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**NAMCO-AMERICA, INC.**

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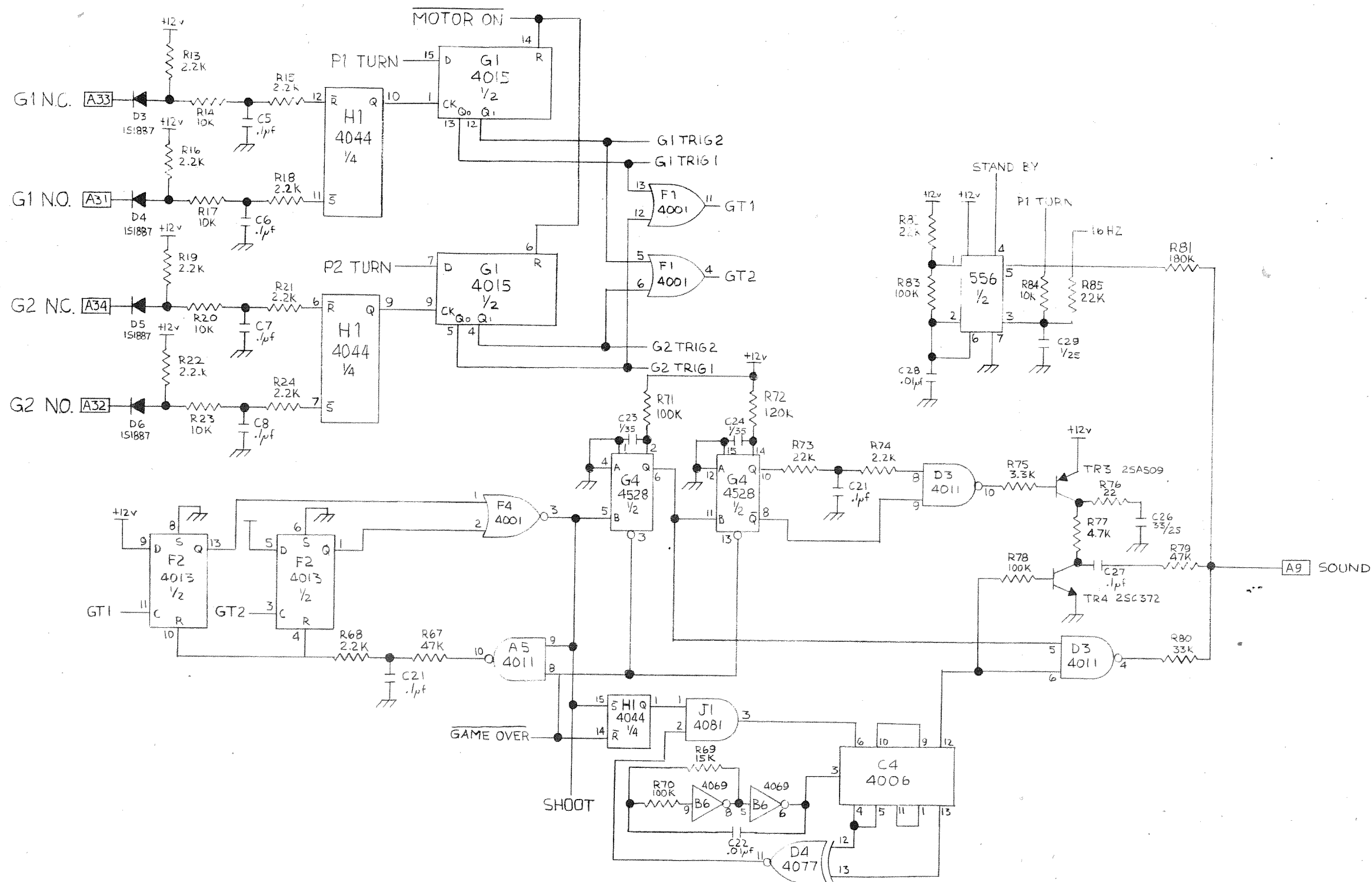
**SHOOT AWAY**

TECHNICAL MANNUAL

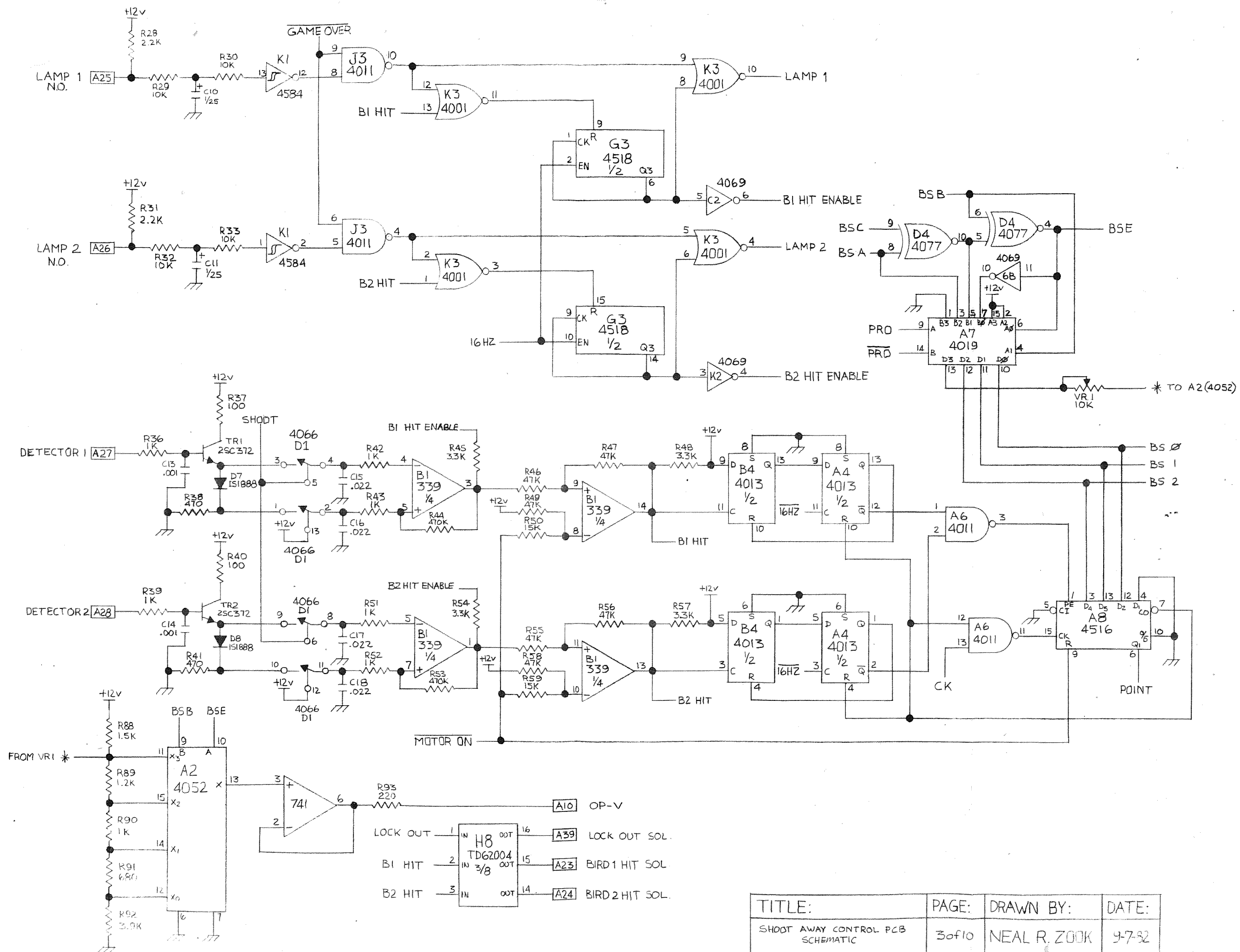
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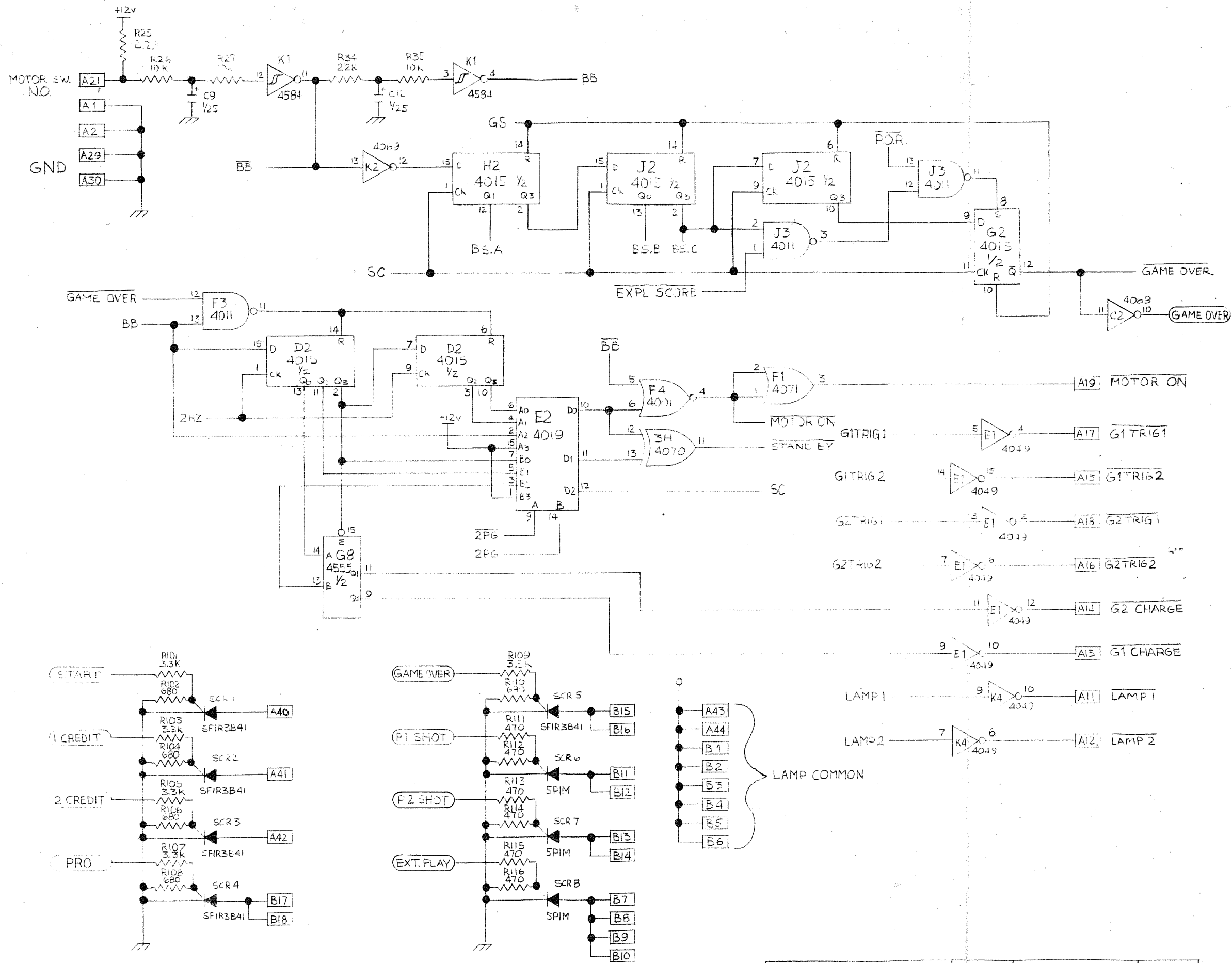




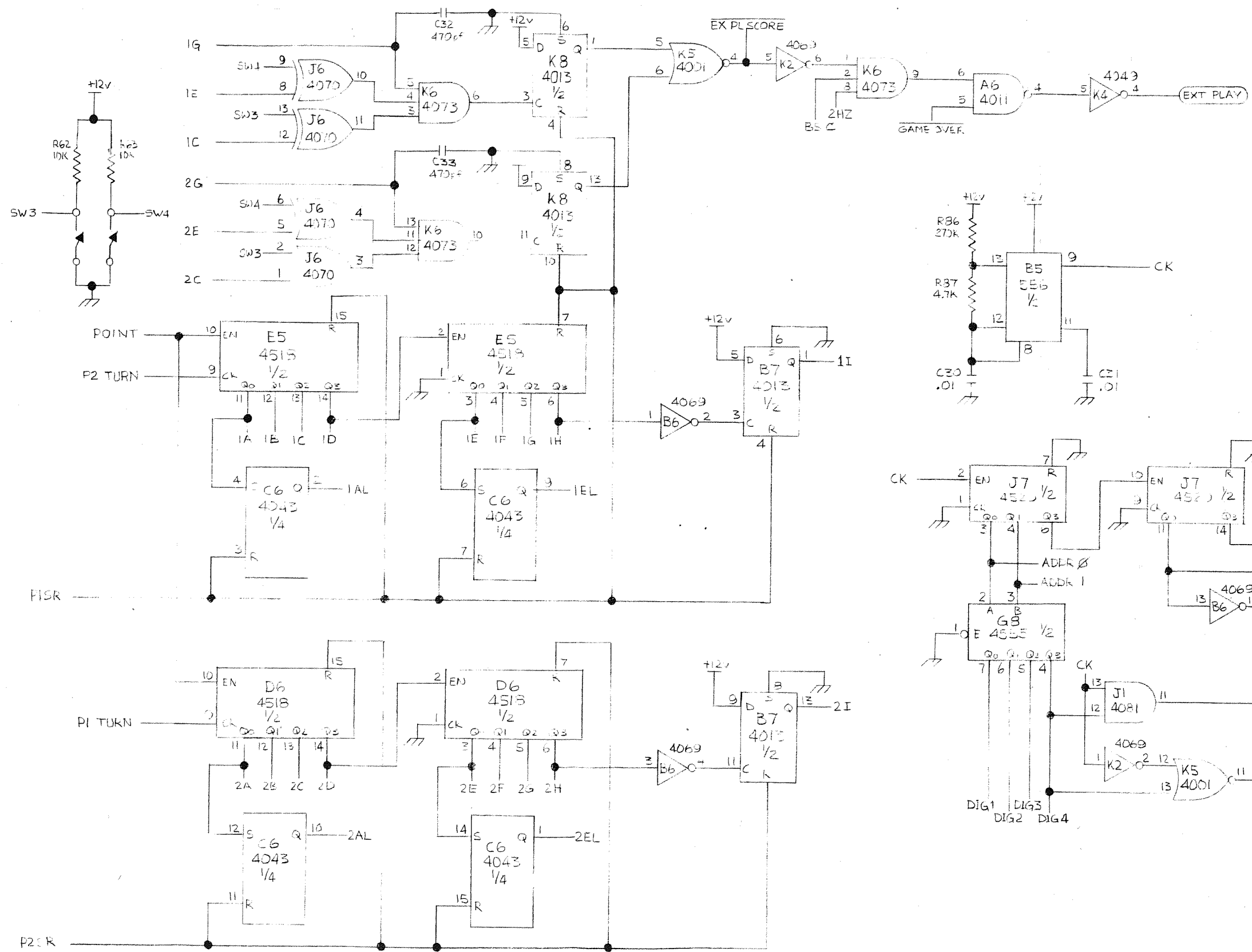
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SHOOT AWAY CONTROL PCB SCHEMATIC.	2 of 10	NEAL R. Z...	9-2-82



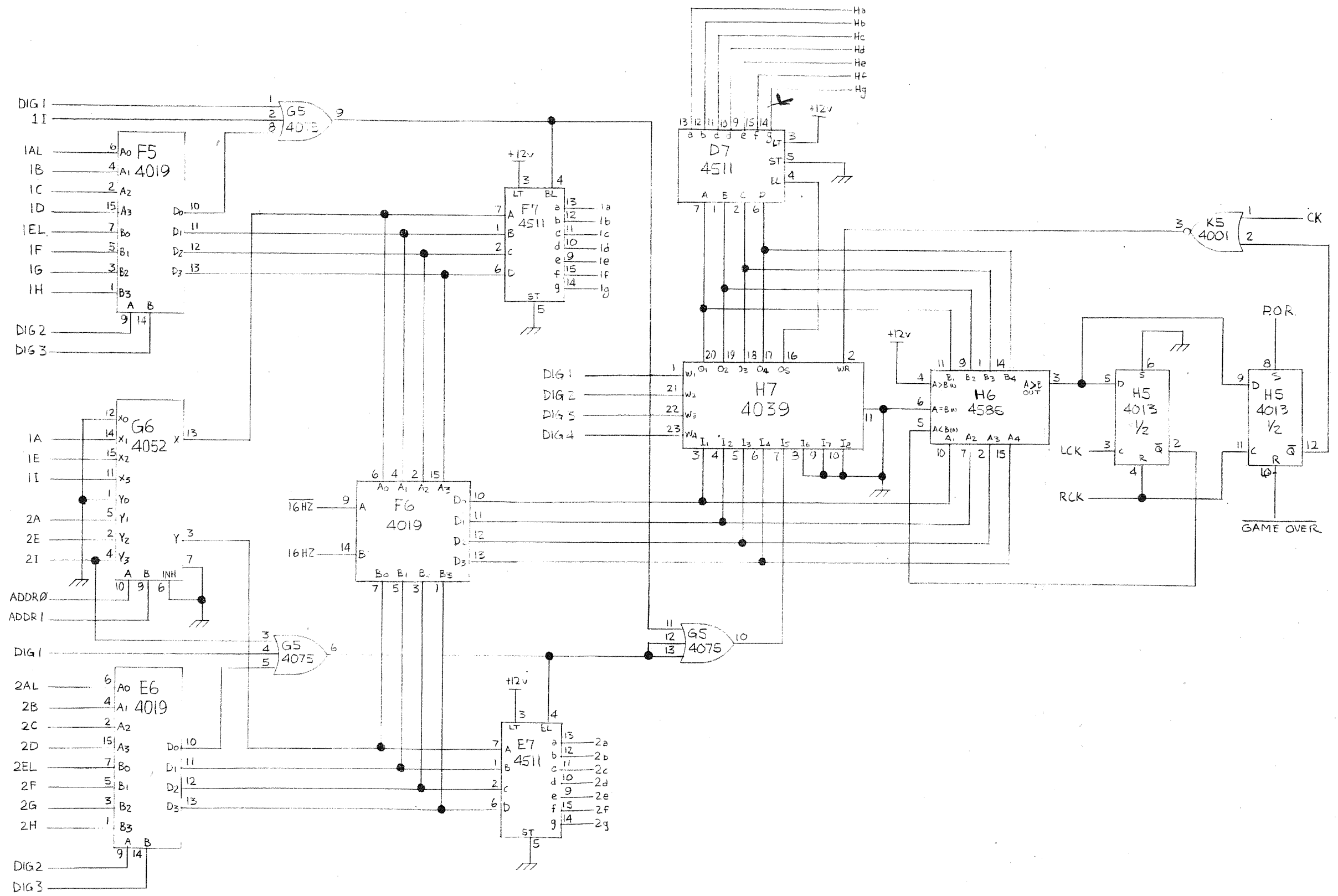
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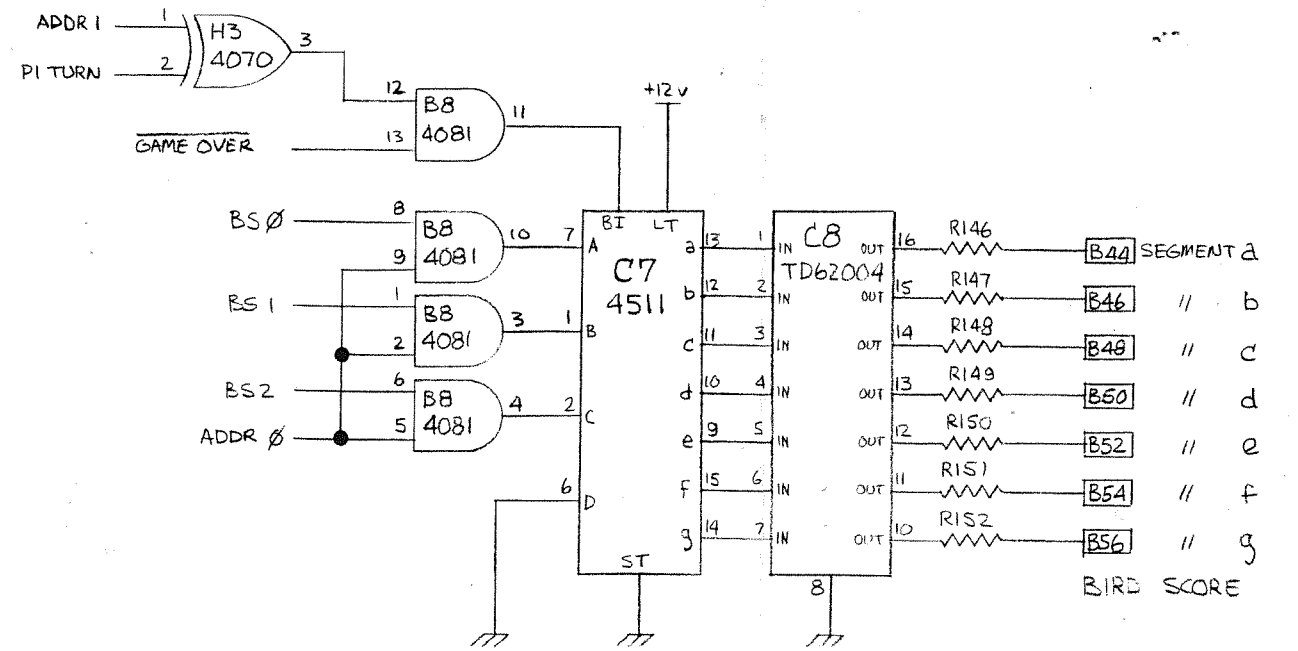
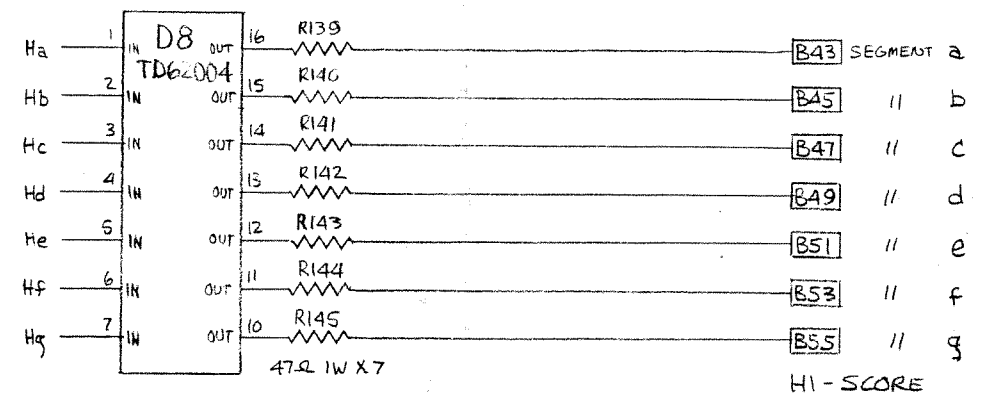
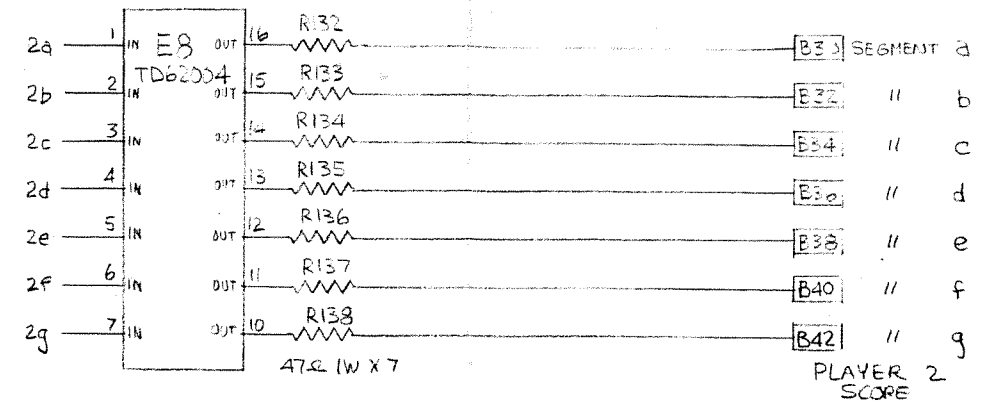
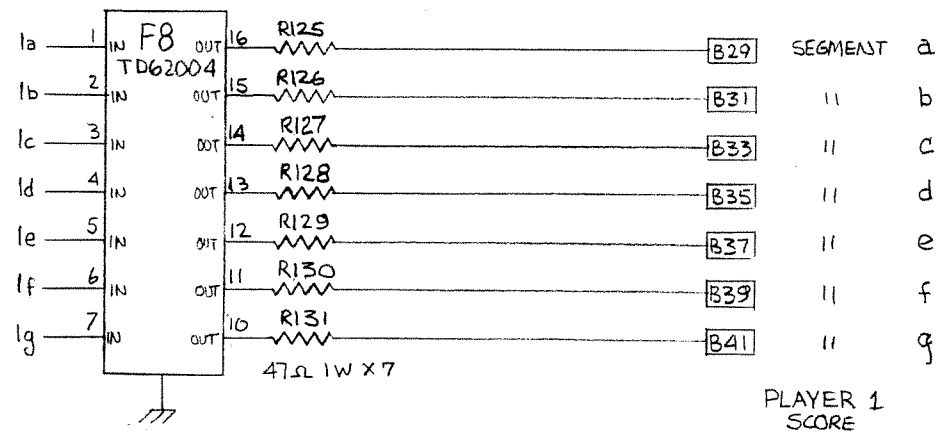
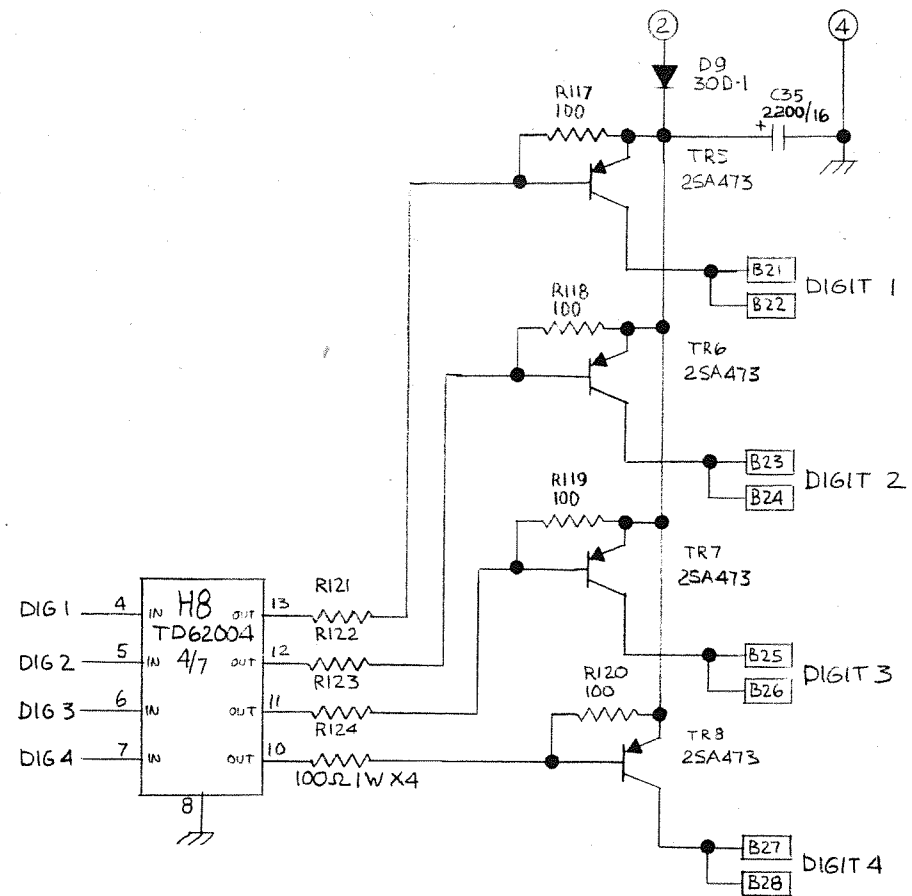
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SHOOT AWAY CONTROL PCB SCHEMATIC	5 of 10	NEAL R. ZOOK	9-8-82

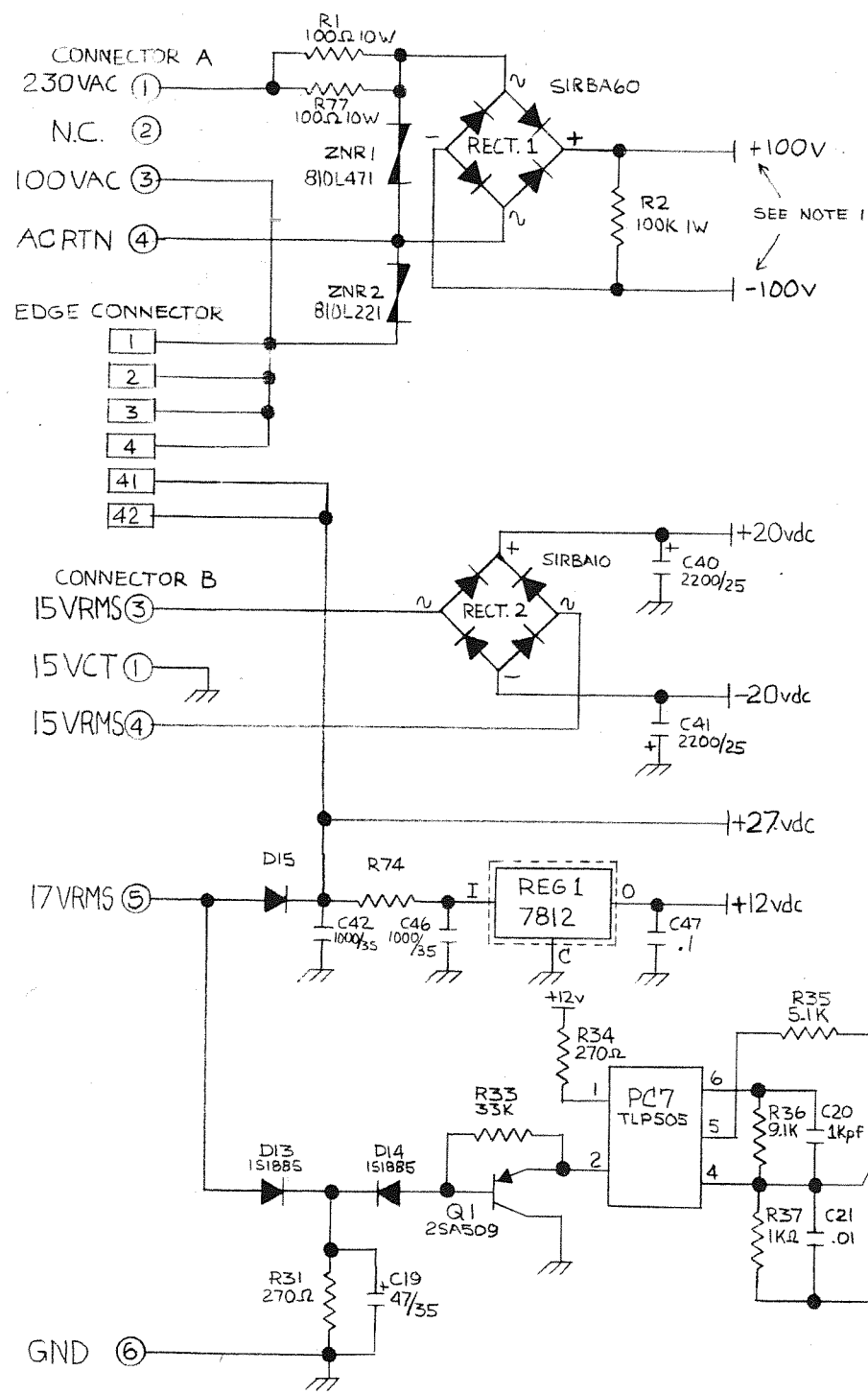


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SHOOT AWAY CONTROL PCB SCHEMATIC	6 of 10	NEAL R. ZOOK	9-9-82



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SHOOT AWAY CONTROL PCB SCHEMATIC.	7 of 10	NEAL R. ZOOK	9-9-82

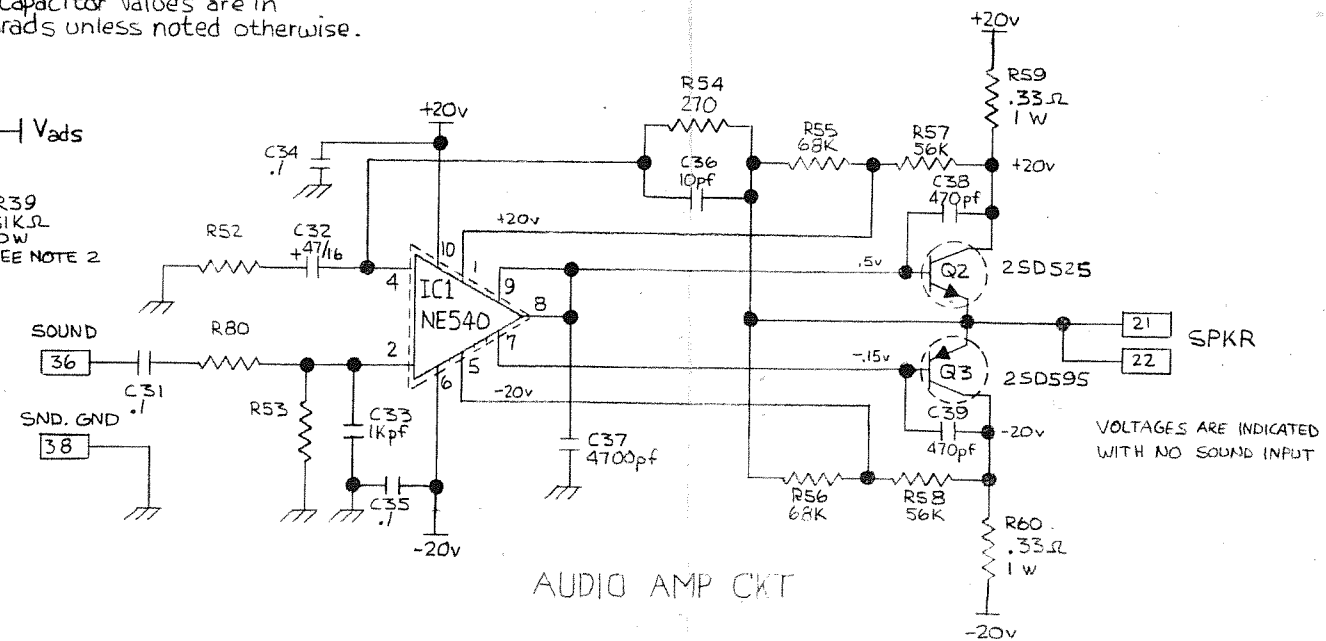
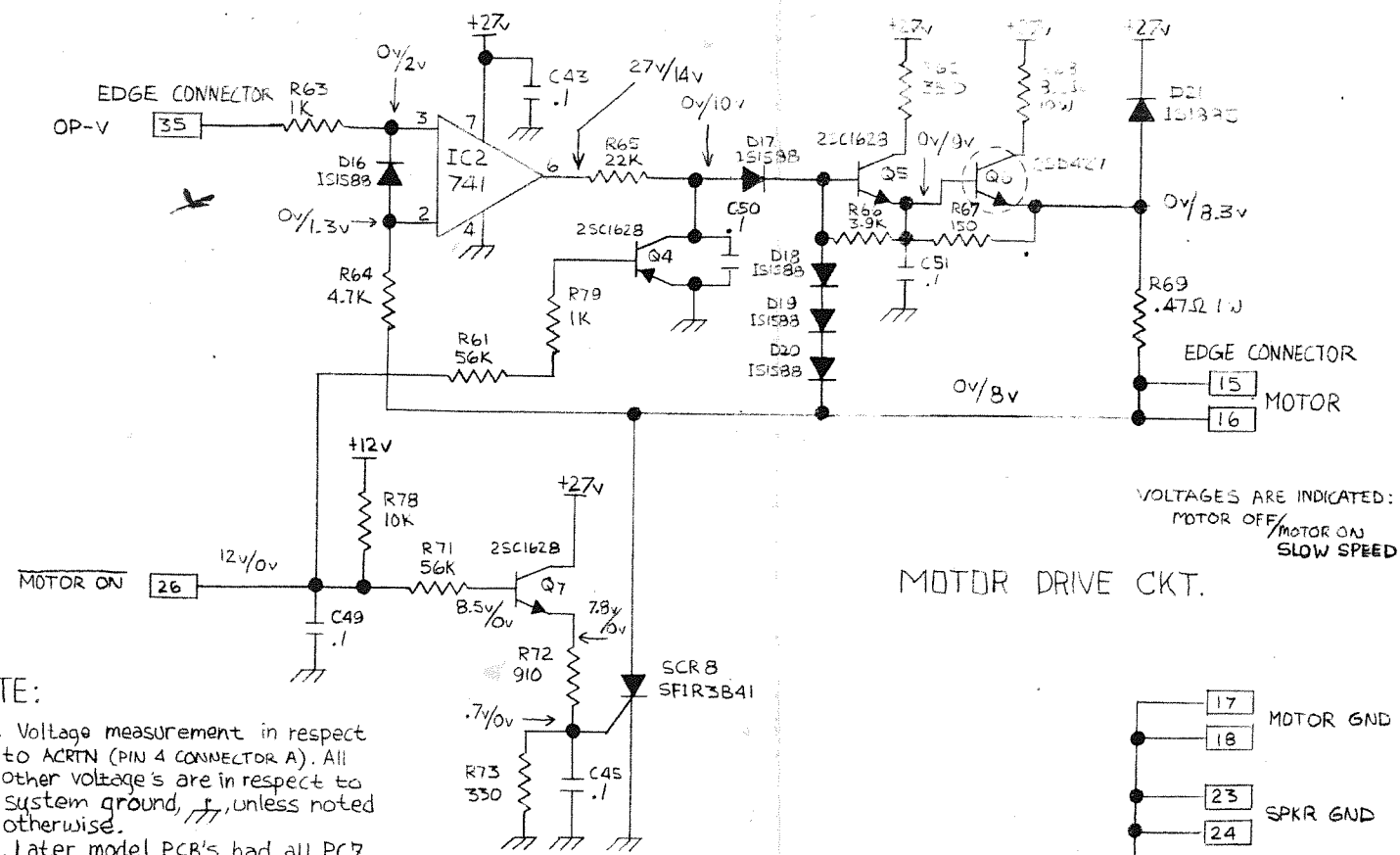




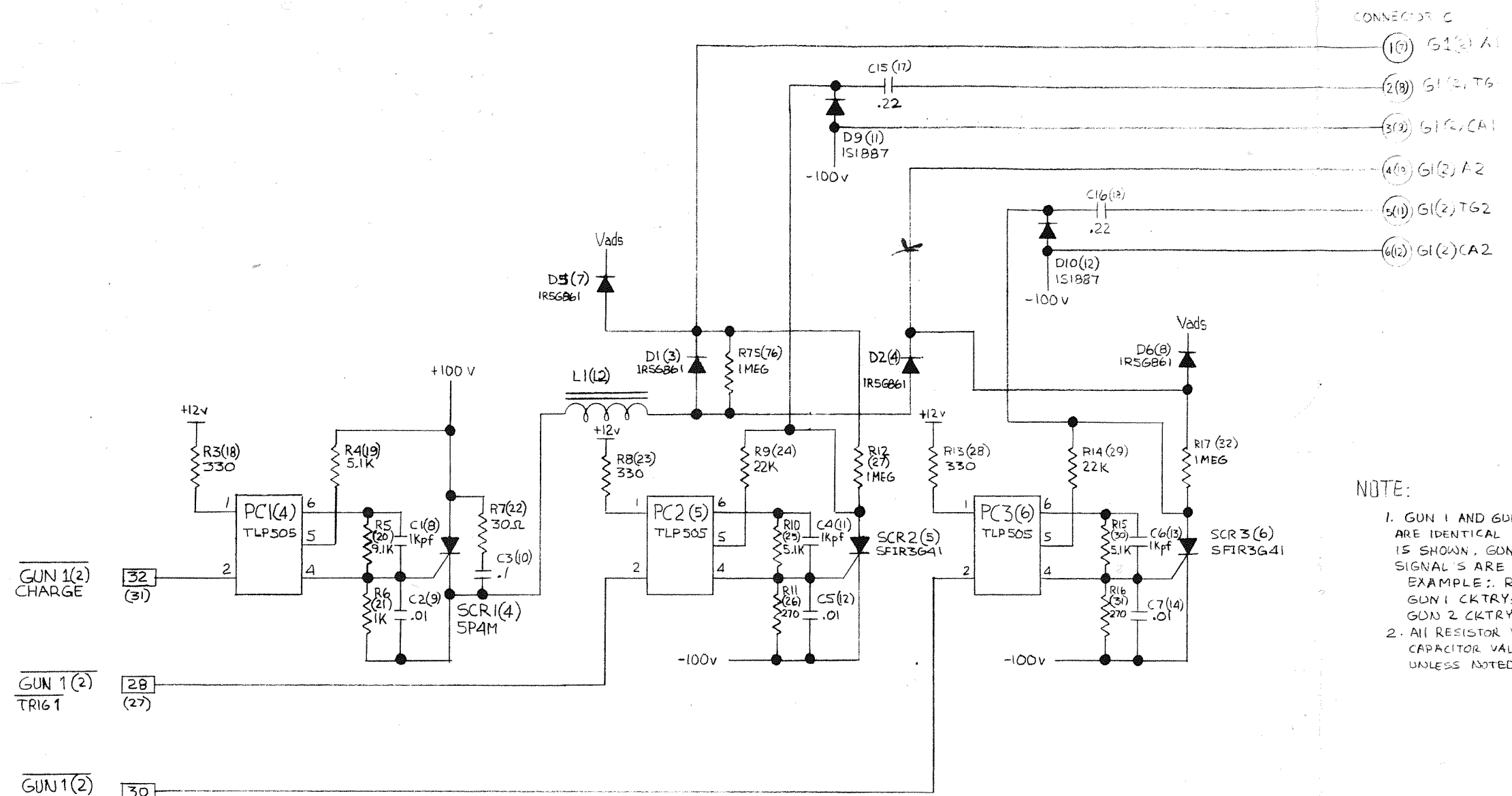
POWER SUPPLY CKT'S

NOTE:

1. Voltage measurement in respect to ACRTN (PIN 4 CONNECTOR A). All other voltage's are in respect to system ground, unless noted otherwise.
2. Later model PCB's had all PC7 circuitry removed and R39 installed as shown.
3. All resistor values are in Ohms, and all capacitor values are in microfarads unless noted otherwise.

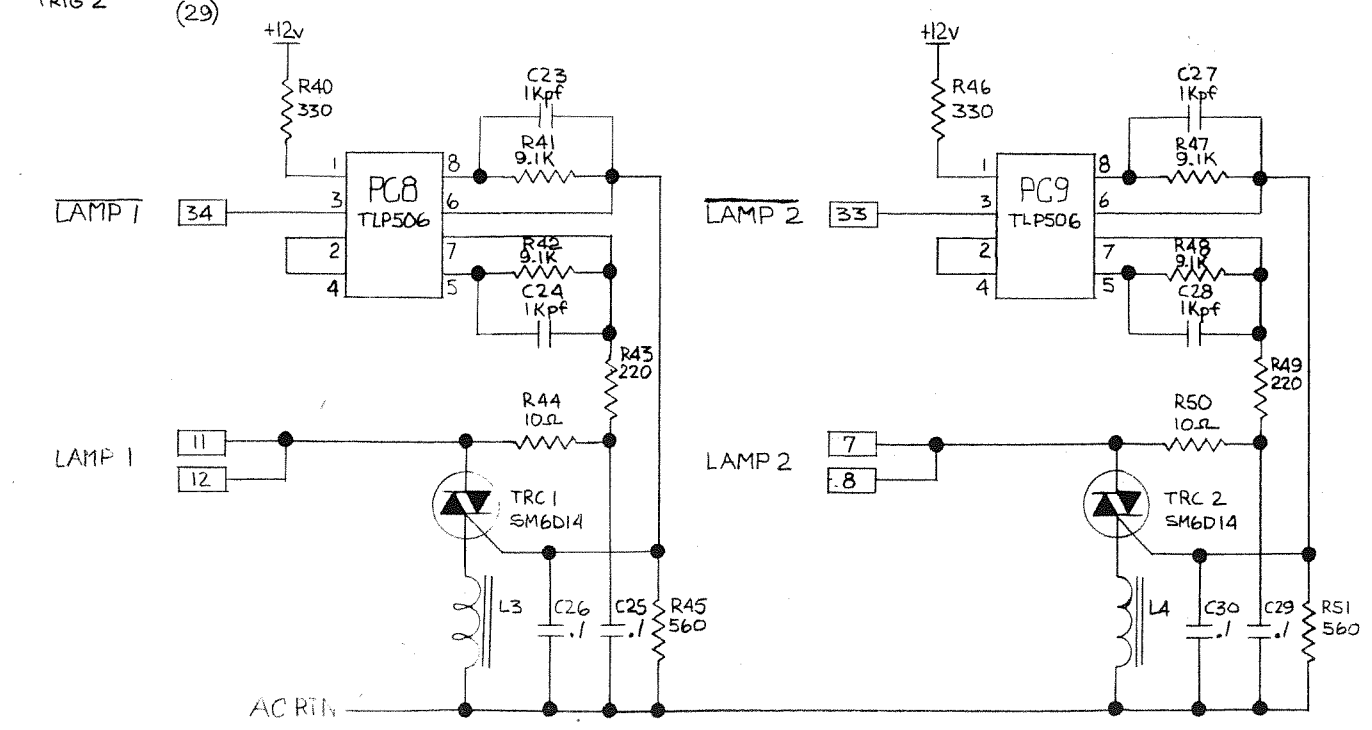


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SHOOT AWAY POWER PCB SCHEMATIC	8 of 10	NEAL R. ZGOK	9-10-84

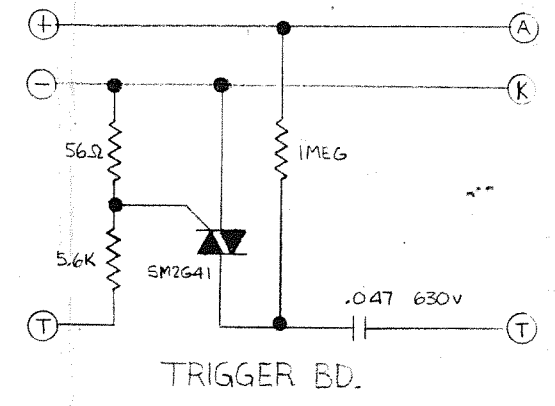
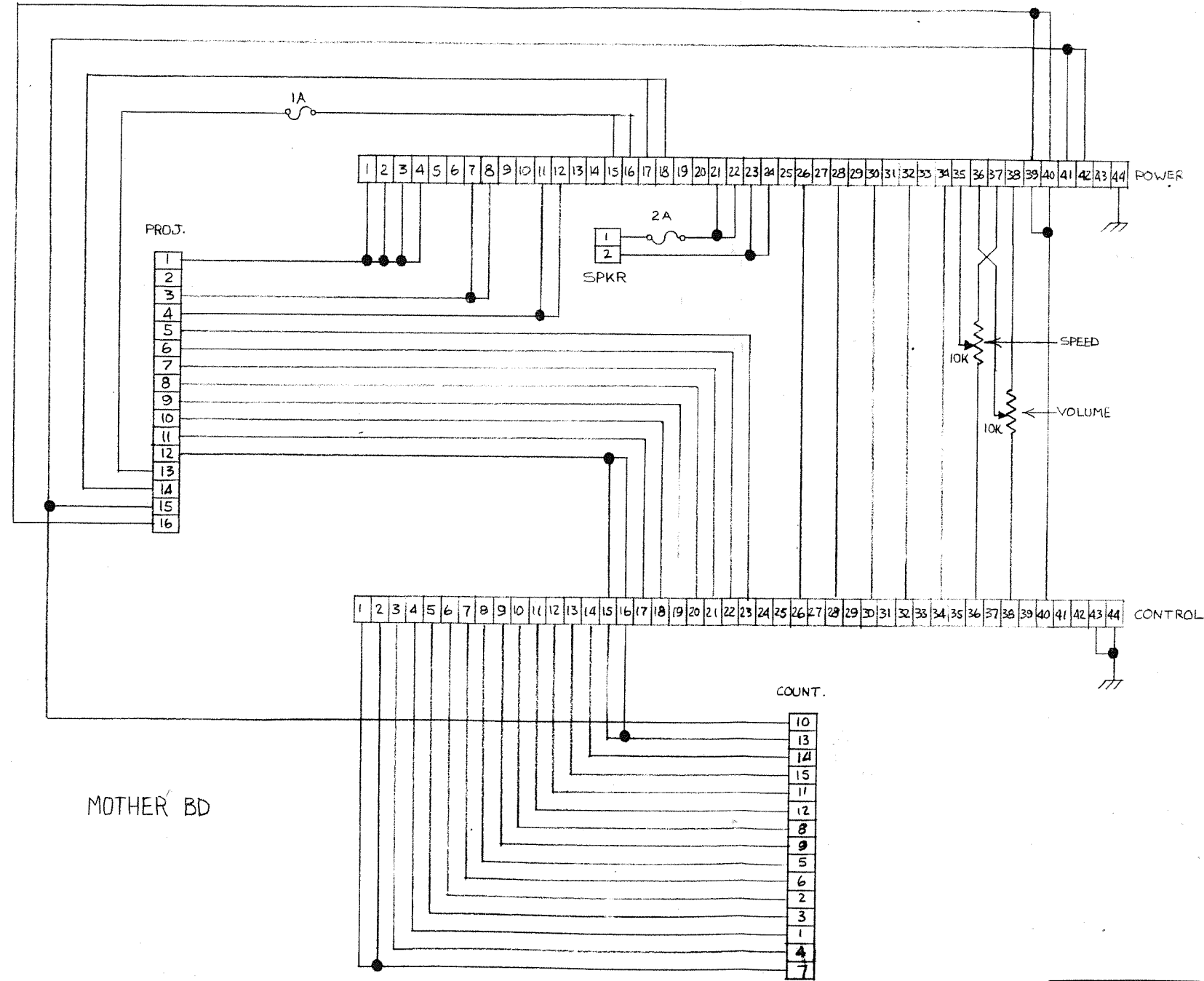
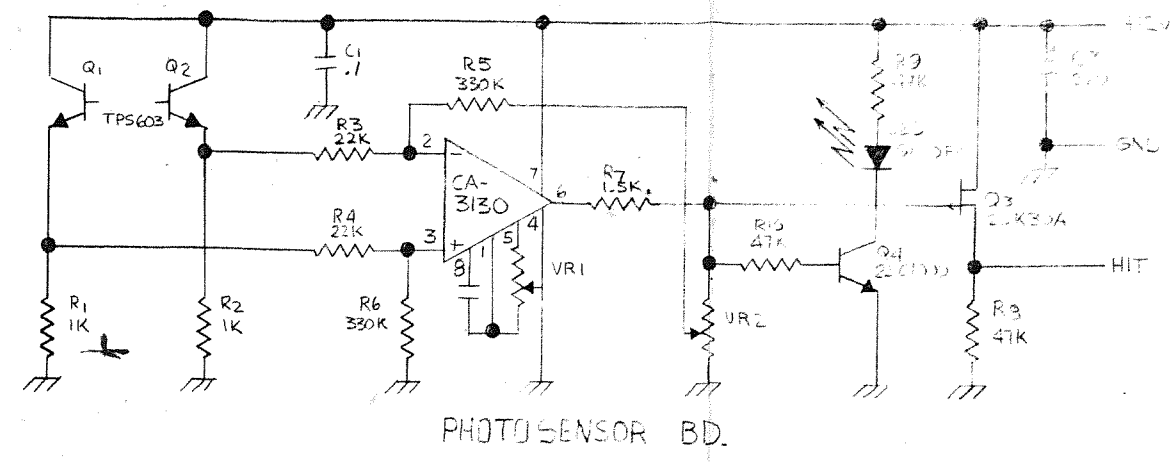


NOTE:

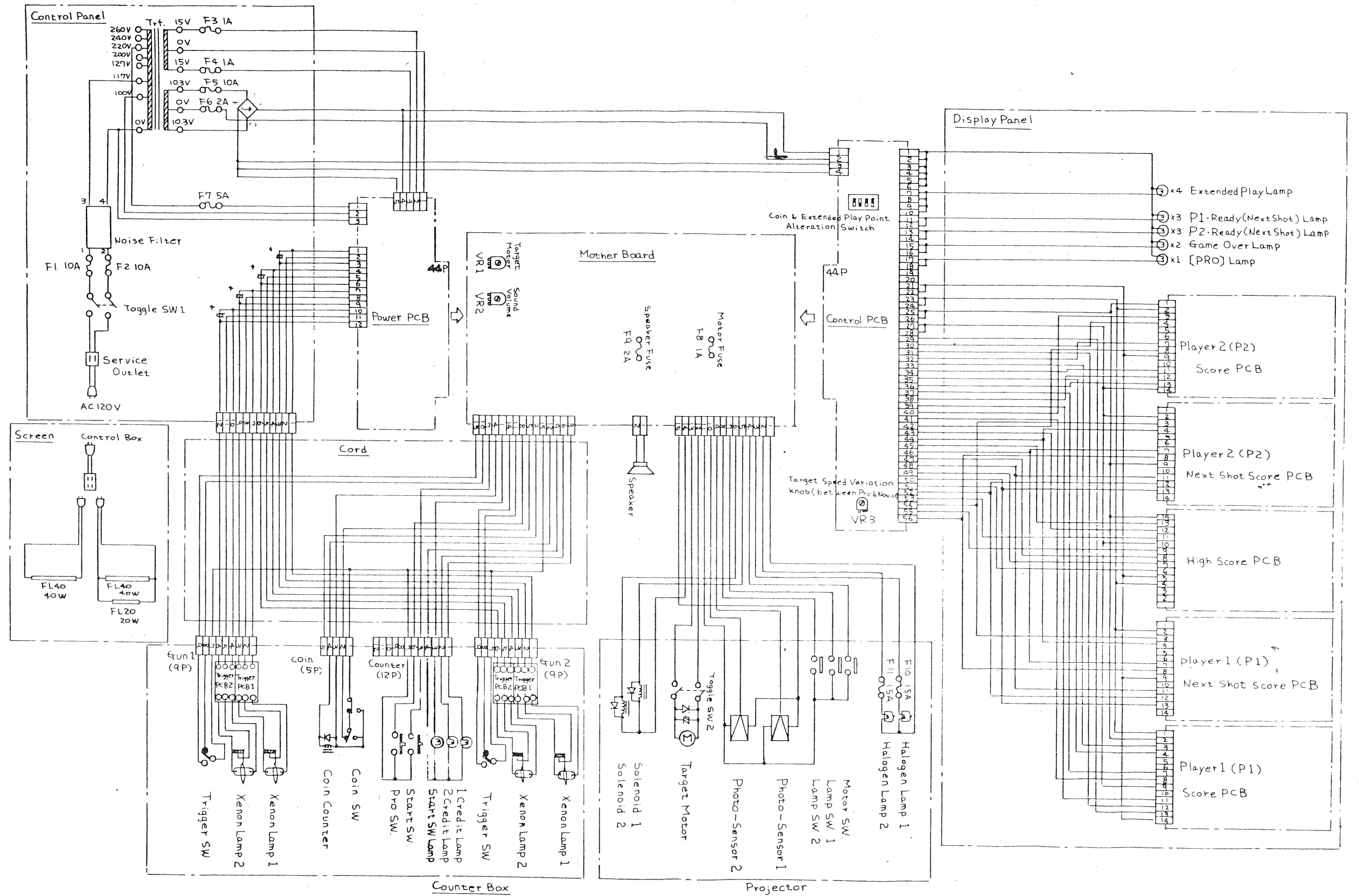
1. GUN 1 AND GUN 2 ZENON DRIVE CIRCUITS ARE IDENTICAL SO ONLY GUN 1 CIRCUITRY IS SHOWN. GUN 2 COMPONENTS AND SIGNALS ARE REPRESENTED IN ( ).  
EXAMPLE: R3(18)  
GUN 1 CKTRY—R3  
GUN 2 CKTRY—R18
2. ALL RESISTOR VALUES ARE IN OHMS AND ALL CAPACITOR VALUES ARE IN MICROFARADS UNLESS NOTED OTHERWISE.



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SHOOT AWAY POWER PCB SCHEMATIC	9 of 10	NEAL R. ZUJIK	9-13-82



TITLE:	PAGE:	DRAWN BY:	DATE:
SHOOT AWAY PHOTOSENSER, MOTHER, & TRIGGER SCHEMATICS.	10 of 10	NEAL R. ZOOK	9-13-82



SHOOT AWAY TROUBLESHOOTING GUIDE

SYMPTOM	PROBABLE CAUSE	COUNTERMEASURE
NO POWER TO GAME.	<ol style="list-style-type: none"> <li>1. LOOSE CONNECTION TO OR FROM POWER SUPPLY.</li> <li>2. BLOWN FUSE F1 OR F2.</li> <li>3. DEFECTIVE TOGGLE SW-1.</li> </ol>	<ol style="list-style-type: none"> <li>1. TIGHTEN CONNECTION.</li> <li>2. REPLACE BLOWN FUSE.</li> <li>3. REPLACE TOGGLE SW-1.</li> </ol>
DOES NOT REGISTER WHEN COINED UP.	<ol style="list-style-type: none"> <li>1. COIN SWITCH MALFUNCTIONING OR DEFECTIVE.</li> <li>2. LOOSE CONNECTION TO PCB.</li> <li>3. DEFECTIVE CONTROL PCB, CHECK COIN INPUT STAGE ON PG1 OF SCHEMATICS FOR DEFECTIVE COMPONENT.</li> </ol>	<ol style="list-style-type: none"> <li>1. ADJUST OR REPAIR COIN SWITCH.</li> <li>2. TIGHTEN CONNECTION.</li> <li>3. REPLACE DEFECTIVE COMPONENT.</li> </ol>
PRO LAMP DOES NOT OPERATE.	<ol style="list-style-type: none"> <li>1. PRO LAMP IS DEFECTIVE.</li> <li>2. PRO SWITCH IS DEFECTIVE.</li> <li>3. LOOSE CONNECTION TO PCB.</li> <li>4. DEFECTIVE CONTROL PCB, CHECK PRO INPUT STAGE ON PG1 OF SCHEMATICS AND SCR-4 FOR FAILURE.</li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE PRO LAMP.</li> <li>2. REPLACE PRO SWITCH.</li> <li>3. TIGHTEN CONNECTION.</li> <li>4. REPLACE DEFECTIVE COMPONENT.</li> </ol>
GAME COINS UP BUT WILL NOT START.	<ol style="list-style-type: none"> <li>1. DEFECTIVE START SWITCH.</li> <li>2. LOOSE CONNECTION TO PCB.</li> <li>3. DEFECTIVE CONTROL PCB, CHECK START INPUT STAGE ON PG1 OF SCHEMATICS FOR DEFECTIVE COMPONENT.</li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE START SWITCH.</li> <li>2. TIGHTEN CONNECTION.</li> <li>3. REPLACE DEFECTIVE COMPONENT.</li> </ol>

SYMPTOM	PROBABLE CAUSE	COUNTERMEASURE
NO GUNFIRE OR BUZZER SOUND.	<ol style="list-style-type: none"> <li>1. BLOWN FUSE F9 (ON MOTHER PCB).</li> <li>2. BLOWN FUSE F3 AND/OR F4.</li> <li>3. DEFECTIVE SPEAKER.</li> <li>4. LOOSE CONNECTION TO PCB.</li> <li>5. DEFECTIVE POWER PCB, CHECK THE FOLLOWING: <ol style="list-style-type: none"> <li>A) REC 2 FOR FAILURE.</li> <li>B) Q2 &amp; Q3 FOR FAILURE.</li> <li>C) IC-1 FOR FAILURE.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE BLOWN FUSE.</li> <li>2. REPLACE BLOWN FUSE(S).</li> <li>3. REPLACE SPEAKER.</li> <li>4. TIGHTEN CONNECTION.</li> <li>5. REPLACE DEFECTIVE COMPONENT.</li> </ol>
GUN DOES NOT EMIT LIGHT BUT SOUND OCCURS.	<ol style="list-style-type: none"> <li>1. DEFECTIVE XENON LAMP.</li> <li>2. DEFECTIVE TRIGGER PCB.</li> <li>3. BLOWN FUSE F7.</li> <li>4. LOOSE CONNECTION TO PCB.</li> <li>5. DEFECTIVE POWER PCB, CHECK THE FOLLOWING: <ol style="list-style-type: none"> <li>A) R1 &amp; R77 &amp; R39 FOR FAILURE.</li> <li>B) REC-1 FOR FAILURE.</li> <li>C) SCR-1 THUR 7 FOR FAILURE.</li> <li>D) D1 THUR D12 FOR FAILURE.</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE XENON LAMP.</li> <li>2. REPAIR/REPLACE TRIGGER PCB.</li> <li>3. REPLACE FUSE.</li> <li>4. TIGHTEN CONNECTION.</li> <li>5. REPLACE DEFECTIVE COMPONENTS.</li> </ol>
GUN DOES NOT EMIT LIGHT, AND SOUND DOES NOT OCCUR.	<ol style="list-style-type: none"> <li>1. DEFECTIVE TRIGGER SWITCH.</li> <li>2. LOOSE CONNECTION TO PCB.</li> <li>3. DEFECTIVE GUN HARNESS</li> <li>4. DEFECTIVE CONTROL PCB CHECK GUN 1 &amp; 2 INPUT STAGE ON PG2 OF SCHEMATICS FOR DEFECTIVE COMPONENT.</li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE SWITCH.</li> <li>2. TIGHTEN CONNECTION</li> <li>2. REPLACE HARNESS.</li> <li>4. REPLACE DEFECTIVE COMPONENT.</li> </ol>

SYMPTOM	PROBABLE CAUSE	COUNTERMEASURE
TARGET DOES NOT EXPLODE WHEN HIT, BUT SCORE IS ADDED.	<ol style="list-style-type: none"> <li>1. DEFECTIVE SOLENOID.</li> <li>2. LOOSE CONNECTION TO PCB.</li> <li>3. DEFECTIVE CONTROL PCB CHECK I.C. LOCATION H-8 (TD62004) FOR FAILURE ON PG3 OF SCHEMATICS.</li> </ol>	<ol style="list-style-type: none"> <li>1. REPLACE SOLENOID.</li> <li>2. TIGHTEN CONNECTION.</li> <li>3. REPLACE DEFECTIVE I.C.</li> </ol>
TARGET DOES NOT EXPLODE WHEN HIT AND SCORE IS NOT ADDED.	<ol style="list-style-type: none"> <li>1. LOOSE CONNECTION TO PCB.</li> <li>2. DEFECTIVE PHOTO-SENSOR PCB.</li> <li>3. DEFECTIVE CONTROL PCB CHECK DETECTOR STAGE ON PG OF SCHEMATICS FOR DEFECTIVE COMPONENT.</li> </ol>	<ol style="list-style-type: none"> <li>1. TIGHTEN CONNECTION.</li> <li>2. REPAIR/REPLACE PCB.</li> <li>3. REPLACE DEFECTIVE COMPONENT.</li> </ol>

NOTE: IN CASE THE PROBLEM IS NOT SOLVED AFTER APPROPRIATE TREATMENT IS ATTEMPTED, CONTACT YOUR DISTRIBUTOR OR NAMCO-AMERICA'S SERVICE DEPARTMENT IMMEDIATELY.

SHOOT AWAY SEMICONDUCTOR  
CROSS REFERENCE GUIDE

DEVICE NUMBER

TRANSISTORS	G.E.	MALLORY	MOTOROLA	SYLANIA	ZENITH
2SA473-Y	GE-69	PTC111	TIP42A	ECG153	121-988-03
2SA509-Y	GE-269	PTC103	2N4403	ECG290	121-Z9003
2SB595-0	GE-250	PTC168	TIP42A	ECG332	121-988-03
2SC372	GE-61	PTC121	MPSA18	ECG199	121-Z9000A
2SC1000	GE-62	PTC121	MPSA18	ECG199	121-972
2SC1628-0	GE-229	PTC117	2N3439	ECG154	121-777-01
2SD427	GE-35	PTC118	MJ423	ECG162	121-Z9042
2SD525-0	GE-241	PTC167	TIP41A	ECG152	121-987-03
2SK30A	GEFET-1	PTC151	MPF102	ECG132	121-756

SCR'S

SFIR3B41	C106A	N/A	C106A1	ECG5454	903-206
SFIR3G41	C106C	N/A	C106C1	ECG5456	185-Z9010
5P4M	C122D	N/A	C122D1	ECG5465	185-Z9010
5PIM	C122B	N/A	C122A1	ECG5462	N/A

DIODE'S

1R5BZ61	GE504-A	PTC202	1N4005	ECG116	212-76-02
1R5GZ61	GE-510	PTC205	1N4007	ECG125	903-334
1S1885	GE-504A	PTC201	1N4005	ECG116	212-76-02
1S1887	GE-504A	PTC201	1N4005	ECG116	212-76-02
1S1588	GE-514	PTC214	1N4935	ECG519	103-131
30-D-1	GE-512	PTC204	1N4725	ECG156	212-Z9000



