions before removing or destroying them.

3.2 LOCATION

The Model SR-150 Transceiver may be placed in any location permitting free air circulation through the ventilation openings in the cabinet. However, excessively warm locations such as those adjacent to radiators and heating units should be avoided.

3.3 ANTENNAS.

Antenna connections are provided on the rear of the transceiver, as shown in figure 2. If a common antenna is used, the antenna switch (S2) should be in the down (common) position and the antenna connected to the bottom connector. If separate antennas are used, the switch should be up, the receiver antenna should be connected to the top

connector (J1), and the transmitter antenna connected to the bottom connector (J2).

Figure 3 shows an installation, in block diagram form, making use of a linear amplifier and an external antenna changeover relay. Connections to the power supply from the antenna changeover relay are internal solder connections. Refer to figures 14, 15, 17, and 18 for the internal chassis views and schematic diagrams of the power supplies used in conjunction with the Model SR-150 Transceiver. In the installation shown, the receiver is connected directly to the relay through the top antenna connector (J1); the transmitter is connected through the bottom antenna connector (J2) to the linear amplifier which, in turn, is connected to the relay. If desired, two separate antennas may be used in the installation shown, eliminating the use of the antenna changeover relay.

NOTE

Never operate the transceiver without making a connection to a proper antenna or to a resistive dummy load.

Refer to the ARRL handbook or similar publications for the selection and installation of antennas.

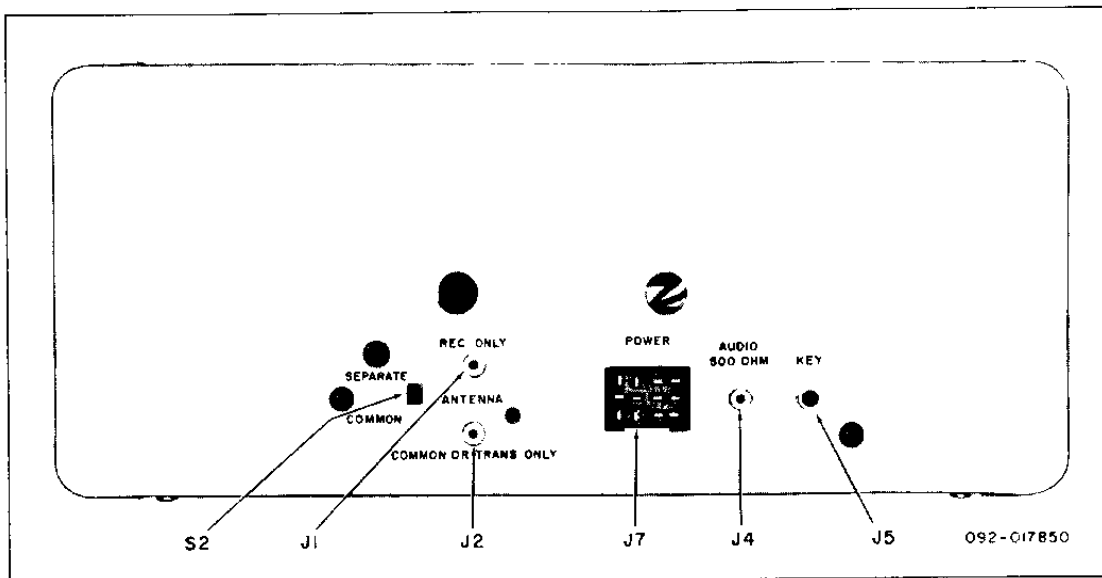


Figure 2. Rear View of Transceiver.

3.4 MOBILE INSTALLATION

The Model SR-150 Transceiver may be installed in any vehicle having a 12-volt DC power source. To complete this mobile installation, a Model PS-150-12 Power Supply and a Model MR-150 Mobile Mounting Rack will be required. The PS-150-12 Power Supply, as shipped, is wired for vehicles having the negative side of the battery grounded. If this equipment is to be installed in vehicles having the positive side grounded, make the wiring change noted in figure 18, schematic diagram of the Model PS-150-12 Power Supply.

Before installing the equipment, it is necessary to set the position of the connectors in the rear of the mounting rack. This may be accomplished as follows:

1. Set the mounting rack on a work bench with the rear of the rack on the bench and the side panels open. Make sure the four nuts securing the power and antenna connectors have been loosened.
2. Holding the transceiver with the front panel up, very carefully slide the transceiver into the rack until the power and antenna connectors mate with those in the mounting rack.

IMPORTANT

Extreme care must be exercised in performing this step to prevent damaging the connectors on the transceiver and in the mounting rack.

3. With the transceiver securely in position, turn the equipment on its side and tighten the four nuts holding the connectors in the mounting rack in place.
4. Carefully remove the transceiver from the mounting rack and proceed with the installation.

A base bracket and mounting straps are provided for installing the Model MR-150 Mounting Rack under the dashboard or on the transmission hump (see figure 4). When selecting a location for installing the mounting rack, an open area should be allowed on the top or bottom to provide adequate ventilation for the transceiver when it is in place.

The SR-150 Transceiver may be installed at this time if desired. Before installing the transceiver in the mounting rack, ascertain that the antenna switch on the rear panel is in the down (common) position. Slide the transceiver back into the MR-150 Mounting Rack so that a good connection is made to the power and antenna receptacles on the rear inside of the mounting rack. Secure the units together by means of the wing screws on both sides of the mounting rack.

The Model PS-150-12 Power Supply may be installed in any convenient location. In the installation discussed in this book, the power supply will be installed in the trunk (see figure 5). Mount the power supply securely, using self-tapping screws. Position the power supply in such a

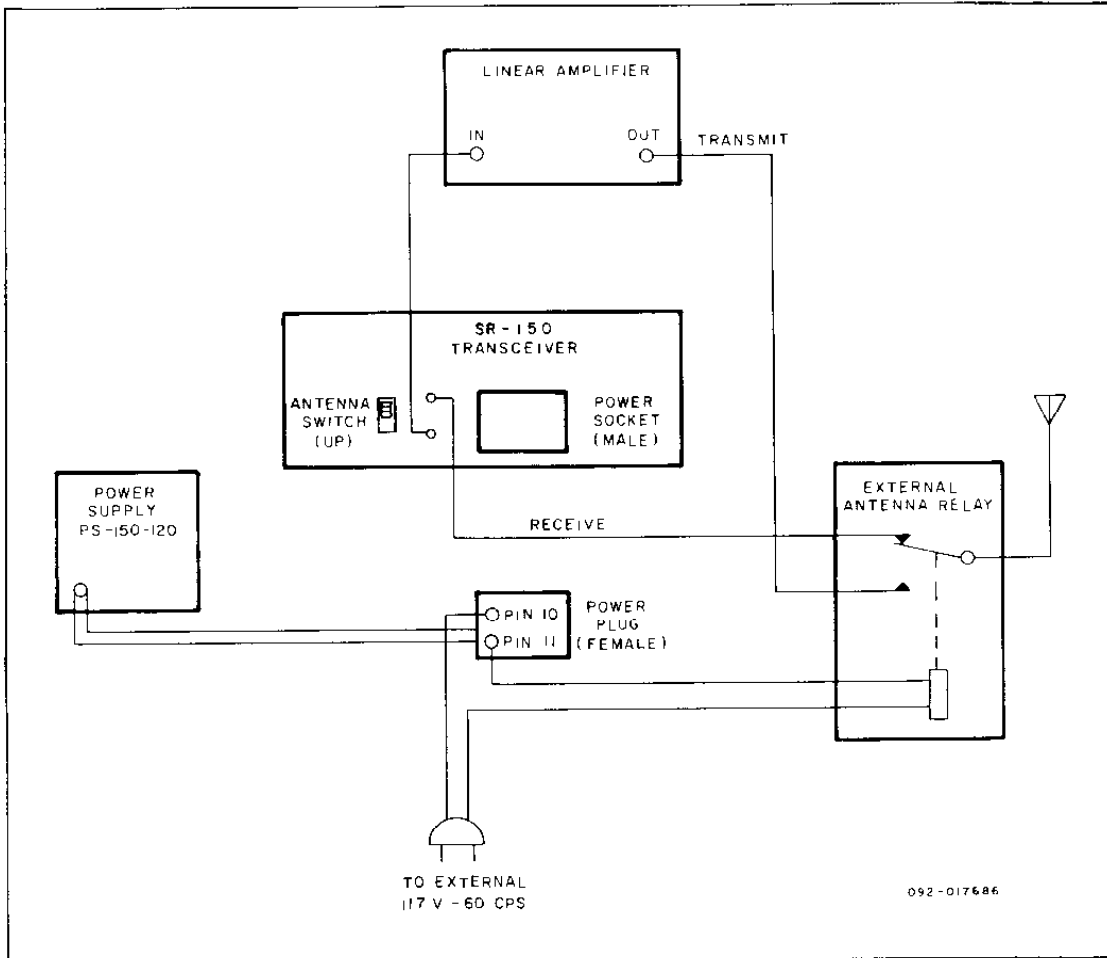


Figure 3. Base Installation Using a Linear Amplifier.

manner that the side with the terminal strips is accessible. Run the cable from the mounting rack under the floor mat and under the rear seat into the trunk. Since this cable is weatherproof, it may be threaded underneath the vehicle if desired. Cut the cable to the desired length, strip the wires, and connect these wires to the terminal strip on the power supply (see figures 5 and 17 for color coding and terminal numbering).

IMPORTANT

Before connecting to the vehicle's battery check the transceiver, if already

should be connected from the top terminal on the power supply to the positive (+) side of the battery and the red/black wire from the bottom terminal to the negative (-) side of the battery. These wires should be cut to a suitable length before being connected to the battery. The positive lead should be connected to the battery through a 30-ampere fuse block (not supplied, see figure 5). If the vehicle has a positive ground electrical system, fuse the negative lead.

CAUTION

between the two-connector terminal strip on the power supply and the battery. The red/white wire

AND EVEN EXPLOSION IF SHORT CIRCUITED.

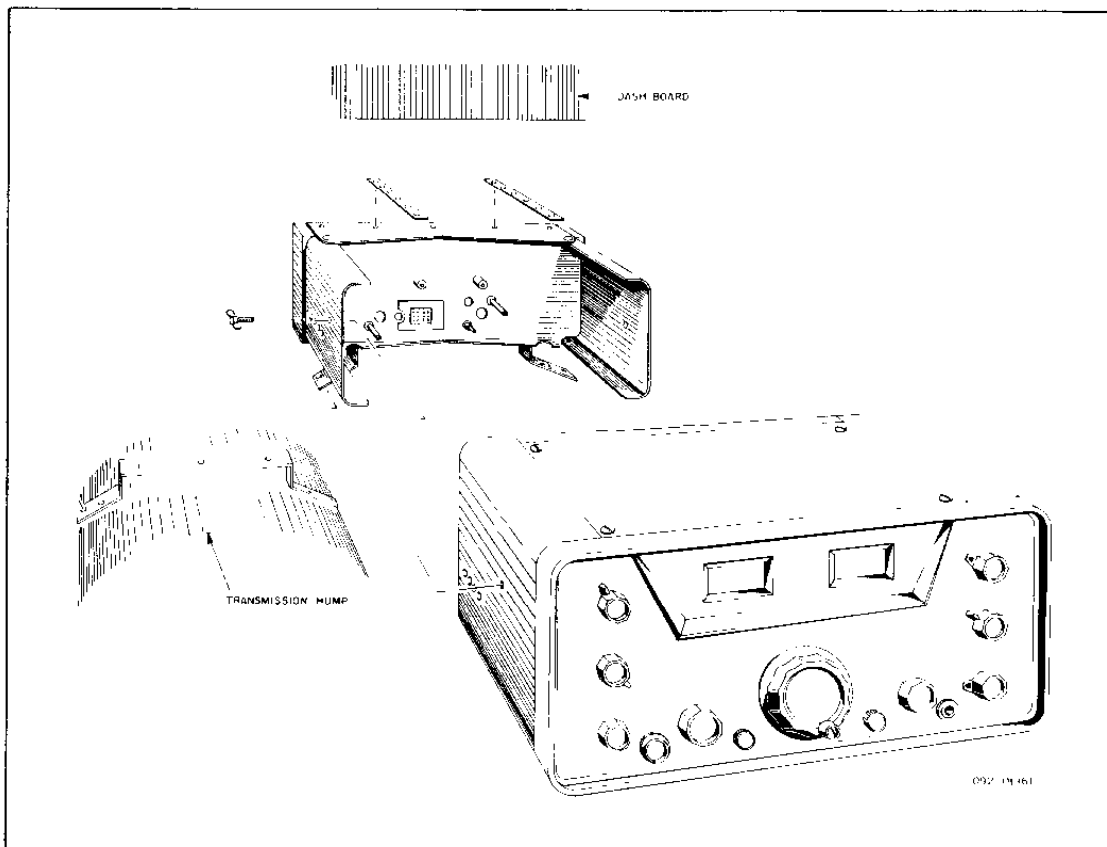


Figure 4. Installing the Model MR 150 Mounting Rack

Connect the speaker to the jack provided on the side of the mounting rack. This jack accepts a standard PL55 type plug.

Use of the auto radio loud speaker is not recommended unless a switch is installed to remove the speaker from the auto radio when operating the SR-150.

Install the antenna in the manner recommended by the antenna manufacturer. Connect the coaxial cable from the antenna, through the hole in the right side of the mounting rack, and solder to the rear of the phono-pin-plug type connector in the rear of the mounting rack. Use care when soldering. Solder on the outside of the center pin must be removed to prevent possible damage to the female antenna connector in the transceiver. If desired, prior to installing the mounting rack, a length of coaxial cable may be connected from this phono-pin-plug type connector to a coaxial connector attached to the right side of the mounting rack in the space provided. If this is done, when the antenna is installed, it may be attached to the connector using a mating connector.

Connect a suitable microphone to the jack provided on the front panel. It is important that the internal wiring of the microphone be as shown in figure 6.

IMPORTANT

Before proceeding, refer to alignment procedure, paragraph 8-3, for bias adjustment.

Only after familiarizing yourself with the controls and their functions, as outlined in Sections IV and V, should you perform an operational check. It is recommended that the engine be running while operating the Model SR-150 Transceiver to prevent draining power from the battery.

3-5. MOBILE NOISE SUPPRESSION.

The following suggestions may be helpful in the suppression of noise encountered in mobile operation. Install resistor-type spark plugs and

In this position, those circuits used only in the receive mode are automatically biased off when the transmitter is keyed (microphone button depressed). In the VOX position, the transmitter is energized by voice or part of the first character of a CW transmission. In the absence of voice or keying, the unit is automatically placed in the receive mode. This portion can also be referred to as Automatic.

4.4. FUNCTION

The FUNCTION control is a three-position switch. This switch is used to select the mode of operation: CW, LSB, or USB.

4.5. CALIBRATION ADJUSTMENT (CAL ADJ)

The CAL ADJ control varies the frequency of the Variable Frequency Oscillator (VFO) over a small range so that its frequency can be set precisely when compared to a standard.

When in the CAL or on position, it provides standard frequencies at 100-KC intervals to accurately calibrate the VFO.

4.7. BAND SELECTOR

The BAND SELECTOR control is an eight-position switch used to select the desired band for receiving or transmitting. This control also indicates the low-frequency end of the band and which scale, red or black, to read on the dial for direct frequency determination.

4.8. TUNING (VFO).

The TUNING control tunes in the frequency to which you are listening. As an added feature,

the bristol wrench supplied. Loosen the two set screws and position the TUNING knob on the shaft against the felt pad for the desired amount of drag or torque.

4.9. PRESELECTOR

The PRESELECTOR tunes to the desired frequency within a given band, as indicated by the setting of the BAND SELECTOR. The function of the PRESELECTOR, however, is determined by the OPERATION control. With the OPERATION control in the STBY position, the PRESELECTOR tunes the receiver RF and first mixer stages; with the OPERATION control in the MOX or VOX position, the PRESELECTOR tunes the transmitter mixer and driver stages.

4.10. RF LEVEL - MIC GAIN

The RF LEVEL and MIC GAIN controls are two controls mounted on concentric shafts. The RF LEVEL control (lever control) varies the

(fully clockwise). The RF LEVEL control functions only in the CW mode of operation.

The MIC GAIN control (round knob) varies the audio level from the microphone amplifier stages to the balanced modulator. The control has sufficient range to permit adjustment of any high-level crystal microphone or low-level dynamic microphone normally used for voice communication.

4.11. FINAL TUNING

The FINAL TUNING control consists of a continuously tunable capacitor with a band-segment indicator. This control tunes the final

SECTION V TUNING PROCEDURE

5.1. GENERAL.

The tuning procedure of the Model SR-150 Transceiver is not complicated; however, care should be exercised when tuning to insure peak performance of the equipment. The following paragraphs describe the procedures for receiver and transmitter tuning.

IMPORTANT

Before operating the SR-150, the Bias Adj. control on the power supply must be set. See paragraph 8-3 of alignment procedure.

5.2. RECEIVER CALIBRATION.

Preset the controls as indicated:

OPERATION STBY (receive, power on)
RF GAIN Maximum
AF GAIN As required
FUNCTION Desired sideband
BAND SELECTOR Desired band
TUNING 100-KC point nearest desired frequency

PRESELECTOR Desired band segment
 RIT OFF
 CAL CAL (on)
 CAL ADJ As required

To calibrate, set the TUNING control to the 100-KC point on the dial nearest the desired frequency. Rotate the CAL ADJ control for zero beat. It may be necessary to increase the AF GAIN control to get sufficient indication at or near zero beat. The RIT control switch must be in the OFF position when calibrating. Turn the CAL switch to OFF and tune to the desired frequency. Peak the PRESELECTOR control for maximum S-meter indication.

NOTE

The CAL switch should be in the OFF

when calibrating the receiver.

5-3. BASIC TUNE-UP

Preset the indicated controls as follows:

OPERATION MOX
 FINAL TUNING Desired band segment
 FUNCTION CW
 BAND SELECTOR Desired band
 TUNING Desired frequency
 PRESELECTOR Desired band segment
 RF LEVEL Between 4 and 5, or as required.

Adjust the RF LEVEL control until a small

voltage. Adjust the FINAL TUNING control for maximum output and then adjust the PRESELECTOR for maximum output indication. Adjust the RF LEVEL control as required to keep the

5.4 MANUAL CW OPERATION.

Use the procedure as given in paragraphs 5-2 and 5-3. (If a key is plugged into the Key

jack, J5, it must be closed.) Advance the RF LEVEL control to just below saturated output.

Saturated output is determined in the following manner. Start at "0" setting of the RF LEVEL control and slowly increase the control (clockwise) while observing the S-meter. Set the control at a point where further rotation does not cause an appreciable increase in the S-meter reading. This is saturated output; operate slightly below this level.

The transmitter is now ready to key. To receive, it is necessary to turn the OPERATION switch to the STBY position.

5-5 BREAK-IN CW OPERATION

Use the tuning procedure as given in paragraphs 5-2 and 5-3. Set the OPERATION switch to the VOX position. Adjust the delay control (see

ready for break-in CW operation.

5.6. PUSH-TO-TALK SSB OPERATION (MOX).

Use the procedure given in paragraphs 5-2 and 5-3. Set the FUNCTION switch to the desired sideband (USB or LSB). Set the OPERATION switch to MOX. Depress the microphone switch (push-to-talk) and advance the MIC GAIN control (while speaking into the microphone in a normal voice level) until the S-meter indicates approximately one-half the level shown at saturation. The MIC GAIN setting is not critical, because of the action of the AALC circuitry, and may be advanced slightly beyond this point to increase compression. Typical settings will run from 5 to 8.

5-7 VOICE CONTROLLED SSB OPERATION (VOX)

For voice operated transmission, use the tuning procedure in paragraphs 5-2 and 5-3. Set the FUNCTION switch to the desired sideband (USB or

level. While speaking into the microphone, advance the VOX gain control clockwise (see figure 12) until the VOX relay closes; use no more VOX gain than necessary. Adjust the delay control for the

to the desired listening level. Advance the anti-trip control (see figure 12) clockwise until received signals do not actuate the VOX relay. Use no more anti-trip gain than necessary.

SECTION VI

THEORY OF OPERATION

6-1 GENERAL

The Model SR-150 Transceiver consists of a double-conversion receiver and a double-conversion transmitter. The VFO circuitry, the heterodyne crystal oscillator circuitry, and the crystal filter/IF circuitry are common to both the transmitter and receiver. Refer to figure 8 for a block diagram of the equipment and to figure 21 for a schematic diagram.

6-2. RECEIVER CIRCUIT

The signal at the antenna is applied to the receiver's RF amplifier stage (V1A) through the antenna relay located in the transmitter final amplifier section. This signal is amplified and then fed to a mixer (V2), where it is mixed with the signal from the heterodyne crystal oscillator (V8), resulting in a variable IF signal of 6.0 MC to 6.5 MC. The RF amplifier and mixer tuned circuits are selected by the BAND SELECTOR

oscillator), V9, in the receiver mixer (V4), resulting in a second IF signal of 1650 KC. This signal is amplified by the first 1650-KC IF amplifier (V17A), passed through the crystal-lattice filter (FL1), and applied to the second 1650-KC IF amplifier (V5A). The output from V5A is fed to the product detector (V6) where it is mixed with the correct carrier oscillator output to present the desired detected sideband signal to the receiver first audio amplifier (V11A).

The output of the first audio amplifier is applied to the audio output stage (V13) and then to the speaker. The proper sideband is selected by a shift in the VFO frequency coupled with a selection of the proper carrier oscillator and the passage of the signal through the crystal-lattice filter, thereby rejecting the undesired sideband.

6-3 TRANSMITTER SECTION

The signal from the microphone is applied through the first and second microphone amplifiers (V18A and V18B) and fed to an audio cathode follower (V3B). The output of V3B is presented to the balanced modulator along with the selected signal from the carrier oscillator (V10), to produce a double-sideband suppressed carrier signal.

The balanced modulator output signal is applied to the first 1650-KC IF amplifier (V17A), through the crystal-lattice filter (FL1) which attenuates the unwanted sideband, to the receiver and transmitter mixer (V2) where the signal is added to the VFO (V9) output signal. The sum of these signals (in the 6.0-MC to 6.5-MC range) is then amplified by the tunable IF amplifier (V3A) and fed to the transmitter mixer (V7) where it is subtracted from the heterodyne crystal oscillator (V8) signal.

The output of the transmitter mixer is the desired operating frequency and is amplified by

SELECTOR switch and tuned by the PRESELECTOR control, while the final amplifier output tuned circuit is selected by the BANDSELECTOR switch and tuned by the FINAL TUNING control.

The Automatic Audio Level Control (AALC) circuitry operates in the following manner. When a small amount of flat-topping occurs in the final amplifier, an audio signal appears on the amplifier bias line, in proportion to the amount of flat-topping. This audio signal, which is not present without final amplifier flat-topping, is coupled to the AALC amplifier (V5B) whose output is rectified by diodes CR7 and CR8. The resulting DC voltage, which is in direct proportion to the amount of flat-topping occurring in the final amplifier, is connected to the 6.5-MC to 6.0-MC IF amplifier and the first 1650-KC IF amplifier as gain control bias.

SECTION VII SERVICE DATA

7-1 COVER AND CHASSIS REMOVAL

A. TOP COVER REMOVAL. - Loosen the four top-cover screws 1/4 turn only and remove cover. To replace cover, tighten cover screws 1/4 turn only, so that the plastic latch nuts will not be damaged.

B. BOTTOM COVER REMOVAL. - Remove the four bottom cover screws located in the feet, and remove the cover. When replacing the bottom cover, make certain that the grounding clip on the cover engages properly at the final amplifier shield partition.

C. CHASSIS REMOVAL. - To remove the chassis from the cabinet, it is first necessary to remove the bottom cover (see paragraph 7-1B). Remove the four cabinet screws at the bottom near the cabinet feet and carefully slide the chassis and panel assembly out from the front of the cabinet.

7-2 TUBE AND DIAL LIGHT REPLACEMENT

Access to the dial light and all tubes may be obtained by removing the top cover of the cabinet. See paragraph 7-1A.

7-3 TROUBLESHOOTING

In the design of this transceiver, full consideration was given to keep maintenance problems at an absolute minimum. As in all well-designed electronic equipment, maintenance and repair problems are generally confined to the checking and replacement of tubes and semiconductor devices which may become defective. Malfunctions of this nature are usually easily isolated and corrected. However, it is entirely possible that a more obscure malfunction may arise. In this event, only thoroughly trained technical personnel should attempt to service equipment of this complexity.

A recommended aid to troubleshooting the Model SR-150 Transceiver is a general-coverage receiver which can be used to provide a quick check on the various oscillator circuits within the SR-150. A lead connected to the antenna of this receiver, when placed in the proximity of the oscillator tube in the circuit to be checked, can determine the presence or absence of signal from the stage in question.

If a malfunction occurs when operating on one particular band and/or mode of operation, the unit should be checked on all other bands and in all other modes of operation to isolate the difficulty. A careful study of the block diagram (figure 8) will give a quick clue as to which tubes should be checked. The voltage and resistance charts (figures 9 and 10) and schematic diagram (figure 21) will also aid in isolating and correcting a malfunction.

7-4. SERVICE AND OPERATING QUESTIONS.

For further information regarding operation or servicing of the Model SR-150 Transceiver, contact the dealer from whom the unit was purchased. The Hallicrafters Company maintains an extensive system of Authorized Service Centers where any required service will be performed promptly and efficiently at no charge if this equipment is delivered to the service center within 90 days from date of purchase by the original buyer and the defect falls within the terms of the warranty. It is necessary to present the bill of sale in order to establish warranty status. After the expiration of the warranty, repairs will be made for a nominal charge. All Hallicrafters Authorized Service Centers display the sign shown below. For the location of the one nearest you, consult your dealer or your local telephone directory.

Make no service shipments to the factory unless instructed to do so by letter, as The Hallicrafters Company will not accept responsibility for unauthorized shipments.

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



SECTION VIII ALIGNMENT PROCEDURE

8-1 GENERAL

The Model SR-150 Transceiver has been accurately aligned and calibrated at the factory and, with normal usage, will not require re-alignment for extended periods of time. Service

definitely traced to mis-alignment. Alignment should only be performed by persons experienced in this work, using the proper test equipment.

NOTE

Do not make any adjustments unless the operation of this transceiver is fully understood and adequate test equipment is available. Refer to figures 11 and 12, the top and bottom views of the transceiver, for the locations of all adjustments.

8-2. EQUIPMENT REQUIRED.

1. RF Signal Generator; Measurements Corporation, Model 65B or an equivalent signal generator having up to 1 volt output at an impedance of 70 ohms or less (a 100 micro-microfarad DC blocking capacitor must be placed in series with the RF lead).
2. A Vacuum Tube Voltmeter (VTVM); Hewlett-Packard Model 410B, or equivalent VTVM having an RF probe good to 30 MC.

5. A general-coverage receiver covering the frequency range from 3 MC to 30 MC with a 100-KC calibrator.

8-3. BIAS ADJUSTMENT.

The final amplifier bias must be properly set before any extensive checks are made on the transmitter portion of the SR-150.

positive to red and negative to blue. Set the voltmeter on a low scale (2.5 volts or 3.0 volts). There is a 10-ohm resistor across the tip jacks so that the meter will indicate 1 volt for 100 MA.

Set the OPERATION switch to STBY and allow the unit to warmup about 5 minutes. Then set the FUNCTION switch to USB or LSB, MIC GAIN to "0", and OPERATION switch to MOX. Plug in a microphone and press the microphone switch. Adjust BIAS ADJ control, R206 on the power supply, for 0.7 volt (70 MA plate current) on voltmeter.

When using the DC power supply (PS-150-12) the high voltage (red/white) lead must be disconnected from the power supply terminal strip (pin 1) and a DC milliammeter, having a full-scale deflection of not less than 300 MA, connected between the lead and the high voltage terminal on the power supply. Follow the procedure outlined in the preceding paragraph and set the BIAS ADJ control, R308 on the power supply, for 70 MA.

8-4. IF ALIGNMENT (1650 KC)

Connect the signal generator to pin 7 of V4 and

center of the crystal-filter passband. The output

below S9, thus, preventing possible overload and inaccurate adjustments.

8.5. CRYSTAL FILTER ALIGNMENT

Because of the specialized techniques and test equipment required, it is recommended that realignment of the crystal-filter termination coils, L14 and L15, be handled through The Hallicrafters Company Service Department. However, the operation of the filter can be checked out as follows to determine whether or not the filter requires realignment.

1. Tune the transmitter into a 50-ohm load and switch to lower sideband (LSB).
2. With an audio generator connected to the microphone input at 1000 CPS, adjust the transmitter output for S9 on the S-meter.

or to S7 on the S-meter.

If the response of the transmitter does not meet these requirements, the SR-150 Transceiver should be returned for filter realignment.

8.6. IF ALIGNMENT (6.0 TO 6.5 MC)

Connect the signal generator to pin 2 of V2.

the signal level low to prevent overload. Set the signal generator to 6.0 MC and tune the VFO to the high end of the dial (black 500 and red 1000). Tune the slugs of the IF transformers, T1 and T2, for maximum output, reducing signal generator output as required to prevent overload. Repeat adjustments of C32D, C32E, T1, and T2 until tracking is accomplished.

8.7 RECEIVER RF ALIGNMENT

Connect the signal generator to the antenna jack, J1, at the rear of the chassis. Set the antenna switch to the receive only (up) position.

Set the OPERATION switch to STBY (receive), RF GAIN to maximum, AF GAIN as required, BAND SELECTOR to 29.5, and the PRESELECTOR to slightly above the high-frequency or right-hand edge of the 10-meter segment.

Tune the signal generator to 30.0 MC and tune the VFO to the high end (black 500). Tune the signal in and adjust trimmers C7D and C7E for maximum output, reducing signal generator output as required. Tune the signal generator to 28.0 MC. Set the PRESELECTOR to the low-frequency edge of the 10-meter segment, the BAND SELECTOR to 28, and tune the VFO to the low end of the dial (black 0). Tune the signal in and adjust the slugs of coils L5 and L7 for maximum output. Repeat the adjustments of C7D, C7E, L5, and L7 until tracking is accomplished.

Tune the signal generator to 21.3 MC and set the BAND SELECTOR to 21. Tune the VFO to 300 on the dial. Tune in the signal and adjust the slugs

the BAND SELECTOR to 21. Tune the VFO to 300 on the dial. Tune in the signal and adjust the slugs of coils L3 and L10 for maximum output.

Tune the signal generator to 3.8 MC and set the BAND SELECTOR to 3.5. Tune the VFO to 300 on the dial. Tune in the signal and adjust the slugs of coils L4 and L11 for maximum output.

8.8 6.5-MC TRAP ADJUSTMENT.

NOTE

A slight readjustment of the 40-meter RF coil slug, L10, may be required after the 6.5-MC trap, L12, is tuned.

8.9 DRIVER PLATE CIRCUIT RF ALIGNMENT.

After the final amplifier bias has been properly adjusted (see paragraph 8-3) and the receiver alignment has been completed (see paragraphs 8-4 through 8-8), the driver plate circuit coils may be aligned.

Connect a 50-ohm to 52-ohm resistive load to the antenna jack, J2. Set the OPERATION switch to STBY (receive) and the FUNCTION switch to CW. Set the BAND SELECTOR to 28.5 and the VFO to 300 on the dial. Set the FINAL

8-16 VFO CALIBRATION ALIGNMENT

If the electrical index check at the 100-KC check points on all bands shows that the calibration marks consistently fall to one side of the pointer, a trimmer adjustment is indicated. (This will be necessary only if the calibration is beyond tuning range of the CAL ADJ control.)

Proceed as follows:

- a. Adjust the TUNING control until the dial is at 500 (3.5 MC).
- b. Set the BAND SELECTOR at 3.5, FUNCTION to USB, and CAL-OFF to CAL.
- c. Carefully adjust trimmer C87 in very small increments until a zero beat is heard. Care should be exercised to make sure that the correct 100-KC beat note is tuned-in with the trimmer.
- d. Check across the dial at the 100-KC check points. If the frequency error is less than 3000 CPS, the calibration is within acceptable limits. If the error at the high-frequency end of the dial (4.0 MC) is greater than 3000 CPS, the VFO may require a coil adjustment in addition to the trimmer adjustment.

8-17 CONDITIONS REQUIRING COIL AND TRIMMER ADJUSTMENT

If the dial error progressively increases in the same direction with the high-frequency end, running out more than 3000 CPS, at this end, both L27 and C87 should be adjusted.

- a. Adjust the TUNING dial to 1000 (4.0 MC) and adjust L27 to zero beat.
- b. Adjust the TUNING dial to 500 (3.5 MC) and adjust C87 to zero beat.
- c. Repeat steps a and b until both 3.5 MC and 4.0 MC are exactly on frequency.
- d. Check across the dial at the 100-KC points. If the frequency error is less than 3000 CPS, the calibration is within acceptable limits. If the error is in excess of 3000 CPS at any of the mid-points, with the end limits at zero error, the VFO capacitor (C32A) should be knifed. This operation should not be attempted by other than qualified personnel thoroughly familiar with the technique.

REPAIR PARTS LIST FOR MR-150

Bracket, Mounting	067-010870
Cable Assembly	087-007656
Clamp, Cable	076-002744
Connector, Phone Type (Speaker)	036-000338
Connector, Power (12-pin)	010-002585
Connector, RF Type (Antenna)	035-000084
Guide Pin	074-002792
Knob, Decorative, Wing-Screw	015-001768
Pad, Side Bracket (Left)	014-000475
Pad, Side Bracket (Right)	014-000483
Strap, Mounting (2)	076-003202

SERVICE REPAIR PARTS

Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number
CAPACITORS			CAPACITORS (CONT)		
C3,20,148	15 μ F, 2%, 500V, Plastic Mica	493-121350-334	C119,123	2,200 μ F, 350V, Electrolytic 0.001 μ F, 20%, 3000V, Ceramic Disc	043-300902 047-100397
C4,24,25,143	15 μ F, 5%, 500V, Plastic Mica	482-132150	C121	5 μ F, ± 0.5 μ F, 500V, Plastic Mica	493-(10050-531)
C5,70	22 μ F, 5%, 500V, Plastic Mica	482-152220	C122	Variable, FINAL TUNING	048-000525
C6,23	3900 μ F, 2%, 500V, Plastic Mica	482-361392	C124	220 μ F, 2%, 500V, Plastic Mica	482-161221
C7A,B,C, D,&E	Variable, PRESELECTOR	048-000526	C125	150 μ F, 2%, 500V, Plastic Mica	482-161151
C8,33,59,108	10 μ F, 5%, 500V, Plastic Mica	482-132100	C127,126, 129	390 μ F, 2%, 500V, Plastic Mica	482-(61391)
C9,50,71	47 μ F, 2%, 500V, Plastic Mica	482-151470	C131	0.01 μ F, +80%, -20%, 500V, Ceramic Disc	047-100224
C10,12,13, 29,30,35,36, 37,41,68,69, 75,79,102, 116,132,133, 146,149,150, 151,162,166, 167	0.005 μ F, 20%, 500V, Ceramic Disc	047-100442	C136	1000 μ F, 2%, 500V, Plastic Mica	482-261102
C11,55,61, 112,117,137, 188,169,170, 171,179	0.02 μ F, 20%, 600V, Ceramic Disc	047-100471	C140,141	510 μ F, 2%, 500V, Plastic Mica	482-261511
C15,164	Variable, Trimmer, 5 μ F to 25 μ F	044-100473	C142	270 μ F, 2%, 500V, Plastic Mica	482-(61271)
C16	125 μ F, 2%, 500V, Plastic Mica	493-121250-334	C144	680 μ F, 2%, 500V, Plastic Mica	482-261681
C17,22,26, 27,57,74,78, 81,126,130, 135,136,173, 174	100 μ F, 2%, 500V, Plastic Mica	482-161101	C163	27 μ F, 2%, 500V, Plastic Mica	482-151270
C21	33 μ F, 2%, 500V, Plastic Mica	482-151330	C175	0.002 μ F, 20%, 500V, Ceramic Disc	047-100395
C28,31,34, 39,40,42,43, 44,46,51,53, 64,56,64,67, 82,84,107, 110,113,152, 154,159,160, 177	0.01 μ F, 20%, 500V, Ceramic Disc	047-100354	*RESISTORS		
C32A,B,C, D,&E	Variable, TUNING	048-000522	R1,2,8,139, 143,146,149, 152,158	1 Megohm	451-252105
C38	39 μ F, 2%, 500V, Plastic Mica	482-151390	R3	180 Ohms	451-252181
C45,47,49, 80,83,99,111, 134,153,155, 161,172,176	0.001 μ F, 20%, 500V, Ceramic Disc	047-001671	R4 and 91, R46 and 140	Variable, Dual: 10K Ohms, 30%, 1 watt, RF GAIN and 500K Ohms, 20%, 1/4 watt, AF GAIN; 10K Ohms, 30%, 1 watt, RF LEVEL and 500K Ohms, 30%, 1/4 watt, MIC GAIN	025-002063
C48	38 μ F, 2%, 500V, Plastic Mica	482-151360	R5,11,17,24, 31,36,37,39, 40,49,52,84, 77,113,136, 137,159	47K Ohms	451-252473
C52,72	82 μ F, 2%, 500V, Plastic Mica	482-161820	R8,81	180K Ohms	451-252184
C58,157, 185,178	0.22 μ F, 10%, 500V, Paper Tubular	046-001296-04	R7,27,30	15K Ohms	451-252153
C60,62,65, 109	470 μ F, 2%, 500V, Plastic Mica	482-261471	R9	150K Ohms	451-252194
C63,100	5 μ F, 25V, Electrolytic	045-000938	R10,38,43, 141	2200 Ohms	451-252222
C65,118, 120,158	0.1 μ F, +80%, -20%, 100V, Ceramic Disc	047-001428	R12	100 Ohms	451-252101
C73	120 μ F, 2%, 500V, Plastic Mica	482-161121	R13,23	15K Ohms, 2 watts	451-652153
C76	4.7 μ F, ± 0.5 μ F, 500V, Plastic Mica	493-140470-531	R14,15,18, 28,33,42,45, 50,53,64,55, 56,57,59,60, 63,69,73,114, 128,154	1000 Ohms	451-252102
C77	8.8 μ F, ± 0.5 μ F, 500V, Plastic Mica	493-(40680-531)	R16,22,32	220 Ohms	451-252221
C85,91,98, 101,156	1000 μ F, GMV, Ceramic Feed-Through	047-001308	R19,29,51,66, 79,112,148	470K Ohms	451-252474
C86	3.3 μ F, ± 0.5 μ F, 500V, Plastic Mica	493-140330-521	R20,34,67,74, 82,93,94,132	220K Ohms	451-252224
C87	Variable, Trimmer, 1 μ F to 12 μ F, 000V (Piston type)	044-000568	R21,65,124	22K Ohms	451-252223
C88	27 μ F, 2%, 300V, Plastic Mica	481-151270	R25	82 Ohms	451-252620
C89	51 μ F, 2%, N30, Ceramic Tubular	491-024510-31	R26,35,41,75, 84,87,102,110, 115,125,135, 142,147,151, 157	100K Ohms	451-252104
C90	12 μ F, 0%, N470, Ceramic Tubular	491-006120-83	R47,88,98,105	10K Ohms	451-252103
C92	43 μ F, 2%, 300V, Plastic Mica	481-151430	R48,100,108, 138	4700 Ohms	451-252472
C93,94	910 μ F, 2%, 300V, Plastic Mica	481-261911	R58	22K Ohms, 1/4 watt	451-152223
C95	18 μ F, 5%, 300V, Plastic Mica	481-132180	R61	12K Ohms, 1/4 watt	451-152183
C96,139	Variable, Trimmer, 0.8 μ F to 13 μ F, 3000V (Piston type with hardware)	044-000520	R62	27K Ohms, 1/4 watt	451-152273
C97	69 μ F, 2%, 300V, Plastic Mica	481-161680	R68	4700 Ohms, 2 watts	451-652472
C103,106	Variable, Trimmer, 8 μ F to 50 μ F	044-200437	R70,83,101, 130	2700 Ohms	451-252272
			R71,129	68K Ohms	451-252683
			R72	680 Ohms	451-252681
			R76	2200 Ohms, 1/4 watt	451-152222
			R78	27K Ohms	451-252273
			R80	Variable, 25K Ohms, 30%, 1/3 watt, CAL ADJ	025-002001
			R82	Variable, 25K Ohms, 30%, 1/3 watt, RIT (Inc. 94)	025-002062
			R85,86,121	820 Ohms	451-252221
			R89,90	4.7 Megohms	451-252475
			R95	2500 Ohms, 10 watts, Wire Wound	453-062252
			R96,150	Variable, 1 Megohm, 30%, 0.2 watt, QT Gain and VOX Sensitivity	025-002067
			R97,156	8.2 Megohms	451-252625
			R99	47 Ohms, 1 watt	451-352470

LIST MODEL SR-150

Schematic Symbol	Description	Hallicrafters Part Number	Schematic Symbol	Description	Hallicrafters Part Number
- RESISTORS (CONT)			SWITCHES		
R103,133,134,145	470 Ohms	451-252471	S1	Rotary, BAND SELECTOR (Inc. S1A)	060-002442
R104	2700 Ohms, 1 watt	451-352272	S1B,E	Wafer, Crystal Oscillator and Transmitter Mixer	062-000195
R107	470 Ohms, 1 watt	451-352471	S1C,D,	Wafer, Antenna, RF Amplifier, Mixer, and Final Input	062-000196
R109	47K Ohms, 2 watts	451-652473	F,H		
R111	270K Ohms	451-252274	S1G	Wafer, Driver Output	062-000198
R116	1.5 Megohms	451-252155	S1J	Wafer, Final Pi-Output	062-000197
R117	2.2 Megohms	451-252225	S2	SPST, Antenna	060-100440
R118,122	3300 Ohms	451-252332	S3	Rotary, CAL-OFF	060-002555
R119	82K Ohms, 1 watt	451-352823	S4	SPST, RIT-OFF/ON	Part of R82
R120	Variable, 50K Ohms, 20%, 0.2 watt, Meter Zero	025-002065	S5	Rotary, FUNCTION	060-002441
R123	150 Ohms	451-252151	S8	Rotary, OPERATION (Inc. S7)	000-002443
R126	33K Ohms	451-252333	S7	SPST, POWER	Part of S8
R127	86K Ohms	451-252563			
R131	Variable, 250 Ohms, 0.3 watt, Balance	025-002064			
R144	3900 Ohms	451-252392			
R153	330K Ohms	451-252334			
R155	Variable, 10 Megohms, 20%, 0.2 watt, Delay	025-002066			
R160	1500 Ohms	451-252152			
* All RESISTORS are carbon type, 10%, 1/2 watt unless otherwise stated.					
COILS & TRANSFORMERS			CRYSTALS		
L1	Coil, Antenna, 15 Meters	051-003350	Y1	100 KC, Crystal Calibrate	019-002712
L2	Coil, Antenna, 20 Meters	051-003347	Y2 ***	36.0 MC, 10 Meters	019-002840-08
L3	Coil, Antenna, 40 Meters	051-003345	Y3 ***	35.5 MC, 10 Meters	019-002840-07
L4	Coil, Antenna, 80 Meters	051-003346	Y4	35.0 MC, 10 Meters	019-002840-06
L5	Coil, Antenna, 10 Meters	051-003351	Y5 ***	34.5 MC, 10 Meters	019-002840-05
L8,13,16,26,28,29,33,36,42	Coil, 0.7 MH RF Choke	053-000530	Y6	27.5 MC, 15 Meters	019-002840-04
L7,37	Coil, Mixer and Driver, 10 Meters	051-003352	Y7	20.5 MC, 20 Meters	019-002840-03
L8,38	Coil, Mixer and Driver, 15 Meters	051-003349	Y8	13.5 MC, 40 Meters	019-002840-02
L9,39	Coil, Mixer and Driver, 20 Meters	051-003342	Y9	10.0 MC, 80 Meters	019-002840-01
L10,40	Coil, Mixer and Driver, 40 Meters	051-003340	Y10	1648.1 KC, LSB	019-002845-01
L11,41	Coil, Mixer and Driver, 80 Meters	051-003341	Y11	1651.7 KC, USB	019-002845-02
L12	Coil, 6.0-MC to 6.5-MC Trap	053-000865	*** Not Supplied.		
L14,15	Coil, IF, Filter Termination	050-000800	CONNECTORS		
L17,18	Coil, Crystal Oscillator, 10 Meters	051-003353	J1,2,4	Antenna (Receiver and Common), 500-Ohm Output	036-100041
L19,20	Coil, Crystal Oscillator, 10 Meters	051-003343	J3,5	PHONES and Key	036-200210
L21	Coil, Crystal Oscillator, 15 Meters	051-002529	J6	Microphone (Inc. Hardware)	010-101569
L22	Coil, Crystal Oscillator, 20 Meters	051-002344	J7	Power Input (12-pin Jones type)	010-002388
L23	Coil, Crystal Oscillator, 40 Meters	051-003530	MISCELLANEOUS		
L24	Coil, Crystal Oscillator, 80 Meters	051-003351	Cainet		150-000000
L27	Coil, VFO	051-003509	Cable Assembly (Harnessed)		087-007864
L28	Coil, 27 μ H RF Choke	053-000866	Coupler, Solid		029-100264
L30	Coil, 1 MH RF Choke	053-000580	Cover, Cabinet Bottom		000-002141
L31	Coil, Final Amplifier RF Choke	053-200428	Cover, Cabinet Top		066-003140
L32	Coil, Final Amplifier Pi-Output	051-003348	Cover, VOX Relay		066-201480
L34,35	Coil, Parasitic Choke Assembly	053-000878	Dial Window		022-000896
T1,2	Transformer, Variable IF, 6.5 MC to 6.0 MC	000-000788	Disc, Dial (TUNING)		063-001012
T3	Transformer, IF, 1650 KC	068-000890	Emblem, Hallicrafters Logo		007-000835
T4,6	Transformer, BFO and Balanced Modulator Output	050-000861	Escutcheon		007-000812
T5	Transformer, Output	055-000488	Escutcheon Plate		007-000813
**ELECTRON TUBES & DIODES			FL1	Filter, Crystal Lattice	049-000210
V1	Tube, Type 6AZ6	000-901417	Foot, Plastic (4)		018-201072
V2,4	Tube, Type 12BA7	000-901474	Front Panel		068-001174
V3,5,9,17	Tube, Type 6EA6	000-901350	Gear, Pinion		026-001087
V6	Tube, Type 12BE6	090-900040	Gear, Spur (Fixed)		026-001090
V7	Tube, Type 6AN6	090-900793	Gear, Spur		026-001069
V8,10,19	Tube, Type 12AT7	090-909034	Handle, Knob		030-000793
V11	Tube, Type 6T8A	090-901403	Iron Core (Coil Slugs)		003-203388
V12	Tube, Type 6A2	090-900001	Iron Core (L27 Only)		003-203306
V13	Tube, Type 6AQ5A	090-901331	Knob, AF GAIN, MIC GAIN, and RIT (Round)		015-001773
V14,15	Tube, Type 12DQ6B/12GW8	090-901475	Knob, BAND SELECTOR and FUNCTION		015-001760
V16	Tube, Type 12BY7A	090-901192	Knob, CAL ADJ and CAL-OFF		015-001755-02
V18	Tube, Type 12AX7/ECC83	090-901230	Knob, FINAL TUNING and PRESELECTOR		015-001000-21
CR1,2,3,5,6,7,8,9	Diode, Type 1N295	019-301980	Knob, OPERATION		015-001775
CR4	Diode, Type V-100, Varicap	048-000484	Knob, RF GAIN, RF LEVEL, and RIT OFF/ON (Bar)		015-001740-01
CR10,11	Diode, Type 1N87	019-002841	Knob, TUNING (VFO) Meter		015-001789
			M1	Pilot Lamp, NO. 1815	082-000566
			DS1	Pointer, FINAL TUNING and PRESELECTOR	039-000689
			K2,3	Pointer, TUNING Dial	082-000576-01
			K1	Relay, RF Switching and Antenna	082-000587
				Relay, VOX	021-200442
				Screw, Machine (TUNING knob spinner)	003-007650
				Skirt, TUNING Knob	063-001015
				Spring, Anti-Backlash	075-000841
				Switch Wafer (Dummy)	062-000205
				Washer, TUNING Knob Spinner	426-003543

** See Section II, Page 3 for Tube Functions.

ERRATA SHEET

MODEL SR-150

Prior to production but after the Handbook of Instructions was printed, certain minor circuit modifications were made in the Model SR-150 Transceiver to improve its performance. These changes are itemized below and should be included in the handbook as applicable.

1. Change capacitors C62 and C65 from 470 $\mu\mu F$ to 0.001 μF , 500V, ceramic disc type (part number 047-001671).
2. Change capacitor C76 from 4.7 $\mu\mu F$ to 10 $\mu\mu F$, 5%, 500V, plastic mica type (part number 482-132100).
3. Capacitor C100 has been moved. Show this capacitor connected to ground from the junction of R80, R81, and R82.
4. Change capacitor C116 from 0.005 μF to 0.001 μF , 500V, ceramic disc type (part number 047-001671).
5. Change capacitor C163 from 27 $\mu\mu F$ to 18 $\mu\mu F$, 500V, plastic mica type (part number 482-132180).
6. Add a 100 $\mu\mu F$, 500V, plastic mica capacitor (C14), part number 482-161101, between the wiper arm of the QT Gain control (R96) and ground.
7. Add a silicon diode (CR12), type 1N456, part number 019-002964 between R1 and the control grid, pin 6, of V1. (Connect cathode of CR12 toward R1.)
8. Change resistor R64 from 47K ohms to 220 K ohms (part number 451-252224). The end of this wire shown connected to ground is now connected to pin 3 of V8.
9. Change resistor R100 from 4700 ohms to 2700 ohms (part number 451-252272).
10. Change resistor R101 from 2700 ohms to 4700 ohms (part number 451-

12. Add two resistors (R161 and R162), one each to the grid pin 5 of V14 and V15 from the junction of C135 and R105. The grid of V15 is erroneously shown as pin 3. These resistors are 10 ohms, 10%, 1/2 watt (part number 451-252100).
13. Page 24 paragraph 10-1. On the last line of the first paragraph, change reference from figure 15 to figure 18.
14. In the filament string, change the second tube from the left from V12 to V2.

Form Number 094-903451B
Pack with Instruction
Manual 094-903286

S-METER

The meter, as used in the Model SR-150 Transceiver, functions as an indicator

Periodically, the S-Meter should be zero calibrated. To do this proceed as follows:

1. Set the OPERATION switch to STBY (Receive), the FUNCTION switch to LSB, and the RF GAIN control fully counterclockwise.
2. Allow the unit about 15 minutes to warm up.
3. Adjust potentiometer R120 until the meter pointer is directly over the line

AC POWER SUPPLY (PS-150-120)

Transmit (CW) 290 Watts
Receive 150 Watts

DC POWER SUPPLY (PS-150-12)

Transmit (CW) 19 Amperes
Receive 14 Amperes

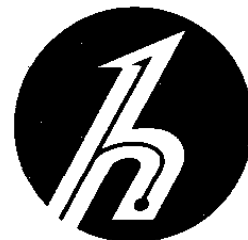
WARNING

LETHAL HIGH VOLTAGE IS PRESENT WITHIN THIS EQUIPMENT. BE CAREFUL WHEN INSTALLING THE UNIT, WHEN MAKING BIAS ADJUSTMENTS, AND WHEN PERFORMING CHECKS UNDER THE CHASSIS.

This note should be inserted in the handbook in the installation section, in the alignment section, and with both power supplies.



Service Bulletin



hallicrafters

BULLETIN 1963-2
April 15, 1963

BIAS ADJUSTMENT PROCEDURE FOR SR-150 COMMUNICATIONS TRANSCEIVER

CIRCUIT REVISIONS IN THE SR-150 COMMUNICATIONS TRANSCEIVER

BIAS ADJUSTMENT: The correct setting of the Bias Adjustment on the SR-150 is of prime importance and, if not correctly done, can result in premature failure of the 12DQ6B final amplifier tubes and other transmitter problems. Note that the transceiver must be in the transmit mode when the adjustment is made. This is done by depressing the microphone button when the SR-150 is in MOX and USB or LSB. The procedure is fully described on Page 16 in Paragraph 8-3 of the Operating and Service Instructions and is repeated here for your convenience.

When using the AC power supply (PS-150-120), proceed as follows: Before turning the transceiver on, connect a DC voltmeter to the two tip jacks on the power supply (see figure 14), positive to red and negative to blue. Set the voltmeter on a low scale (2.5 volts or 3.0 volts). There is a 10-ohm resistor across the tip jacks so that the meter will indicate 1 volt for 100 MA.

Set the OPERATION switch to STBY and allow the unit to warmup about 5 minutes. Then set the FUNCTION switch to USB or LSB, MIC GAIN to "0", and OPERATION switch to MOX. Plug in a microphone and press the microphone switch. Adjust BIAS ADJ control, R206 on the power supply, for 0.7 volt (70 MA plate current) on voltmeter.

When using the DC power supply (PS-150-12) the high voltage (red/white) lead must be disconnected from the power supply terminal strip (pin 1) and a DC milliammeter, having a full-scale deflection of not less than 300 MA, connected between the lead and the high voltage terminal on the power supply. Follow the procedure outlined in the preceding paragraph and set the BIAS ADJ control, R308 on the power supply, for 70 MA.

CIRCUIT REVISIONS: A number of circuit revisions have been made in the Model SR-150 Transceiver since it was originally introduced. These revisions, and the reasons for making them, are shown on the attached list. The changes incorporated in any particular SR-150 may be determined by comparing the first six digits of the serial number with those listed, all preceding numbers contain the modifications listed previously. A revised schematic diagram and parts list containing all changes are included.

This information is intended to assist in identifying the various changes made; they are not necessarily required in units previously produced. As stated on Page 13 of the Operating and Service Instructions for the SR-150, the Hallicrafters Company reserves the privilege of making revisions in current production of equipment and assumes no obligation to incorporate such revisions in earlier models.

Cordially yours,

A. R. Dambrauskas,
National Service Manager

jrh

CIRCUIT REVISIONS INCORPORATED IN THE SR-150 TRANSCEIVER

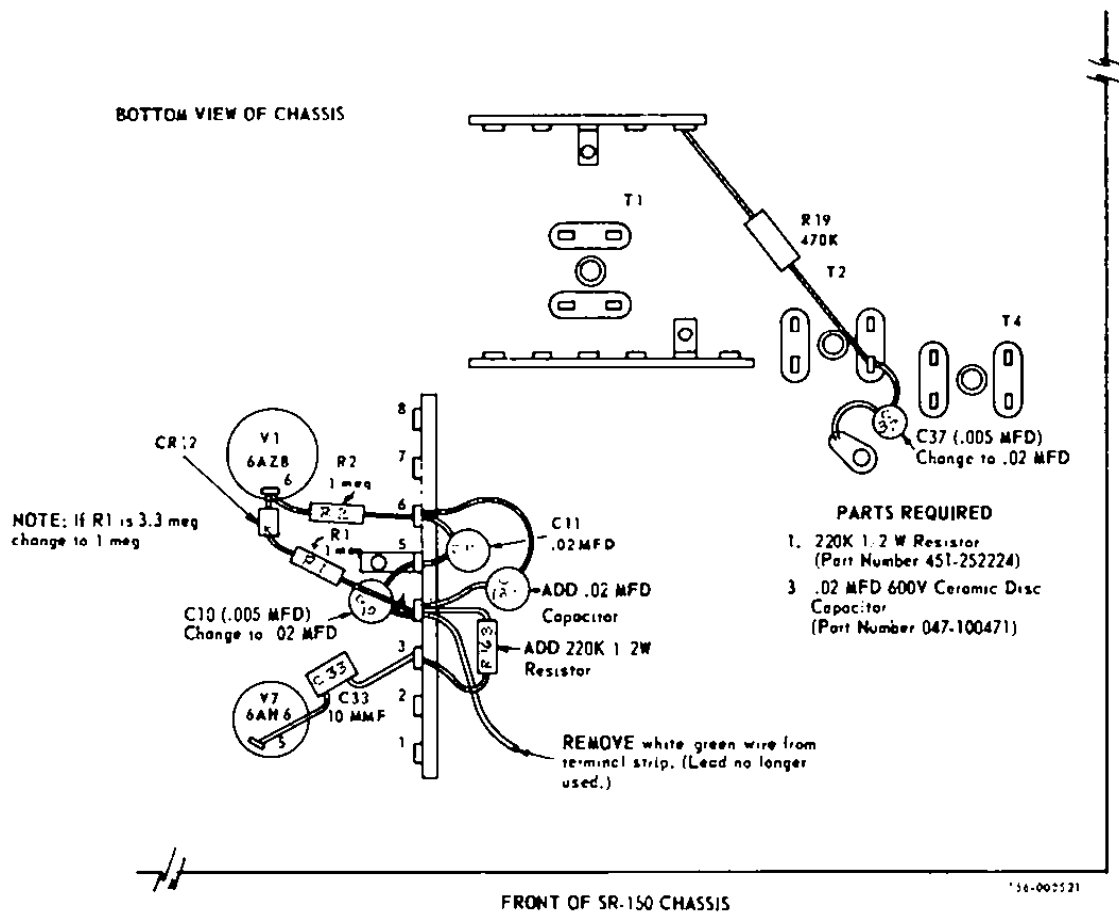
1st 6 digits of SERIAL NO.	MODIFICATION	REASON
415000 415001	Add capacitor C14, 100 MMF 500V, plastic mica type (part number 482-161101), between the wiper arm of the QT Gain control, R96 and ground.	Improves by-passing action. Eliminates possibility of 1650KC regeneration in receive position.
	Change capacitor C163 (27MMF) to 18MMF, 500V, plastic mica type (part number 482-132180).	This change facilitates balance phasing on the production line and is not required in existing units. If this change is installed, carrier balance will have to be made as outlined in the manual, Page 20, Paragraph 8-11. (These changes are incorporated in most sets produced.)
415002	Change capacitors C62 and C65 (470MMF) to 0.001 MF, 500V ceramic disc type (part number 047-001671). Change capacitor C116 (0.005MMF) to 0.001MMF, 500V, ceramic disc type (part number 047-001671).	Reshapes the receiver audio response to reduce the highs.
	Add silicon diode CR12, type 1N456, (part number 019-002964), between R1 and the control grid, pin 6, of V1. (Connect cathode of CR12 toward R1. Change resistor R100 (4700 ohms) to 2700 ohms (part number 451-252272). Change resistor R101 (2700 ohms) to 4700 ohms (part number 451-252472). Change resistor R116 (1.5 meg-ohms) to 820K ohms (part number 451-252625).	Improves AGC action and also provides complete cut-off of the RF tube during transmitting.
415003	Change capacitor C76 (4.7MMF) to 10MMF, 5%, 500V, plastic mica type (part number 482-132100). Change resistor R64 (47K ohms) to 220K ohms (part number 451-252224). The end of this wire shown connected to ground is now connected to pin 3 of V8.	Ensures starting of the Heterodyne oscillator if the crystal has a tendency to be sluggish.
	Capacitor C100 has been moved. Show this capacitor connected to ground from the junction of R80, R81, and R62. (Physical location between RIT control potentiometer (high side) and ground lug installed under escutcheon mounting screw).	Corrects frequency chirp when going from receive to transmit.

1st 6 digits of SERIAL NO.	MODIFICATION	REASON
415004	Add two resistors, R161 and R162, one each to the grid, pin 5, of V14 and V15 from the junction of C135 and R105. The grid of V15 is erroneously shown as pin 3. These resistors are 10 ohms, 10%, 1/2 watt (part number 451-252100).	Removes parasitics noticed in some units when operating on 15 meters.
415005	Change R123 (150 ohms) to 10K ohms (part number 451-252103). Change C166 (.005 MMF) to .001 MF, 500V, ceramic disc type (part number 047-001671).	Improves transmitter audio response.
	(620 ohms) and ground terminal of same strip. Change C113 (.01MF) to .005MF, 500V, ceramic disc type, (part number 047-100442).	
	See attached instruction sheet.	Removes transmitted "click" from SR-150 when switching from transmit to receive.

MODIFICATION INSTRUCTIONS

The following procedures outline the modifications necessary to remove the transmitted "click" from the SR-150 Transceiver, when switching from transmit to receive.

1. Remove white/green wire from terminal 4 of terminal strip near tubes V1 and V7. (Junction of R1, 1 megohm, and C10, .005 MF.)
2. Replace capacitor C10 (.005 MF) with a .02 MF disc capacitor. (Connected between terminals 4 and 5 of terminal strip.)
3. Add a .02 MF disc capacitor between terminals 4 and 6 of terminal strip.
4. Add a 220 K ohm, 1/2 watt resistor between terminals 3 and 4 of terminal strip.
5. Replace capacitor C37 (.005 MF) with a .02 MF disc capacitor. (Located at 6 MC IF can, T2.)



the hallicrafters co.

4401 WEST 5TH AVENUE

Chicago 24, Ill.

MATERIAL OR METHODS SPECIFICATION

SPECIFICATION NO. - 093-801667 RELEASE DATE OCT 3, 62
MODEL NO. PS-150-120 POWER SUPPLY RELEASE MEMO dw 27668
TITLE PS-150-120 PERFORMANCE SPECS.

PREPARED BY _____

APPROVED BY _____

REVISION SHEET

TITLE PS-150-120 PERFORMANCE SPECS.

SPEC. NO. 093-801667

Issue	Description of Revision	Memo No. & Date
A	CORRECTION	DW 27668
B	PAGE 3 OF 4, REVISED PARA V REVISED PER CN 17486 FEK	11.7-86 18 FEB 64

I. POWER REQUIREMENTS

117V, 60 cycles, 280 watts. All measurements to be made at 117V. (Maximum operating voltage--125.)

II. PRIMARY SWITCHING

power switch in test jig must turn supply on and off.

III. MECHANICAL HUM

There shall be no audible mechanical hum or cabinet vibration.

IV. SPEAKER TEST

A. With .6 volts RMS @ 400 cycles, neither speaker or cabinet shall rattle when swept through the range from 100 cycles to 4000 cycles.

B. Speaker resonance shall be 145 cycles \pm 10 cycles.

V. VOLTAGE AND RIPPLE

High Voltage B+	Load 2820 Ohms	Load 8200 Ohms
	565V \pm 3%	585V \pm 3%
Ripple	4.5V. RMS Max.	3.5 V. RMS MAX.
Low Voltage B+	Load 1300 ohms	Load 1300 ohms
	255V. \pm 3%	258V. \pm 3%
Ripple	.2V. Max.	.2V. Max.
Bias Voltage	-80 to -130 \pm 3%	22K Load
	.2V. Max.	
Filament Voltage	12.6 \pm 5%	2.5 OHM Load

VI. LINE ISOLATION

Either side of AC line must withstand 350V. breakdown to chassis.

VII. LIFE TEST

The following conditions will apply for life test:

- A. The low voltage load will be 1300 ohms.
- B. The bias load will be 22K ohms.
- C. The high voltage load will be 2820 ohms for one minute and open circuit for three minutes. (Test not to exceed 24 hours.)
- D. Supply shall give normal operation at end of test.

