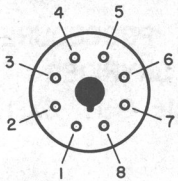
ALIGNMENT PROCEDURE
SUPER SKYRIDER
Special Models S-17 SX-17

the hallicrafters inc.
2611 INDIANA AVENUE
CHICAGO

Alignment Procedure for Special Super Skyrider Models S-17, SX17

The following measurements made with 1000 ohms per volt meter and taken from the point indicated to ground. Antenna and Ground disconnected and R. F. and A. F. Gain controls set at maximum. Line voltage of 115 at the time measurements were taken. Normal tolerance allows variation of plus or minus 10% from the indicated values. "DL" means Dead Lug but will indicate voltage when used as a tie.



Bottom view of socket

Tube	Function	1	2	3	4	5	6	7	8
6K7	RF Amp (1)			260	100	8	0 ON 50 OFF	6.3	8
6K7	RF Amp (2)			260	100	8	0 ON 50 OFF	6.3	8
6L7	Mixer			260	85	-13	DL	6.3	2.5
6J5G	Osc			175	DL	-13	DL	6.3	0
6K7	IF Amp (1)			260	100	11	100	6.3	10
6K7	IF Amp (2)			260	100	10	.5 ON 50 OFF	6.3	10
6R7G	2nd Det A.V.C.			175	1	1	0	6.3	-7
6V6G	1st Audio Output			300	250	0	DL	6.3	16
6V6G	Output			300	250	0	DL	6.3	16
6J7	Beat Osc.	(TUBE OUT)		250	240	0	DL 260	6.3	0
6J7G	meter Amp			260	120	10	250	6.3	10
6J5	Silencer	(ON)		-2	-2	-2	-3.5	6.3	-2

INTERMEDIATE FREQUENCY ALIGNMENT (465 KC)

Have the controls set in the following positions:

Noise silencer "OFF" (switch to the left)
B.F.O. Injector "OFF"
A.F. and R.F. gain controls on full.
Selectivity switch on "SHARP" position.
Crystal phasing condenser midway (pointer straight up).
A.V.C. switch "OFF".
Crystal switch "IN".

BAND SWITCH ON #1 BAND - TUNING GANG OPEN.
REMOVE OSCILLATOR TUBE.
REMOVE 6L7 GRID CAP.
CONNECT SIGNAL GENERATOR TO GRID OF 6L7 TUBE THROUGH A .1 MFD CONDENSER.
TUNE SIGNAL GENERATOR TO 465 KC AND THEN ADJUST THE FOLLOWING TRIMMERS FOR MAXIMUM OUTPUT: T-4#7,8; T3-#5,6; T2-#3,4; T1-#1,2; THROW CRYSTAL SWITCH TO OUT POSITION AND READJUST TRIMMERS #2, 3 FOR MAXIMUM OUTPUT. WHEN THE "SELECTIVITY" SWITCH IS SNAPPED INTO THE "BROAD" POSITION A SLIGHT DROP IN GAIN SHOULD BE INDICATED. A RECTIFIER TYPE OUTPUT METER IS SUGGESTED AS AN OUTPUT INDICATOR.

ALIGNMENT USING A 465 KC CRYSTAL

SHOULD THE RECEIVER BE A CRYSTAL MODEL IT IS NECESSARY THAT THE CRYSTAL BE USED IN AN EXTERNAL OSCILLATOR IN PLACE OF A SIGNAL GENERATOR SUCH AS THE ABOVE. THE OUTPUT OF THIS CRYSTAL-CONTROLLED OSCILLATOR IS THEN FED TO THE GRID OF THE 6L7 TUBE AND THE ABOVE PROCEDURE FOLLOWED. WHEN THE I F AMPLIFIER HAS BEEN ALIGNED FROM THE CRYSTAL OSCILLATORS OUTPUT, RE-INSERTING THE CRYSTAL IN THE RECEIVER WILL SHOW VERY LITTLE DIFFERENCE IN OUTPUT WHETHER THE CRYSTAL IS "IN" OR "OUT" OF THE CIRCUIT AS INDICATED BY THE CRYSTAL SWITCH.

R. F. ALIGNMENT PROCEDURE

ON BAND #1, OR BROADCAST, USE A .0002 MFD CONDENSER IN SERIES WITH THE OUTPUT LEAD FROM GENERATOR TO RECEIVER. ON THE OTHER BANDS USE A 400 OHM RESISTOR. BE SURE JUMPER FROM DOUBLET POST TO GND. REMAINS CONNECTED WHEN ALIGNING THE RECEIVER.
ALL PAD ADJUSTMENTS (LOCATED ON THE TOP OF THE CHASSIS) ARE FOR THE LOW FREQUENCY ENDS OF THE BANDS.
ALL TRIMMER ADJUSTMENTS (LOCATED ON THE BOTTOM OF THE CHASSIS) ARE FOR THE HIGH FREQUENCY ENDS OF THE BANDS.
REDUCE THE R.F. GAIN CONTROL BELOW THE POINT OF BLOCKING OR OVERLOADING; ALSO BE SURE THAT THE CRYSTAL SWITCH IS IN THE "OUT" POSITION AS WELL AS THE A.V.C. SWITCH IN THE "OFF" POSITION.
BE SURE TO CHECK IMAGES - IMAGES WILL FALL A LITTLE LESS THAN 1,000 KC LOWER IN FREQUENCY THAN THE FUNDAMENTAL OR HARMONIC OF THE SIGNAL FROM THE GENERATOR. BECAUSE OF THE TWO RF STAGES IMAGES WILL BE GREATLY ATTENUATED IN COMPARISON TO A UNIT WITH ONE STAGE OF RF.
THE TUNING GANG MUST BE ROCKED WHEN MAKING THESE ADJUSTMENTS.

NOTE#1 HARMONICS OF SUITABLE FREQUENCIES MAY BE USED IF THE FOLLOWING SUGGESTED FREQUENCIES ARE NOT AVAILABLE.

" 2 IT IS NECESSARY TO REPEAT EACH PAIR OF OPERATIONS SEVERAL TIMES UNTIL NO CHANGE IS NOTED.

" 3 GREAT CARE SHOULD BE EXERCISED IN ALIGNING AND ACCURATELY RESONATING EACH CIRCUIT IN THE SPECIAL SUPER SKYRIDER; OTHERWISE YOUR ERRORS WILL BE CUMULATIVE AND THE SET WILL FUNCTION POORLY.

OPR.	BAND	RECEIVER DIAL SETTING	SIGNAL GENERATOR FREQUENCY	ADJUST OSC. WITH	TRIMMERS ADJ. FOR MAX GAIN	ADJUST OSC. WITH	PADDERS ADJ. FOR MAX GAIN
1	1	600KC	600KC	------	--------	C22	--------
2	1	1400KC	1400KC	CA	CB CC CD	------	--------
3	2	1800KC	1800KC	------	--------	C21	--------
4	2	4000KC	4000KC	CE	CF CG CH	------	--------
5	3	5000KC	5000KC	------	--------	C19	C5 C9 C13
6	3	9000KC	9000KC	CI	CJ CK CL	------	--------
7	4	10,000KC	10,000KC	------	--------	C20	C6 C10 C14
8	4	18,000KC	18,000KC	CM	CN CO CP	------	--------
9	5	20,000KC	10,000KC	------	--------	C18	C7 C11 C15
10	5	30,000KC	10,000KC	CQ	CR CS CT	------	--------
11	6	40,000KC	20,000KC	------	--------	C17	C16
12	6	60,000KC	20,000KC	CU	CV	------	--------

SERVICING SUGGESTIONS

TO MAKE A RAPID CHECK OF THE RECEIVER REMOVE THE GRID CAP OF THE 6R7 TUBE AND TOUCH THE CAP OF THE TUBE WITH YOUR FINGER. IF A LOUD HUM IS HEARD THE AUDIO END OF THE RECEIVER IS OK.

DEAD SET. CHECK BIAS OF THE R.F. TUBES. IF THE BIAS IS TOO HIGH CHECK THE R.F. GAIN CONTROL FOR AN OPEN. ADDITIONALLY, CHECK THE PLATE AND SCREEN VOLTAGE OF THE R.F. TUBES (SEE CHART).

NOISY GANG WHEN JARRED - INCREASE THE TENSION ON THE GANG WIPERS.

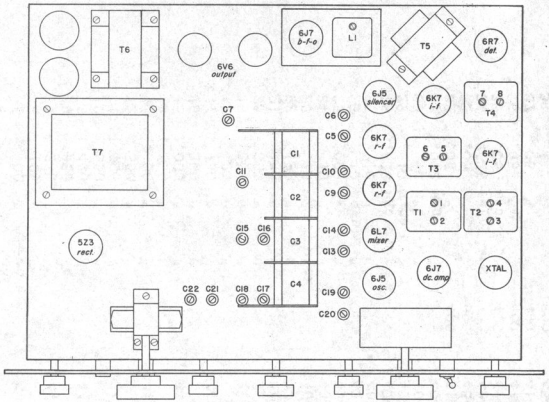
NOISY COIL ASSEMBLY - LIGHTLY TAP THE TRIMMERS OF THE PARTICULAR BAND IN WHICH NOISE OCCURS. ONCE LOCATED THE TRIMMER SHOULD BE REPLACED.

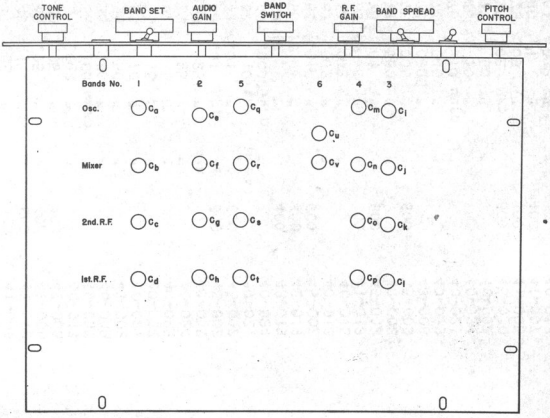
IF LOW SIGNAL AND HIGH NOISE LEVEL DEVELOPS REPLACE THE 6L7 TUBE.

DEAD BEAT OSCILLATOR - IF 6J7 SHOULD SHORT TO GROUND IT WILL OPEN THE BO CONTROL. CHECK #1 - "B PLUS" TO BO COIL FOR A GROUND. CHECK #2 - CHECK THE BO INJECTION CONTROL FOR AN OPEN CIRCUIT. IN MOST CASES A NEW 6J7 WILL CORRECT A DEAD BO.

VIOLENT OSCILLATION - CHECK ALL 6K7 TUBES.

NOISE SILENCER HUM - PROBABLY CAUSED BY A DEFECTIVE 6J5 WITH BAD CATHODE LEAKAGE - REPLACE WITH NEW 6J5 TUBE.





LIST OF CONDENSERS SPECIAL SUPER SKYRIDER MODELS S-17, SX-17

No.	Capacity	Type	Voltage	Parts No.
C1		MAIN		
2	420 MMFD			48-018
3				
4		GANG		
5	100 "	PAD		44-019
6	100 "	"		
7	310 "	"		44-020
8	880 "	"		
9	1,400 "	"		44-018
10	590 "	"		
11	1,000 "	"		44-017
12	350 "	"		
13	1,400 "	"		44-018
14	590 "	"		
15	1,000 "	"		44-017
16	350 "	"		
17	180 "	"		44-016
18	120 "	"		
19	1,000 "	"		44-017
20	350 "	"		
21	180 "	"		44-016
22	120 "	"		
23	10 "	MICA		40-021
24	10 "	"		40-021
25	.002 MFD	"		40-013
26	10 MMFD	"		40-021
27	10 "	"		40-021
28	.002 MFD	"		40-013
29	10 MMFD	"		40-021
30	10 "	"		40-021
31	.002 MFD	"		40-013
32	.05 "		400	41-005
33	.05 "		600	45-007
34	25 MMFD	AIR		48-012
35	.05 MFD		400	41-005
36	.05 "		400	41-005
37	.05 "		400	41-005
38	.1 "		600	45-008
39	.25 "		600	45-009
40	.05 "		400	41-005
41	.05 "		400	41-005
42	.1 "		600	45-008
43	10. "		25	42-002

No.	Capacity	Type	Voltage	Parts No.
C44	.05 MFD		400	41-005
45	.002 "	MICA		40-013
46	.1 "		400	41-007
47	.05 "		400	41-005
48	.1 "		600	45-008
49	.05 "		400	41-005
50	.05 "		400	41-005
51	.002 "	"		40-013
52	100 MMFD	"		40-007
53	50 "	"		40-002
54	50 "	"		40-002
55	10 "	"		40-021
56	15 "	"		40-022
57	15 "	"		40-022
58	25 "	"		40-024
59	25 "	AIR		48-012
60	.01 MFD		600	45-002
61	.01 "		600	45-002
62	10 MMFD	MICA		40-021
63	.00025 MFD	"		40-024
64	16 "		400	42-019
65	16 "		400	42-019
66	.01 "		600	45-002
67	.002 "	"		40-013
68	.002 "	"		40-013
69	1. "		400	41-013
70	.01 "		600	45-002
71	.0001 "	"		40-003
72	.005 "		600	45-009
73	.0005 "	"		43-008
74	.005 "	"		40-019
75	10 MMFD	"		40-021
76	10 "	"		40-021
77	50 "	"		40-002
78	.02 MFD		600	45-010
79	.05 "		400	41-005
80	.1 "		400	41-007
81	.002 "	"		40-013
82	10 MMFD	"		40-021
83	10 "	"		40-021
84	.05 MFD		600	45-007
85	10 MMFD	"		40-021

LIST OF RESISTORS SPECIAL SUPER-SKYRIDER MODELS S-17, SX-17

No.	OHMS	WATTAGE	PARTS No.
R 1	5,000	R. F. GAIN	25-021
2	500	1/3	24-040
3	10,000	2.5	24-037
4	10,000	2.5	24-037
5	700	1/3	24-038
6	100,000	"	20-093
7	700	"	24-038
8	100,000	"	20-093
9	30,000	1.	22-075
10	100,000	1/3	20-093
11	1,000	"	20-033
12	100,000	"	20-093
13	1,000	"	20-033
14	1,000,000	"	20-108
15	1,000,000	"	20-108
16	950	"	22-032
17	250,000	"	20-099
18	1,000,000	A. F. GAIN	25-023
19	50,000	1/3	20-084
20	10,000	1.	20-061
21	100,000	1/3	20-093
22	100,000	"	20-093
23	50,000	"	20-084
24	50,000	"	20-084
25	500,000	BFO CONTROL	25-024
26	100,000	1/3	20-093
27	500	METER ADJ.	25-022
28	95	1/2	22-007
29	250	1.	20-099
30	100,000	1/3	20-093
31	1,000,000	"	20-108
32	20,000	"	20-072
33	1,000,000	TONE CONTROL	25-013
34	100,000	1/3	20-093
35	10,000	"	20-063
36	100,000	"	20-093
37	20,000	"	20-072
38	150	"	22-011
39	1,000	"	20-033

SWITCHES

S 1	SELECTIVITY DPDT
2	NOISE SILENCER SPST
3	BFO (MOUNTED ON CONTROL)
4	"S" METER (MOUNTED ON R.F. GAIN CONTROL)
5	A.C. OFF AND ON (MOUNTED ON TONE CONTROL)
6	SEND RECEIVE SPST
7	CRYSTAL SPST
8	AVC DPST

SCHEMATIC DIAGRAM — SUPER SKYRIDER — TYPE SX-17