

## Hallicrafters, Inc.

**Model:** SX-24

**Chassis:**

**Year:** Pre August 1939

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

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**MODEL SX23**  
**Super Skyrider**  
**Operating Data**  
**Antenna Notes**

**THE HALLICRAFTERS INC.**

**MODEL SX24**  
**Skyrider Defiant**  
**Antenna Notes**

control adjusts the sensitivity of the receiver by varying the cathode bias of IF amplifiers. Maximum sensitivity will be obtained with this control set as far as it will go. When this is done a switch will be operated, the which will be described under 5 meter.

receiver under varying local conditions of noise, it will be advisable to the "R" and "A" gain controls until the most favorable signal to noise ratio is obtained. It is suggested that the R. F. gain be advanced until the white dot on the dial is approximately at the "8" on SKYRIDER. Later experiment to find the best a given signal bearing in mind that with the selectivity switch in any of the

**CRYSTAL OPERATION**

se controls which must be properly adjusted for most satisfactory crystal filtering. Their operation shall be treated in the order in which they are called upon in their functions in the receiver.

with -

se positions of selectivity with the Automatic Volume Control circuit operating high fidelity broadcast reception the selectivity switch should be rotated to "B" position.

sh placed in the "IF Sharp" position the selectivity is greatly increased at sacrifice in tone reproduction.

"ystal" position affords maximum selectivity with automatic volume control. will have to be accurately resonated on each desired signal because this step greatly attenuates the sidebands of a modulated carrier. You will notice a slot into which the signal falls, only in the exact center of which will be of a good order be maintained. The "Phone Crystal" position is recommended in cases of extreme interference where adjacent channel stations are causing objectionable interference.

switch in a counter-clockwise position still farther allows the receiver to be three selectivity positions with the A.V.C. circuit disconnected. When the switch is so adjusted it is then necessary to manually adjust the "RF Gain" to manual control.

"ystal" position the maximum selectivity of the set is obtained. The drop in use is immediately apparent. This position is recommended only for the reception of signals because the selectivity is so great phone signals are practically to realize the maximum in performance from the SKYRIDER 23 crystal circuit, two controls should be adjusted as described. First tune in an extremely

control" should be turned until a beat note is audible. Then adjust the main dial and go across the signal. Two distinct signals will be heard either side of the null position in the center tuning through which no signal is audible. As the dial is turned to the high frequency side of the signal (that which appears either side) is the weaker. Leave the receiver set on whichever of the two signals is the stronger. Now very carefully adjust the "Phasing Control" until you have eliminated as much as possible. As an additional step, if you have eliminated the high frequency side, reject, rotate the "Pitch Control" through zero but side so that a beat note is apparent. Then adjust the main pitch as before is obtained. The receiver and it will be apparent that the signal on the other side of zero is present to the markings on the dial at which this signal was first tuned in. Tune. Again carefully adjust the "Phasing Control" and compare the strength change when this side has been phased out, or rejected. When you have demonstrated the phasing or rejection is better on either the low or high frequency audio signal control is left in that position and you then have the SKYRIDER 23 extremely selective crystal action for which it is noted.

and "Phasing Control" should be called upon frequently to demonstrate how, per adjustment, extreme conditions of interference can be coped with. Frequent adjustment of the pitch control will place a desired signal in the clear when calls differ in frequency by only a few hundred cycles. Minute adjustment of the control will frequently obliterate an interfering signal by dropping it in the

Schematic

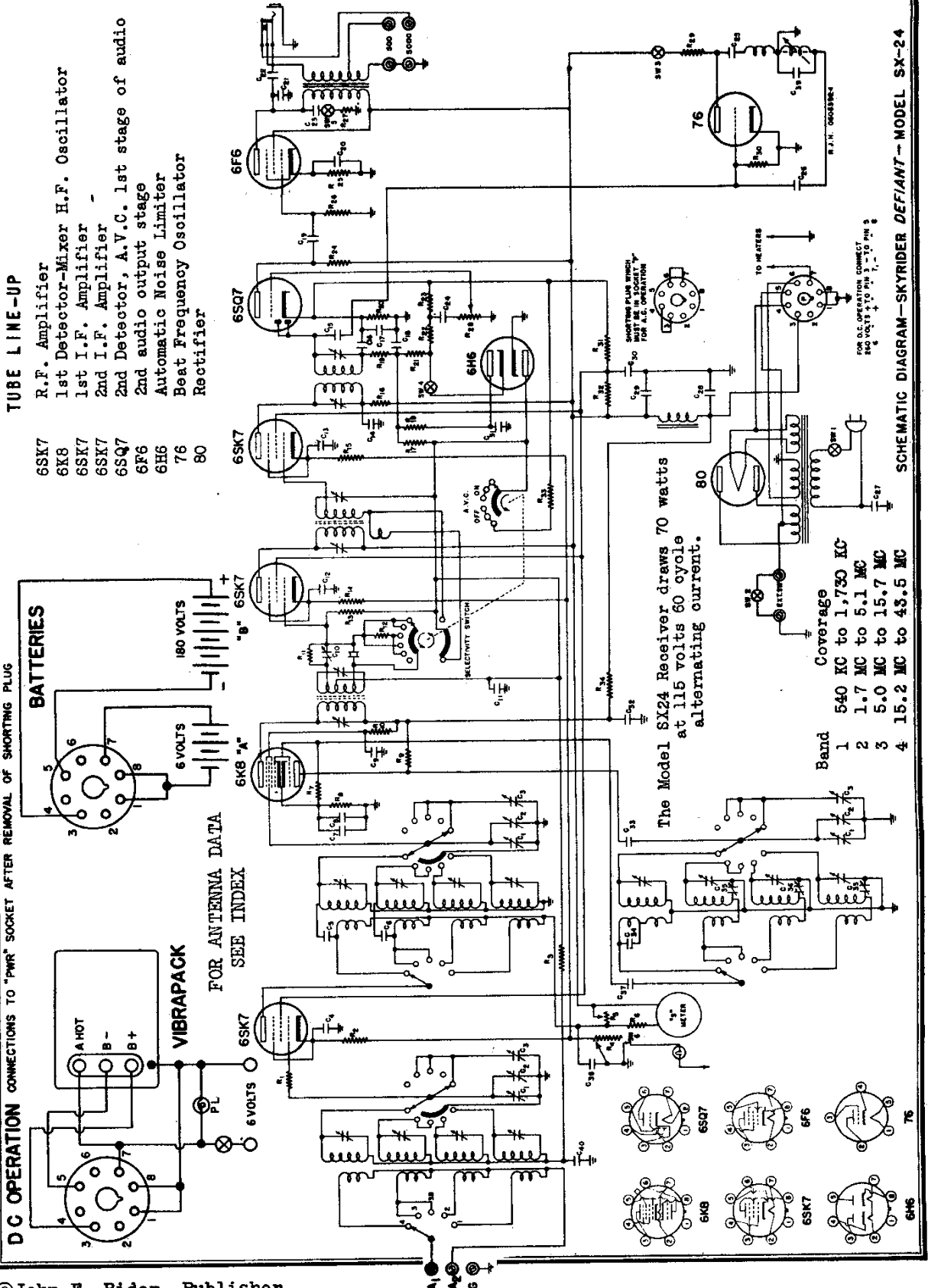
THE HALLICRAFTERS INC.

MODEL SX24  
Skyrider Defiant

Unless otherwise specified the SX24 Receiver operates on 100-125 volt 50-60 cycle current.

TUBE LINE-UP

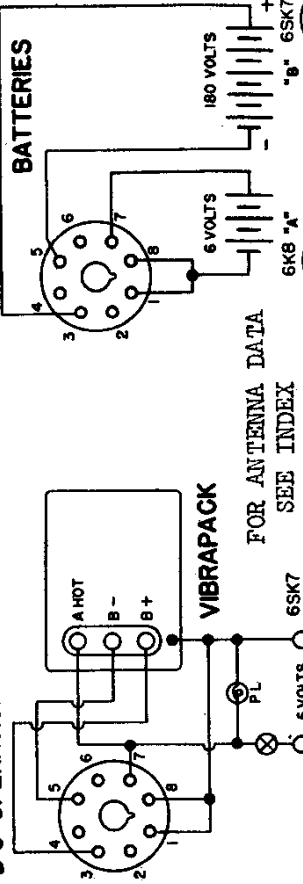
- 6SK7 R.F. Amplifier
- 6K8 1st Detector-Mixer H.F. Oscillator
- 6SK7 1st I.F. Amplifier
- 6SK7 2nd I.F. Amplifier
- 6SQ7 2nd Detector, A.V.C. 1st stage of audio
- 6F6 2nd audio output stage
- 6HG Automatic Noise Limiter
- 76 Beat Frequency Oscillator
- 80 Rectifier



The Model SX24 Receiver draws 70 watts at 115 volts 60 cycle alternating current.

Band	Coverage
1	540 KC to 1,730 KC
2	1.7 MC to 5.1 MC
3	5.0 MC to 15.7 MC
4	15.2 MC to 43.5 MC

DC OPERATION CONNECTIONS TO "PW" SOCKET AFTER REMOVAL OF SHORTING PLUG



SCHEMATIC DIAGRAM—SKYRIDER DEFIANT—MODEL SX-24

MODEL SX24, Skyriider Defiant

Socket, Trimmers  
Parts List  
Alignment

THE HALLICRAFTERS INC.

CONDENSERS		NO.	CAPACITY	VOLTAGE	TYPE	NO.	CAPACITY	VOLTAGE	TYPE
1	440	mfd	Per Section	21	.005	mfd	600	Paper	
2	4	"	"	22	.01	"	400	"	
3	26	"	"	23	.02	"	600	"	
4	.05	mfd	200	24	.02	"	200	"	
5	25	mmfd	"	25	.01	"	400	"	
6	10.	"	"	26	100.	mmfd	"	Mica	
7	.002	mfd	200	27	.01	mfd	600	Paper	
8	.05	"	400	30.	"	"	350	Electrolytic	
9	.05	"	200	29	10.	"	200	Electrolytic	
10	25.	mmfd	Crystal Phasing	31	.05	"	400	Paper	
11	.02	"	200	32	10.	"	200	"	
12	.05	"	"	33	100	mmfd	350	"	
13	.05	"	400	34	105	"	"	Mica	
14	.02	"	Twisted Pair	35	2200	"	"	Ceramicon	
15	3.	"	"	36	450	"	"	Dual Pad	
16	100.	"	25	37	1400	"	"	"	
17	10.	mfd	Electrolytic	38	.002	mfd	400	Mica	
18	50.	mmfd	Mica	39	.05	"	400	Paper	
19	.05	mfd	400	40	.0005	"	200	Mica	
20	10.	"	25		.05	"	200	Paper	

SW4 - A.N.L. on & OFF  
SW5 - Hi-Low Tone Switch  
SW6 - S-Meter  
SW1 - AC Switch On AF Gain  
SW2 - Send RC Switch  
SW3 - S.F.O. on & OFF

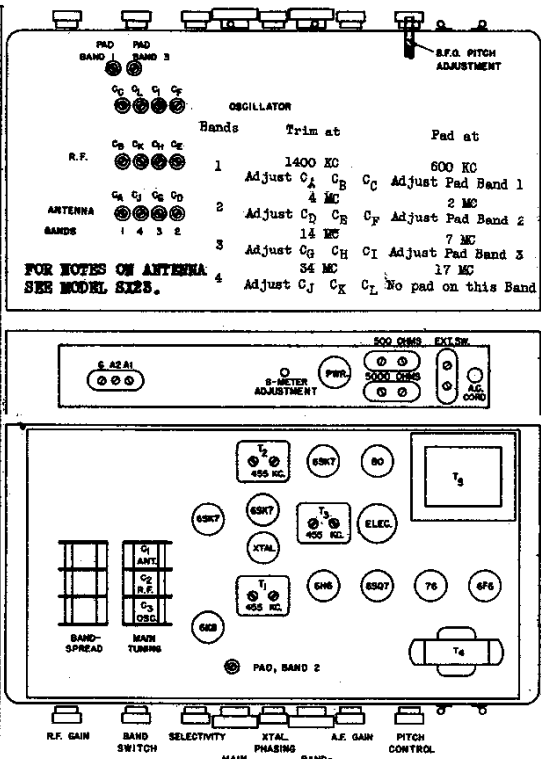
OHMS	WATTAGE
1,000,000	1/3
50,000	"
100	"
250,000	"
100,000	"
250,000	"
500,000	1
500,000	1/3
5,000	"
20,000	1
50,000	1/3
20,000	"
15,000	1
150	1/3
5,000	"

the "Q" position.  
to #2 band.  
2 megacycles, band spread to zero.  
in "CW Sharp" position.  
inverter to this tube. Connect the  
receiver. Now feed a 465 KC sig-  
note of approximately 1000 cycles.  
exception of the secondary trimmer  
that the output reaches a maximum  
the IF frequency and align to the  
crystal note sounding like an ap-  
on the correct adjustment has been  
gain.

of the generator to the A1 antenna  
connected to A2 and C. Leave signal  
tuned by referring to the top end  
frequency end of each band while the  
removed by placing a knife under  
factory adjustment of the trim-  
condenser gang across the signal  
has been accurately peaked.

to operate, a light will appear  
his light is on will the meter in-  
from maximum the meter is still in  
when so adjusted the meter can be  
basis is the "S" meter adjustment  
the R.F. Gain Control on full and  
Now, adjust this knurled knob  
tuning in a station will show its

speaker or other load of those in-  
set to the 5000 ohm strip. When  
connection is automatically dis-  
it will go.



Notes! The accuracy of the main dial calibration will hold only if the BAND SPREAD condenser is set at minimum capacity, or the position indicated by "0" on the Band Spread dial which has been approached by turning the Band Spread Knob in a clockwise direction, or to the right, as far as it will go.