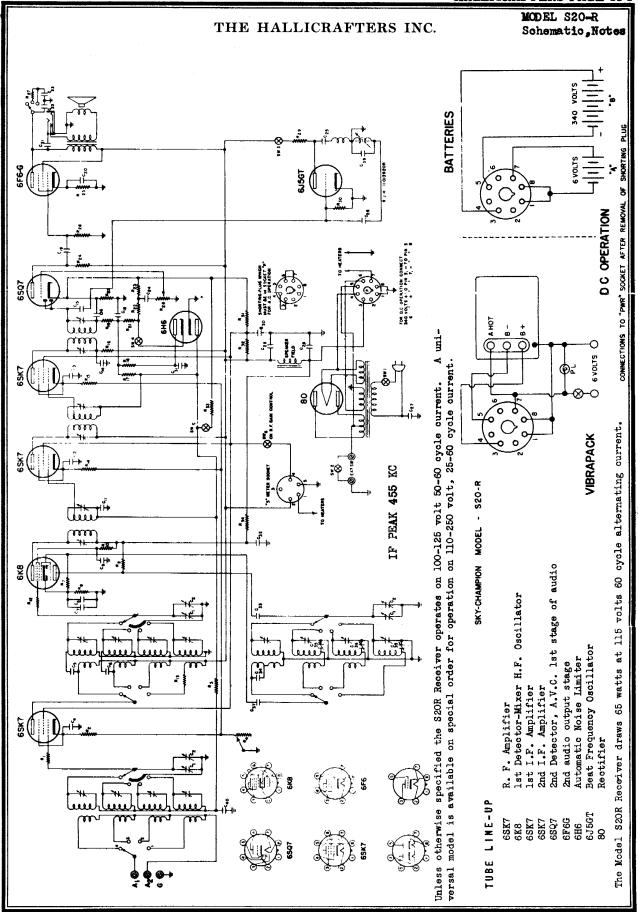
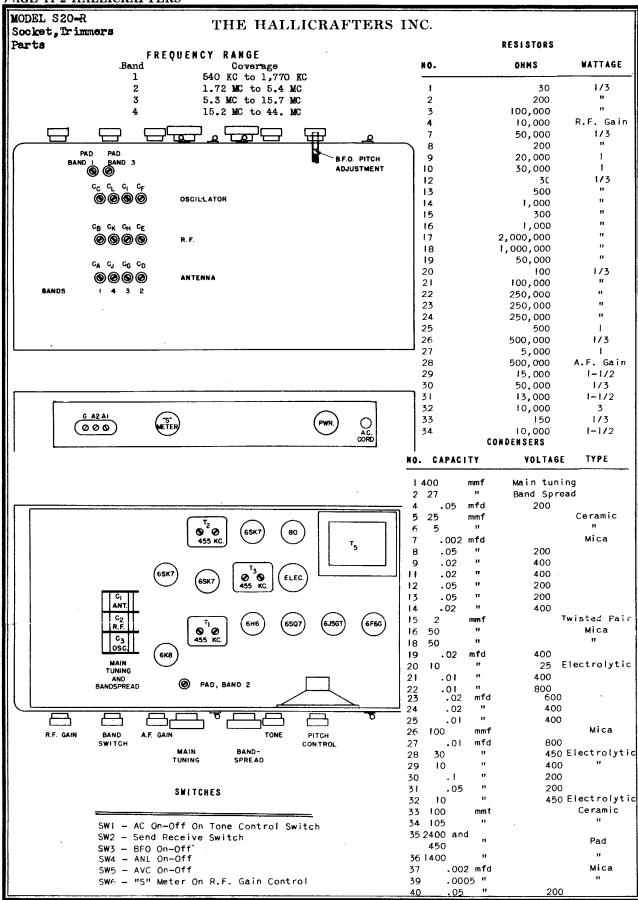
Hallicrafters, Inc.				
	Model: S20-R	Chassis:	Year: Pre June 1940	
	Power:	Circuit:	IF:	
	Tubes:	•	•	
	Bands:			
		Resources		
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# THE HALLICRAFTERS INC.

MODEL S20-R Alignment, Antenna Notes MODEL SX-25 Antenna Notes

#### ANTENNA

The Sky Champion has an antenna input circuit which will allow the use of either a doublet or Marconi (inverted "L") antenna. The approximate antenna input impedance of the S2OR is 400 ohms.

A very serviceable antenna will be the inverted "L", or Marconi type. This antenna should be approximately 75 feet long overall, including the lead-in to the set. Satisfactory operation of the Sky Champion is obtained throughout its tuning range with this type of antenna and because of that fact as well as its ease of construction it is highly recommended.

With the inverted "L" type of antenna  ${
m A_2}$  must remain connected to G for best operation. While a ground connection is usually not necessary it might prove to be helpful in reducing noise. A cold water pipe or 6' foot rod driven in moist soil will be a very satisfactory ground when connected to the G terminal on the receiver. Connections to a radiator or gas piping are not recommended.

Should a doublet antenna be used it is suggested that a transmission line of 400 ohms value of impedance be constructed so that a most efficient transfer of energy is obtained. The commercially available all wave doublet antennas are usually provided with a coupling transformer which matches the transmission line to the receiver. This transformer connects to the Al and Al terminals on the antenna strip. The half-wave length-doublet antenna cut for a particular frequency can be computed by the following formula.

Length in feet =  $\frac{100}{\text{Frequency in megacycles}}$ 

or for example, a half wave 20 meter or 14 megacycle antenna would be

463 or 33.7 feet long overall

This type of antenna is broken in the center with an insulator and has the transmission line connected to each resulting quarter wave section at that point. This antenna is a very good performer, in a direction broadside to its length, only on the relatively narrow group of frequencies for which it was cut. It does not function well on harmonic frequencies.

When using either type of doublet antennas the transmission line should be connected to A1 and A2 binding posts. The wire connecting the A2 to ground or G can be left connected if the performance of the receiver is improved.

## ALIGNMENT PROCEDURE

455 KC, Intermediate-Frequency Alignment. Have the controls set as follows: AF and RF gain controls for maximum volume.

B.F.O. switch in the "OFF" position.

Set band switch to #2 band.

Set main dial to 2 megacycles, band spread to zero.

Remove 6K8 grid cap and connect the hot side of your 455 KC generator to this tube. Connect the ground terminal of the signal generator to the chassis of the receiver. Now feed a 455 KC signal into the receiver. Adjust all I.F. transformer trimmers on Tl, T2, T3, for maximum gain.

### R. F. ALIGNMENT

Re-connect the grid cap to the 6K8 tube. Connect the hot side of the generator to the  $\mathbb{A}_1$  antenna terminal on the rear of the chassis through a 400 ohm resistor. Be sure a jumper is connected to A, and G. Leave signal generator ground connected to the chassis of the receiver.

The location of the following trimmers and padders can be determined by referring to the top and bottom chassis views. All pad adjustments are for the low frequency end of each band while the trimmers are for the high frequency ends.

In order to get at the RF trimmers the guarantee card can be removed by placing a knife under the small snap fasteners holding it in place. So that most satisfactory adjustment of the trimmers and padders can be made, it is advisable to "Rock" the condenser gang across the signal being delivered by the generator until that particular circuit has been accurately peaked at all frequencies except 1400 KC and 4 MC.

Bands	Trim at	Pad at
1	1400 KC Adjust C <sub>A</sub> C <sub>B</sub> C <sub>C</sub>	600 KC Adjust Pad Band 1
2	$^{4}$ MC Adjust $^{ m C}_{ m D}$ $^{ m C}_{ m E}$ $^{ m C}_{ m F}$	2 MC Adjust Pad Band 2 (Top Chassis)
3 ´	$^{14}$ MC Adjust $^{ m C}_{ m G}$ $^{ m C}_{ m H}$ $^{ m C}_{ m I}$	7 MC Adjust Pad Band 3
4	. Adjust $\mathtt{C_J}$ $\mathtt{C_K}$ $\mathtt{C_L}$	17 MC No pad on this Band