

**ALIGNMENT PROCEDURE**

**SUPER SKYRIDER**

**Models S-16 SX-16**



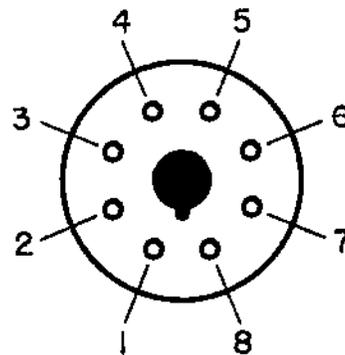
**the hallicrafters inc.**

**2611 INDIANA AVENUE**

**CHICAGO**

## ALIGNMENT PROCEDURE FOR SUPER-SKYRIDER MODELS S-16, SX-16

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 TIME MEASUREMENTS WERE TAKEN. NORMAL TOLERANCE ALLOWS VARIATION PLUS OR MINUS 10% FROM VALUES INDICATED. "DL" INDICATES 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	R.F. AMP.			275	110	7	0 ON 60 OFF	6.3	7
6L7	MIXER			275	100	0	DL	6.3	2.5
6J5G	Osc			180	DL	0	DL	6.3	0
6K7	IF AMP (1)			270	110	6.5	DL 14D	6.3	9
6K7	IF AMP (2)			270	110	6.5	0 ON 60 OFF	6.3	9
6R7G	2ND DET. A.V.C.			190	4.5	4.5	0	6.3	-7
6V6G	1ST AUDIO OUTPUT			315	275	0	DL	6.3	14.5
6V6G	OUTPUT			315	275	0	DL	6.3	14.5
6J7	BEAT Osc.			150	150	0	DL 300	6.3	0
6J7G	Sig. AMP.			275	110	5	DL 300	6.3	8

## INTERMEDIATE FREQUENCY ALIGNMENT (465KC)

HAVE THE CONTROLS SET IN THE FOLLOWING POSITIONS:

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".

(IF ALIGNMENT CONTINUED)

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: T4-#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 METER IS SUGGESTED AS OUTPUT INDICATOR.

#### ALIGNMENT USING 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 IF AMPLIFIER HAS BEEN ALIGNED FROM THE CRYSTAL OSCILLATOR'S 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 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 R.F. GAIN CONTROL BELOW THE POINT OF BLOCKING OR OVERLOADING; ALSO BE SURE THAT THE CRYSTAL SWITCH IS IN THE "OUT" POSITION AND THE A.V.C. SWITCH IS IN THE "OFF" POSITION.  
BE SURE TO CHECK IMAGES - IMAGES WILL FALL A LITTLE LESS THAN 1000 KC LOWER IN FREQUENCY THAN THE FUNDAMENTAL OR HARMONIC OF SIGNAL.

THE TUNING GANG MUST BE ROCKED WHEN MAKING THESE ADJUSTMENTS.

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

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

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 2	1 1	600kc 1400kc	600kc 1400kc	----- CA	----- CB - CC	C9 -----	----- -----
3 4	2 2	1800kc 4000kc	1800kc 4000kc	----- CD	----- CE - CF	C8 -----	----- -----
5 6	3 3	5000kc 9000kc	5000kc 9000kc	----- CG	----- CH - CI	C6 -----	C14 - C10 -----
7 8	4 4	10,000kc 18,000kc	10,000kc 18,000kc	----- CJ	----- CK - CL	C7 -----	C15 - C11 -----
9 10	5 5	20,000kc 30,000kc	10,000kc 10,000kc	----- CM	----- CN - CO	C5 -----	C16 - C12 -----
11 12	6 6	40,000kc 60,000kc	20,000kc 20,000kc	----- CP	----- CQ - CR	C4 -----	C17 - C13 -----

### SERVICING SUGGESTIONS

TO MAKE A RAPID CHECK OF THE RECEIVER REMOVE GRID CAP OF THE 6R7 TUBE AND TOUCH THE GRID 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). CHECK "BPLUS" FOR A SHORT TO GROUND - IF SO CHECK ALL TUBES.

IF THE RECEIVER DEVELOPS A HIGH-PITCH AUDIO SQUEAL REVERSE THE GRID WIRES OF THE AUDIO INPUT TRANSFORMER.

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 B0 CONTROL. CHECK #1 - "BPLUS" TO B0 COIL FOR A GROUND. CHECK #2 - CHECK THE B0 INJECTION CONTROL FOR AN OPEN CIRCUIT. IN MOST CASES A NEW 6J7 WILL CORRECT A DEAD B0.

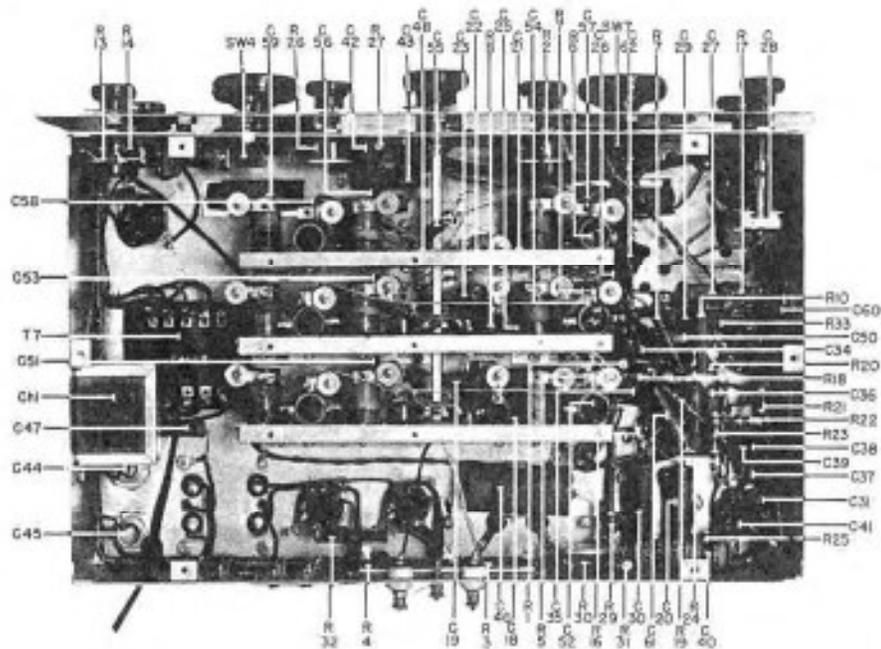
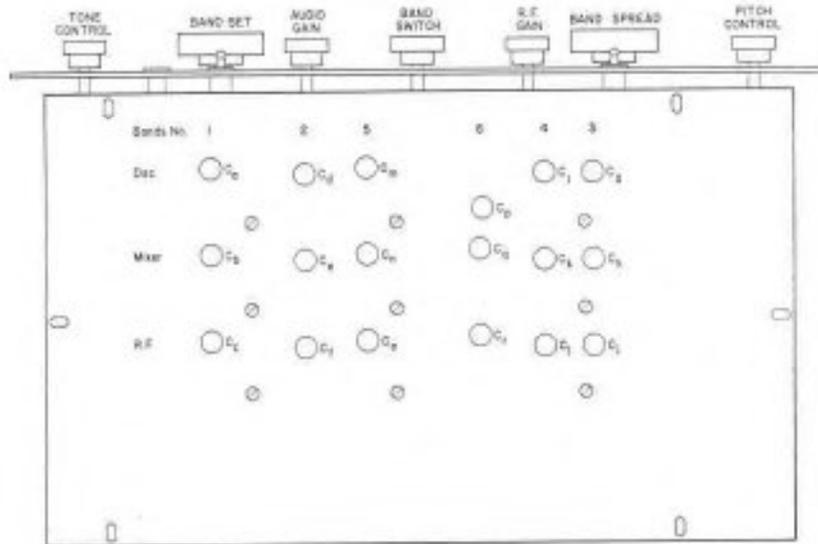
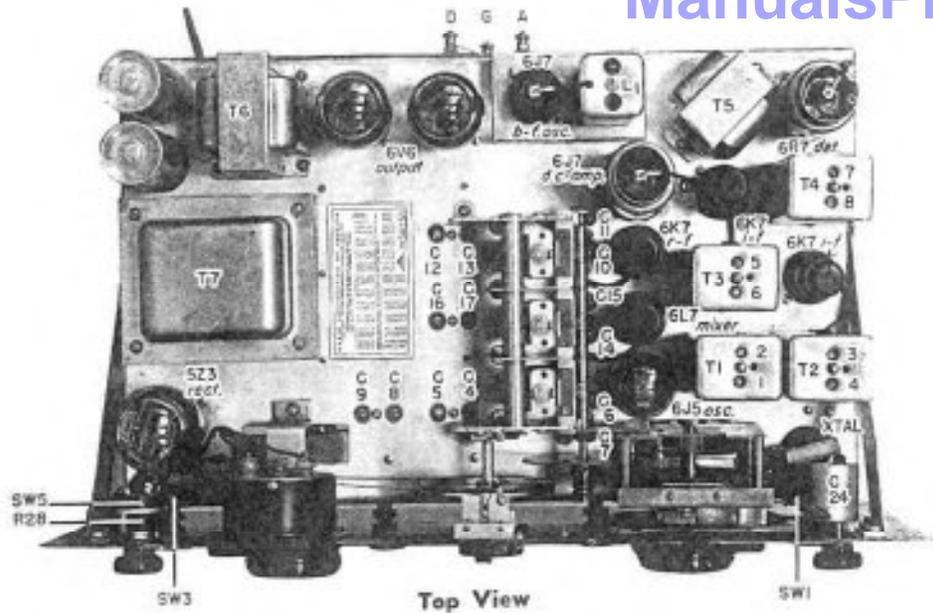
VIOLENT OSCILLATION - CHECK ALL 6K7 TUBES. ALSO IF A 300 OHM BIAS RESISTOR IS USED ON THE LAST 6K7 IF AMPLIFIER REPLACE WITH A 400 OHM RESISTOR.

## LIST OF RESISTORS SUPER-SKYRIDER MODELS S-16, SX16

No.	OHMS	WATTAGE	PARTS No.	No.	OHMS	WATTAGE	PARTS No.
R1	100,000	1/5	20-093	R18	100,000	1/5	20-093
R2	5,000		25-021	R19	1,000,000	"	20-108
R3	10,000	2.5	24-037	R20	1,000	"	20-033
R4	10,000	"	24-037	R21	1,000,000	"	20-108
R5	700	1/5	24-038	R22	20,000	"	20-072
R6	50,000	"	20-084	R23	100,000	"	20-099
R7	10,000	1.	20-061	R24	100,000	"	20-099
R8	100,000	1/5	20-093	R25	950	"	22-032
R9	285	"	22-020	R26	1,000,000	"	25-023
R10	29,000	1.	22-075	R27	20,000	"	20-072
R11	50,000	1/5	20-084	R28	1,000,000	"	25-013
R12	50,000	"	20-084	R29	10,000	"	20-063
R13	50,000	"	20-084	R30	500		25-022
R14	500,000	"	25-024	R31	95	1/2	22-007
R15	100,000	"	20-093	R32	235	1.	22-015
R16	380	"	22-021	R33	1,000	1/5	20-033
R17	100,000	"	20-093				

## LIST OF CONDENSERS SUPER-SKYRIDER MODELS S-16, SX-16

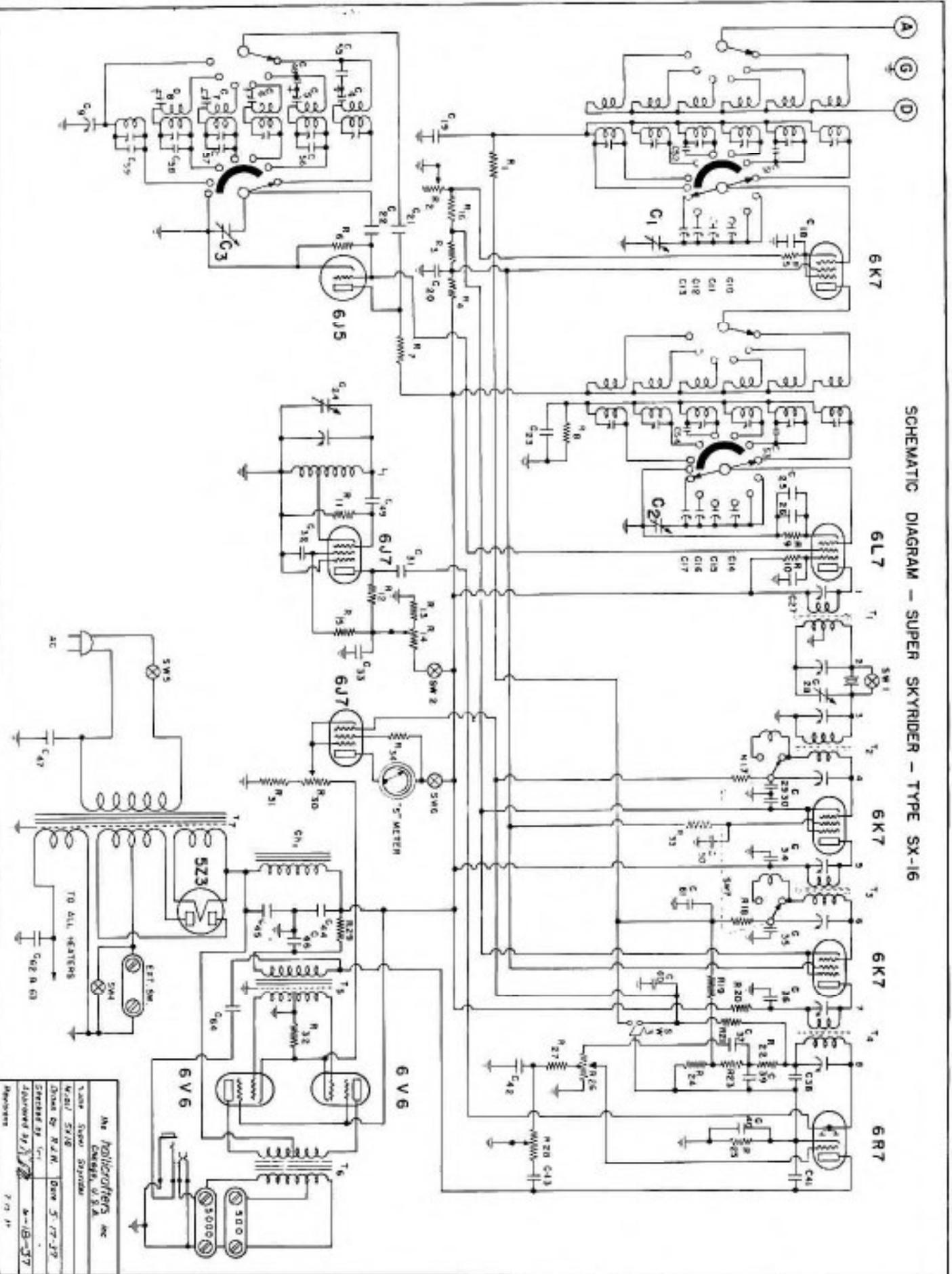
No.	CAPACITY	TYPE	VOLTAGE	PARTS No.	No.	CAPACITY	TYPE	VOLTAGE	PARTS No.
C1	420 MMFD	MAIN			C32	.01 MFD		400	41-001
C2	420 "			48-017	C33	.01 MFD		400	41-001
C3	420 "	GANG			C34	.05 "		400	41-005
C4	100 "			44-019	C35	.05 "		200	41-004
C5	100 "				C36	.1 "		400	41-007
C6	310 "			44-020	C37	.05 "		200	41-004
C7	880 "				C38	100 MMFD	MICA		40-007
C8	1,400 "			44-018	C39	100 "	"		40-007
C9	590 "				C40	10 MFD	ELEC	25	42-002
C10	1,000 "			44-017	C41	.0005 "	MICA		43-008
C11	350 "				C42	.005 "		600	45-003
C12	180 "			44-016	C43	.02 "		400	41-003
C13	120 "				C44	16 "	ELEC	400	42-019
C14	1,000 "			44-017	C45	16 "	"	400	42-019
C15	350 "				C46	1 "	"	400	41-013
C16	180 "			44-016	C47	.01 "		400	41-001
C17	120 "				C48	50 MMFD	MICA		40-002
C18	.002 MFD	MICA		40-013	C49	250 "		400	40-007
C19	.05 "		200	41-004	C50	.05 MFD			41-005
C20	.1 "		400	41-007	C51	10 MMFD	"		40-021
C21	.002 "	"		40-013	C52	10 "	"		40-021
C22	100 MMFD	"		40-003	C53	10 "	"		40-021
C23	.05 MFD		200	41-004	C54	10 "	"		40-021
C24	25 MMFD	AIR		48-021	C55	50 "	"		40-002
C25	.002 MFD	MICA		40-013	C56	10 "	"		40-021
C26	.05 "	"	200	41-004	C57	10 "	"		40-021
C27	.05 "	"	400	41-005	C58	10 "	"		40-021
C28	25 MMFD	AIR		48-012	C59	25 "	"		40-024
C29	.05 MFD		200	41-004	C60	.05 MFD		200	41-004
C30	.25 "	"	200	41-008	C61	.05 "		200	41-004
C31	10 MMFD	MICA		40-021	C62	.002 "	"		40-013
C63	.002 "	"			C63	.002 "	"		40-013
S1	CRYSTAL SWITCH SPST								
S2	BEAT OSC. SWITCH ON B. F. O. INJECTION CONTROL								
S3	A. V. C. SWITCH DPST								
S4	SEND-RECEIVE SWITCH SPST								
S5	A. C. SWITCH ON TONE CONTROL								
S6	METER SWITCH ON R. F. GAIN CONTROL								
S7	SELECTIVITY SWITCH OPDT								



Bottom View



SCHEMATIC DIAGRAM - SUPER SKYRIDER - TYPE SX-16



No. **holstoners inc**  
 CHICAGO, ILL.  
 TYPE SUPER SKYRIDER  
 MODEL SX-16  
 DRAWN BY R.A.M. DATE 5-17-37  
 CHECKED BY [Signature] M-18-37  
 APPROVED BY [Signature] 7-9-37