

Hand No.	Value	Type	Value in Ohms	Wattage or Purpose
1	50 mfd	Variable Air	400	400
2	2,962 mmf	Mica	40	40
3	2,276 mmf	Mica	30	30
4	1,600 mmf	Mica	25	25
5	676 mmf	Mica	400	400
6	512 mmf	Mica	400	400
7	320 mmf	Mica	400	400
8	200 mmf	Mica	400	400
9	100 mmf	Mica	400	400
10	50 mmf	Mica	400	400
11	20 mmf	Mica	400	400
12	10 mmf	Mica	400	400
13	5 mmf	Mica	400	400
14	2.5 mmf	Mica	400	400
15	1.25 mmf	Mica	400	400
16	0.625 mmf	Mica	400	400
17	0.3125 mmf	Mica	400	400
18	0.15625 mmf	Mica	400	400
19	0.078125 mmf	Mica	400	400
20	0.0390625 mmf	Mica	400	400
21	0.01953125 mmf	Mica	400	400
22	0.009765625 mmf	Mica	400	400
23	0.0048828125 mmf	Mica	400	400
24	0.00244140625 mmf	Mica	400	400
25	0.001220703125 mmf	Mica	400	400
26	0.0006103515625 mmf	Mica	400	400
27	0.00030517578125 mmf	Mica	400	400
28	0.000152587890625 mmf	Mica	400	400
29	0.0000762939453125 mmf	Mica	400	400
30	0.00003814697265625 mmf	Mica	400	400
31	0.000019073486328125 mmf	Mica	400	400
32	0.0000095367431640625 mmf	Mica	400	400
33	0.00000476837158203125 mmf	Mica	400	400
34	0.000002384185791015625 mmf	Mica	400	400
35	0.0000011920928955078125 mmf	Mica	400	400
36	0.00000059604644775390625 mmf	Mica	400	400
37	0.000000298023223876953125 mmf	Mica	400	400
38	0.0000001490116119384765625 mmf	Mica	400	400
39	0.00000007450580596923828125 mmf	Mica	400	400
40	0.000000037252902984619140625 mmf	Mica	400	400
41	0.0000000186264514923095703125 mmf	Mica	400	400
42	0.00000000931322574615478515625 mmf	Mica	400	400
43	0.000000004656612873077392578125 mmf	Mica	400	400
44	0.0000000023283064365386962890625 mmf	Mica	400	400
45	0.00000000116415321826934814453125 mmf	Mica	400	400
46	0.00000000058207660913467407071875 mmf	Mica	400	400
47	0.000000000291038304567337035359375 mmf	Mica	400	400
48	0.00000000014551915228366851767678125 mmf	Mica	400	400
49	0.000000000072759576141834258838390625 mmf	Mica	400	400
50	0.000000000036379788070917121419191875 mmf	Mica	400	400
51	0.00000000001818989403545856055959375 mmf	Mica	400	400
52	0.000000000009094947017729280279796875 mmf	Mica	400	400
53	0.00000000000454747350886401398984375 mmf	Mica	400	400
54	0.0000000000022737367544320069946875 mmf	Mica	400	400
55	0.00000000000113686837722100349734375 mmf	Mica	400	400
56	0.000000000000568434188600174868671875 mmf	Mica	400	400
57	0.0000000000002842170943000874343359375 mmf	Mica	400	400
58	0.00000000000014210854715004371716796875 mmf	Mica	400	400
59	0.00000000000007105427357502185838390625 mmf	Mica	400	400
60	0.00000000000003552713678751092929191875 mmf	Mica	400	400
61	0.000000000000017763568393755464645959375 mmf	Mica	400	400
62	0.0000000000000088817841968752728229796875 mmf	Mica	400	400
63	0.00000000000000444089209843751364148984375 mmf	Mica	400	400
64	0.000000000000002220446049218756820744941875 mmf	Mica	400	400
65	0.0000000000000011102230246093753410372246875 mmf	Mica	400	400
66	0.000000000000000555111512304687517051861191875 mmf	Mica	400	400
67	0.00000000000000027755575615230468758529305959375 mmf	Mica	400	400
68	0.000000000000000138777878076152304687542646529796875 mmf	Mica	400	400
69	0.0000000000000000693889390380761523046875213232648984375 mmf	Mica	400	400
70	0.0000000000000000346944695190380360761523046875106616244941875 mmf	Mica	400	400
71	0.0000000000000000173472347595190380360761523046875533081224246875 mmf	Mica	400	400
72	0.0000000000000000086736173797595190380360761523046875266540612246875 mmf	Mica	400	400
73	0.0000000000000000043368086898759759519038036076152304687513327030612246875 mmf	Mica	400	400
74	0.00000000000000000216840434493797597595190380360761523046875666351530612246875 mmf	Mica	400	400
75	0.00000000000000000108420217246898759759759519038036076152304687533317576530612246875 mmf	Mica	400	400
76	0.000000000000000000542101086236493797597597595190380360761523046875166587876530612246875 mmf	Mica	400	400
77	0.000000000000000000271050543118246898759759759759519038036076152304687583293937876530612246875 mmf	Mica	400	400
78	0.000000000000000000135525271559118246898759759759759519038036076152304687541646968937876530612246875 mmf	Mica	400	400
79	0.000000000000000000067762635779559118246898759759759759519038036076152304687520823484468937876530612246875 mmf	Mica	400	400
80	0.0000000000000000000338813178897955911824689875975975975951903803607615230468751041174224468937876530612246875 mmf	Mica	400	400
81	0.0000000000000000000169406589448979559118246898759759759759519038036076152304687552058711224468937876530612246875 mmf	Mica	400	400
82	0.00000000000000000000847032947244897955911824689875975975975951903803607615230468752602935611224468937876530612246875 mmf	Mica	400	400
83	0.0000000000000000000042351647362244897955911824689875975975975951903803607615230468751301467780611224468937876530612246875 mmf	Mica	400	400
84	0.00000000000000000000211758236811224489795591182468987597597597595190380360761523046875650733890311224468937876530612246875 mmf	Mica	400	400
85	0.0000000000000000000010587911840561122448979559118246898759759759759519038036076152304687532536694511224468937876530612246875 mmf	Mica	400	400
86	0.00000000000000000000052939559202805611224489795591182468987597597597595190380360761523046875162683472511224468937876530612246875 mmf	Mica	400	400
87	0.00000000000000000000026469779601402805611224489795591182468987597597597595190380360761523046875813417312511224468937876530612246875 mmf	Mica	400	400
88	0.00000000000000000000013234889800701402805611224489795591182468987597597597595190380360761523046875406708662511224468937876530612246875 mmf	Mica	400	400
89	0.00000000000000000000006617444900350701402805611224489795591182468987597597597595190380360761523046875203354312511224468937876530612246875 mmf	Mica	400	400
90	0.0000000000000000000000330872245017503507014028056112244897955911824689875975975975951903803607615230468751016771562511224468937876530612246875 mmf	Mica	400	400
91	0.000000000000000000000016543612250087503507014028056112244897955911824689875975975975951903803607615230468755083857812511224468937876530612246875 mmf	Mica	400	400
92	0.000000000000000000000008271806125004375035070140280561122448979559118246898759759759759519038036076152304687525419289062511224468937876530612246875 mmf	Mica	400	400
93	0.000000000000000000000004135903062500218750350701402805611224489795591182468987597597597595190380360761523046875127096445312511224468937876530612246875 mmf	Mica	400	400
94	0.00000000000000000000000206795153125001093750350701402805611224489795591182468987597597597595190380360761523046875635482226562511224468937876530612246875 mmf	Mica	400	400
95	0.0000000000000000000000010339757656250005468750350701402805611224489795591182468987597597597595190380360761523046875317741132812511224468937876530612246875 mmf	Mica	400	400
96	0.0000000000000000000000005169878828125000273437503507014028056112244897955911824689875975975975951903803607615230468751588705664062511224468937876530612246875 mmf	Mica	400	400
97	0.000000000000000000000000258493941406250001367187503507014028056112244897955911824689875975975975951903803607615230468757943528320312511224468937876530612246875 mmf	Mica	400	400
98	0.00000000000000000000000012924697070312500006835937503507014028056112244897955911824689875975975975951903803607615230468753971764161562511224468937876530612246875 mmf	Mica	400	400
99	0.000000000000000000000000064623485351562500003417968750350701402805611224489795591182468987597597597595190380360761523046875198588207812511224468937876530612246875 mmf	Mica	400	400
100	0.0000000000000000000000000323117426778125000017089843750350701402805611224489795591182468987597597597595190380360761523046875992941039062511224468937876530612246875 mmf	Mica	400	400

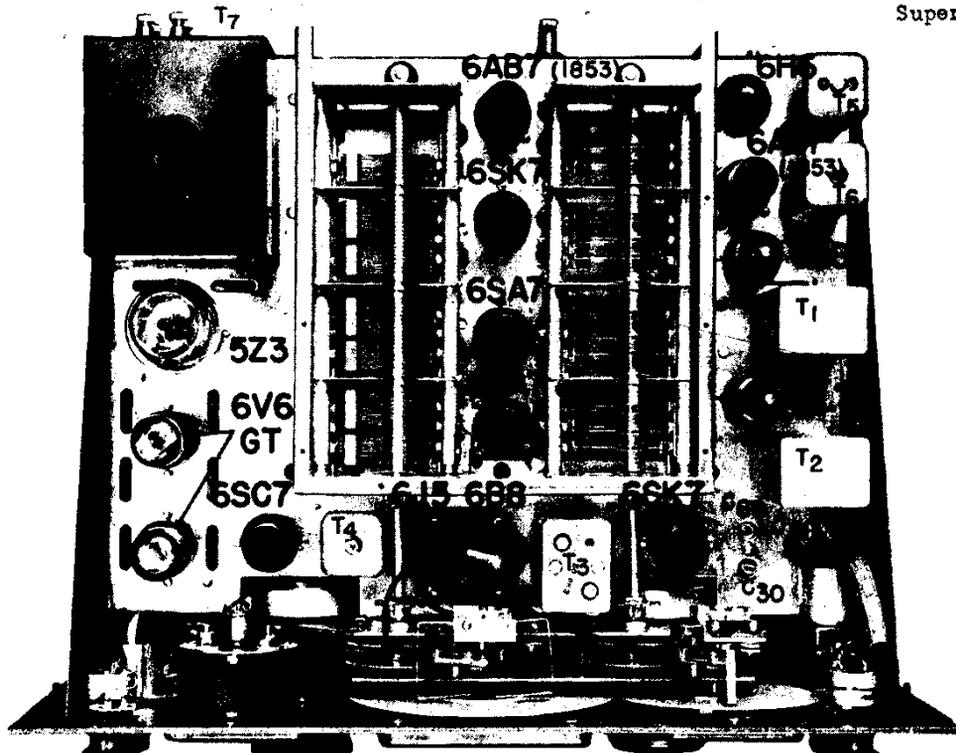
Power Consumption—at 117 volts—60 cycles—138 watts on 108 watts
Power Consumption—DC operation—18 amp. at 6 volts
Power Output
Sensitivity—(for .05 watts output) Bands 1 to 5—2 MV and under; 6th band 4 MV
Selectivity—IF Broad (high fidelity) 12 Kc
IF Sharp 36 Kc
Frequency Range: RF—Note: These are the actual frequencies covered corresponding to nominal figures indicated on the front panel.
550 to 1,620 kilocycles
1.5 to 3.1 megacycles
2.9 to 5.9 megacycles
5.75 to 11.5 megacycles
10.3 to 21.5 megacycles
20.4 to 42 megacycles

Frequency response AF (audio filter out broad IF tone control high—70 to 3000 cycles = 2 1/2 DB
Speaker Output Impedance—5000 and 500 ohms
Intermediate Frequency—455 Kc

No.	Value in Ohms	Wattage or Purpose
R 1	100,000	10
R 2	10,000	5
R 3	100	5
R 4	100	5
R 5	25,000	5
R 6	3,000	5
R 7	7,000	5
R 8	100,000	5
R 9	300	5
R 10	1,000	5
R 11	5,000	5
R 12	100,000	5
R 13	1,000	5
R 14	100,000	5
R 15	1,000	5
R 16	250	5
R 17	1,000	5
R 18	3,000	5
R 19	100,000	5
R 20	500,000	5
R 21	1,000	5
R 22	1,000	5
R 23	1,000	5
R 24	1,000	5
R 25	1,000	5

THE HALLICRAFTERS INC.

MODEL SX 28
Super Skyrider

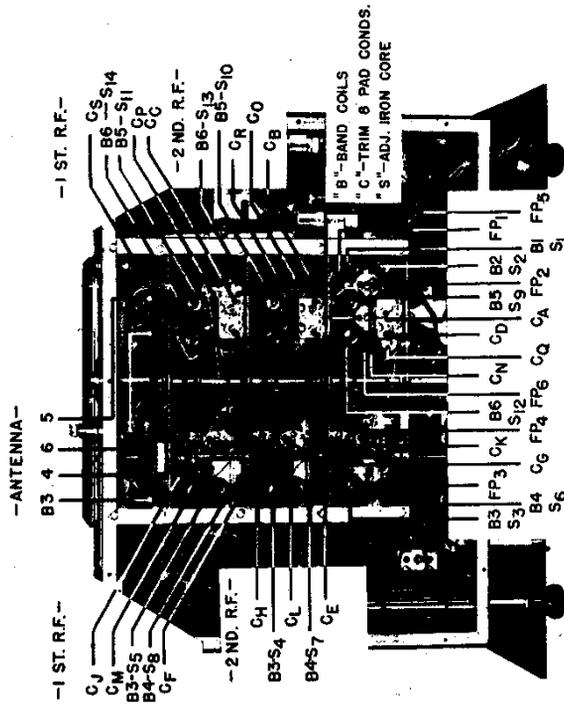


The following measurements made with a 20,000 ohms per volt meter and taken from the socket terminal indicated to ground or receiver chassis. Antenna and ground were disconnected from the receiver when these measurements were taken and the RF and AF gain controls set at maximum. "DL" means Dead Lug but will indicate voltage when used as a tie. Normal tolerance allows a variation of $\pm 10\%$ from the indicated values.

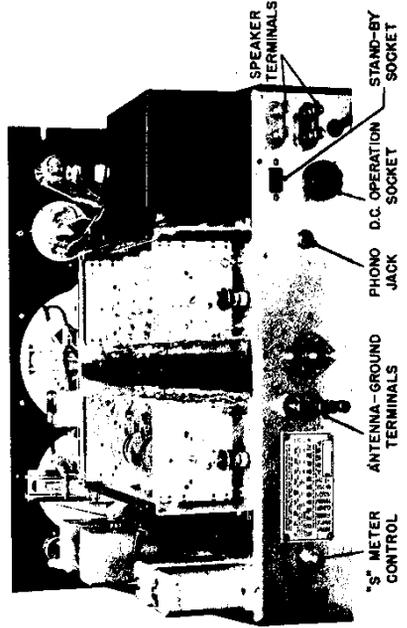
TUBE	FUNCTION	SOCKET TERMINALS								
		1	2	3	4	5	6	7	8	Cap.
6AB7	RF Amp. (1)	...	...	...	0.1	4.15	170	6.3	227	.....
6SK7	RF Amp. (2)	...	...	4.35	0.1	4.35	105	6.3	279	.....
6SA7	Mixer	...	...	250	100	0.12	4.1	6.3	...	.....
6SA7	HF Osc.	...	...	116	116	0.3	...	6.3	116	.....
6L7	IF Amp. (1) Noise Limiter	...	...	245	102	...	...	6.3	4	-.075
6SK7	IF Amp. 2	...	...	4	...	4	107.5	6.3	235	.....
6B8	2nd Det. S Meter Tube	...	...	17.2	-.255	-.255	108	6.3	...	-.17
6B8	AVC Amp.	...	...	225.5	0.2	0.2	107	6.3	2	.....
6AB7	Noise Amp.	...	...	...	.07	1.1	150	6.3	225	.....
6H6	Noise Rectifier	...	...	...	.1	...	17.6 DL	6.3	-.1	.....
6J5	Beat Osc.	...	...	140	...	-7.4	...	6.3	...	BFO ON ONLY FOR TEST
6SC7	1st Audio Amp.	...	140	...	...	137	1.4	6.3	...	.....
6V6GT	P.P. Audio Amp.	...	...	310	290	...	198 DL	6.3	17	.....
6V6GT	P.P. Audio Amp.	...	...	310	290	...	...	6.3	17	.....
5Z3	Rectifier	320	340 AC	340 AC	320	...	...	...	...	.....

MODEL SX28
Super Skyrider

THE HALLICRAFTERS INC.



"FP" INDICATES FIXED PADS WHICH SHOULD NOT BE ADJUSTED - OSCILLATOR -



ALIGNMENT PROCEDURE MODEL SX-28—SUPER SKYRIDER

parent when the correct adjustment has been reached. Switch to "Xtal Sharp" and adjust C₉ for maximum output while varying signal generator frequency. Two points of maximum output will be noted corresponding to two adjustments of C₉. Either one of these points may be used at which to leave C₉, a sharply peaked tone will result at the correct adjustment.

Switch to "Xtal Medium" and adjust C₉ till the output is midway between the outputs reached while aligning the "Xtal Sharp" and "Xtal Broad" positions. The apparent sharpness of tone should be midway between the "Sharp" and "Broad" positions.

Switch again to "Xtal Sharp" and set the signal generator to exact crystal frequency. Set BFO front panel control to a tone of approximately 1000 cycles. Switch again to "Sharp IF" and carefully realign the IF transformers as called for in the first paragraph of these instructions.

BFO Adjustment: Set front panel control to zero—BFO switch ON—Signal Generator tuned to crystal frequency—selectivity switch in IF Sharp position—now, adjust screw on top of T₄ after loosening lock nut, to zero best. Noise Limiter and AVC Amplifier Adjustment: Have the controls set as before except that the AVC switch is now in the ON position. Connect a high resistance type voltmeter across R₄₇ which is connected between terminal #5 of the 6L7 tube and chassis.

ANL & AVC Amplifier Adjustment: Connect a 50,000 ohm resistor across primary T₃ (Red and Blue leads). Set generator at 455 kc. Turn dial to 1400 kc. Adjust crystal to zero on grid of 6AB7 tube (pin #4). Rotate ANL control all the way to the right, or position #9. Adjust screws on top of T₅ for maximum indication on DC meter connected across R₄₇. Reconnect generator, as for IF alignment, to mixer grid of 6SA7 tube. Remove 50,000 ohm resistor which was inserted across primary T₃ using alignment procedure above. Turn dial to 1400 kc. With generator set at 455 kc and ANL control at extreme right adjust wave trap trimmer C₅₅ for minimum signal as indicated on output meter.

With generator connected to 6SA7 mixer grid as above, replace 6L7 grid and turn ANL control to extreme left until switch clicks. Connect high resistance DC meter across 688 diode filter condenser C₆₄. Adjust screw on top of T₆ for maximum indication on DC meter across C₆₄.

Equipment Needed for Aligning:

- 1—An all wave signal generator which will provide an accurately calibrated signal at the test frequencies indicated.
- 2—Output indicating meter connected to 5000 ohm output terminals.
- 3—Non-metallic screw driver.
- 4—Dummy antenna of 200 mmf and also 400 ohm carbon resistor.

Setting of controls prior to alignment—IF and RF. Tone control at maximum high frequency position (#9)—BFO at 0—Bass switch at Bas IN—AF Gain at #9—RF Gain at #9—Band switch—IF alignment position 35 to 1.6 band—RF alignment depending on band aligned.

Selectivity control at sharp IF—Send Receive switch in Receive—Crystal phasing at #3 on left side—ANL—OFF at 0—AVC OFF.

Impedance Have bandspread control so logging scale reads 100.

Antenna trimmer adjusted for Maximum gain at each RF alignment point on Bands 3-4-5-6.

Note: Antenna trimmer not in circuit on bands 1 and 2.

455 KC—IF Alignment: Tune main dial to 1400 kc on 55 to 1.6 mc band. Connect the hot lead from the signal generator to 6SA7 mixer terminal #9—Ground to chassis. Roughly adjust the aligning screws of T₁, the lower screw of which is accessible through hole in right mounting bracket, for maximum gain. Now adjust lower screw on T₂ (do not adjust upper screw). Also adjust C₃₁ and the air trimmer condenser at the top of T₃ for maximum gain.

Switch to Crystal Broad Position—Turn on BFO and adjust to a tone of about 1000 cycles. Vary the frequency of the signal generator while adjusting the top screw on T₂ until the output goes through a maximum, dips down and starts going up again. Adjust the phasing control for maximum selectivity and then back off the top screw on T₁ until the output reaches a minimum value between the two maximum values first noted. The frequency of the signal generator should be varied over a small range while adjusting the top screw of T₂. A washing note, in contrast to the usual sharp crystal tone will be ap-

RF ALIGNMENT

Connect hot lead of signal generator to A1 through dummy antenna shown in table. Leave jumper connected between A2 and G. Ground of Generator to Chassis.

Band	Res. Dial Setting	Sig. Gen. Freq.	Dummy Antenna	HIGH FREQUENCY END		LOW FREQUENCY END	
				Adjust Osc. With	Adjust Trimmers for Max. Gain	Adjust Osc. With	Permeability Tuned By
1	1.4 mc	6	200 mmf	C ₅	C ₃ C ₆	S ₁	S ₁
1	6	6	200 mmf	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
2	2.8	2.8	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
2	1.6	1.6	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
3	5.6	5.6	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
3	3.2	3.2	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
4	11	11	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
4	6	6	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
5	20	20	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
5	11	11	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
6	36	36	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁
6	22	22	400 ohms	C ₅	C ₃ C ₆ C ₇	S ₁	S ₁