

GAME NO. 645  
AUGUST 1980

# MIDWAY'S SPACE ENCOUNTERS PARTS AND OPERATING MANUAL



**MIDWAY MFG. CO.**

A BALLY COMPANY

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U.S.A.

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FORM NO. 0645-00300-0000

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## WARNING

**THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.**

## GENERAL INSTRUCTIONS FOR SPACE ENCOUNTERS

### INSTALLATION

1. Remove shipping cleats located on bottom of cabinet.
2. Install four (4) provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts, 60 cycles.

### LINE VOLTAGE SAFETY SWITCH

A line voltage safety switch has been provided for your protection. It is located on the right rear side of the cabinet. When the door is removed, it opens the circuit to the line voltage. To restore power when servicing, pull switch fully out.

### TO CENTER PICTURE

1. Place adjustment switch (5) "ON" and (6) "OFF". These switches are located on Game Logic (P.C. A084-90700-F645). Switch adjustment card is located in rear of cabinet area.
2. Adjust monitor so that cross-hatch is inside of viewing area.

### TO SERVICE CONTROL PANEL

1. Open coin box door.
2. Release two (2) clamps, located on each side of cabinet.
3. Disconnect control cable jack if removing unit from cabinet.

### TO ADJUST CONTROL PANEL VERTICAL AND HORIZONTAL ENCODERS

1. Place adjustment switch (5) "OFF" and (6) "ON".
2. Press trigger button, located on steering control to set encoder test mode.
3. Loosen set screws on vertical encoder gear (at rear of assembly).
4. Rotate encoder shaft until defense ship stops in lower part of the viewing area.  
NOTE: Steering control must be in it's furthest out position.
5. Tighten set screws.
6. Loosen set screws on horizontal encoder gear.
7. Hold hand grips in a horizontal position and rotate encoder shaft until defense ship is in center of screen.
8. Tighten set screws.

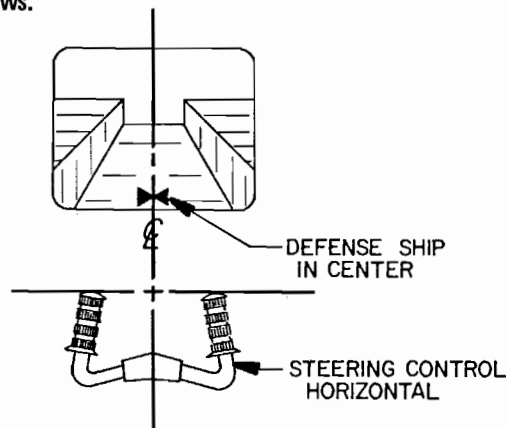


FIGURE 1

During this test mode, you can play the game without the defense ship being hit to check:

- a. Coin switch
- b. Trigger switch
- c. Score and bonus
- d. All sounds (except defense ship hit)
- e. Defense ship travel
- f. Reset switches (5) and (6)

#### VOLTAGE CONTROL POTS

Located on Power Supply Board (P.C. A084-91324-F645) and are preset at the factory. These pots should not be tampered with unless the distributor service department is contacted.

#### VOLUME CONTROL

Located on sound board (P.C. A084-91324-0645) controls the volume of all sounds and may be varied as desired by rotating pot control.

#### STROBE LITE ASSEMBLY

Located on top shelf of game. Before servicing this unit, turn off game and wait three (3) minutes to avoid shock.

#### CLEANING OF PICTURE TUBE, GLASS & PLEXI

1. Remove control panel.
2. Remove screws at bottom of plastic viewing bezel. Remove bezel.
3. Remove two (2) brackets holding the clear front glass and lift out.
4. Remove two (2) brackets from bottom of interior shelf to lower screened plexi-glass for cleaning.

**ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.**

**CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.**

**ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRIE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.**

**SWITCH ADJUSTMENTS**

<b>BONUS AT</b>		
	SW. 1	SW. 2
2000, 4000, 8000 PTS.	ON	ON
3000, 6000, 12000 PTS.	OFF	ON
4000, 8000, 16000 PTS.	ON	OFF
5000, 10000, 20000 PTS.	OFF	OFF

<b>METHOD OF PLAY</b>		
	SW. 3	SW. 4
1 COIN – 1 PLAY	ON	ON
2 COINS – 1 PLAY	OFF	ON
1 COIN – 3 PLAYS	ON	OFF
2 COINS – 3 PLAYS	OFF	OFF

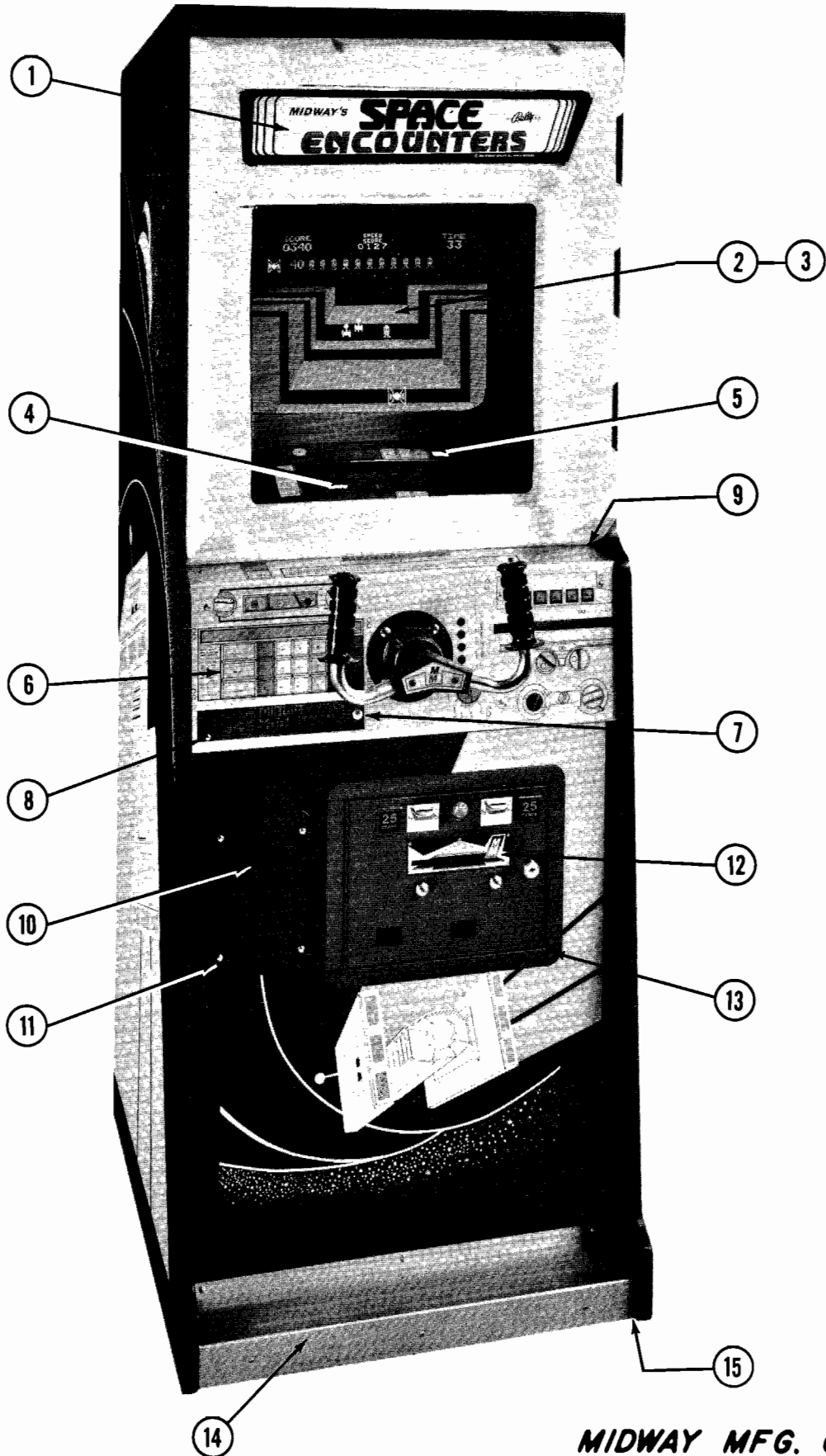
	SW. 5	SW. 6
BONUS	ON	ON
NO BONUS	OFF	OFF
CROSS HATCH	ON	OFF
RAM-ROM TEST	OFF	ON
ENCODER ALIGNMENT		

<b>TIME OF PLAY</b>		
	SW. 7	SW. 8
45 SECONDS	ON	ON
60 SECONDS	OFF	ON
75 SECONDS	ON	OFF
90 SECONDS	OFF	OFF

M051-00645-A012

**NO. 645 - SPACE ENCOUNTERS - PHOTOGRAPH**

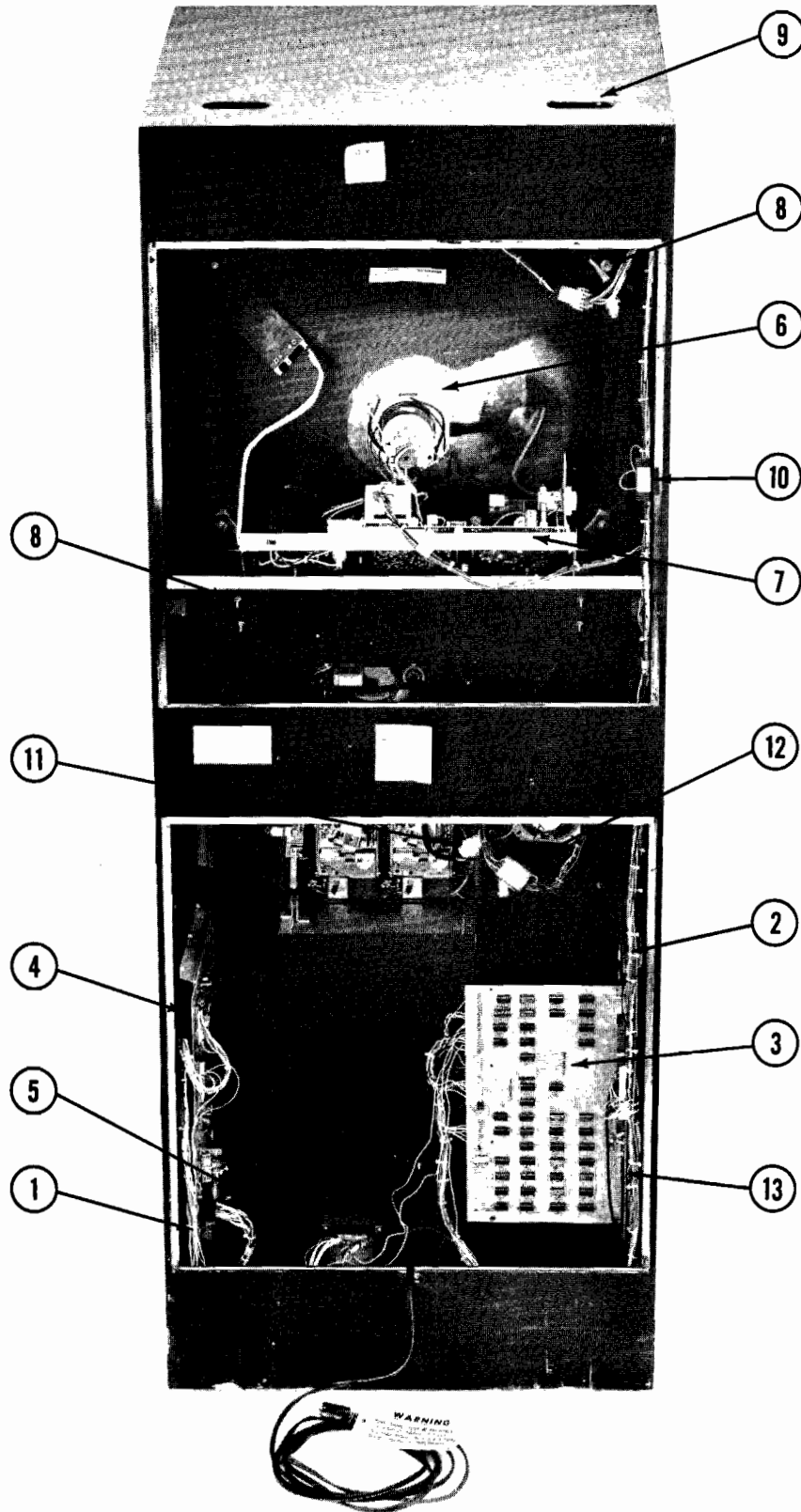


**MIDWAY MFG. CO.**  
A BALLY COMPANY

**NO. 645 – SPACE ENCOUNTERS – PHOTOGRAPH**  
**ORDER BY PART NUMBER ONLY**

ITEM	PART NO	DESCRIPTION
1	A645-00020-0000	PLASTIC BEZEL ASSY.
2	0645-00919-0000	COLORLED SCREEN OVERLAY
3	0645-00910-0000	FRONT GLASS – 23-9/16" x 20" x 3/16"
	0537-00903-0017	GLASS CHANNEL – 18-3/4" LG. (2 REQ'D.)
	0537-00903-0034	GLASS CHANNEL – 23" LG.
	0629-00902-0700	GLASS LIFT CHANNEL 23-1/4" LG.
	0645-00108-00XF	GLASS LOCK BRKT. (2 REQ'D.)
4	0645-00916-0000	COCKPIT LIGHTS INSERT
	0645-00506-0000	COCKPIT LIGHTS PANEL
	0645-00111-0000	SUPPORT BRKT. (2 REQ'D.)
	0017-00031-0030	WEDGE BASE LIGHT SOCKET (8 REQ'D.)
	0017-00003-0182	7V., .43 AMP WEDGE LAMP (8 REQ'D.)
	A645-00032-0000	COCKPIT LIGHTS CABLE ASSY.
5	0645-00900-00XF	SCENERY CARD – BOTTOM
	0645-00901-00XF	SCENERY CARD – RIGHT (NOT SEEN)
	0645-00901-01XF	SCENERY CARD – LEFT (NOT SEEN)
	0645-00902-00XF	SCENERY CARD – BACK (NOT SEEN)
6	0645-00100-00XF	CONTROL SHELF PLATE
7	0017-00102-0019	1/4-20 x 1-1/2 CARRIAGE BOLT (4 REQ'D.)
	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D')
	0017-00104-0005	1/4 SPLIT LOCK WASHER (4 REQ'D.)
8	0017-00101-0639	#8-32 x 1-1/4 CARRIAGE BOLT (4 REQ'D:)
	0017-00103-0061	#8-32 HEX NUT (4 REQ'D.)
	0017-00104-0022	#8 FLAT WASHER (4 REQ'D.)
9	0017-00101-0062	#6 x 3/4 PHIL. PAN HD. SCREW (3 REQ'D')
10	0017-00009-0393	SPEAKER GRILL & HARDWARE
	0017-00003-0187	SPEAKER
11	0017-00101-0642	#8-32 x 1-1/2 CARRIAGE BOLT (4 REQ'D.)
12	A090-00020-2001	DOUBLE ENTRY COIN DOOR ASSY.
	A090-00057-0000	COIN METER ASSY.
13	0090-00002-02GR	COIN DOOR FRAME
	0017-00101-0121	#6-32 x 5/16 PHIL. TRUS HD. M.S. (3 REQ'D.) (MOUNTS COIN DOOR TO FRAME)
14	0645-00911-0000	ALUMINUM STEP
15	0017-00102-0048	LEG LEVELERS (4 REQ'D.)
	0017-00103-0026	LEG LEVELER NUTS (4 REQ'D.)
		<b>NOT SHOWN LIST</b>
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0603-00131-0000	STRIKE (2 REQ'D.)
	0645-00107-00XF	SPRING BRKT. (MOUNTS STEERING, CONTROL SPRING TO CABINET SIDE).

NO. 645 - SPACE ENCOUNTERS - BACK PICTURE



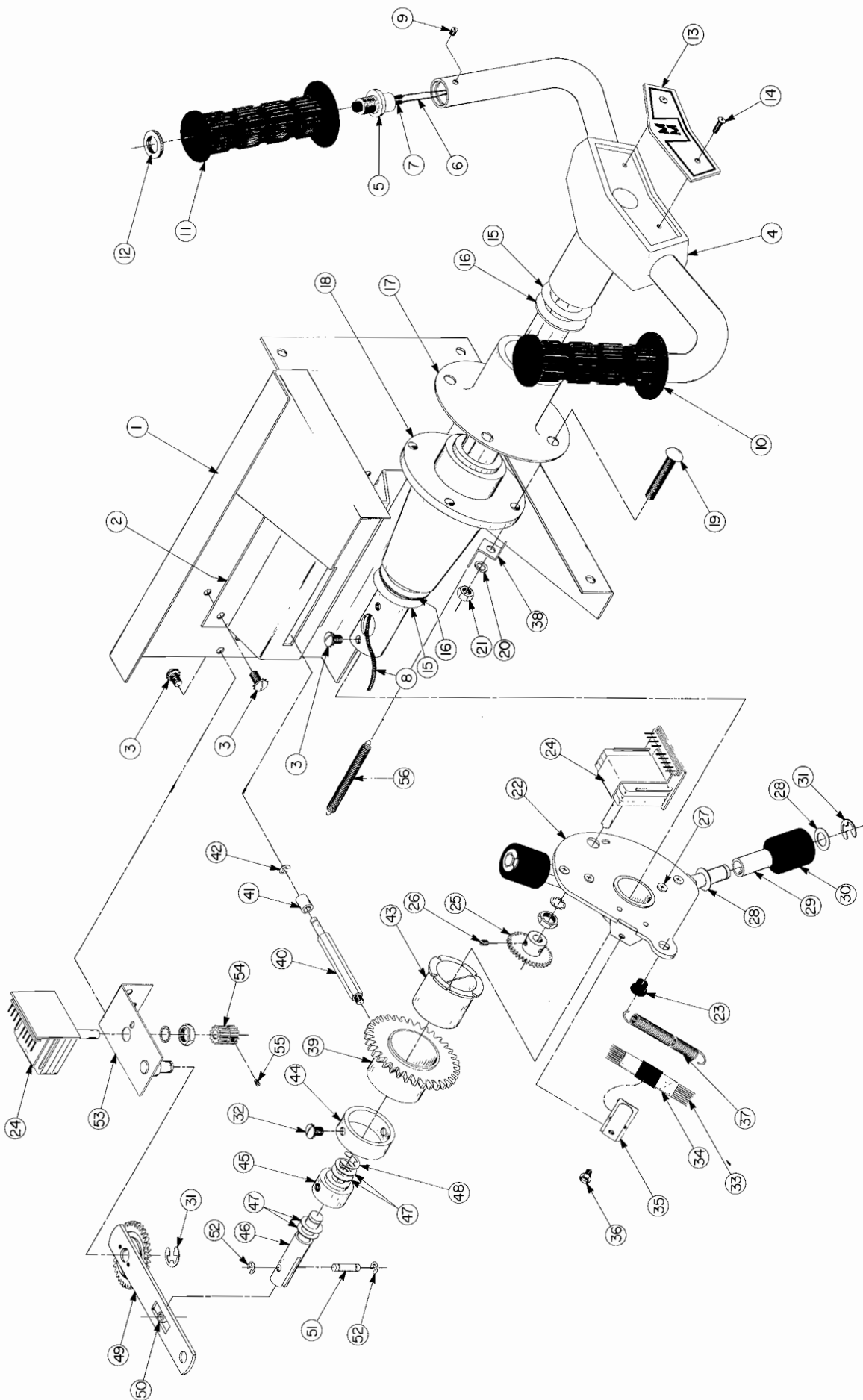


**NO. 0645 – SPACE ENCOUNTERS – BACK PICTURE**

***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
1	A082-90400-H000	POWER SUPPLY P.C.B. ASSY.
2	A082-90000-L645	MOTHER P.C.B. ASSY.
3	A084-90700-G645	GAME LOGIC P.C.B. ASSY.
4	A084-91324-F645	SOUND P.C.B. ASSY.
	0624-00902-0100	P.C. SUPPORT BRKT. 12" (5 REQ'D.)
	0624-00902-0300	P.C. SUPPORT BRKT. 2-1/2" (7 REQ'D.)
	0017-00101-0025	#8 x 1/2 HEX HD. WOOD SCREW (29 REQ'D.)
	0017-00104-0037	#8 FLAT WASHER (29 REQ'D.)
5	A905-00022-0000	TRANSFORMER BOARD ASSY.
6	0017-00003-0199	22" CATHODE RAY TUBE
7	0017-00003-0198	22" CHASSIS
	0017-00003-0322	22" C.R.T. YOKE
	A739-00010-0000	DAG SPRING ASSY.
	3000-17175-0000	GROUND STRAP
	0592-00104-0100	CHASSIS MTG. BRKT. R.H.
	0592-00104-0200	CHASSIS MTG. BRKT. L.H.
	0645-00502-0000	CHASSIS PANEL
8	0017-00101-0637	#8-32 x 1 CARRIAGE BOLT (4 TUBE, 4 CHASSIS)
	0017-00104-0022	#8 FLAT WASHER (4 TUBE, 4 CHASSIS)
	0017-00103-0061	#8-32 HEX NUT SEMS (4 TUBE, 4 CHASSIS)
9	0017-00032-0005	ON-OFF SWITCH
	0567-00106-0100	SWITCH MTG. PLATE
	0017-00101-0025	#8 x 1/2 SLOT HEX HD. WOOD SCREW (4 REQ'D.)
10	A645-00022-00XF	INTERLOCK SWITCH BRKT. ASSY.
	0017-00003-0225	INTERLOCK SWITCH
11	A622-00018-0000	COIN DOOR CABLE ASSY.
12	A645-00033-0000	CONTROL SHELF CABLE ASSY.
13	A645-00034-0000	MASTER CABLE ASSY.
		<u>ADDITIONAL PARTS LIST</u>
	A097-00001-0000	LOCK ASSY. - BACK DOOR (2 REQ'D.)
	0017-00009-0490	VENT SCREEN (4 REQ'D.)
	0017-00009-0477	MOLDED CASH BOX
	A623-00013-0000	COIN BOX COVER ASSY.
	A624-00001-0000	COIN BOX GUIDE BRKT. ASSY.
	0624-00101-0000	COIN BOX GUIDE BRKT.

**NO. 645 -- SPACE ENCOUNTERS -- CONTROL SHELF ASSY.**



NO. 645 - SPACE ENCOUNTERS - CONTROL SHELF ASSY.

*ORDER BY PART NUMBER ONLY*

ITEM	PART NO	DESCRIPTION
1	A645-00006-00XF	BASE & BRACE ASSY.
2	0645-00106-00XF	STOP BRKT.
3	0017-00101-0652	#10-32 3/8 SLOT PAN HD. S.M.S. (9 REQ'D.)
4	A645-00011-0000	BASE - TUBE & HANDLE ASSY.
5	0017-00032-0004	SWITCH
6	0017-00033-0334	CABLE - 2 LEAD
7	M033-00100-0001	SHRINK TUBING (2 REQ'D.)
8	0010-00225-0200	CABLE GUARD
9	0017-00101-0307	#8-32 x 1/8 SETSCREW (2 REQ'D.)
10	0017-00009-0443	GRIP
11	0645-00917-0000	GRIP
12	0017-00021-0009	15/32-32 ROUND NUT
13	0645-00912-0000	CONTROL INSERT
14	0017-00101-0116	#10-32 x 1/4 TAMPER PROOF SCREW (2 REQ'D.)
15	0017-00041-0617	RING - NEOPRENE (2 REQ'D.)
16	0645-00913-0000	WASHER - FRICTION (2 REQ'D.)
17	0645-00905-0000	SHROUD
18	A645-00012-0000	PEDESTAL ASSY.
19	0017-00102-0019	1/4-20 x 1-1/2 CARRIAGE BOLT (4 REQ'D.)
20	0017-00104-0005	1/4 SPLIT LOCK WASHER (4 REQ'D.)
21	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D.)
22	A645-00008-00XF	STOP PLATE & HUB ASSY.
23	0017-00042-0016	SNAP BUSHING
24	A082-91101-B000	ENCODER (2 REQ'D.)
25	A645-00024-0000	GEAR & BUSHING ASSY.
26	0017-00101-0309	#8-32 x 1/4 SET SCREW (2 REQ'D.)
27	0017-00101-0658	#10-32 x 5/8 PHIL. PAN HD. SCREW (4 REQ'D.)
28	0017-00104-0032	FLAT WASHER (4 REQ'D.)
29	0645-00906-0000	BEARING (2 REQ'D.)
30	0645-00907-0000	RUBBER ROLLER (2 REQ'D.)
31	0017-00100-0031	E-RING (3 REQ'D.)
32	0017-00101-0652	#10-32 x 3/8 SLOT. PAN HD. SCREW (2 REQ'D.)
33	0017-00033-0329	CABLE ASSY.
34	0645-00915-0000	INSULATOR STRIP
35	A645-00039-0000	CLAMP BRKT. & SPRING PLT. ASSY.
36	0017-00101-0598	#8-32 x 5/16 SLOT HEX HD. SCREW
37	0010-00597-0000	SPRING
38	0645-00117-00XF	"Z" - BRKT.
39	A645-00007-0000	GEAR & BUSHING ASSY.

**NO. 645 – SPACE ENCOUNTERS – CONTROL SHELF ASSY.**

***ORDER BY PART NUMBER ONLY***

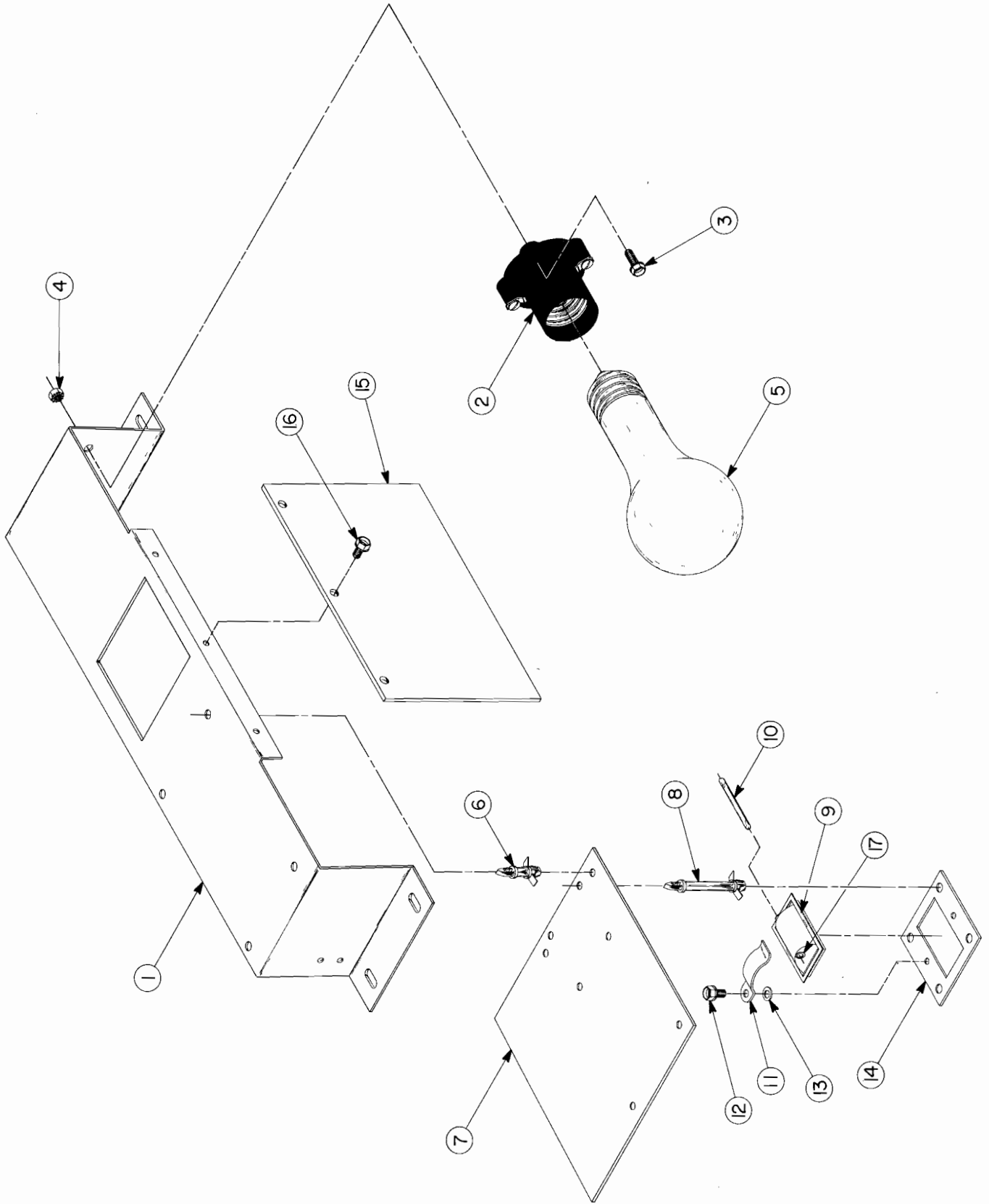
<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
40	0645-00702-00XF	ANTI-ROTATION ROD
41	0645-00908-0000	NYLON ROLLER
42	0017-00100-0015	E-RING
43	0017-00042-0222	NYLINER 1-1/4
44	0645-00708-00XF	COLLAR
45	A645-00025-0000	PLUG & BEARING ASSY.
46	0645-00710-00XF	ANTI-TWIST SHAFT
47	0030-00125-0000	NYLON WASHER (4 REQ'D.)
48	0017-00100-0037	E-RING
49	A645-00010-0000	ARM & GEAR ASSY.
50	0645-00701-00XF	ROLLER
51	0645-00700-00XF	PIN
52	0017-00100-0018	E-RING (2 REQ'D.)
53	A645-00009-0000	BRKT. & PIN ASSY.
54	0583-00723-00B0	PINION - 16 TOOTH
55	0017-00101-0308	#8-32 x 3/16 SETSCREW (2 REQ'D.)
56	0010-00265-0000	SPRING
	0017-00009-0484	TAMPER PROOF ALLEN KEY (NOT SHOWN)
		THE FOLLOWING PARTS USED TO ATTACH ITEM 22 TO SHAFT
	0645-00712-00XF	PIN
	0017-00100-0037	E-RING (2 REQ'D.)
	0017-00102-0042	1/4-20 x 3/4 SOCKET HD. CAP SCREW

# NOTES

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**NO. 645 - SPACE ENCOUNTERS - EXPLOSION LIGHT ASSY.**

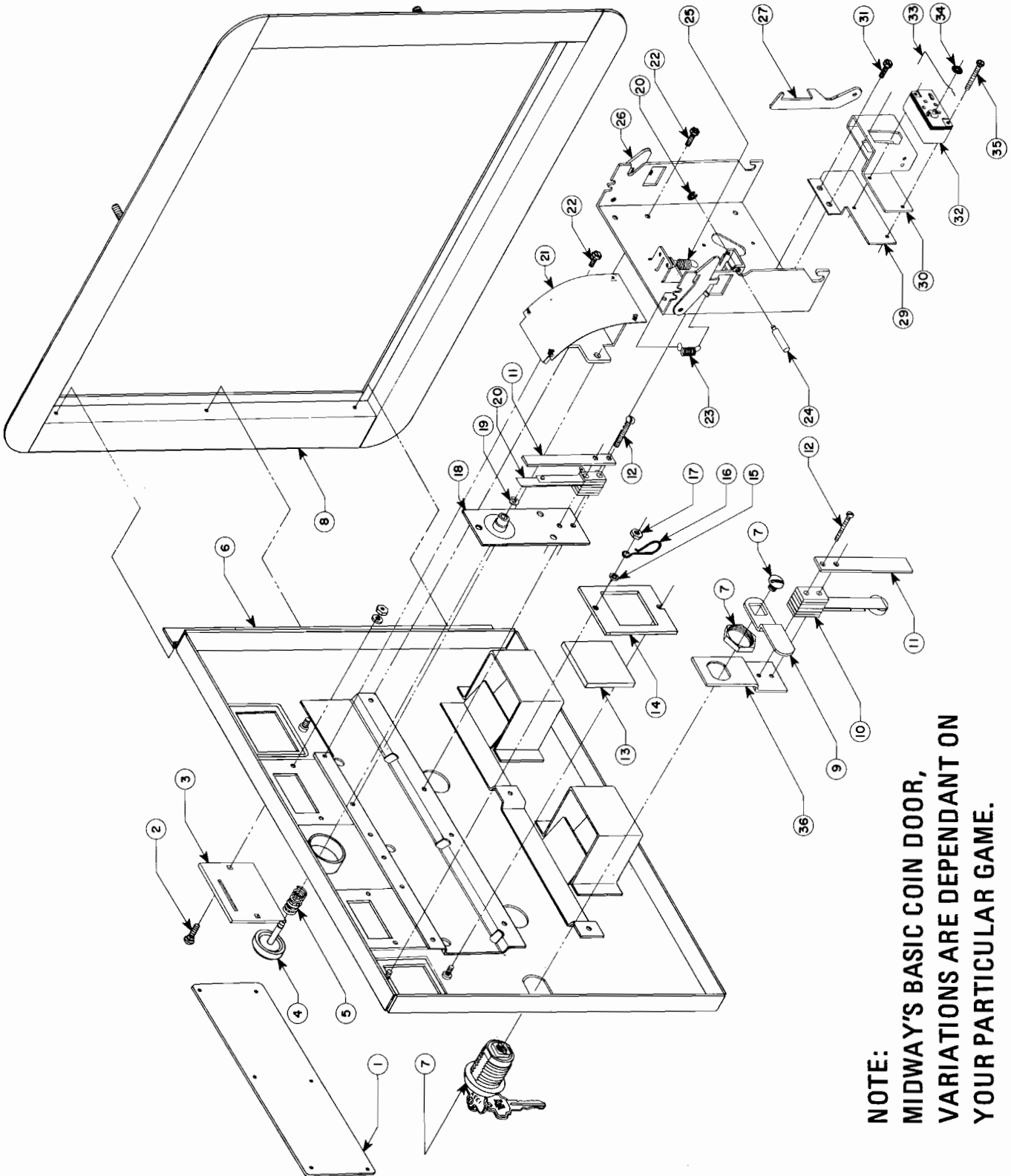


**NO. 645 – SPACE ENCOUNTERS – EXPLOSION LIGHT ASSY.**

***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART N<sup>o</sup></b>	<b>DESCRIPTION</b>
1	0645-00115-0000	EXPLOSION LIGHT MTG. BRKT.
2	0017-00003-0135	LAMP SOCKET
3	0017-00101-0026	#8-32 x 5/8 SLOT HEX HD. SCREW (2 REQ'D.)
4	0017-00103-0061	#8-32 HEX NUT SEMS (2 REQ'D.)
5	0760-00945-00XF	LAMP GE 200 W RED
6	0017-00042-0231	STANDOFF 3/4 (4 REQ'D.)
7	A084-91359-B645	EXPLOSION P.C. BOARD
8	0017-00042-0232	STANDOFF 1-3/8 (4 REQ'D.)
9	0069-156XX-XXIX	FLASH TUBE - FT19-30K
10	0069-157XX-XXIX	REFLECTOR
11	0017-00042-0233	TENSION CLIP
12	0017-00101-0555	#6-32 x 5/16 SLOT HEX HD. SCREW
13	0017-00104-0019	#6 FLAT WASHER
14	0645-00116-0000	STROBE LIGHT HOUSING BRKT.
15	0645-00114-0000	STROBE LIGHT GUARD
16	0017-00101-0598	#8-32 x 5/16 SLOT HEX HD. SCREW (3 REQ'D.)
17	0645-00918-0000	GROMMET (2 REQ'D.)
	A645-00030-0000	STROBE LIGHT CABLE ASSY. (NOT SHOWN)

**NO. 645 – SPACE ENCOUNTERS – FRONT DOOR ASSY.**



**NOTE:  
MIDWAY'S BASIC COIN DOOR,  
VARIATIONS ARE DEPENDANT ON  
YOUR PARTICULAR GAME.**

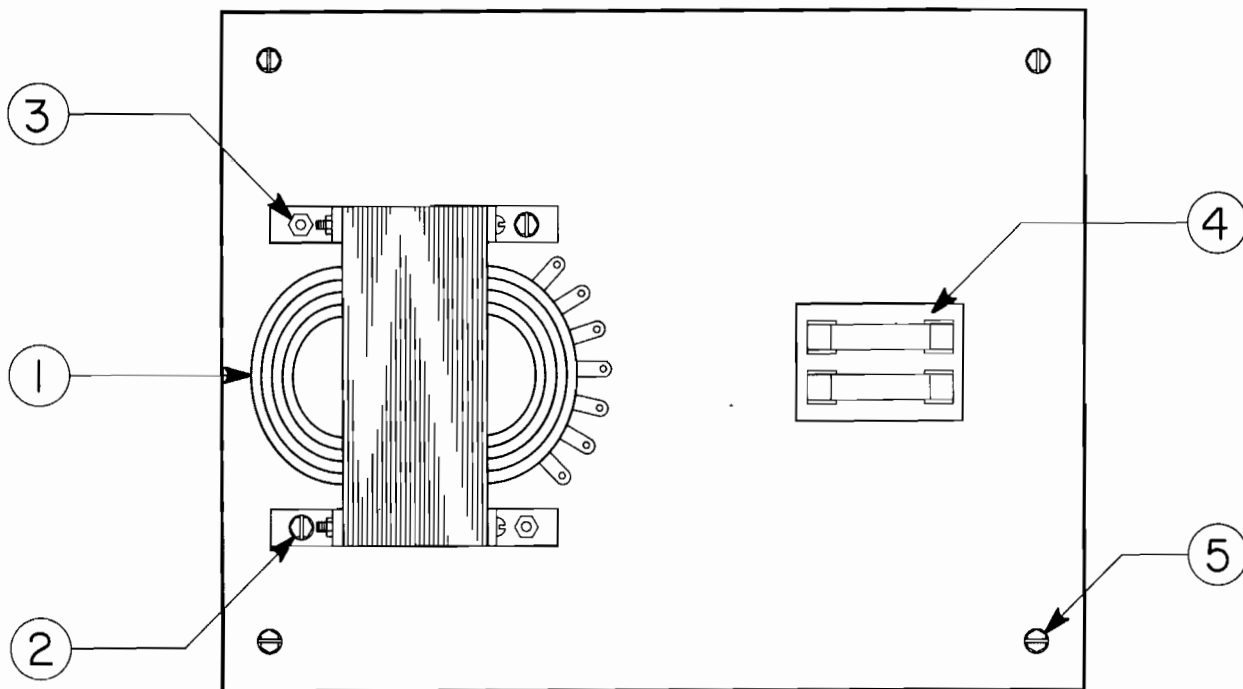


**NO. 645 – SPACE ENCOUNTERS – FRONT DOOR ASSY.**

***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
1	0090-00902-0000 0090-00902-0100	DRESS PLATE DRESS PLATE (W/O PRESS BUTTON TO START GAME)
2	0017-00101-0552	#6-32 x 1/4 CARRIAGE BOLT (2)
3	0090-00117-03XF	COIN ENTRY PLATE (25¢)
4	0090-00906-0000	PLASTIC START BUTTON
5	0010-00007-0000	COMPRESSION SPRING
6	0090-00013-0200	DOOR ASSY. DOUBLE ENTRY
7	0017-00005-0050	DOOR LOCK & KEY WITH SCREW & NUT
8	0090-00002-02BR	DOUBLE DOOR FRAME
9	0017-00005-0041	421 N.S. CAM
10	0090-00901-0000	DOOR SWITCH
11	0090-00126-01XF	SWITCH BACKUP PLATE
12	0017-00101-0528	#5-40 x 3/4" LNG. M.S.
13	0090-00903-0040	25¢ WINDOW
14	0090-00143-0000	COIN PLEX RETAINER
15	0017-00104-0002	SPLIT LOCK WASHER
16	0017-00007-0019	KEY HOOK
17	0017-00103-0005	#6-32 HEX NUT
18	0090-00010-0000	SW. PLATE & OILLITE ASSY.
19	0017-00100-0018	"E" RING
20	0090-00131-0000	SWITCH
21	0090-00104-0000	TOP & BTM. COIN CHUT W/BRKT. ASSY.
22	0017-00101-0598	#8-32 x 5/16 SCREW
23	0010-00181-0100	SPRING
24	0090-00129-00XF	PIVOT POST
25	0010-00134-0000	SPRING
26	0090-00008-0000	ACCEPTOR FRAME ASSY.
27	0093-00155-00XF	REJECTOR LEVER
28	0017-00100-0012	"E" RING
29	0093-00151-00XF	COIN GUIDE MTG. BRACKET
30	0090-00005-0000	COIN GUIDE ASSY.
31	0017-00101-0555	#6-32 x 5/16 SCREW
32	0017-00005-0039	COIN SWITCH
33	0010-00557-2500	TRIP WIRE
34	0017-00007-0132	PUSH-ON RING (BIK)
35	0017-00101-0507	#4-36 x 3/4 SCREW
36	0090-00128-00XF A090-00061-0000  A090-00064-0000	SWITCH BRKT. - DOOR TILT ANTI-STRING DEVICE ASSY. - OPTIONAL (REPLACES ITEM 30) ANTI-PENNY DEVICE ASSY.

**NO. 645 – SPACE ENCOUNTERS – TRANSFORMER BOARD ASSY.**



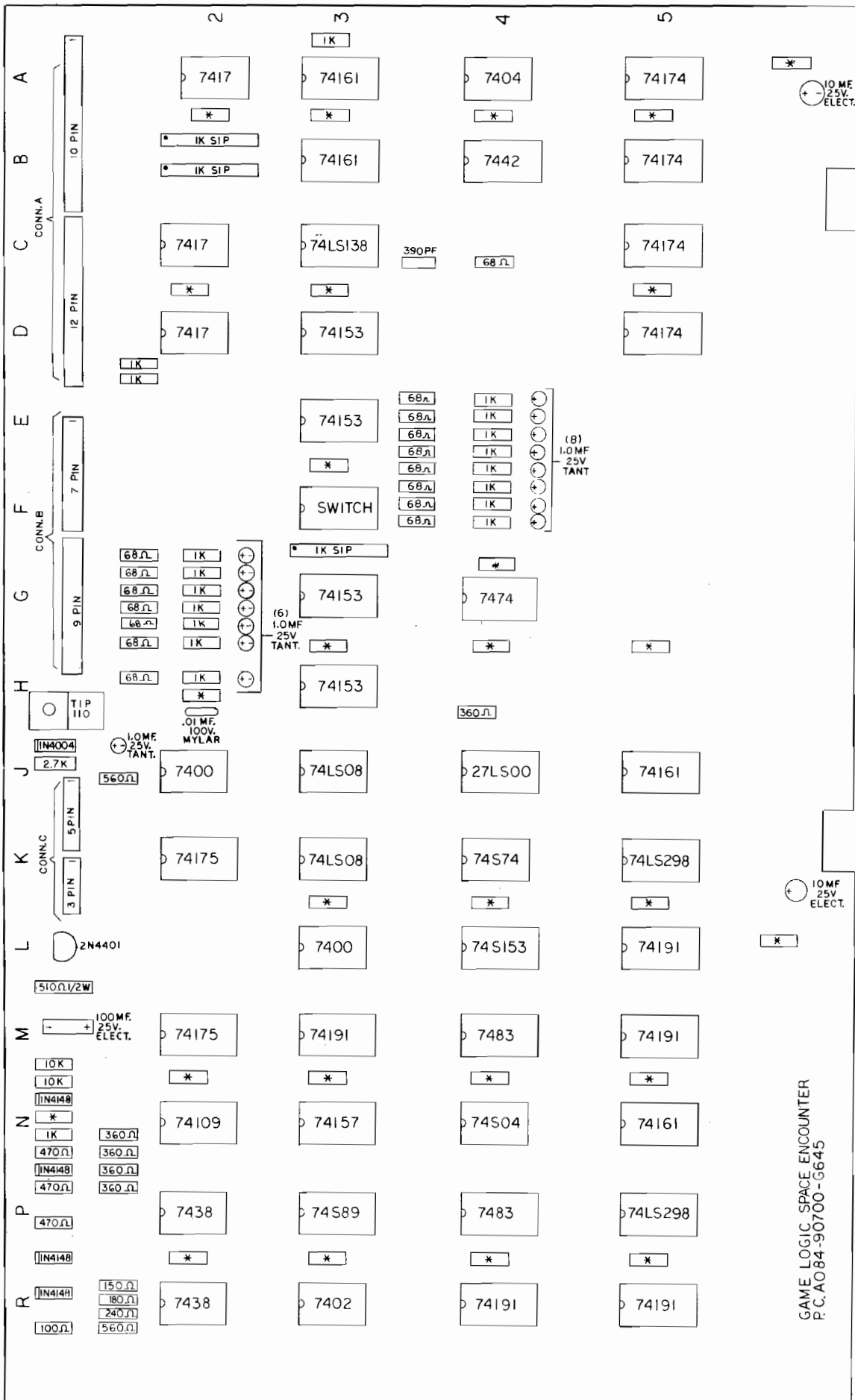
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**NO. 645 – SPACE ENCOUNTERS – TRANSFORMER BOARD ASSY.**

***ORDER BY PART NUMBER ONLY***

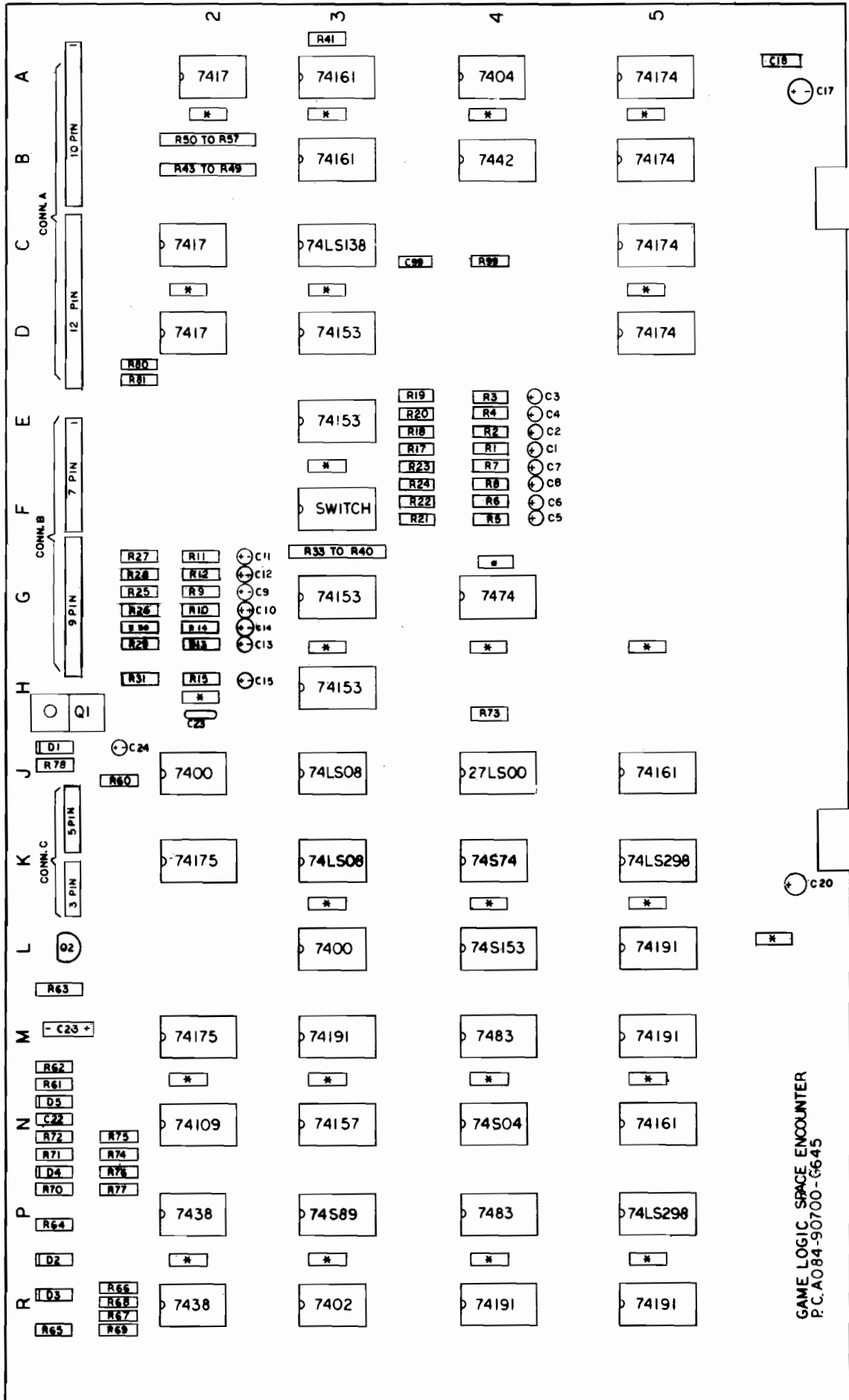
ITEM	PART NO	DESCRIPTION
1	MT00-00058-0000	TRANSFORMER – 60 CYCLE – DOMESTIC (OR)
	MT00-00059-0000	TRANSFORMER – 50 CYCLE – FOREIGN
2	0017-00101-0017	#6 x 1/2 SLT. HEX HD. WD. SCR. (2 REQ'D.)
3	0017-00101-0637	#8-32 x 1" CARRIAGE BOLT (2 REQ'D.) WITH
	0017-00103-0008	#8-32 HEX NUT (2 REQ'D.)
4	0720-00001-0200	2 POSITION FUSE BLOCK
	0017-00003-0103	FUSE 1.5 AMP
	0017-00003-0006	FUSE 4 AMP
5	0017-00101-0018	#6 x 3/4 SLT. HEX HD. SCREW (5 REQ'D.)
	0017-00003-0064	16 FT. LINE CORD – NOT SHOWN
	0017-00003-0114	NOISE FILTER - NOT SHOWN

COMPONENT LAYOUT PART NO. M051-00645-A002



GAME LOGIC SPACE ENCOUNTER  
P.C.A084-90700-6645

RRC LAYOUT PART NO. M05I-00645-A003



\* INDICATES 0.1MF 50V AXIAL LEAD CERAMIC CAP.

GAME LOGIC SPACE ENCOUNTER  
P.C.A084-90700-6645

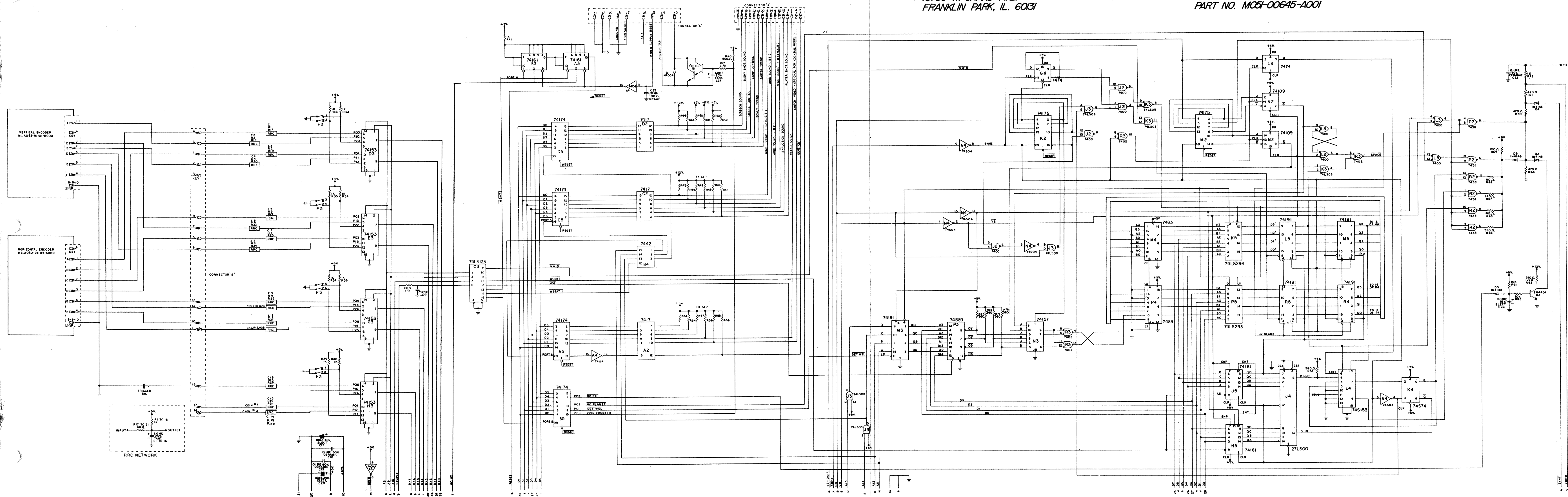
# NOTES

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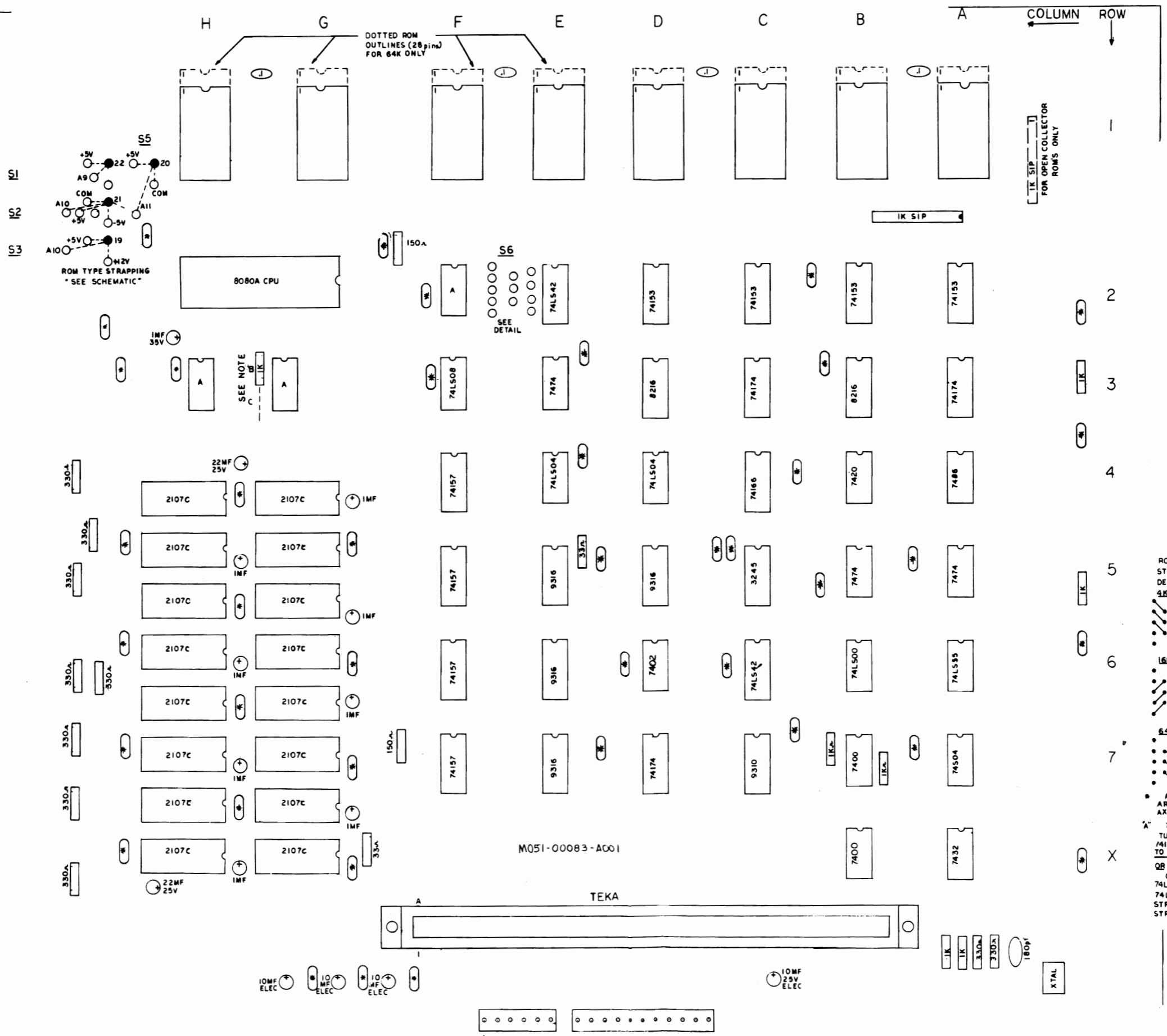
"SPACE ENCOUNTERS"  
MIDWAY MFG. CO.  
10750 W. GRAND AVE.  
FRANKLIN PARK, IL. 60131

GAME LOGIC SCHEMATIC  
P.C. A084-90700-G645  
PART NO. M051-00645-A001

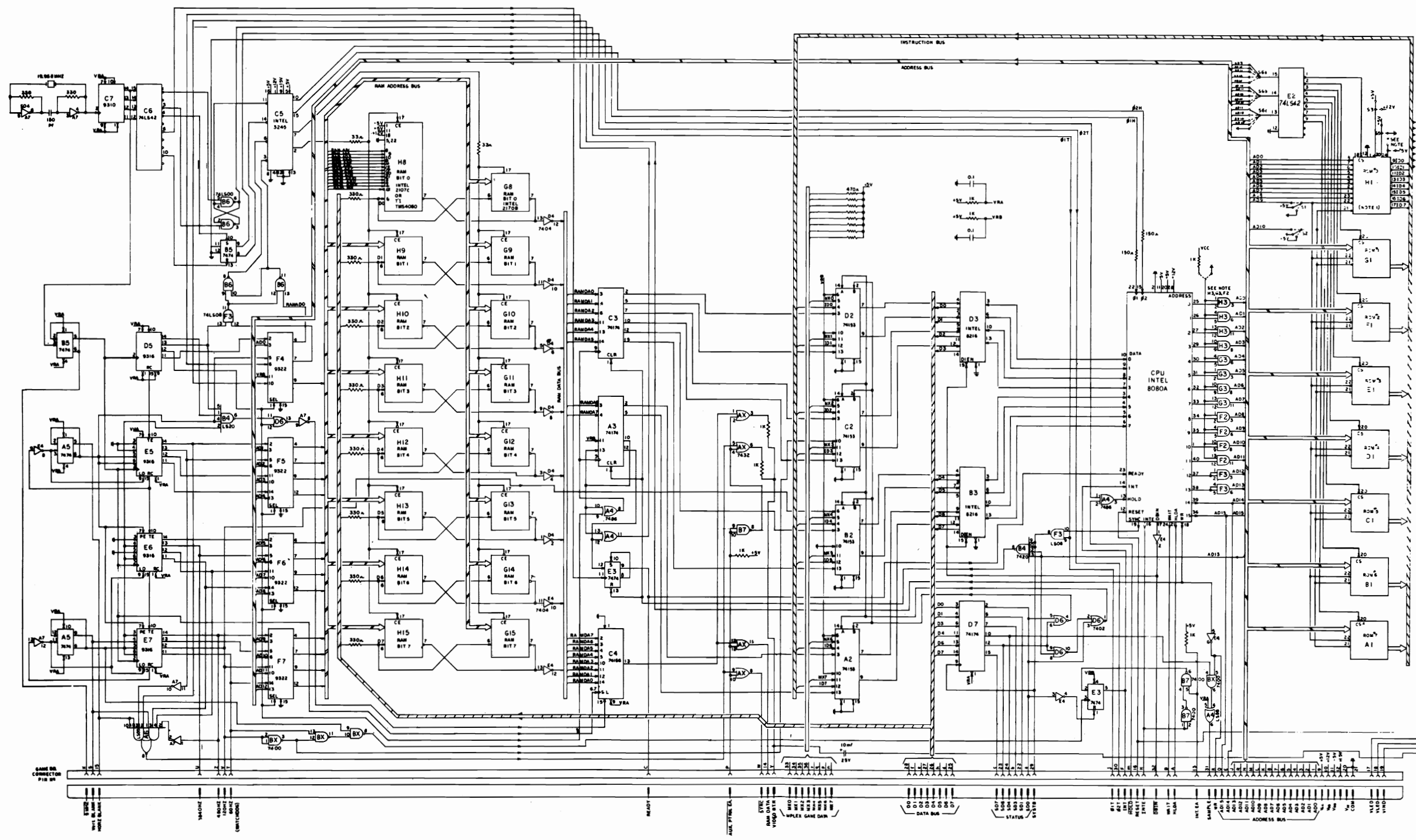








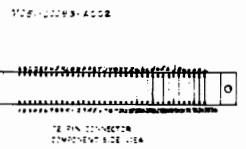
MOTHER BOARD COMPONENTS LAYOUT  
A084-90000-L000



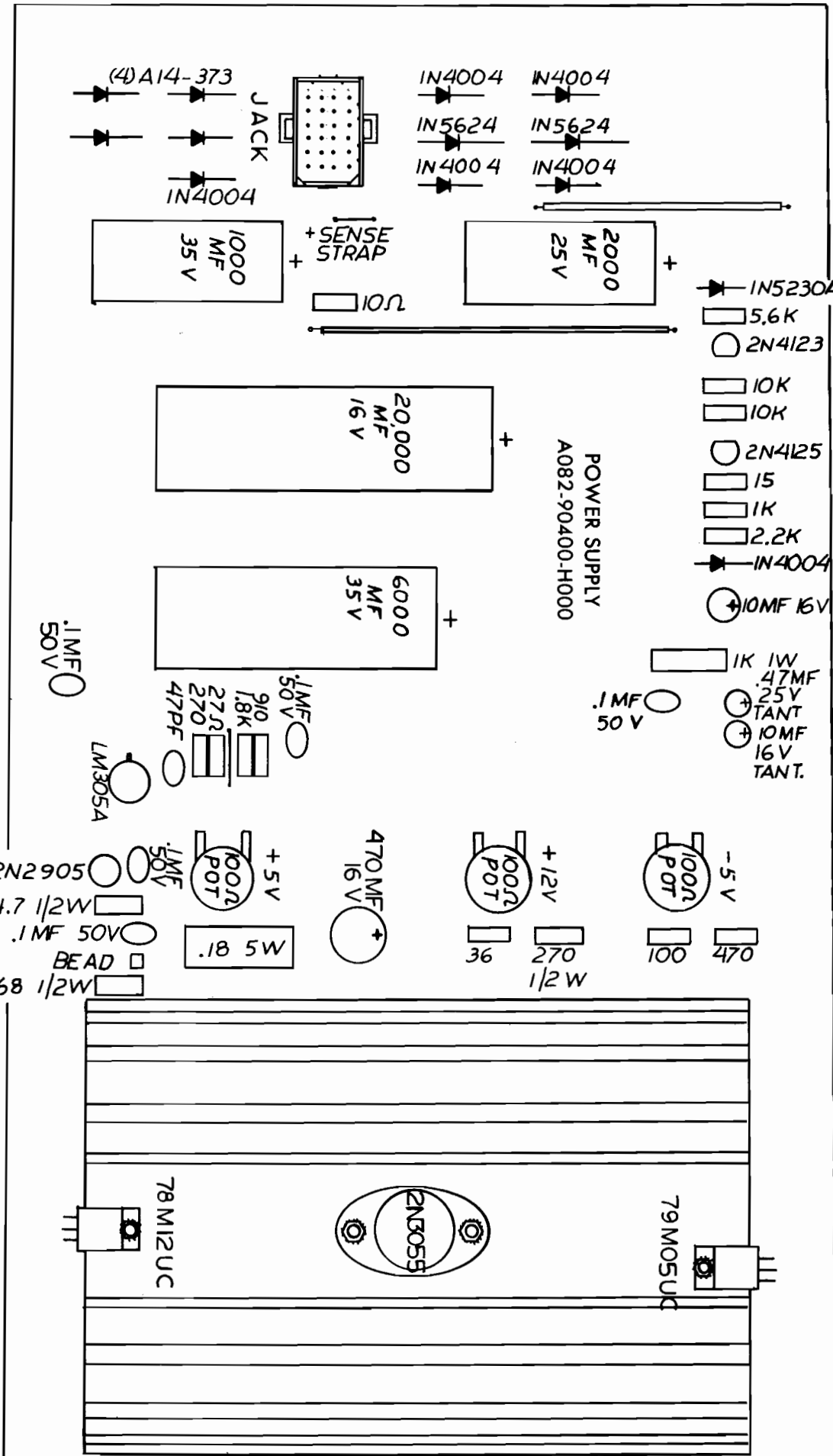
56  
 AD6 0 A O AD12  
 AD10 0 B O AD14  
 AD11 0 C O AD15  
 AD12 0 D O AD16  
 AD14 0 E O COM

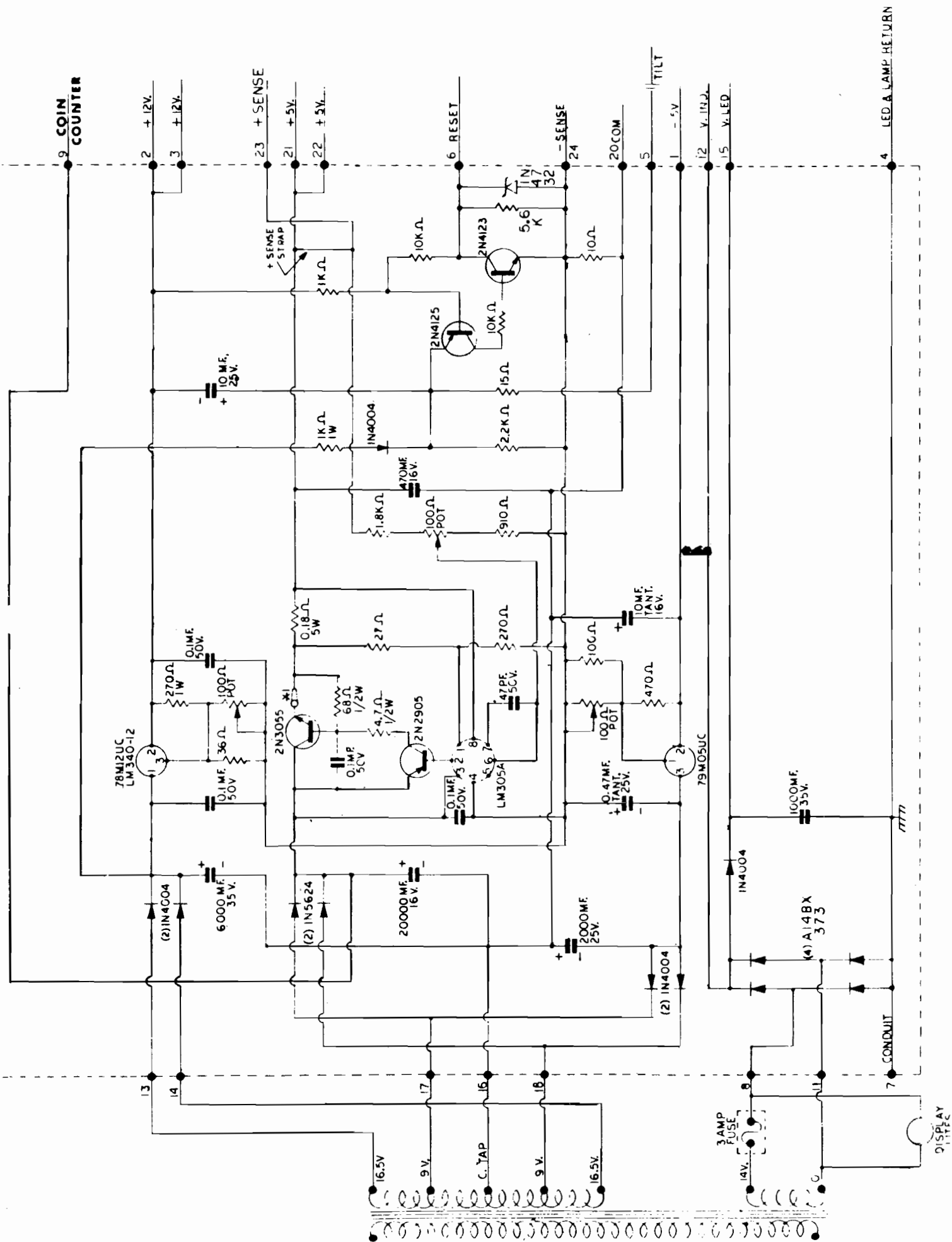
NOTE 1: OTHER AVAILABLE CHIPS AND STRAP ARRANGEMENT IF USED

PROG	MFG	SA	SB	SC	SD	SE	SF	SG	SH	SI	SM	SN	SO	SP	SR	SS	ST	SV	SW	RECORD
EPROM	ROM	PN15	PN14	PN13	PN12	PN11	PN10	PN9	PN8	PN7	PN6	PN5	PN4	PN3	PN2	PN1	PN0	PN-1	PN-2	PN-3
2764	AMD	AD10	AD11	AD12	COM	+5V	COM	AD9	+5V	NO										
2708	INTEL	AD10	AD11	AD12	COM	+5V	COM	AD9	+5V	NO										
2716	TI	AD11	AD12	AD14	AD10	+12V	+5V	AD9	+5V	NO										
9316	GL	AD11	AD12	AD14	COM	AD10	COM	AD9	+5V	NO										



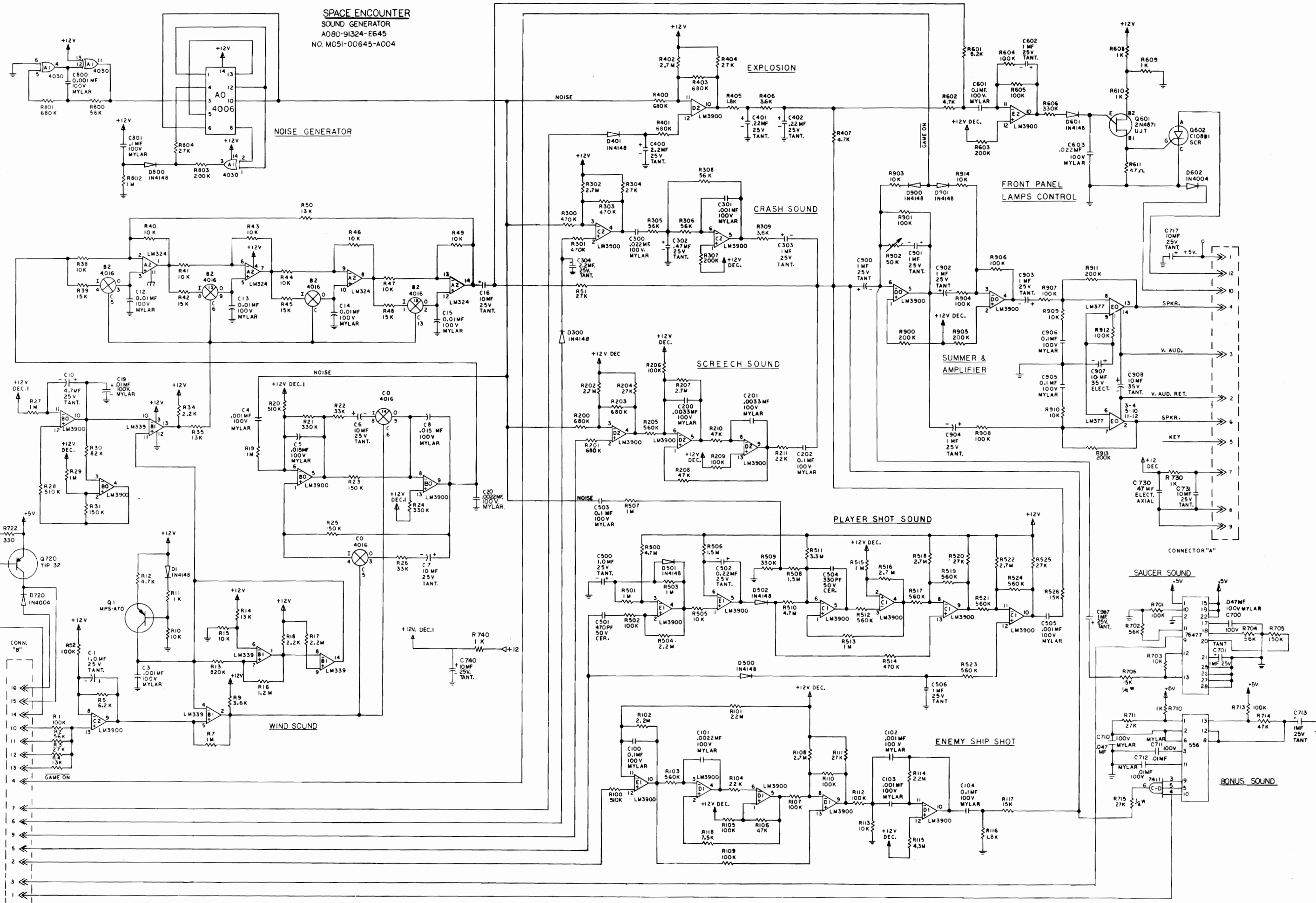
MOTHER BOARD SCHEMATIC  
 A084-9000-L000



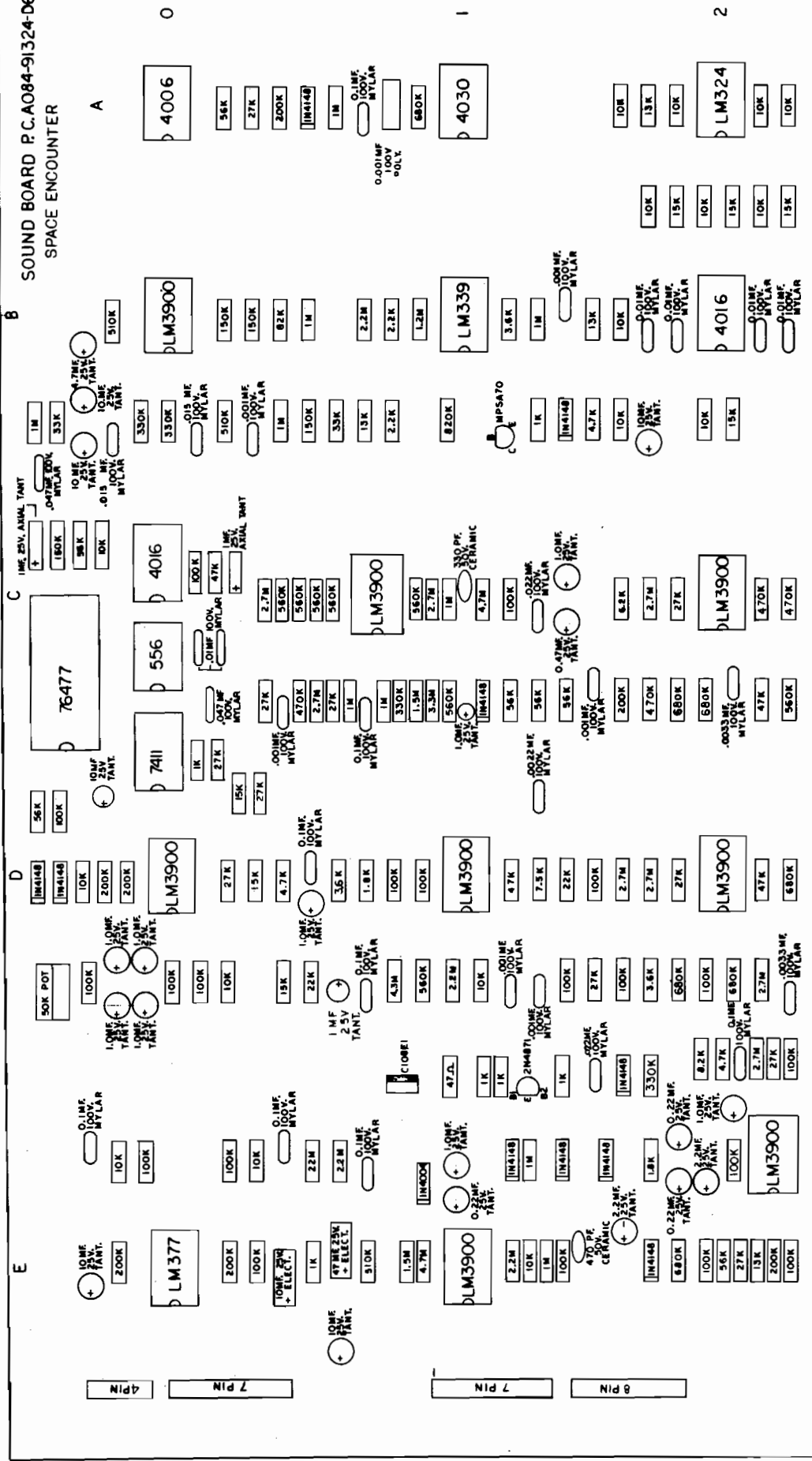


DISPLAY LIGHT

**SPACE ENCOUNTER**  
**SOUND GENERATOR**  
 A080-91324-E645  
 NO. M051-00645-A004

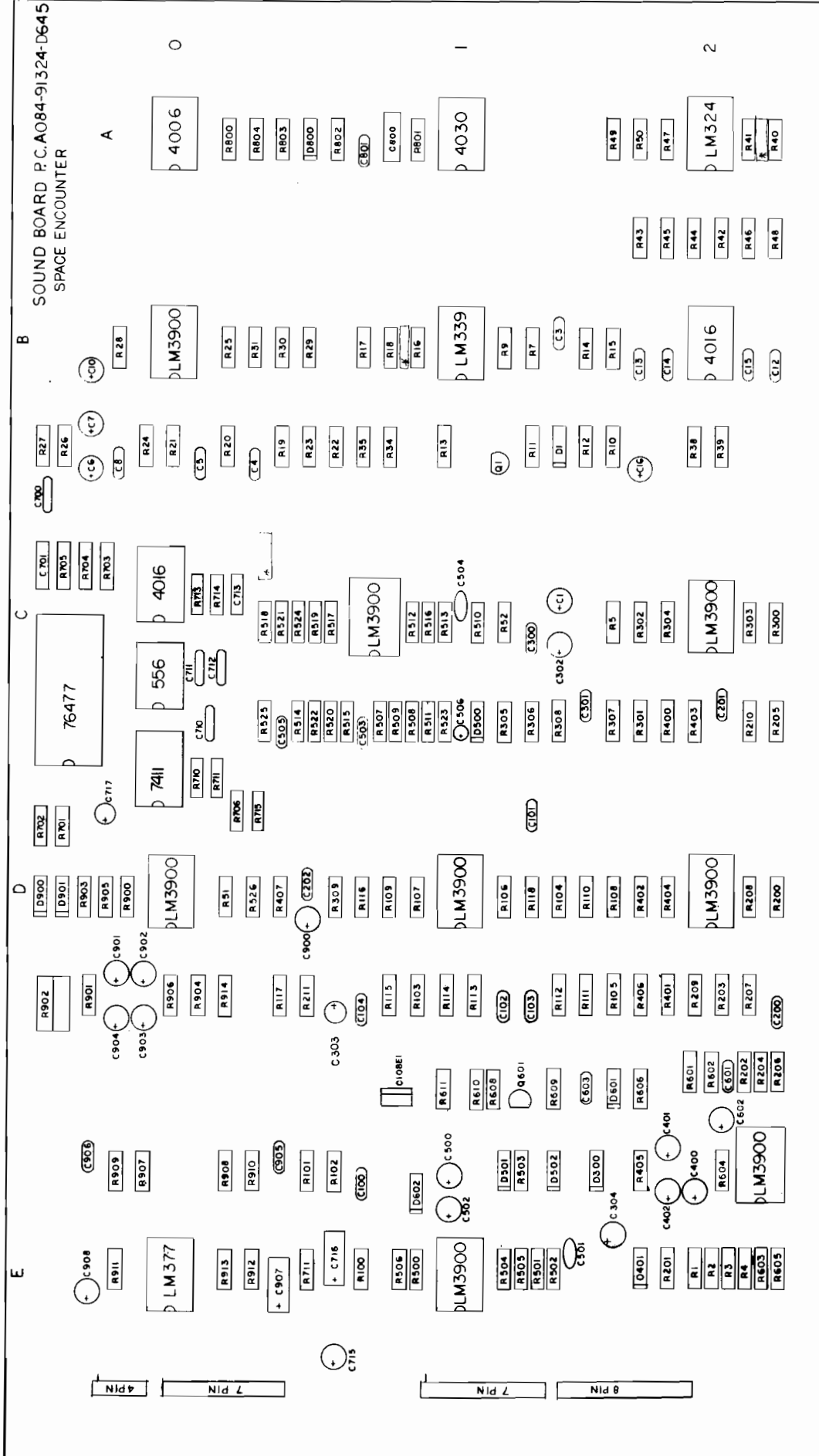


SOUND BOARD P.C.A084-91324-D645  
SPACE ENCOUNTER

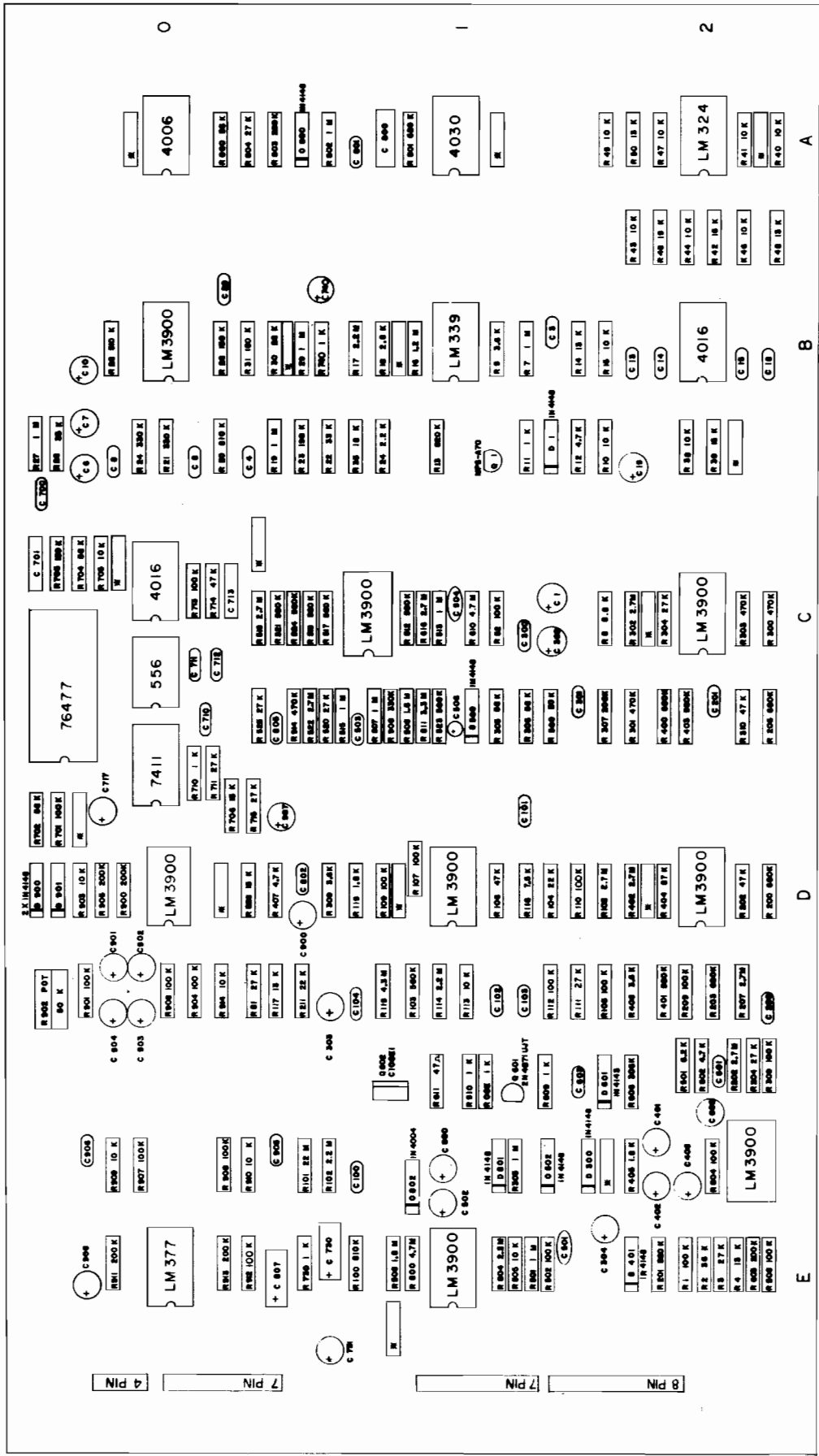


COMPONENT LAYOUT PART NO. MO51-00645-A005

SOUND BOARD P.C.A084-91324-D645  
SPACE ENCOUNTER



RRC LAYOUT PART NO. M051-00645 - A006



**DRAWING NO.-M051-00645-8005**

**REVISEMENTS**

1	2/1	ASSEMBLY
2		
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8		
9		
10		

DATE: 10/1/71  
 DESIGNED BY: 47  
 CHECKED BY: 47  
 DRAWN BY: 47

UNIT PRICE ENCOUNTER

**MIDWAY MFG. CO.**  
 2777 N. PULASKI ST., MILWAUKEE, WIS. 53205

SOUND BOARD COMPONENT LAYOUT A084-91324-F645

- |                          |                          |                            |                         |                         |                           |                          |                             |                            |                            |                            |                             |                             |                          |                            |                            |
|--------------------------|--------------------------|----------------------------|-------------------------|-------------------------|---------------------------|--------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|--------------------------|----------------------------|----------------------------|
| C 804, .1 MF 100 V MYLAR | C 901, .1 MF 100 V MYLAR | C 710, .047 MF 100 V MYLAR | C 804, 330 PF 50 V CER. | C 804, .1 MF 25 V TANT  | C 804, .47 MF 25 V TANT   | C 100, .1 MF 100 V MYLAR | C 101, .0022 MF 100 V MYLAR | C 102, .001 MF 100 V MYLAR | C 103, .001 MF 100 V MYLAR | C 104, .1 MF 100 V MYLAR   | C 200, .0033 MF 100 V MYLAR | C 201, .0022 MF 100 V MYLAR | C 202, .1 MF 100 V MYLAR | C 300, .002 MF 100 V MYLAR | C 301, .001 MF 100 V MYLAR |
| C 805, .1 MF 25 V TANT   | C 806, .1 MF 25 V TANT   | C 711, .01 MF 100 V MYLAR  | C 805, .01 MF 50 V TANT | C 806, .01 MF 50 V TANT | C 712, .01 MF 50 V TANT   | C 400, .1 MF 100 V MYLAR | C 401, .1 MF 50 V TANT      | C 402, .002 MF 100 V MYLAR | C 403, .047 MF 100 V MYLAR | C 404, .047 MF 100 V MYLAR | C 405, .002 MF 100 V MYLAR  | C 406, .22 MF 25 V TANT     | C 500, .1 MF 50 V CER.   | C 501, .1 MF 25 V TANT     | C 502, .1 MF 25 V TANT     |
| C 807, .1 MF 25 V TANT   | C 808, .1 MF 25 V TANT   | C 713, .01 MF 100 V MYLAR  | C 807, .01 MF 50 V TANT | C 808, .01 MF 50 V TANT | C 714, .01 MF 50 V TANT   | C 809, .01 MF 50 V TANT  | C 810, .01 MF 50 V TANT     | C 811, .01 MF 50 V TANT    | C 812, .01 MF 50 V TANT    | C 813, .01 MF 50 V TANT    | C 814, .01 MF 50 V TANT     | C 815, .01 MF 50 V TANT     | C 816, .01 MF 50 V TANT  | C 817, .01 MF 50 V TANT    | C 818, .01 MF 50 V TANT    |
| C 819, .01 MF 50 V TANT  | C 820, .01 MF 50 V TANT  | C 715, .01 MF 100 V MYLAR  | C 821, .01 MF 50 V TANT | C 822, .01 MF 50 V TANT | C 716, .01 MF 100 V MYLAR | C 823, .01 MF 50 V TANT  | C 824, .01 MF 50 V TANT     | C 825, .01 MF 50 V TANT    | C 826, .01 MF 50 V TANT    | C 827, .01 MF 50 V TANT    | C 828, .01 MF 50 V TANT     | C 829, .01 MF 50 V TANT     | C 830, .01 MF 50 V TANT  | C 831, .01 MF 50 V TANT    | C 832, .01 MF 50 V TANT    |

**NOTE:**

W MARKED ON CAPS ARE .1 MF 50V AT. CER.

C 1, 1 MF 25 V TANT

C 2, .01 MF 100 V MYLAR

C 3, .01 MF 100 V MYLAR

C 4, .01 MF 100 V MYLAR

C 5, .01 MF 100 V MYLAR

C 6, .01 MF 100 V MYLAR

C 7, .1 MF 25 V TANT

C 8, .1 MF 25 V TANT

C 9, .1 MF 25 V TANT

C 10, .1 MF 25 V TANT

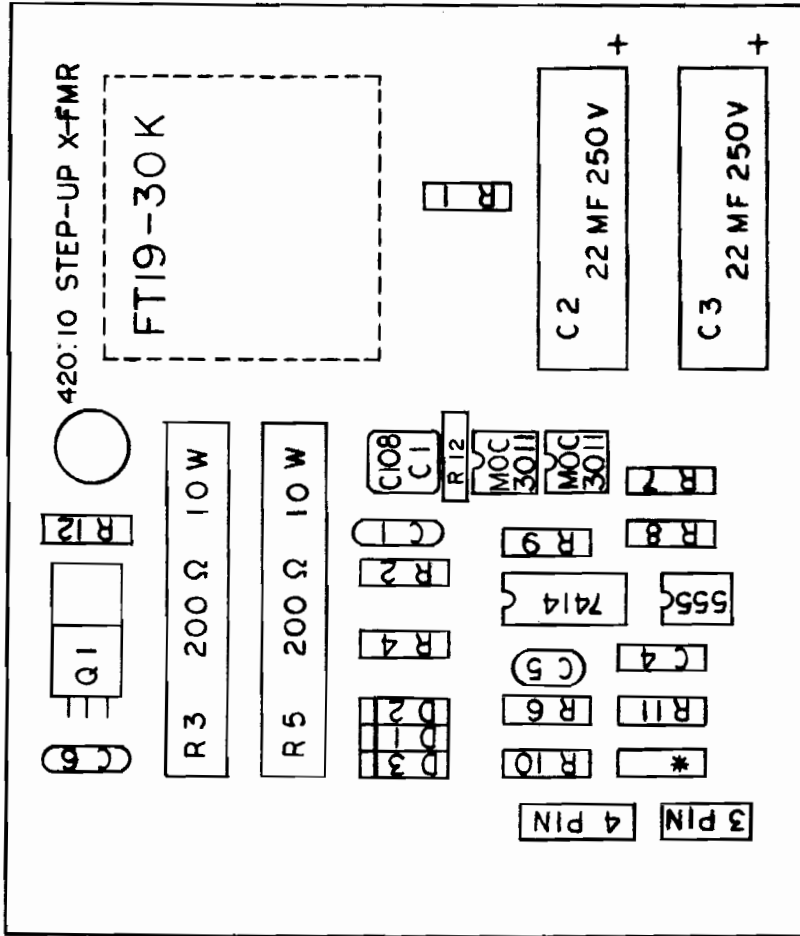
C 11, .1 MF 25 V TANT

C 12, .1 MF 25 V TANT



**NOTE**

- D 1 2 3 IN 4004
- \* .1 MF AX. CER.
- C 1 0.1 MF 200V MYLAR
- C 4 .01 MF AX. CER.
- C 5 .1 MF 100V MYLAR
- C 6 0.01 MF 250V MYLAR
- R 1 1 M
- R 2 10 K
- R 4 180 K
- R 6 820 Ω
- R 7 220 Ω
- R 8 1.6 M
- R 9 1 K
- R 10 330 Ω
- R 11 220 Ω
- R 12 180 Ω
- Q 1 SC141 D




REVISIONS

**MIDWAY MFG. CO.**

FRANKLIN PK. ILL.

USED ONSPACE ENCOUNTER

NO. REQ'D 1 PER

ASSEMBLY DRAWING  
STROBE AND LIGHT P.C.

PART NO.  
A084-91359-B645

SCALE

HEAT TREAT

MAT'L.

FINISH

DO NOT SCALE DWG.

DIM. TOLERANCES UNLESS SPECIFIED

CONCENTRICITY T.I.R. .003  
FRACTIONAL ± 1/64  
DECIMAL ± .005  
HOLE DIA. ± .002-.000

DRN. *Q.V.*

CKD.

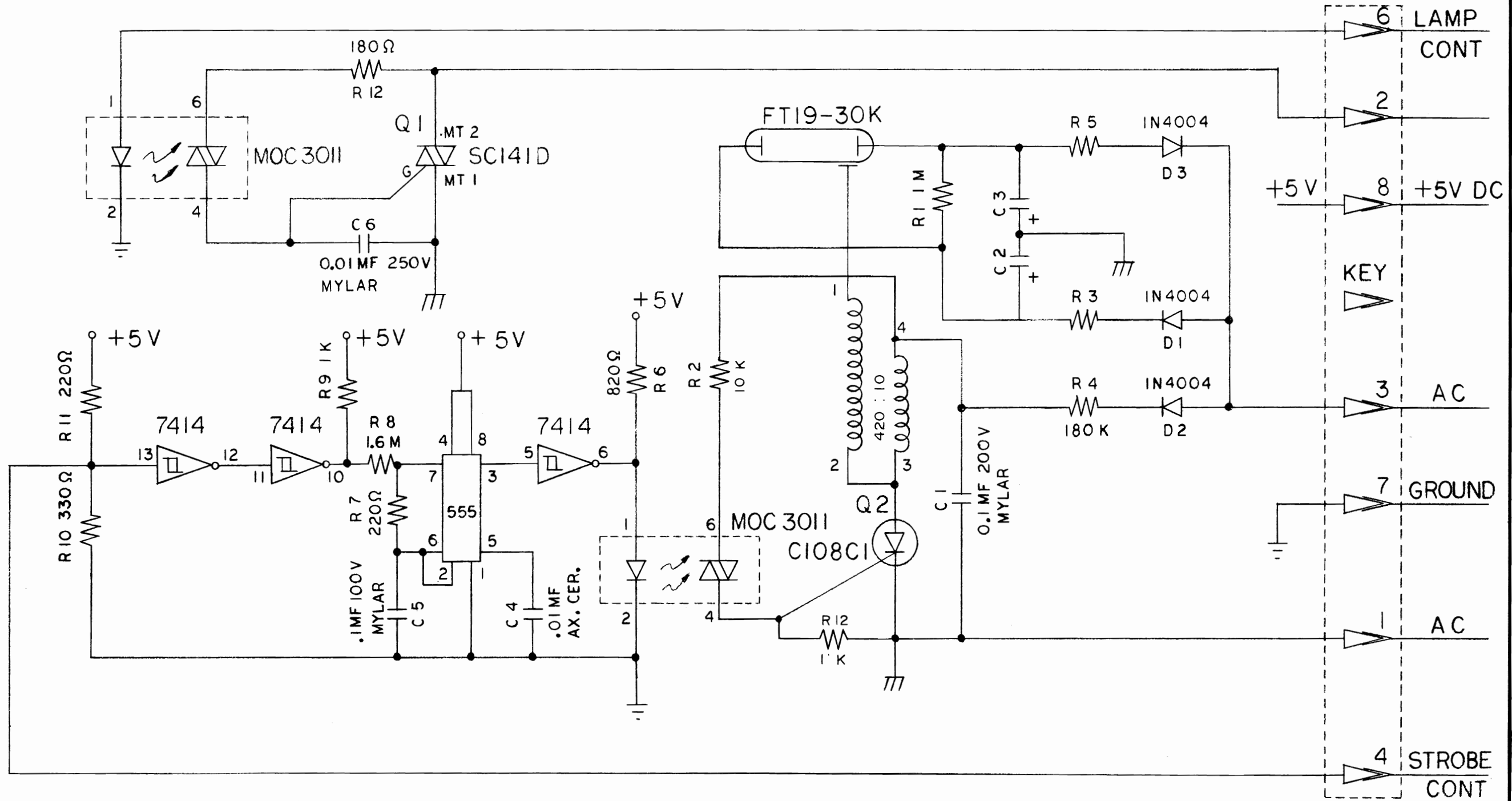
DATE

7/3/80

# NOTES

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This space is provided for personal notes



C 2,3 22 MF 250V ELEC  
 R 3,5 200Ω 10 W

DRAWING NO M051-00645-B001

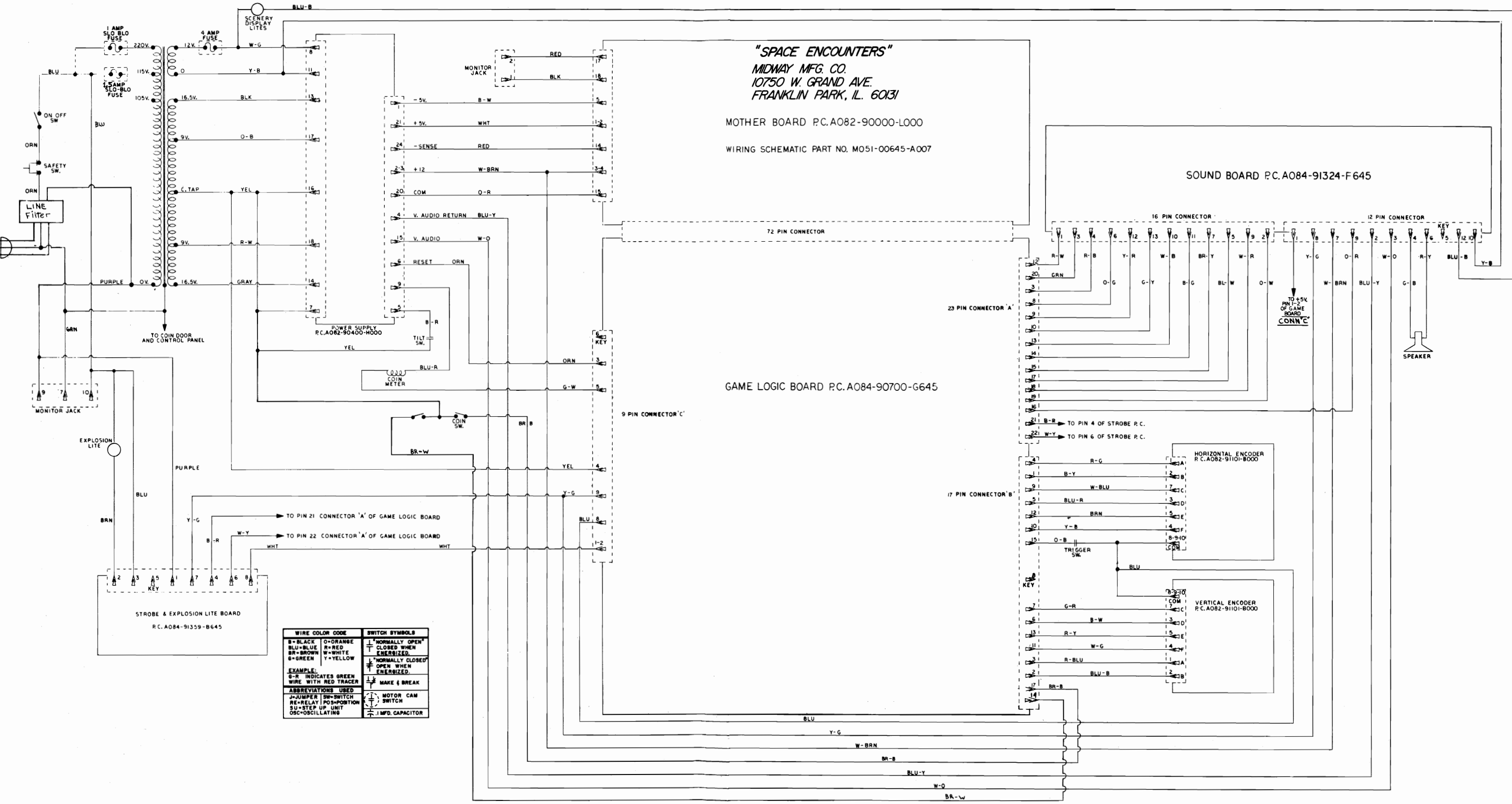
DO NOT SCALE DWG.		HEAT TREAT	SCALE	USED ONSPACE ENCOUNTER	MIDWAY MFG. CO. FRANKLIN PK. ILL.
DIM. TOLERANCES UNLESS SPECIFIED		MAT'L.	NO. REQ'D		
CONCENTRICITY T.I.R. .003	DRN. <i>CL</i>				A084-91359-B645
FRACTIONAL..... ± 1/64	CKD.				
DECIMAL..... ± .005	DATE <i>7/2/80</i>	FINISH			
HOLE DIA..... ± .002-.000					
STROBE AND LIGHT P.C. SCHEMATIC DRAWING					

**"SPACE ENCOUNTERS"**  
 MIDWAY MFG. CO.  
 10750 W. GRAND AVE.  
 FRANKLIN PARK, IL. 60131

MOTHER BOARD P.C.A082-90000-L000  
 WIRING SCHEMATIC PART NO. M051-00645-A007

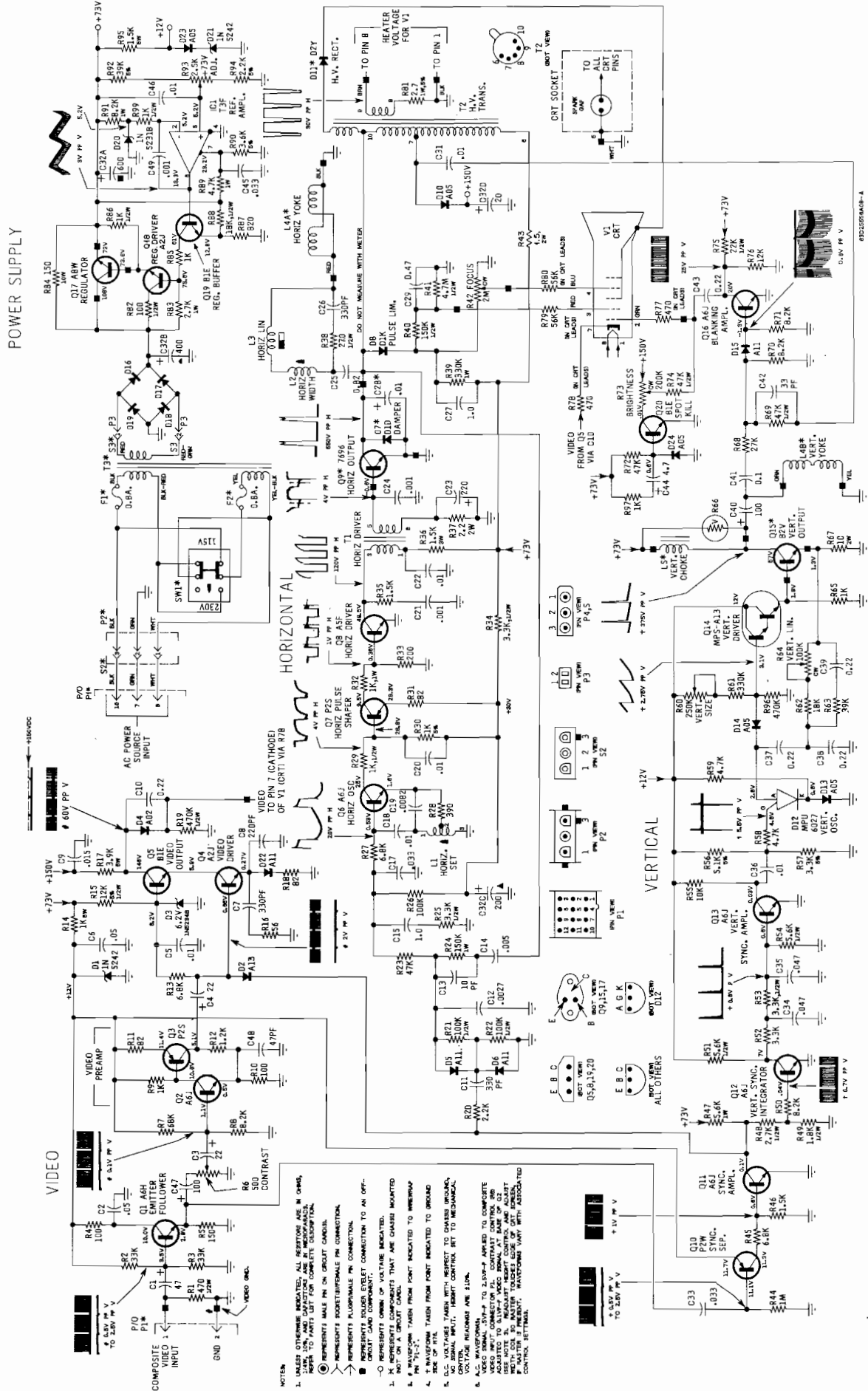
SOUND BOARD P.C.A084-91324-F645

GAME LOGIC BOARD P.C.A084-90700-G645



WIRE COLOR CODE		SWITCH SYMBOLS	
B=BLACK	O=ORANGE	NORMALLY OPEN	CLOSED WHEN ENERGIZED
BLU=BLUE	R=RED	NORMALLY CLOSED	
BR= BROWN	W=WHITE	NORMALLY OPEN	OPEN WHEN ENERGIZED
G=GREEN	Y=YELLOW	MAKE & BREAK	
EXAMPLE:		MOTOR CAM	
G-R INDICATES GREEN WIRE WITH RED TRACER		.1 MFD. CAPACITOR	
ABBREVIATIONS USED			
J=JUMPER	SW=SWITCH		
RE=RELAY	POS=POSITION		
SU=STEP UP UNIT			
OSC=OSCILLATING			

POWER SUPPLY



VIDEO

HORIZONTAL

VERTICAL

- NOTES
1. RESISTOR VALUES INDICATED: ALL RESISTORS ARE IN OHMS, UNLESS SHOWN OTHERWISE. RESISTOR VALUES ARE INDICATED AS RESISTANCE VALUES TO PARTS LIST FOR COMPLETE IDENTIFICATION.
  2. CAPACITOR VALUES INDICATED: ALL CAPACITORS ARE IN P.F. UNLESS SHOWN OTHERWISE.
  3. RESISTORS IDENTIFIABLE BY CONNECTION.
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  95. RESISTORS IDENTIFIABLE BY CONNECTION.

M5000-155, M7000-155 - Diagram Schematic



## REPLACEMENT PARTS LIST

REF. NO.	PART NUMBER	DESCRIPTION	REF. NO.	PART NUMBER	DESCRIPTION
R-63	6S121301	1000 10% 1/2W		50V25008A22	SPEAKER: 4" PM; incld D22
R-64	17S10130C91	10 10% 1/2W (special)	E-1	65S139451	LAMP: No. 1436
R-66	6S129064	4700 10% 1W			
R-67	6S122848	18K 10% 1/2W			
R-68	6S124797	150 10% 1/2W			
R-69	17S647132	1200 10% 5W WW (Use 17S136197)			
R-71	6S119926	2700 10% 1/2W		9D66133A28	CAP, SS Rect (HV Transformer - PRI/SEC lead)
R-72	6S124551	15K 10% 1/2W		42B25158A01	CLAMP, Metal: Defl Yoke Mtg
R-73	6S129875	2200 10% 1/2W		31D70080B04	CONNECTOR, PC panel: 9 contact; on chassis
R-75	6S121301	1000 10% 1/2W			
R-76	6S124506	3300 10% 1/2W			
R-77	6S129221	100 10% 1/2W	S-2	*15S10390A06	CONNECTOR, PC panel: 12 contact; less key and contacts (power-audio panel)
R-78	6S127005	5600 10% 1/2W			
R-79	17S135589	150 10% 10W WW	P-1	*15S10183A69	CONNECTOR, Plug: 12 contact; less contacts (power)
R-81	6C66263A08	VARISTOR (Use 6S66263A16)			
R-86	6S127099	220 10% 1/2W			
R-88	6S121301	1000 10% 1/2W			
R-89	---	Part of CRT Socket		*39S10184A63	CONTACT, Plug: for power connector 15S10183A69
R-90	6S131412	56 10% 1/2W		39S10184A22	CONTACT: for S2 connector
R-91	6S10053C39	1800 5% 1/2W		15S10630A01	COVER, nylon: slide switch; SW1
R-92	6S10053C57	10K 5% 1/2W		*7S10609A03	GROMMET, Plastic: PC panel mtg
R-95	6S125568	22K 10% 1/2W		26C66745A05	HEAT SINK: Q3
R-96	6S125568	22K 10% 1/2W		*26C25198A01	HEAT SINK: Q20
R-97	6S121847	4700 10% 1/2W		9C66238A02	HOLDER, Fuse: F1 & F2
R-98	6S127099	220 10% 1/2W		14A562353	INSULATOR, Mica: Transistor socket; Q9, Q13, Q16 & Q20 (Use 14A543810)
R-99	6S128226	120 10% 1/2W		28S10733A01	KEY, Plug: for S2 connector
				2S7051	NUT, hex: 3/8-32; control mtg
				5S10281A03	RIVET, drive pin: nylon; HV transf mtg
				47C66082A03	ROD, Adjustment: width coil; L4
				3S136050	SCREW, tpg: 6-20 x 1/2 clu pan hd; Q9, Q13, Q16 & Q20
				9S10143A41	SOCKET, lamp: E1
				*9D67555V27	SOCKET, CRT: incld leads & resistors
				*9D25201A01	SOCKET, HV Rectifier (4): complete; incld 2nd anode lead & cup
				9C63825A01	SOCKET, transistor: Q9, Q13, Q16
				9C63825A02	SOCKET, transistor: Q20
				41D65987A01	SPRING, special: CRT aquadag grnd
				66P65173A47	TOOL, contact removal (S2 connector)
<b>SWITCHES</b>					
SW-1	40S10624A01	SWITCH, Slide: DPDT (115V-230V)			
<b>TRANSFORMERS</b>					
T-1	25D67440A03	HORIZ DRIVER			
T-2	24D69791A21	H. V. TRANSFORMER: complete			
T-3	25D65840A22	VERT OUTPUT (Use 25D65840B23)			
T-4	*25D68164A31	POWER			
<b>MISCELLANEOUS ELECTRICAL PARTS</b>					
V-1	20WP4	CRT (XM501-10 19VP111)			
	23JEP4	CRT (XM701-10 23VP111)			

\* DENOTES NEW ITEM APPEARING ON ANY LIST FOR FIRST TIME.

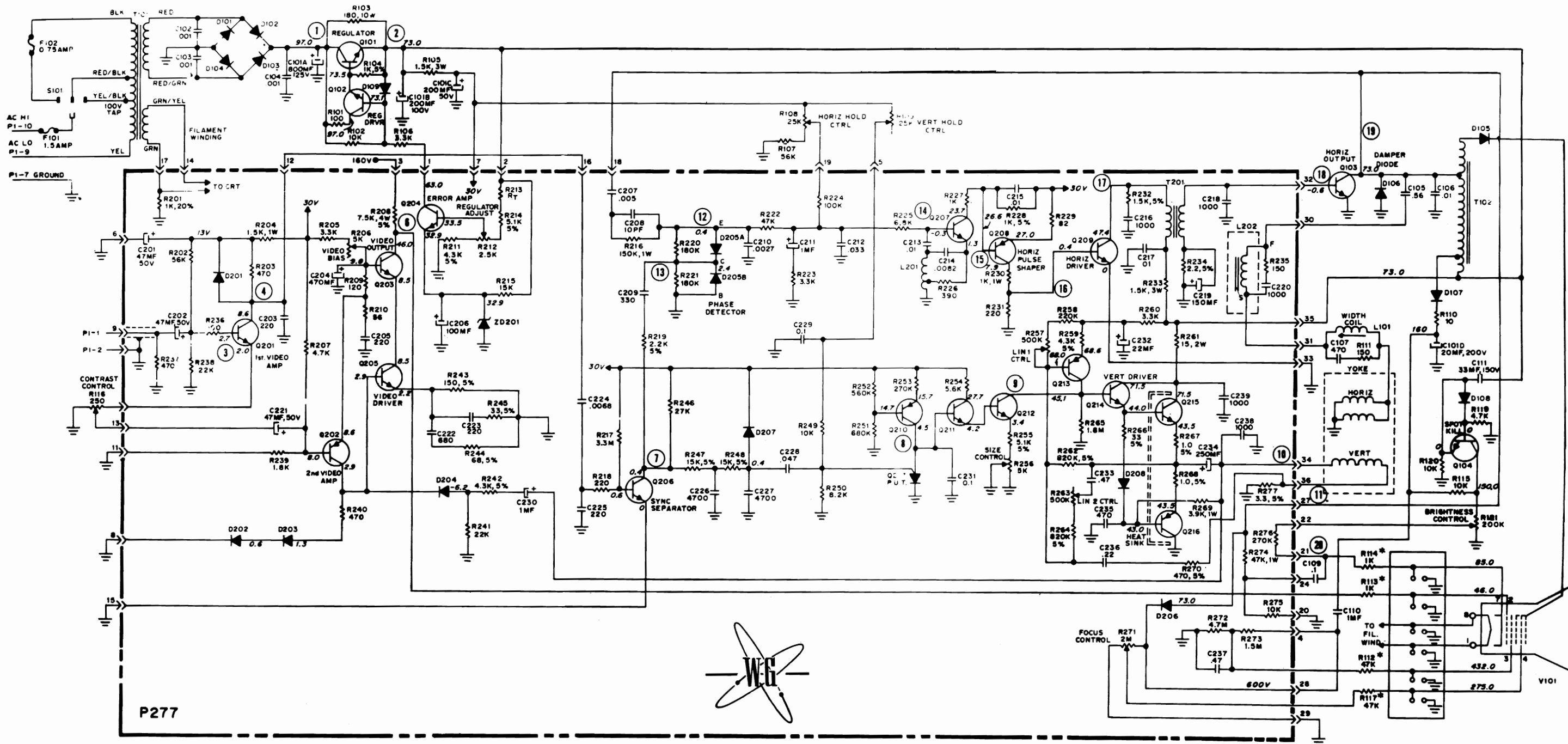
**MOTOROLA PARTS DEPT.**  
**MOTOROLA INC.**  
**1155 HARVESTER RD.**  
**WEST CHICAGO, IL 60185**  
**PHONE (312) 231-4400**

# NOTES

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This space is provided for personal notes





P277

- NOTES:
1. VOLTAGE MAY VARY WITH CONTROL SETTING.
  2. LINE VOLTAGE MAINTAINED AT 120VAC, 50/60 Hz.
  3. ALL D.C. VOLTAGES  $\pm 10\%$  MEASURED FROM POINT INDICATED TO CHASSIS USING HIGH IMPEDANCE METER WITH NO SIGNAL INPUT. CONTRAST AND BRIGHTNESS CONTROLS AT MAXIMUM; ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.
  4. ○ WITH INTERNAL NUMBER INDICATES LOCATION OF WAVE FORM READING.

# WELLS - GARDNER ELECTRONICS

CORPORATION

2701 N. KILDARE AVE. • CHICAGO, ILL. 60639 • ALBANY 2-8220  
TELEX 25-3286

- NOTES:
- \* INDICATES RESISTORS LOCATED IN PICTURE TUBE LEAD ASSEMBLY.
  - RESISTANCE VALUES IN OHMS, 1/2 WATT, 10% UNLESS OTHERWISE NOTED. K-1,000 M-1,000,000
  - CAPACITANCE VALUES OF 1 OR LESS ARE IN MICROFARADS. ABOVE 1 IN PICOFARADS UNLESS OTHERWISE NOTED.

*MODEL No.*  
V1001-5734

# REPLACEMENT PARTS LIST

## CHASSIS PARTS

### CAPACITORS

C101A, B, C, D	45X0558-001	800 $\mu$ F/125V, 200 $\mu$ F/100V 200 $\mu$ F/50V, 20 $\mu$ F/200V Electrolytic
C102, 103 104	80X0001-000	.001 $\mu$ F, GMV Z5U Cer. Disc.
★C105	342X5642-049	.56 $\mu$ F, 400V, 10% Polypropylene
★C106	46X0536-001	.01 $\mu$ F, 1200V, 5% Polypropylene
C107	80X0099-006	470 pF, Z5F, 10%
C109	342X1044-040	0.1 $\mu$ F, 400V, 20% Mylar
★C110	46X0540-002	1.0 $\mu$ F, 630V, 10% Polyester Film
C111	45X0515-032	33 $\mu$ F, 150V, Electrolytic

### CONTROLS

R108, 109	40X0585-091	25k Ohm, Horiz. & Vert. Hold
R116	40X0585-090	250 Ohm, Contrast
R121	40X0585-092	200k Ohm, Brightness

### COILS & TRANSFORMERS

★L101	9A2787-001	Coil, Width
★T101	53X0475-001	Transformer, Power
★T102	53X0474-001	Transformer, Flyback

### RESISTORS

R101	340X3101-941	100 Ohm, 10%, 1/2W
R102, 115, 120	340X3103-941	10k Ohm, 10%, 1/2W
★R103	340X0181-341	180 Ohm, 10%, 10W, WW
R104	340X3102-931	1k Ohm, 5%, 1/2W
★R105	340X6152-341	1.5k Ohm, 10%, 3W, WW
R106	340X3332-941	3.3k Ohm, 10%, 1/2W
R107	340X3563-941	56k Ohm, 10%, 1/2W
R110	340X3100-941	10 Ohm, 10%, 1/2W
R111	340X3151-941	150 Ohm, 10%, 1/2W
R119	340X3472-941	4.7k Ohm, 10%, 1/2W

### SEMICONDUCTORS

D101, 102 103, 104	66X0023-009	Rectifier, Silicon 500V 1N444B
★D105	66X0067-001	Rectifier Varo H1802
★D106	66X0068-001	Diode, Damper MR1-1600
D107	66X0053-001	Diode, 350V Amperex BA148
D108, 109	66X0046-001	Diode, Silicon FDH444
★Q101	86X0117-001	Transistor (NPN) 2N5632 Regulator
Q102	86X0071-001	Transistor (NPN) Reg. Driver MPSA06
★Q103	86X0118-001	Transistor (NPN) BU207 Hor. Output
Q104	86X0065-001	Transistor (NPN) D40N5 Spot Kill

### MISCELLANEOUS

★F101	16X0171-001	Fuse Holder
★F102	16X0176-001	Fuse, 1.5 Amp, Slo-Blo 3AG
★	16X0175-001	Fuse, 0.75 Amp, Slo-Blo 3AG
★	13X1201-001	HV Lead & Recept. Assy.
★	28X0789-001	Spring, Dag, Grounding
★	9A2786-001	Deflection Yoke & Clamp
★V101	19VARP4	CRT (19V1001)
or	or	
★V101	22VATP4	CRT (22V1001)
	38A5473-000	2 PDT Small Relay (W/Wires)
	38A5474-000	6 PDT Large Relay (W/Wires)

★ Product Safety Device

# REPLACEMENT PARTS LIST P277 CIRCUIT BOARD ASSY.

## CAPACITORS

C201, 202, 221	45X0524-027	47 $\mu$ F, 50V, Electrolytic
C203, 205, 223, 225	80X0099-057	220 pF, 10%, Z5F, Cer. Disc.
C204	45X0524-053	470 $\mu$ F, 16V, Electrolytic
C206	45X0524-051	100 $\mu$ F, 50V, Electrolytic
C207	80X0099-192	.005 $\mu$ F, 20%, 1KV, Cer. Disc.
C208	80X0099-036	10 pF, 10%, 500V, Cer. Disc.
C209	80X0099-013	330 pF, 10%, 500V, Cer. Disc.
C210	349X4722-109	.0027 $\mu$ F, 10%, Mylar
C211	45X0524-023	1.0 $\mu$ F, 15V, Electrolytic
C212	349X3332-109	.033 $\mu$ F, Mylar
C213	46X0537-002	.01 $\mu$ F, Poly
C214	46X0537-003	.0082 $\mu$ F, Poly
C215	349X1032-109	.01 $\mu$ F, 10%, 100V Mylar
C216, 218, 220, 238, 239	80X0099-076	1000 pF, 10%, 500V, Cer. Disc.
C217	349X1032-209	.01 $\mu$ F, 10%, 200V, Mylar
C219	45X0524-052	150 $\mu$ F, 10V, Electrolytic
C222	80X0099-137	680 pF, 10%, 500V, Cer. Disc.
C224	349X6822-109	.0068 $\mu$ F, 10%, 100V, Mylar
C226, 227	80X0099-056	4700 $\mu$ F, 10%, 500V, Cer. Disc.
C228	349X4732-109	.047 $\mu$ F, 10%, 100V, Mylar
C229	349X1044-109	0.1 $\mu$ F, 20%, 100V, Mylar
C230	45X0515-014	1.0 $\mu$ F, 50V, Electrolytic
C231	349X1042-109	0.1 $\mu$ F, 10%, 100V, Mylar
C232	45X0524-026	22 $\mu$ F, 100V, Electrolytic
C233	349X4742-109	.47 $\mu$ F, 10%, 100V, Mylar
C234	45X0524-025	250 $\mu$ F, 100V, Electrolytic
C235	80X0099-006	470 pF, 10%, Z5F, Cer. Disc.
C236	349X2242-109	.22 $\mu$ F, 10%, 100V, Mylar
C237	46X0540-001	.47 $\mu$ F, 10%, 630V, Polyester Film

## CONTROLS

R206, 256	40X0592-008	5k Ohm, Video Output, Size
R212	40X0585-093	2.5k Ohm, Reg. Adj.
R257, 263	40X0592-004	500k Ohm, Lin 1 & 2
R271	40X0585-094	2M Ohm, Focus

## COILS & TRANSFORMERS

★L201	9A2788-001	Horiz. Osc.
★L202	9A2789-001	Horiz. Lin.
★T201	52X0126-001	Horiz. Driver

## RESISTORS

R201	340X3102-954	1k Ohm, 20%, 1/2W
R202	340X3563-944	56k Ohm, 10%, 1/2W
R203, 237, 240	340X3471-944	470 Ohm, 10%, 1/2W
★R204	340X4152-843	1.5k Ohm, 10%, 1.0W
R205, 223, 260	340X3332-944	3.3k Ohm, 10%, 1/2W
R207	340X3472-944	4.7k Ohm, 10%, 1/2W
★R208	340X7752-733	7.5k Ohm, 5%, 4.0W
R209	340X3121-944	120 Ohm, 10%, 1/2W
R210	340X3560-944	56 Ohm, 10%, 1/2W
R211, 242, 259	340X3432-934	4300 Ohm, 5%, 1/2W
R213	43X0467-001	Thermistor
R214, 255	340X3512-934	5.1k Ohm, 5%, 1/2W
R215	340X3153-944	15k Ohm, 10%, 1/2W
★R216	340X4154-843	150k Ohm, 10%, 1.0W
R217	340X3335-944	3.3M Ohm, 10%, 1/2W
R218, 231	340X3221-944	220 Ohm, 10%, 1/2W
R219	340X3222-934	2.2k Ohm, 5%, 1/2W

## RESISTORS (Cont'd.)

R220, 221	340X3184-944	180k Ohm, 10%, 1/2W
R222	340X3473-944	47k Ohm, 10%, 1/2W
R224	340X3104-944	100k Ohm, 10%, 1/2W
R225	340X3682-944	6.8k Ohm, 10%, 1/2W
R226	340X3391-944	390 Ohm, 10%, 1/2W
R227	340X3102-944	1k Ohm, 10%, 1/2W
R228	340X3102-934	1k Ohm, 5%, 1/2W
R229	340X3820-944	82 Ohm, 10%, 1/2W
★R230	340X4102-843	1k Ohm, 10%, 1.0W
R232	340X3152-934	1.5k Ohm, 5%, 1/2W
★R233	340X6152-743	1.5k Ohm, 10%, 3.0W
R234	340X5022-333	2.2 Ohm, 5%, 2.0W
R235	340X3151-944	150 Ohm, 10%, 1/2W
R236	340X3101-944	100 Ohm, 10%, 1/2W
R238, 241	340X3223-944	22k Ohm, 10%, 1/2W
R239	340X3182-944	1.8k Ohm, 10%, 1/2W
R243	340X3151-934	150 Ohm, 5%, 1/2W
R244	340X3680-934	68 Ohm, 5%, 1/2W
R245, 266	340X3330-934	33 Ohm, 5%, 1/2W
R246	340X3273-944	27k Ohm, 10%, 1/2W
R247, 248	340X3153-934	15k Ohm, 5%, 1/2W
R249, 275	340X3103-944	10k Ohm, 10%, 1/2W
R250	340X3822-944	8.2k Ohm, 10%, 1/2W
R251	340X3684-944	680k Ohm, 10%, 1/2W
R252	340X3564-944	560k Ohm, 10%, 1/2W
R253, 276	340X3274-944	270k Ohm, 10%, 1/2W
R254	340X3562-944	5.6k Ohm, 10%, 1/2W
R258	340X3224-944	220k Ohm, 10%, 1/2W
★R261	340X5150-843	15 Ohm, 10%, 2.0W
R262, 264	340X3824-934	820k Ohm, 5%, 1/2W
R265	340X3185-944	1.8M Ohm, 10%, 1/2W
R267, 268	340X3010-934	1 Ohm, 5%, 1/2W
R269	340X4392-843	3.9k Ohm, 10%, 1/2W
R270	340X3471-934	470 Ohm, 5%, 1/2W
R272	340X3475-944	4.7M Ohm, 10%, 1/2W
R273	340X3155-944	1.5M Ohm, 10%, 1/2W
★R274	340X4473-843	47k Ohm, 10%, 1.0W
R277	340X3033-934	3.3 Ohm, 5%, 1/2W

## SEMICONDUCTORS

D201, 202, 203, 204, 207, 208	66X0046-001	Diode, Silicon FDH444
D205A, 205B	66X0066-001	Diode, Dual, MSD6102
D206	66X0054-002	Diode, RCA D2102SF
Q201, 205, 206	86X0113-001	Transistor (NPN) 2N3904
Q202, 208	86X0114-001	Transistor (PNP) 2N3906
Q203	86X0071-001	Transistor (NPN)
Q204, 212	86X0071-001	Transistor (NPN) MPSA06
Q207, 211	86X0058-002	Transistor (NPN) MPSA20
Q209	86X0116-001	Transistor Horiz, Driver (NPN) 2N6557
Q210	86X0066-001	Transistor (PNP) MPSA70
Q213	86X0072-001	Transistor (PNP) MPSA56
Q214	86X0073-001	Transistor (NPN) MPSU07
Q215	86X0074-001	Transistor (NPN) 2N5192
Q216	86X0075-001	Transistor (PNP) 2N5195
Q217	86X0070-001	Transistor (P.U.T.) MPU131
ZD201	66X0040-004	Diode, Zener 31V

## MISCELLANEOUS

38A5395-000	Pix Socket & Connector Assy.
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★ Product Safety Device

## SPACE ENCOUNTERS

### GAME LOGIC BOARD [PC - A084 - 90700 - A905]

CHIP NUMBER	FUNCTION
7400	Quad two input Nand
7402	Quad two input Nor
7404	Hex inverter
74LS08	Quad two input And
7417	Hex Buffer
7438	Quad two input Nand Buffer
7442	BCD-Decimal Decoder
7474	Dual "D" Type Flip - Flop
7483	4 Bit Binary Adder
74S89	64 Bit Ram
74109	Dual "JK" Flip Flop
74LS138	3 to 8 line Decoder Multiplexer
74LS153	Dual 4 to 1 line Multiplexer
74157	Quad 2 to 1 line Multiplexer
74161	4 Bit Binary Counter
74174	Hex "D" Type Flip Flop
74175	Quad "D" Type Flip Flop
74191	Binary up - down Counter
74S201	256 Bit Ram
27LS00	256 Bit Ram
74LS298	Quad 2 input Multiplexer

#### ADDITIONAL DEVICES

ADDITIONAL DEVICES	FUNCTION
2N4401	Transistor
TIP-110	Transistor
1N4004	Diode
1N4148	Diode

### STROBE AND LIGHT UNIT [PC A084 - 91359]

DEVICES	FUNCTION
MDC3011	Opto - Isolator
SC141D	Triac
7414	Hex Schmitt Trigger
555	Timer
FT19 - 30K	Strobe Light Assembly
C108C1	SCR
1N4004	Diode

### SOUND GENERATOR [PC A084 - 91324 - F - 645]

CHIP NUMBER	FUNCTION
4006	18 Bit Shift Register
4016	Quad Electronic Switch
4030	Quad Exclusive OR
LM324	Quad OP. Amp.
LM339	Quad Voltage Comparator
LM377	Dual Audio Amp.
556	Dual Timer
76477	Sound Generator
7411	3 Input And
2N4871	Unijunction Transistor

#### ADDITIONAL DEVICES

ADDITIONAL DEVICES	FUNCTION
C108B1	SCR
MPSA20	Transistor
TIP-32	Transistor