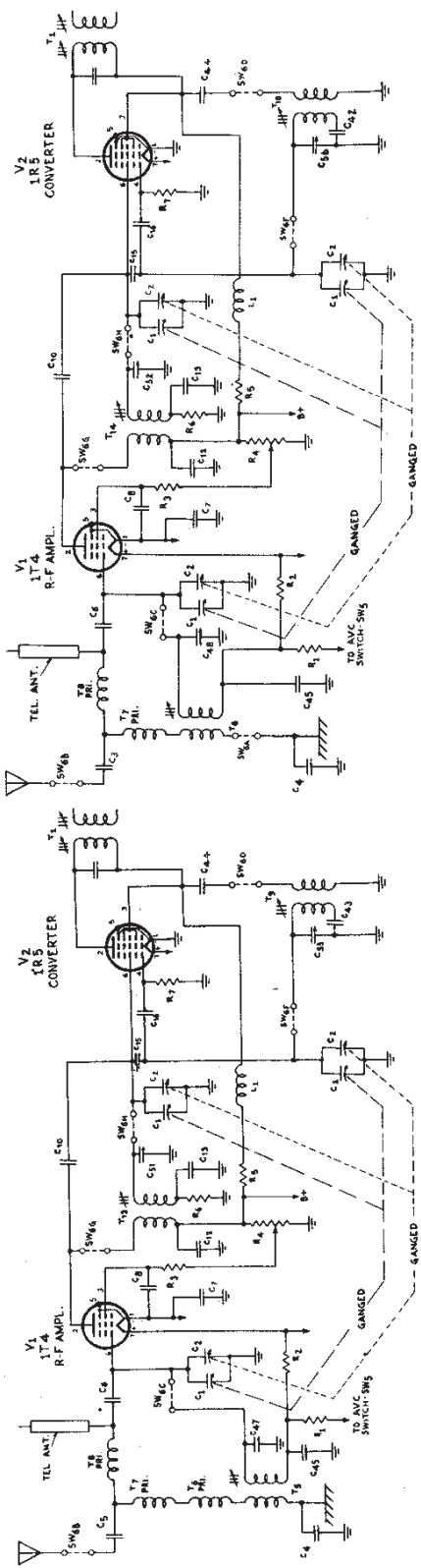
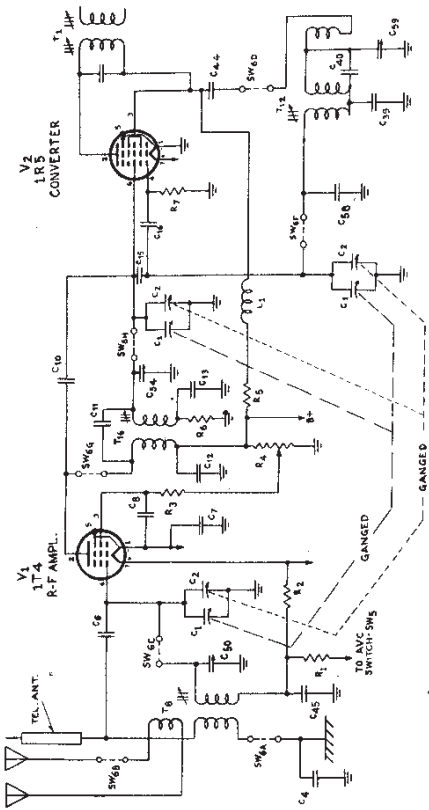


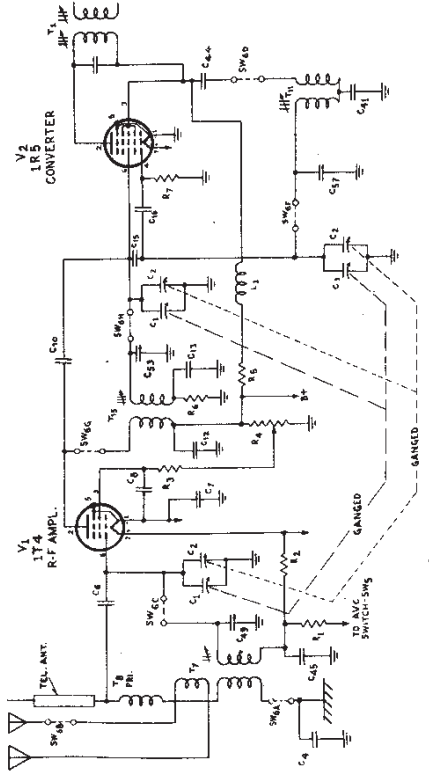
THE HALLICRAFTERS CO. MODEL S-39, Skyranger



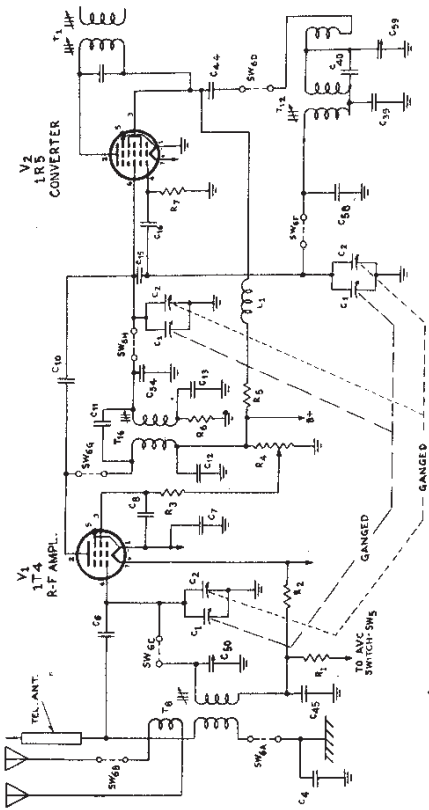
BAND-SWITCH SHOWN AT 1ST POSITION. BROADCAST BAND BAND 1 550KC - 1450 KC



BAND-SWITCH SHOWN AT 2ND POSITION CLOCKWISE BAND 2 1.5MC - 4MC



BAND-SWITCH SHOWN AT 3RD POSITION CLOCKWISE BAND 3 4.5MC - 11MC

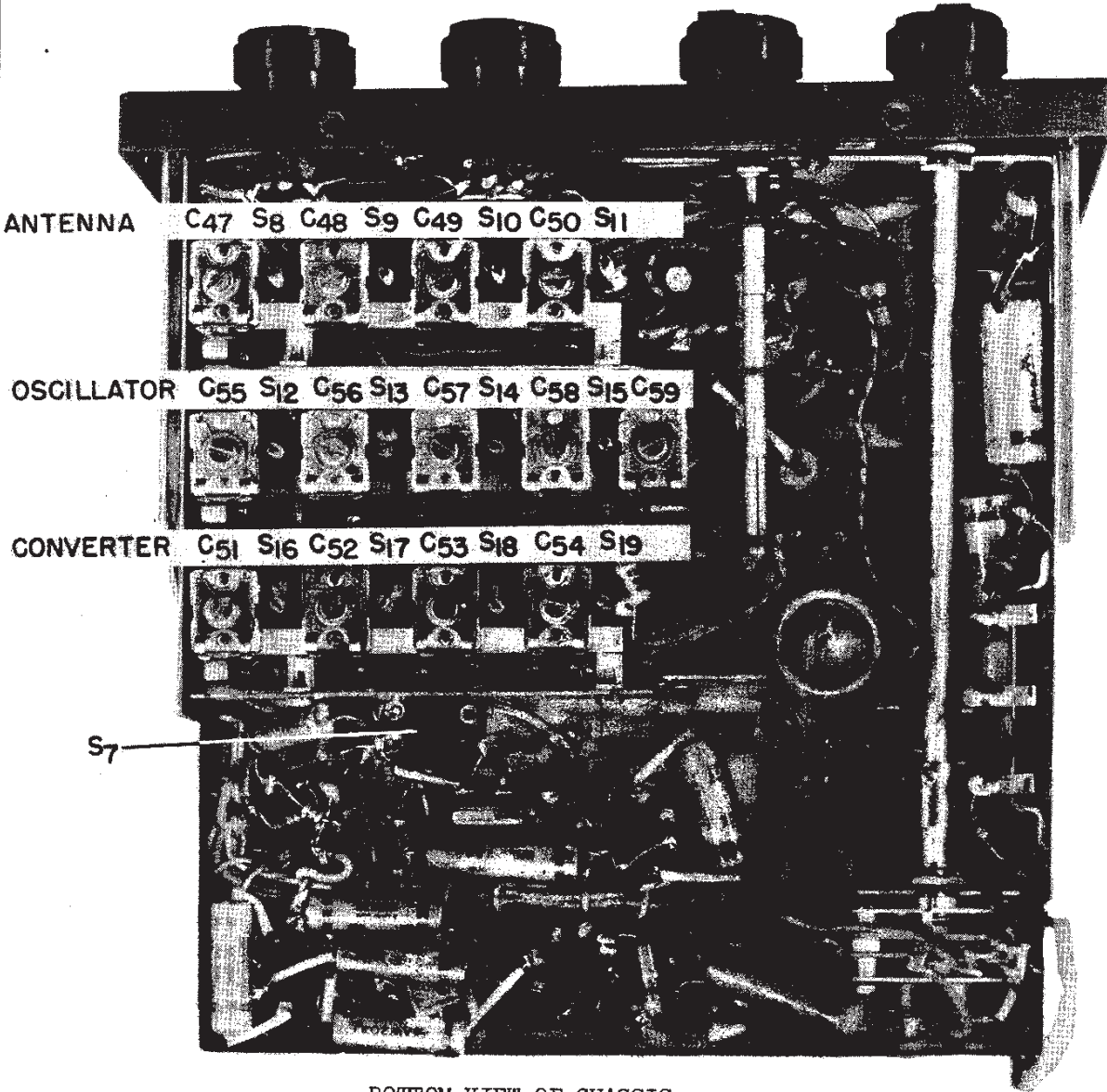


BAND-SWITCH SHOWN AT 4TH POSITION CLOCKWISE BAND 4 11.5 MC - 30 MC

⏏ DENOTES CABINET GROUND
⏏ DENOTES CHASSIS GROUND

⏏ DENOTES CABINET GROUND
⏏ DENOTES CHASSIS GROUND

MODEL S-39, Skyranger THE HALLICRAFTERS CO.



BOTTOM VIEW OF CHASSIS

TUBE	TYPE	PURPOSE
V ₁	1T4	R-F amplifier
V ₂	1R5	Converter and oscillator
V ₃	1P5GT	First i-f amplifier
V ₄	1P5GT	Second i-f amplifier
V ₅	1H5GT	Detector, A-V-C and first audio amplifier
V ₆	3Q5GT	Audio amplifier
V ₇	35Z5GT	Rectifier
V ₈	1H5GT	Beat frequency oscillator and automatic noise limiter
V ₉	35Z5GT	Rectifier

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MODEL S-39, Skyranger

Connect "Hot" lead of signal generator to extended section of telescoping antenna through the 6.5 mmfd dummy antenna condenser.

Connect ground side of generator to chassis. Have external antenna plug P₂ set MAIN TUNING dial of receiver and signal generator frequency as shown in the alignment chart.

Repeat adjustments of slugs S₁ to S₆ to peak all the I-F transformers for maximum output.

Repeat adjustments of slugs S₁ to S₆ to peak all the I-F transformers for maximum output.

Repeat adjustments of slugs S₁ to S₆ to peak all the I-F transformers for maximum output.

Repeat adjustments of slugs S₁ to S₆ to peak all the I-F transformers for maximum output.

Repeat adjustments of slugs S₁ to S₆ to peak all the I-F transformers for maximum output.

Signal generator to cover 455 KC to 30 MC

Non-metallic screwdriver
Output meter with a phone plug
1 mfd. condenser
6.5 mmfd. condenser. (Dummy antenna)

Setting of controls for I-F alignment -
AM, AVC and BFO switches at OFF
STAND BY switch at ON
A.F. and R.F. GAIN controls set at maximum gain
BAND SWITCH at #1 Band
POWER SWITCH at BAT. (power cord removed from wall socket)
BANDSPREAD TUNING at "0"
Telescoping antenna completely collapsed.

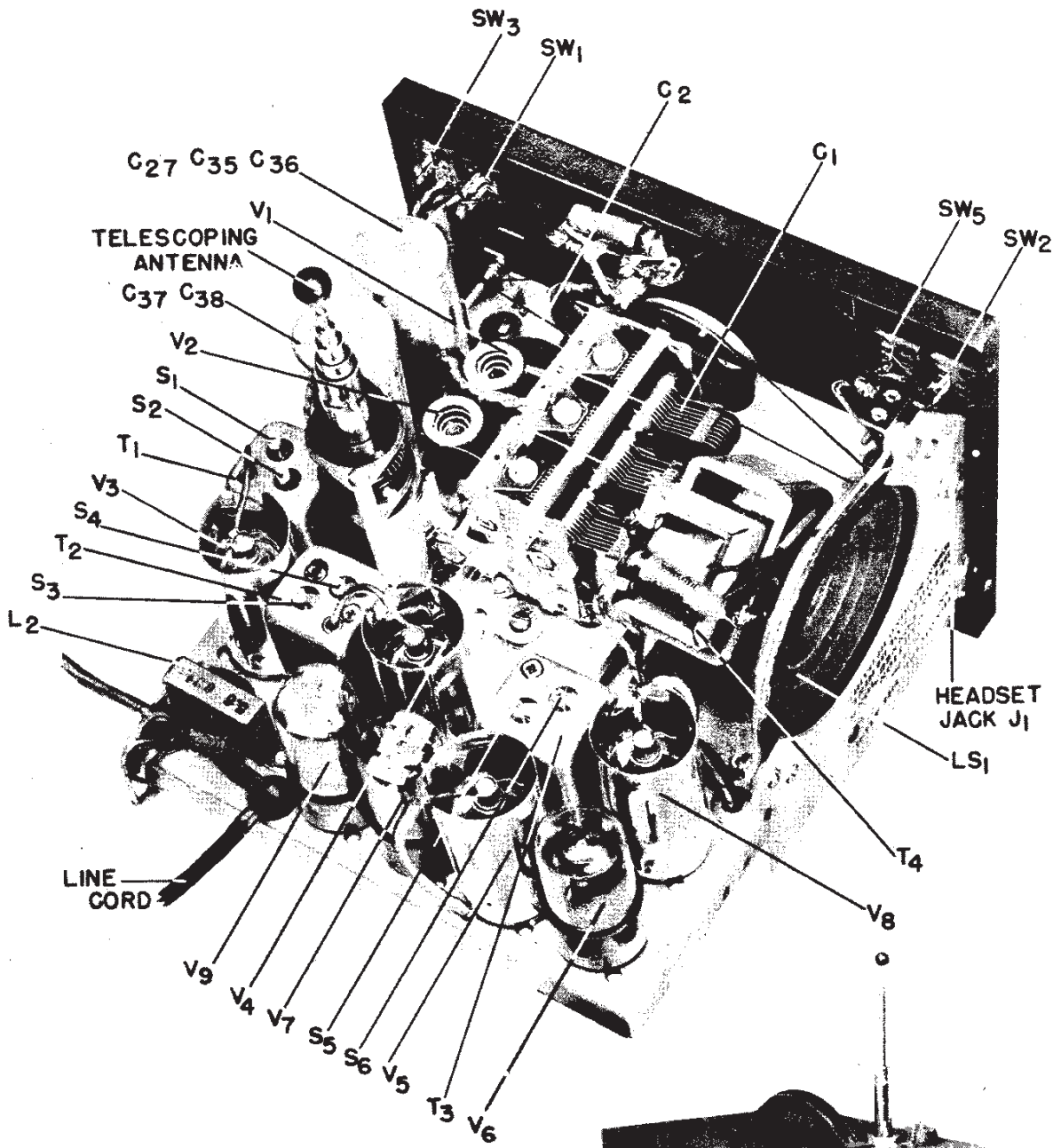
I-F alignment (455 KC) -
Remove top and bottom cover for access to internal components
Have external antenna plug P₂ out of socket S₀
Connect "hot" lead of signal generator through the .1 mfd condenser to the lug on rear stator section of main tuning condenser (C₁)

Setting of controls for R-F alignment -
AM, AVC and BFO switches at OFF
STAND BY switch at ON
A.F. and R.F. GAIN controls set at maximum gain
BAND SWITCH at Band to be aligned (See alignment chart)
POWER SWITCH at BAT. (power cord removed from wall socket)
BANDSPREAD TUNING at "0"
Telescoping antenna is collapsed except for bottom section
R-F alignment -
Leave output meter plug in phone jack (J₁)

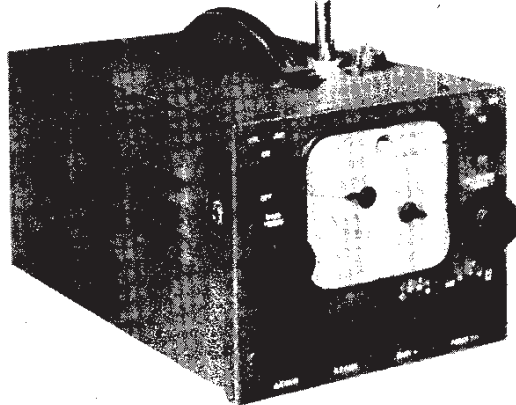
F-4. TABLE OF TUBE SOCKET VOLTAGES
Measured from socket pin to ground with 1000 ohm-per-volt meter
All voltages are D-C unless otherwise specified.

Tube	Pin Number								
	1	2	3	4	5	6	7	8	9
Battery Supply									
V ₁ 1T4	2.62	87	84	NC	2.62	0	4-1	X	X
V ₂ 1R5	0	65	65	0	0	0	1-5	X	X
V ₃ 1P6GT	0	2.7	87	80	NC	11.5	1-5	NC	0
V ₄ 1P6GT	0	2.8	88	88	NC	X	1-4	NC	0
V ₅ 1H5GT	0	1.45	02	NC	0	X	0	NC	0
V ₆ 3Q4GT	NC	7.4	84	88	0	X	4-4	5-9	X
V ₇ 3E25GT	NC	0	NC	X	0	X	0	0	X
V ₈ 1H5GT	0	4.4	*70	NC	0	X	2-8	NC	3-5
V ₉ 3E25GT	NC	0	NC	X	0	X	0	0	X
117 Volts AC									
V ₁ 1T4	2.6	103	92	NC	2.7	0	4-2	X	X
V ₂ 1R5	0	75	75	0	0	0	1-5	X	X
V ₃ 1P6GT	0	2.5	105	75	NC	11.45	1.45	NC	0
V ₄ 1P6GT	0	2.95	102	105	NC	X	1-55	NC	0
V ₅ 1H5GT	0	1.5	70	NC	0	X	0	NC	0
V ₆ 3Q4GT	NC	7.6	100	110	0	X	4-6	6-1	X
V ₇ 3E25GT	NC	0	7.6 A-C	X	11.4 A-C	X	33-5 A-C	110	X
V ₈ 1H5GT	0	4.3	*82.5	NC	0	X	2-85	NC	3-5
V ₉ 3E25GT	115 A-C	39.5 A-C	43 A-C	X	11.4 A-C	115 A-C	65 A-C	110	X
120 Volts DC									
V ₁ 1T4	2.8	103	92	NC	2.8	0	4-2	X	X
V ₂ 1R5	0	72	72	0	0	0	1-5	X	X
V ₃ 1P6GT	0	2.8	108	72	NC	11.5	1.5	NC	0
V ₄ 1P6GT	0	3.2	102	102	NC	X	1-6	NC	0
V ₅ 1H5GT	0	1.6	87	NC	0	X	0	NC	0
V ₆ 3Q4GT	NC	7.7	100	103	0	X	4-8	6-3	X
V ₇ 3E25GT	NC	0	7.3	X	118	X	35	110	X
V ₈ 1H5GT	0	4.8	*85	NC	0	X	3-2	NC	4
V ₉ 3E25GT	1120	35	43	X	118	120	70	110	X

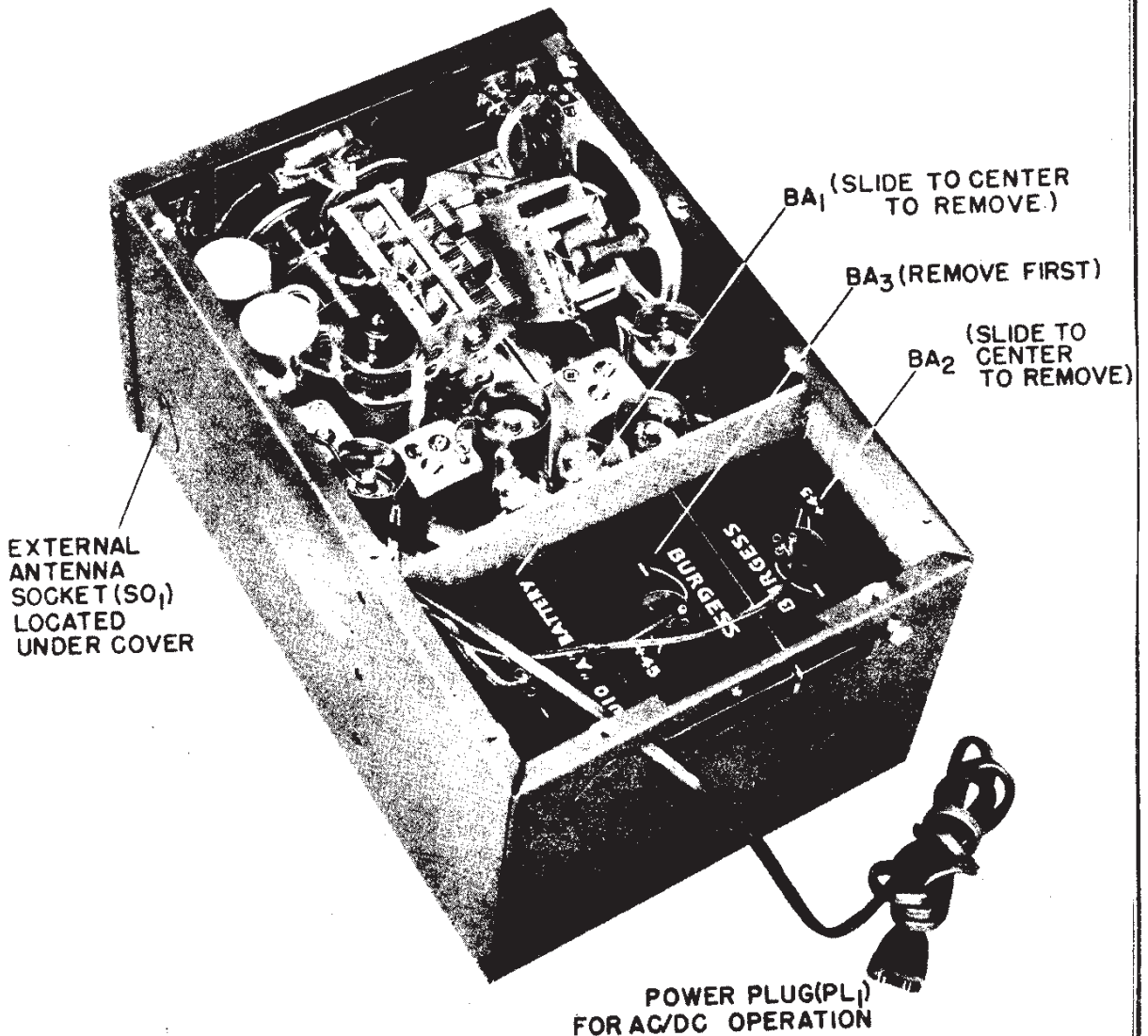
NC - No Connection.
X - No Pin.
* - With BFO switch at ON.
† - Tie Lug.



TOP VIEW.



THE HALLICRAFTERS CO. MODEL S-39, Skyraenger



MODEL S-39 RECEIVER, REAR VIEW, COVER REMOVED, SHOWING POWER CORD COMPARTMENT AND BATTERY COMPARTMENT.

A-3. POWER SUPPLIES - Two separate and independent power supplies are incorporated in the receiver, namely an internal battery supply and a rectifier-filter type of supply for use with an external a-c/d-c source.

The battery supply consists of two 45-volt "B" batteries (BA₂ and BA₃) connected in series, and one 6-volt "A" battery (BA₁) all of which are located in the back section of the carrying-case cabinet. See figure 6.

The a-c/d-c supply consists of two type 35Z5GT rectifier tubes (V₇ and V₉) and the associated filter (L₂, C₃₅ and C₂₇) and filament voltage dropping resistors (R₃₂, R₃₃, R₃₄ and R₃₅). This supply may be used whenever commercial power lines, delivering 110-to 117-volts A-C or D-C are accessible. Refer to Section D for operating instructions.

The supply to be used is selected from the front panel by POWER SWITCH, SW₇. Refer to figure 2 for circuit details.

MODEL S-39, Skyranger THE HALLICRAFTERS CO.

REF. SYMBOL	NAME OF PART AND DESCRIPTION	MFR. CODE	CONTR. S. PART NO.	REF. SYMBOL	NAME OF PART AND DESCRIPTION	MFR. CODE	CONTR.'S. PART NO.
R ₁	Resistor, 2.2 megohm ± 10%, ½ watt, carbon	ASA	RC10AE225K	C ₈	Capacitor, 0.01 mfd. -10 + 40%, 400 V. D-C SP		46AW103J
R ₂	Same as R ₁				working, paper dielectric, type AP		
R ₃	Resistor, 8,200 ohm ± 10%, ½ watt, carbon	ASA	RC21AE922K				
R ₄	Resistor, variable, ½ megohm ± 20%, carbon	CT	25C071	C ₉	Same as C ₈		
R ₅	Resistor, 4700 ohm ± 10%, ½ watt, carbon	ASA	RC10AE472K				
R ₆	Same as R ₁			C ₁₀	Capacitor, adjustable, min. cap. 5 mmfd., max. cap. 6.5 mmfd., 500 V. D-C working, temp. coeff. -.00075 mmfd./mmfd./degree Cent., ceramic dielectric, type 807-004	CRL	47A005
R ₇	Resistor, 100,000 ohm ± 10%, ½ watt, carbon	ASA	RC10AE104K				
R ₈	Resistor, 1.0 megohm ± 10%, ½ watt, carbon	ASA	RC10AE105K	C ₁₁	Same as C ₁₀		
R ₉	Same as R ₁			C ₁₂	Same as C ₇		
R ₁₀	Resistor, 51,000 ohm ± 5%, ½ watt, carbon	ASA	RC21AE513J	C ₁₃	Same as C ₇		
R ₁₁	Same as R ₁						
R ₁₂	Same as R ₈			C ₁₄	Capacitor, 3 mmfd., twisted wire leads		
R ₁₃	Same as R ₇						
R ₁₄	Resistor, variable, ½ megohm ± 20%, carbon	CT	25C070	C ₁₅	Capacitor, 2 mmfd., twisted wire leads		
R ₁₅	Resistor, 10 megohm ± 20%, ½ watt, carbon	ASA	RC10AE106M				
R ₁₆	Same as R ₇			C ₁₆	Same as C ₃		
R ₁₇	Resistor, 470,000 ohm ± 20%, ½ watt, carbon	ASA	RC10AE474M	C ₁₇	Same as C ₇		
R ₁₈	Same as R ₁₇			C ₁₈	Same as C ₈		
R ₁₉	Same as R ₁₇			C ₁₉	Not used		
R ₂₀	Resistor, 47,000 ohm ± 20%, ½ watt, carbon	ASA	RC10AE473M	C ₂₀	Same as C ₇		
R ₂₁	Same as R ₂₀			C ₂₁	Capacitor, 100 mmfd. ± 20%, 500 V. D-C work- ing, mica dielectric	ASA	CM20A101M
R ₂₂	Not used						
R ₂₃	Not used						
R ₂₄	Resistor, 24 ohm ± 5%, 1 watt, carbon	ASA	RC31AE240J	C ₂₂	Capacitor, 0.004 mfd. -10 + 40%, 600 V. D-C A		46AZ402J
R ₂₅	Resistor, 330 ohm ± 5%, 9 watt, wire wound, candohm, type FH	MT	24A829		working, paper dielectric, type 684		
R ₂₆	Not used			C ₂₃	Capacitor, 0.1 mfd. -10 + 40%, 200 V. D-C A		46AU104J
R ₂₇	Resistor, 1000 ohm ± 10%, ½ watt, carbon	ASA	RC10AE102K		working, paper dielectric, type 284		
R ₂₈	Not used.			C ₂₄	Same as C ₈		
R ₂₉	Resistor, 560 ohm ± 10%, ½ watt, carbon	ASA	RC10AE561K	C ₂₅	Capacitor, 0.005 mfd. -10 + 40%, 400 V. D-C (A		46AW502J
R ₃₀	Same as R ₂₉				working, paper dielectric, type 484		
R ₃₁	Not used			C ₂₆	Capacitor, 0.02 mfd. -10 + 40%, 400 V. D-C SP		46AW203J
R ₃₂	Same as R ₂₇				working, paper dielectric, type AB		
R ₃₃	Resistor, 820 ohm ± 10%, 1 watt, carbon	ASA	RC31AE821K	C ₂₇	Capacitor, 60 mfd. -10 + 50%, 150 V. D-C working, electrolytic, one section of 3 section unit, 6 prong plug-in assembly, type 10B336	IC	45A065
R ₃₄	Resistor, 1645 ohm ± 10%, tapped at 800 ohm, 7.4 watt, 2 unit, wire wound, unit #1 800 ohm (R ₃₄), unit #2 845 ohm (R ₃₅), candohm, type MN-2			C ₂₈	Capacitor, 0.02 mfd. -10 + 40%, 400 V. D-C SP		46AW203J
R ₃₅		IRC	24A044				
R ₃₆	Resistor, 820 ohm ± 10%, ½ watt, carbon	ASA	RC10AE821K	C ₂₉	Same as C ₂₈		
R ₃₇	Not used.			C ₃₀	Capacitor, 3 turn twisted wire leads		
R ₃₈	Same as R ₂₄			C ₃₁	Same as C ₂₁		
R ₃₉	Resistor, 1.5 megohm ± 20%, ½ watt, carbon	ASA	RC10AE155M	C ₃₂	Capacitor, 510 mmfd. ± 5%, 500 V. D-C work- ing, mica dielectric	ASA	CM20A511J
R ₄₀	Resistor, 450 ohm tapped at 87 ohm, 7 watt, 2 unit, wire wound, unit #1 365 ohm (R ₄₀), MT unit #2 87 ohm (R ₄₁) candohm, special			C ₃₃	Same as C ₇		
R ₄₁		MT	24A819				
R ₄₂	Same as R ₇						
C ₁	Capacitor, variable, 3 section, 2 unit, unit #1-(C ₁), max. cap. per section 352 mmfd., air dielectric, unit #2-(C ₂) max. cap. perOM section 22 mmfd. air dielectric, each unit has separate drive shaft to which pulleys are fixed, type 945-3-20			C ₃₄	Capacitor, 0.05 mfd. -10 + 40%, 400 V. D-C A		46AW503J
C ₂		48B055			working, paper dielectric, type 484		
C ₃	Capacitor, 51 mmfd. ± 5%, 500 V. D-C work- ing, low loss mica dielectric	ASA	CM20C510J	C ₃₅	Capacitor, 30 mfd. -10 + 50%, 150 V. D-C working, electrolytic, one part of triple unit - refer to C ₂₇		
C ₄	Capacitor, 0.1 mfd. -10 + 40%, 400 V. D-C A		46AV104J	C ₃₆	Capacitor, 100 mfd. -10 + 65%, 5 V. D-C working, electrolytic, one part of triple unit - refer to C ₂₇		
C ₅	Capacitor, 15 mmfd. ± 20%, 500 V. D-C work- ing, temp. coeff. -.00075 mmfd./mmfd./degree Cent., ceramic dielectric, type 809-047	CRL	47A027	C ₃₇	Capacitor, dual, 120 mfd. -10 + 50%, 150 V. D-C working (C ₃₈), 60 mfd. -10 ± 65%, 5 V. D-C working (C ₃₇), unit hermetically sealed	IC	45A066
C ₆	Capacitor, 10 mmfd. ± 20%, 500 V. D-C work- ing, temp. coeff. -.00075 mmfd./mmfd./degree Cent., ceramic dielectric, type 811-013.			C ₃₈	4 prong plug-in assembly, type 10B335		
		CRL	47A028	C ₃₉	Capacitor, 4300 mmfd. ± 5%, 500 V. D-C work- ing, mica dielectric	ASA	CM35A432J
C ₇	Capacitor, 0.05 mfd. -10 + 40%, 200 V. D-C SP		46AU503J	C ₄₀	Capacitor, 240 mmfd. ± 5%, 500 V. D-C work- ing, mica dielectric	ASA	CM20A241J

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THE HALLICRAFTERS CO.

MODEL S-39, Skyranger

REF. SYMBOL	NAME OF PART AND DESCRIPTION	MFR. CODE	CONTR.'S. PART NO.	REF. SYMBOL	NAME OF PART AND DESCRIPTION	MFR. CODE	CONTR.'S. PART NO.
C ₄₁	Capacitor, 2000 mmfd. ± 5%, 500 V. D-C working, mica dielectric	ASA	CM30AR02F	SW ₇	Switch, rotary selector, 3 position, single section, non-shorting type contacts, has a type 8030-K4 toggle action, SPST A-C switch ganged on rear of assembly "ON" position full clockwise, type H	OM	80A162
C ₄₂	Capacitor, 910 mmfd. ± 3%, 500 V. D-C working, mica dielectric	ASA	CM30A911J	SO ₁	Socket, female, 4 contacts, bakelite insulation, wafer type, brass contacts, 2 mtg. holes with 1 1/4" mtg. centers, type 2642	CN	10A080
C ₄₃	Capacitor, 390 mmfd. ± 5%, 500 V. D-C working, mica dielectric	ASA	CM20A391J	PL ₁	Plug with line cord, 2 conductor, rubber insulation, #18 ga. stranded copper wire, length 6 feet, 2 prong spring type molded on plug, special	E	87A078
C ₄₄	Same as C ₈			BA ₁	Battery, 6 V. D-C, 2 hole socket, 3-7/8" x 2-15/16" x 5 1/2", type P698A	ROV	27A010
C ₄₅	Same as C ₇			BA ₂	Battery, 45 V. D-C, combination "B" socket, 4-1/8" x 2-9/16" x 5-5/16", type P5303	ROV	27A009
C ₄₆	Capacitor, 0.5 mfd. -1C + 40%, 200 V. D-C working, paper dielectric		46AT504J	EA ₂	Battery, 45 V. D-C, combination "B" socket, 4-1/8" x 2-9/16" x 5-5/16", type P5303	ROV	27A009
C ₄₇	Capacitor, 4 unit assembly, mica dielectric, compression type adjustment, trimmers mounted on a single metal strip, 3 units with min. cap. 2.7 mmfd., max. cap. 35 mmfd. (C ₄₇ , C ₄₉ , C ₅₀) 1 unit with min. cap. 1.5 mfd., max. cap. 10 mmfd. (C ₄₈ special	UE	44A064	EA ₃	Same as BA ₂		
C ₄₈				J ₁	Jack, single circuit, normally closed, brass mechanism, bakelite insulation, type 1J102	U	36A002
C ₄₉				LS ₁	Loudspeaker; 4 inch O.D. permanent magnet dynamic, includes transformer T ₄ in the assembly, type 4-OM-11A	OT	85B009
C ₅₀				LM ₁	Lamp, indicator, 1-1/8" leads, clear glass bulb type 4 1/2, type NE-7	GE	39A007
C ₅₁	Same as C ₄₇ , C ₄₈ , C ₄₉ , C ₅₀ assembly. C ₅₁ , C ₅₂ , C ₅₃ , C ₅₄ same as C ₄₇ , C ₄₈ , C ₅₀ ; and C ₅₂ same as C ₄₈			V ₁	Tube, pentode, type 1T4	RCA	90XL1T4
C ₅₂				V ₂	Tube, pentagrid converter, type 1R5	RCA	90X1R5
C ₅₃				V ₃	Tube, type, 1P5GT	RCA	90X1P5GT
C ₅₄				V ₄	Same as V ₃		
C ₅₅	Capacitor, 5 unit assembly, mica dielectric, compression type adjustment, trimmers mounted on a single metal strip, 2 units with min. cap. 1.5 mmfd., max. cap. 10 mfd. (C ₅₇ and C ₅₈), 2 units with min. cap. 2.7 mmfd., max. cap. 35 mmfd. (C ₅₅ and C ₅₆), 1 unit with min. cap. 25 mmfd., MAX. 140 mmfd. (C ₅₉), special	UE	44A092	V ₅	Tube, diode triode, type 1H5GT	RCA	90X1H5GT
C ₅₆				V ₆	Tube, beam power amplifier, type 3Q5GT	RCA	90X3Q5GT
C ₅₇				V ₇	Tube, half-wave high-vacuum rectifier, type 35Z5GT	RCA	90X35Z5GT
C ₅₈				V ₈	Same as V ₅		
C ₅₉				V ₉	Same as V ₇		
C ₆₀	Not used						
C ₆₁	Same as C ₄₀						
C ₆₂	Same as C ₂₁						
T ₁	Transformer, I-F, 455 KC., fixed primary trimmer 155 mmfd., fixed secondary trimmer 80 mmfd., primary and secondary are tuned by adjustable iron cores, special	SI	50A086		FOR TROPICAL RECEIVERS USE THE ABOVE PARTS		
T ₂	Same as T ₁ except for length of leads	SI	50B157	T ₁	Transformer, I-F, 455 KC., fixed primary trimmer 155 mmfd., fixed secondary trimmer 85 mmfd., primary and secondary are tuned by adjustable iron cores, vacuum impregnated with zophar #1340 and flash dipped in Hollowax #2012, special (Note: T ₁ differs from T ₂ and T ₃ in the length of the wire leads)	SI	50A150
T ₃	Same as T ₁ , except for length of leads	SI	50B158				
T ₄	Transformer, A-F, primary to match the output of the type 3Q5GT tube, part of speaker assembly LS ₁ . Shown for reference only			T ₂	Transformer, I-F, 455 KC., fixed primary trimmer 155 mmfd., fixed secondary trimmer 85 mmfd., primary and secondary are tuned by adjustable iron cores, vacuum impregnated with zophar #1340 and flash dipped in Hollowax #2012, special (Note: T ₂ differs from T ₁ and T ₃ in the length of the wire leads)	SI	50A159
T ₅	Transformer, R-F, 4 unit assembly, tunes from .55 MC. to 30 MC. in 4 bands with condensers C ₁ and C ₂ , inductance adjusted by movable iron cores.	SWI	51B301				
T ₆							
T ₇							
T ₈							
T ₉	Transformer, R-F, 4 unit assembly, tunes from .55 MC. to 30 MC. in 4 bands with condensers C ₁ and C ₂ , inductance adjusted by movable iron cores	SWI	51B303				
T ₁₀							
T ₁₁							
T ₁₂							
SW ₂	Switch, DPST, slide action, bakelite insulation, steel mtg. plate with 2 holes having 1-1/8" mtg. centers, type 71	OM	60A061	L ₁	Reactor, R-F, inductance 170 microhenries, air core, vacuum impregnated with zophar #1340 and flash dipped in Hollowax #2012, type 3485	SWI	53A057
SW ₃	Same as SW ₂			L ₂	Reactor, filter, d-c resistance 250 ohms ± 20%, max. load current 30 milliamperes, inductance 3.6 henrys at 30 milliamperes, vacuum wax impregnated and flash dipped in Hollowax #2012, type 1A1251 modified	GT	56B051
SW ₄	Switch, SPST, toggle action, refer to SW ₇			SW ₅	Switch, rotary selector, 4 position, 3 section, shorting type contacts, bushing 1/4" long, terminal 6 of section 2 front and rear are electrically connected, type RM	MA	60B179
SW ₅	Switch, SPST, slide, bakelite insulation, brass solder lugs, steel mtg. plate with 2 holes having 1-1/8" mtg. centers, type 77	OM	60A130				
SW ₆	Switch, rotary selector, 4 position, 3 section, shorting type contacts, bushing 1/4" long, type RM	MA	60B160				

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MODEL S-39, Skyranger

RECOMMENDED ANTENNA INSTALLATIONS

MFR. CONTR'S.
CODE PART NO.

NAME OF PART AND DESCRIPTION

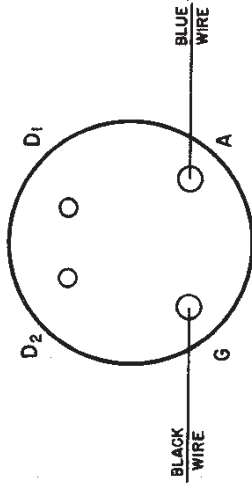
REF. SYMBOL

T₃ Transformer, I-F, 455 KC., fixed primary trimmer 155 mfd., fixed secondary trimmer 85 mfd., primary and secondary are tuned by adjustable iron cores, vacuum impregnated with zophar #1340 and flash dipped in Hallowax #2012, special, (Note T₃ differs from T₁ and T₂ in the length of the wire leads)

T₅ Transformer, R-F, 4 unit assembly, tunes from 0.55 MC. to 30 MC. in 4 bands with condenser C₁ and C₂, inductance adjusted by movable iron cores, wax impregnated with Hallowax #2012

T₉ Transformer, R-F, 4 unit assembly, tunes from 0.55 MC. to 30 MC. in 4 bands with condenser C₁ and C₂, inductance adjusted by movable iron cores, wax impregnated with Hallowax #2012

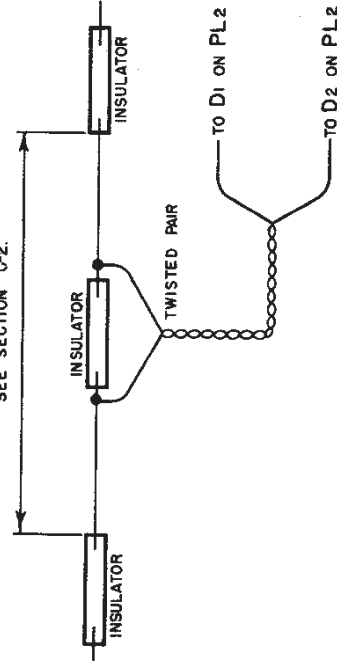
T₁₃ Transformer, R-F, 4 unit assembly, tunes from 0.55 MC. to 30 MC. in 4 bands with condenser C₁ and C₂, inductance adjusted by movable iron cores, wax impregnated with Hallowax #2012



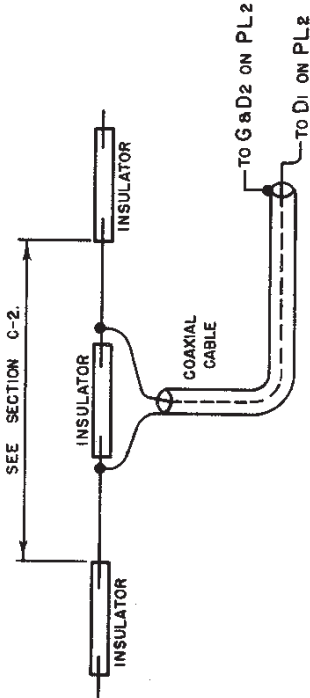
PL2
PIN VIEW

NOTE: PL2 IS SUPPLIED WIRED AS ABOVE

SEE SECTION C-2.



SEE SECTION C-2.



50 TO 100 FEET

