

CPU JUMPER TABLE

Game	CPU* Version	ROM		Installed	Jumpers	Removed
		Location	Location			
Laser Wars	Ver 1	5C		J1b,J3,J4,J6a,J7a,&J8	J1a,J2,J5,J6,&J7b	
	Ver 2	5C		J1b,J3,J4,J5a,J6a,J7b,&J8	J1a,J2,J5,J5b,J6b,&J7a	
Secret Service	Ver 1	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	
	Ver 2	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	
Torpedo Alley	Ver 1	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	
	Ver 2	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	
Time Machine	Ver 1	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	
	Ver 2	5B,5C		J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a	

*Version 1 has a 2K RAM which is a 24-pin IC at location 5D.
 *Version 2 has an 8K RAM which is a 28-pin IC at location 5D.

Power-up CPU Self Tests

Upon power-up, the CPU board performs a series of self tests of major components. Turn the game on while observing the LEDs on the CPU board. Tests of the PIAs, RAM, and EPROMs are performed automatically and results of the test are indicated by the PIA LED.

With all tests passed, the LEDs illuminate in the following sequence at power turn-on. The PIA and +5V LEDs illuminate immediately. Approximately 1/2-second later the PIA LED goes out and the Blanking LED illuminates; the +5V and Blanking LEDs remain illuminated until the game is turned off. Test failures are indicated with the PIA LED:

SUSPECT COMPONENT

- PIA LED**
 - Stays On
 - Flashes 1 Time
 - Flashes 2 Times
 - Flashes 3 Times
- PIA LED**
 - One of the 6821 PIAs
 - 6064 RAM at location D5.
 - EPROM at location B5.
 - EPROM at location C5.

QUICK REFERENCE FUSE CHART

PPB BOARD

- F1 5A Sio-Blo G.I. 6.3VAC
- F2 5A Sio-Blo G.I. 6.3VAC
- F3 5A Sio-Blo G.I. 6.3VAC
- F4 5A Sio-Blo G.I. 6.3VAC
- F5 5A Sio-Blo Flipper Power 48VAC
- F6 3A Sio-Blo PPB Solenoids/Flash Lamps (34VDC)

- F1 7A Sio-Blo +5VDC Regulator Input (9VAC)
- F2 7A Sio-Blo +5VDC Regulator Input (9VAC)
- F3 0.25A Sio-Blo Display Reg. Input (90VAC)
- F4 8A Sio-Blo Switched Illumination Buss (18VDC)
- F5 4A Sio-Blo Solenoid Buss (34VDC)
- F6 5A Sio-Blo Solenoid Buss (34VDC)

POWER SUPPLY BOARD

- F1 7A Sio-Blo +5VDC Regulator Input (9VAC)
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- F6 5A Sio-Blo Solenoid Buss (34VDC)

AUDIT FUNCTIONS

There are 69 audit functions provided for accounting purposes and for evaluation of game difficulty adjustments. Audit functions are split into two groups. There are eleven most-used audits (AU01 through AU11) in a 'quick look' group and 57 less-used audits (E AU13 through E AU69), in an 'expanded' group. The various auditing functions are summarized in the AUDITING FEATURES TABLE and, when accessed, are shown on the player score displays. The Audit Number is shown in the Player 3 Display, the Description in the Player 1 and 2 Displays, and the Audit Total in the Player 4 Display. Access and control is provided from switches located on the inside of the coin door.

To access audit functions, open the coin door and make sure that the FORWARD/REVERSE switch is in the FORWARD (up) position. Depress the STEP switch and the game name is shown in the Player 1 and 2 displays, the Player 3 display is blank, and the PROM revision level is shown in the Player 4 display. This indicates access to audit functions.

With the FORWARD/REVERSE push-button switch still in the FORWARD (up) position, depressing the STEP push-button switch advances through the audit functions one at a time. To review lower-numbered functions, set the forward/reverse push-button switch to the REVERSE (down) position and operate the STEP push-button switch.

To access expanded audits, operate the step push-button until AU12, EXPAND AUDITS is displayed. Set the choice to ON as indicated in the Player 4 display by depressing the Game Start push-button and then depress the step push-button. The request is installed and E AU13 is displayed. When you exit audits and adjustments, the AU12 setting is returned to off for the next time that a review of audits are required.

Audit totals may be reset to zero using Game Adjustment Ad17, Audits Reset. Game adjustments (Ad01 to Ad19 and E Ad20 to E Ad59) begin after the last audit function (AU12 or E AU69). Once audits functions have been recorded, and if no adjustments are required, you may return the game to the attract mode. If adjustments are required, continue pressing the STEP button until the game adjustments are reached. See Game Adjustments for details.

Audit Number (Player 3 Display)	Audit Description (Players 1 & 2 Displays; Total in Player 4 Display)
AU 01	Playboy PROM ID
AU 02	Total Paid Credits
AU 03	Free Percent
AU 04	Ball Time Average
AU 05	Coins Left
AU 06	Coins Right
AU 07	Replay Percent
AU 08	High Score Percent
AU 09	Extra Ball Total
AU 10	Extra Ball Percent
AU 11	Cycles Burn In
AU 12	Expand Audits (ON/OFF)
E AU 13	Plays Total
E AU 14	Free Total
E AU 15	Replay Total
E AU 16	Special Total
E AU 17	Special Percent
E AU 18	Match Total
E AU 19	High Score Wins
E AU 20	Play Time (Minutes)
E AU 21	Ball Total
E AU 22	1 Replay Awards
E AU 23	2 Replay Awards
E AU 24	3 Replay Awards
E AU 25	4 Replay Awards
E AU 26	Games 1 Player
E AU 27	Games 2 Player
E AU 28	Games 3 Player
E AU 29	Games 4 Player
E AU 30	Cycles Attract Mode
E AU 31	Cycles Reset High Score
E AU 32	Enter 3 Ball
E AU 33	Unused
E AU 34	Percent Multiball
E AU 35	Lock Ball 1
E AU 36	Lock Ball 2
E AU 37	Percent Lock Ball
E AU 38	Laser Kick Scored
E AU 39	Laser Kick Fell
E AU 40	Left Ramp
E AU 41	Right Ramp
E AU 42	Mansion Lit
E AU 43	Mansion Scored
E AU 44	Pinball Lit
E AU 45	Pinball Scored
E AU 46	Special Scored
E AU 47	Playboy 50K
E AU 48	Playboy 100K
E AU 49	Playboy Outlane
E AU 50	Bonus Hold
E AU 51	Playboy Extra Ball
E AU 52	Playboy Million
E AU 53	2x Bonus
E AU 54	3x Bonus
E AU 55	4x Bonus
E AU 56	5x Bonus
E AU 57	Lane Extra Ball
E AU 58	2x Scores
E AU 59	3x Scores
E AU 60	4x Scores
E AU 61	5x Scores
E AU 62	Jackpot Shots
E AU 63	Jackpot Average
E AU 64	Ramp Average
E AU 65	Drain Left
E AU 66	Drain Center
E AU 67	Drain Right
E AU 68	Buy In Games
E AU 69	Average Game Time

GAME ADJUSTMENTS

GENERAL

There are 59 adjustable functions provided to vary difficulty of play and to periodically reset audits and the high score levels. The various game adjustments are summarized in the **Game Adjustments Table** and, when accessed, are shown on the player score displays. The **Adjustment Number** is shown in the **Player 3 Display**, the **Description** in the **Player 1 and 2 Displays**, and the setting in the **Player 4 Display**. Access and control is provided from switches located on the inside of the coin door.

Game adjustments are accessed from the audit mode. With the audits displaying game identification and the **FORWARD/REVERSE** switch in the **REVERSE (down)** position, depress the **STEP** switch and **E Ad59 (Expanded Adjustment 59)** is shown in the **Player 3 display**. **FACTORY RESET** is shown in the **Player 1 & 2 displays**, and **OFF** is shown in the **Player 4 display**. With the audits displaying **AU12 (or expanded E AU69)** and the **FORWARD/REVERSE** switch in the **FORWARD (up)** position, depress the **STEP** switch and **Ad01** is shown in the **Player 3 display**. **REPLAY MANUAL/FIXED** is shown in the **Player 1 and 2 displays**, and the setting is shown in the **Player 4 display**.

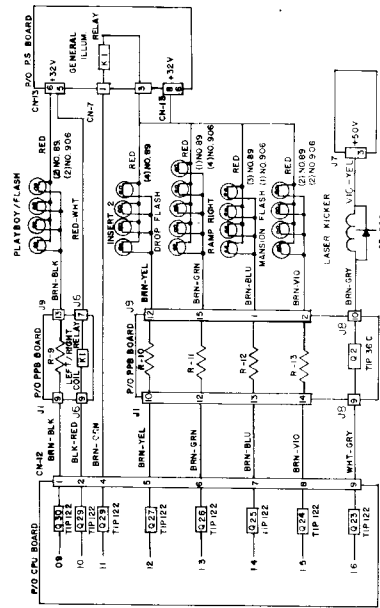
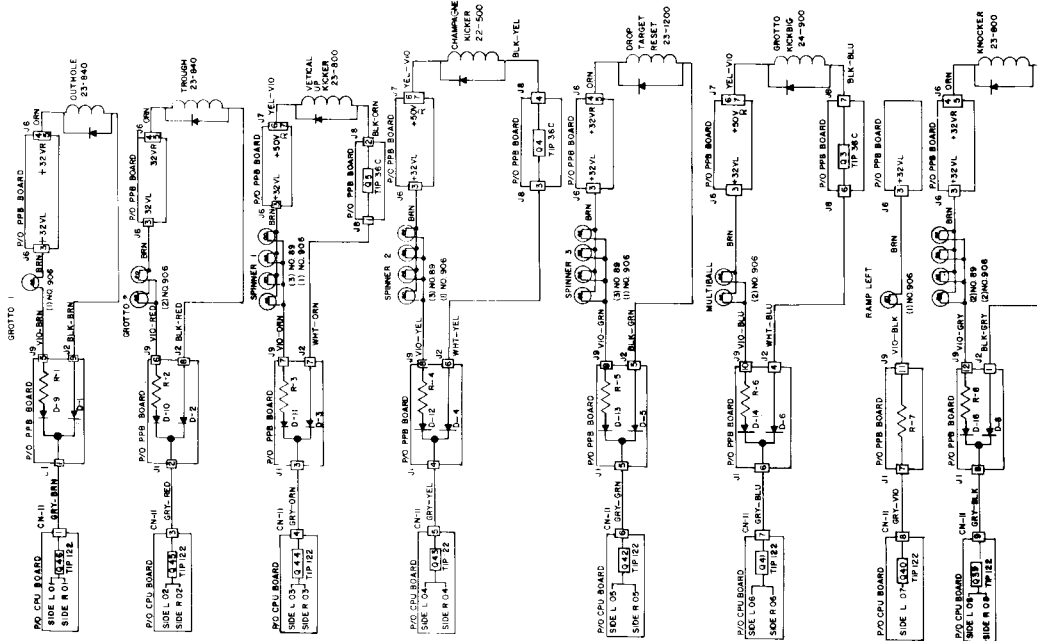
With the **FORWARD/REVERSE** switch in the **FORWARD (up)** position, depressing the **STEP** switch advances through the game adjustments one at a time. With it in the **REVERSE (down)** position, the **STEP** switch selects lower-numbered adjustments. To rapidly scroll through adjustments, hold the **STEP** switch depressed. Adjustment values are changed by operating the **GAME START** push-button. The **FORWARD/REVERSE** switch setting determines whether the values are increased or decreased. (With the **FORWARD/REVERSE** switch up, the value increases; with it down, the value decreases). When the **STEP** switch is depressed the **Player 1 and 2 displays** indicate **REQUEST INSTALLED**.

CUSTOM PRICING TABLE

Coin Mechs	Right	Center	Adjustment Numbers							
			14	19	38	39	40	41	42	
25¢	25¢	\$1.00	Plays/Coins	ON	01	01	01	04	01	02
			1/25¢ 3/50¢	Custom	ON	01	04	01	04	04
			1/25¢ 5/\$1.00	Custom	ON	05	05	20	04	20
			1/25¢/ 6/\$1.00	Custom	ON	01	02	02	02	00
5SCH	10SCH	10SCH	1/10 SCH	Custom	ON	04	08	08	06	00
			1/10 SCH 4/30SCH	Custom	ON	01	05	00	01	00
			1/20¢	Custom	ON	01	05	00	03	05
			1/60¢ 2/\$1.00	Custom	ON	01	01	05	01	05
10P	10P	50P	1/10P 6/50P	Custom	ON	01	01	05	02	05
			1/20P 3/50P	Custom	ON	01	01	05	02	05

INSTALL ADJUSTMENT TABLE

Install Adjustment	Ad 06 Extra Easy	Ad 07 Easy	Ad 08 Factory	Ad 09 Hard	Ad 10 Extra Hard
E Ad 47 General Scores	EASY	FACTORY	FACTORY	HARD	HARD
E Ad 48 General Timer	EASY	EASY	FACTORY	FACTORY	HARD
E Ad 49 General Memory	EASY	EASY	FACTORY	HARD	HARD
E Ad 50 Playbox Targets	EASY	FACTORY	FACTORY	FACTORY	HARD
E Ad 51 Extra Ball 5x	ON	ON	ON	OFF	OFF
E Ad 52 Playbox Percent	EASY	FACTORY	FACTORY	HARD	HARD
E Ad 53 Laser Kick	EASY	EASY	FACTORY	HARD	HARD
E Ad 54 Mansion Memory	PLAYER	BALL	BALL	BALL	NONE
E Ad 56 Pinball Memory	PLAYER	PLAYER	BALL	BALL	NONE



COIL TESTS

Sixteen regular (pulsed under microprocessor control) and six switch-triggered coil drivers are provided to switch ground to coils. Coil number 10 is used in conjunction with drives 8 to switch +34 volts between coils or flash lamps; these sets are termed "left" and "right". Coil number 10 is located on the PPB board which provides isolation diodes and current limiting and heater resistors. This effectively provides 23 regular coils.

Automatic Test

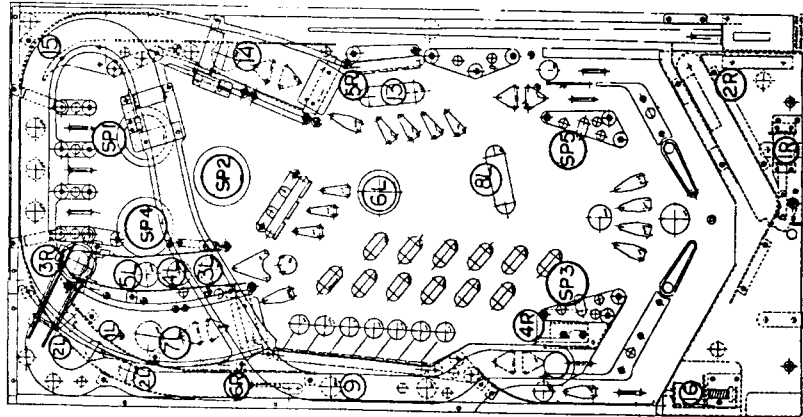
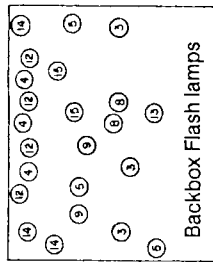
From the Discrete Lamps test, depress the STEP push-button switch. Player 1 and 2 displays indicate COIL TEST. The test pulses each regular solenoid or flash lamp sequentially with the coil/flash lamp name indicated in the Player 1 and 2 displays and the drive number in the Player 4 display.

Select Coil

From the Coil Test, depress the STEP push-button switch. Player 1 and 2 displays indicate SELECT COIL and then the name of drive 1L, the drive number is indicated in the Player 4 display. Operate the Game Start push-button switch to select the coil or flash lamp to be tested. With the desired drive number indicated in the Player 4 display, depress the STEP push-button switch to cause it to be pulsed repeatedly.

RETURN TO GAME OVER

From the Select Coil test, depress the STEP push-button switch one time if a selected coil is pulsing or two times none is pulsing. The game returns to the game-over mode.



SWITCH TRIGGERED SOLENOIDS

Coil Number	Description	Control Line (CPU to Coil)	Power Line (PS to Coil)	Trigger Line (CPU to Coil)	Drive Type (TRIP/ST)	Coil Type
SP1	Center Pop Bumper	BLU/ORN	RED	ORN-BLK	OR	22-800
SP2	Right Pop Bumper	CPU CN18-3	PS CN3-6	CPU CN 18-2	OR	22-800
SP3	Left Singanet	BLU/RED	RED	ORN-RED	OR	22-800
SP4	Left Pop Bumper	BLU/YEL	PS CN3-8	CPU CN 18-3	O10	22-800
SP5	Right Singanet	CPU CN18-4	RED	ORN-YEL	O11	22-800
SP6	Right Pop Bumper	CPU CN18-7	PS CN3-6	CPU CN 18-4	O12	22-800
	NOT USED	BLU/ORN	RED	ORN-GRN	O13	-
		CPU CN18-8	PS CN3-8	CPU CN 18-8		

FLIPPER SOLENOIDS

Coil Description	Flipper GND (CPU to Coil)	Power Lines (PPB & PS to Coil)	Coil Type
Left Flipper	ORN-GRY	GRY-YEL	22-800
Right Flipper	CPU CN19-2	PPB J7-4	22-800
	ORN-VIO	GRY-GRN	22-800
	CPU CN19-1	PPB J7-1,2	22-800
		30VDC	

PLAYBOY COIL PART NUMBER CHART

QUANTITY USED	COIL TYPE	DATA PART NUMBER
0	22-800	000-5001-00
1	22-800	000-5002-00
2	22-800	000-5003-00
1	12-1200	000-5008-00
1	22-500	000-5017-00
2	22-800	000-5020-21

Game Adjustment Table

Adjustment Number (Player 3)	Description (Players 1 & 2)	Factory Setting (Player 4)
AD 01	Replay/Manual	10%
AD 02	Start Replay/Level 1 Replay	2,300,000
AD 03	Levels Replay/Level 2 Replay	01
AD 04	Level 3 Replay	-
AD 05	Level 4 Replay	-
AD 06	Extra Easy Rules	OFF
AD 07	Easy Rules	OFF
AD 08	Factory Rules	OFF
AD 09	Hard Rules	ON
AD 10	Extra Hard Rules	OFF
AD 11	Novelty Rules	OFF
AD 12	5 Ball Rules	OFF
AD 13	Addball Rules	OFF
AD 14	Standard/Custom Pricing	USA 1
AD 15	Time Setting	ON
AD 16	Coin Reset	OFF
AD 17	Audits Reset	OFF
AD 18	Restore Hiscr	OFF
AD 19	Expand Adjustments	OFF
E Ad 20	Awards Replay	CREDITS
E Ad 21	Awards Special	CREDITS
E Ad 22	Match Feature	03
E Ad 23	Balls/Game	03
E Ad 24	Warning Tilt	01
E Ad 25	Maximum Extra Balls	30
E Ad 26	Credits Limit	03
E Ad 27	Scores Highest	03
E Ad 28	Credits High Score 1	00
E Ad 29	Credits High Score 2	00
E Ad 30	Credits High Score 3	00
E Ad 31	Credits High Score 4	00
E Ad 32	High Score 1 Backup	5,000,000
E Ad 33	High Score 2 Backup	4,000,000
E Ad 34	High Score 3 Backup	3,000,000
E Ad 35	High Score 4 Backup	2,500,000
E Ad 36	High Score Reset Every	700
E Ad 37	Free Play	OFF
E Ad 38	Left Coin Pulses	-
E Ad 39	Right Coin Pulses	-
E Ad 40	Center Coin Pulses	-
E Ad 41	Pulses For Credit	-
E Ad 42	Pulses For Bonus Credit	-
E Ad 43	Message Custom	-
E Ad 44	Text	-
E Ad 45	Attract Mode Music	ON
E Ad 46	Lights	ENGLISH
E Ad 47	General Scores	FACTORY
E Ad 48	General Timer	FACTORY
E Ad 49	General Memory	FACTORY
E Ad 50	Playboy Targets	HARD
E Ad 51	Extra Ball fx	ON
E Ad 52	Playboy Percent	FACTORY
E Ad 53	Laser Kick	FACTORY
E Ad 54	Knocker Alarm	ON
E Ad 55	Mansion Memory	BALL
E Ad 56	Pinball Memory	BALL
E Ad 57	Auto Special	ON
E Ad 58	Risque Sound	ON
E Ad 59	Factory Restore	OFF

GAME DIAGNOSTICS

The Data East Pinball system provides tests for sounds, digital displays, lamps, switches, and solenoids. Each feature may be tested manually or automatically using the STEP and FORWARD/REVERSE push-button switches inside the coin door and the Game Start push-button switch on the front of the cabinet. The automatic tests may be used for a quick verification of automatic test functions and the manual tests, for troubleshooting.

ENTERING DIAGNOSTICS

With the game in the game-over mode, open the coin door and make sure that the FORWARD/REVERSE push-button switch is set to REVERSE (down) and depress the STEP push-button switch. The Player displays will show the tollfree Customer Service number 1-800-KICKERS, that is 1-800-542-5377 (outside Illinois) and the toll number (312) 345-7700 (inside Illinois). This indicates entry into game diagnostics.

SOUND TESTS

The Data East Pinball sound system produces true digital stereo sound on left and right speakers and mono on a center speaker. During Sound tests, the Player 1 and 2 displays show the sound board circuit under test and the corresponding sounds are produced. Refer to the Sound Test Chart for the sound circuits displayed and the sounds produced.

The sine wave functions allow verification that all channels are functioning properly and that the speaker connections are correct. Speaker Phase Testing procedures follow for checking speaker connections.

SOUND TEST CHART

Auto/Manual Tests (Player 1 & 2)	Sounds Produced
LEFT SINE CENTER SINE RIGHT SINE VOICE ROM1 (Loc F6) VOICE ROM2 (Loc F4) MUSIC TEST (Sound ROM Loc F7)	60 CYCLE TONE (Left Speaker Only) 60 CYCLE TONE (All Speakers) 60 CYCLE TONE (Right Speaker Only) "THAT'S BEAUTIFUL", "OOHI", HORN BLAST "MMM..!" CHIMPANZEE SOUNDS BIRD CALL, "OOHI", "CAIO BABY" HORN BLAST. MUSIC

Automatic Test

With Customer Service telephone numbers displayed, depress the STEP push-button switch. Player 1 and 2 displays indicate SOUNDS AUTO and the system sequences through the test producing the sounds indicated in the Sound Test Chart.

Manual Test

Operate the STEP push-button switch during the Automatic tests until SOUNDS MANUAL is indicated in the Player 1 and 2 displays. Depressing the Game Start push-button switch allows you to advance through each sound function.

LAMP MATRIX CHART

Column (*)	Row (*)	1 YEL-BRN (41) Q71	2 YEL-RED (42) Q70	3 YEL-ORN (43) Q69	4 YEL-BLK (40) Q68	5 YEL-GRN (45) Q67	6 YEL-BLU (46) Q66	7 YEL-VIO (47) Q65	8 YEL-GRY (48) Q64
1	1	Playboy	Miss July 50k	Photo Shoot 1	Up L&R Release	Up Rt. Man.Ply	Pinball	Pinball	Mansion
2	2	playboy	Miss Aug. 100k	Photo Shoot 2	Lock Ball#1	Bonus Hold	Rt.Score PBValue	Lt.Score PBValue	Mansion
3	3	playboy	Miss Sept.	Photo Shoot 3	Lock Ball Arr.	Play Again	Right Peacock	Left Peacock	Mansion
4	4	playboy	Miss Oct.	Photo Shoot 4	Left Gm Arr.Tar.	DropTar. 2X	Lwr.Lt. BunnyHop	Lwr.Lt. BunnyHop	Mansion
5	5	playboy	Miss Nov.	Photo Shoot 5	Ctr.Gm Arr.Tar.	DropTar. 3X	DropTar. 75k	DropTar. 75k	Mansion
6	6	playboy	Miss Dec.	Photo Special	Rt.Green Arr.Tar.	DropTar. 4X	DropTar. 50k	DropTar. 50k	Mansion
7	7	playboy	Top Left BunnyHop	Spinner X-Ball	Mult.All Scores	DropTar. 5X	DropTar. 25k	DropTar. 25k	Mansion
8	8	Lt."H" Lane	Ctr."M" Lane	Rt."H" Lane	Ball#2 Lock	Up.Left Man.Ply	Up.Rt. BunnyHop	Up.Rt. BunnyHop	pinball

(*) 2 DIGIT NUMBER IN PARENTHESES INDICATES RESISTOR WIRE COLOR CODE NUMBER DISPLAYED DURING DIAGNOSTICS.

DIGITAL DISPLAY TEST

Digital displays are driven by digit and segment driver circuits. Digit drivers sequentially select individual character positions (Player 1 and 2 displays) and digit positions (Player 3 and 4 displays). Segment drivers (16 for Player 1 and 2 characters; 7 for Player 3 and 4 digits) select the individual segments of each position.

Automatic Test

To enter DISPLAY tests, operate the STEP push-button switch from the Sound Manual test. Player 1 and 2 displays indicate DISPLAY AUTO. The displays will sequence from all ZEROS to all nines in the four displays. Next all segments are lit for each digit position in sequence.

Manual Test

Operate the TEST push-button switch from the automatic test; Player 1 and 2 displays indicate DISPLAY MANUAL and then display ZEROS in all positions. Operate the Game Start push-button switch to cycle through each portion of the test.

Switches

Switches are configured in an 8 x 8 matrix of columns (switch drives) and rows (switch returns) with up to 64 switches possible. The switch tests include three parts; switch test, active switches, and bad switches. Row and column wire colors are indicated in each test using corresponding resistor color code numbers.

- 0 = Black
- 1 = Brown
- 2 = Red
- 3 = Orange
- 4 = Yellow
- 5 = Green
- 6 = Blue
- 7 = Violet
- 8 = Grey
- 9 = White

LAMP TESTS

Controlled lamps are configured in an 8 x 8 matrix of columns (lamp drives) and rows (lamp returns) with up to 64 lamps possible. The lamp tests include four parts; all lamps, lamp return (row), lamp drive (column), and discrete (individual) lamps. Row and column wire colors are indicated in the discrete lamp test using corresponding resistor color code numbers.

All Lamps

From the Bad Switch test, operate the STEP push-button switch. Player 1 and 2 displays indicate ALL LAMPS and all controlled lamps will light.

Lamp Returns

From the ALL LAMPS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP ROWS and the Player 4 display indicates 01 for row 1. All controlled lamps in row 1 should be lit. Operating the Game Start push-button switch cycles through each of the rows separately.

Lamp Drives

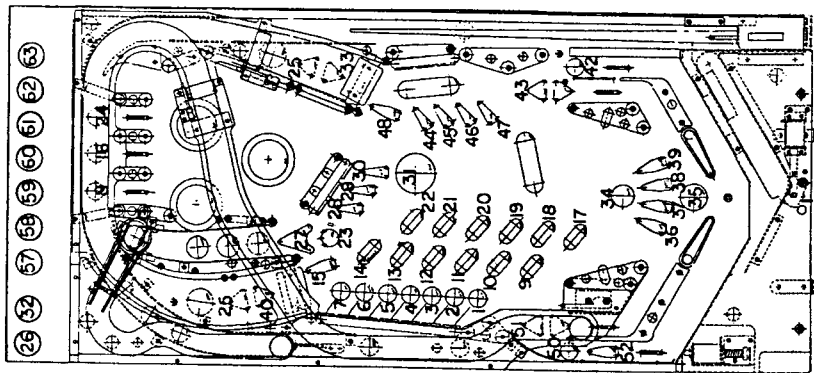
From the LAMP ROWS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP COLUMNS and the Player 4 display indicates 01 for column 1. All controlled lamps in column 1 should be lit. Operating the Game Start push-button switch cycles through each of the columns separately.

Discrete Lamp

From the LAMP COLUMNS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP TEST and then the name assigned to lamp 01; the Player 1 and 2 displays indicate the lamp name, the Player 3 display indicates the row and column wire colors, and the Player 4 display indicates 01. Lamp 01 should light. With the FORWARD/REVERSE push-button switch in the FORWARD (up) position, operating the Game Start push-button switch selects higher-numbered lamps; with it in the REVERSE (down) position, Game Start selects lower-numbered lamps.

Lamp Number	Description	Lamp Number	Description
11	Miss September Lives Out-lane 50k	37	3x
12	Miss October 50k Bonus Hold Over	38	4x
13	Miss November Extra Ball	39	5x
14	Miss December 1,000,000	40	Upper Left Mansion Party
15	Top Left Bunny Hop	41	PI-ball
16	Center "H" Lane	42	RI Score Playboy Value
17	Photo Shoot 1	43	Right Peacock
18	Photo Shoot 2	44	Drop Target 100k
19	Photo Shoot 3	45	Drop Target 75k
20	Photo Shoot 4	46	Drop Target 50k
21	Photo Shoot 5	47	Drop Target 25k
22	Photo Shoot Special	48	Upper Right Bunny Hop
23	Spinner Extra Ball	49	RI Score Playboy Value
24	Right "H" Lane	50	LI Score Playboy Value
25	Upper Left and Right Release Ball	51	Left Peacock
26	Lock Ball #1	52	PI-ball
27	Lock Ball (Big arrow)	53	PI-Ball
28	Left Green Arrow Target	54	pinB all
29	Center Green Arrow Target	55	pinA all
30	Right Green Arrow Target	56	pinB L1
31	Upper Left Scores	57	Mansion
32	Upper Right Scores	58	m Mansion
33	Upper Right Mansion Party	59	man Mansion
34	Bonus Holdover	60	man Mansion
35	Play Again	61	man Mansion
36	2x	62	man Mansion
37	3x	63	man Mansion
38	4x	64	pinB L1
39	5x		
40	Upper Left Mansion Party		
41	PI-ball		
42	RI Score Playboy Value		
43	Right Peacock		
44	Drop Target 100k		
45	Drop Target 75k		
46	Drop Target 50k		
47	Drop Target 25k		
48	Upper Right Bunny Hop		
49	RI Score Playboy Value		
50	LI Score Playboy Value		
51	Left Peacock		
52	PI-ball		
53	PI-Ball		
54	pinB all		
55	pinA all		
56	pinB L1		
57	Mansion		
58	m Mansion		
59	man Mansion		
60	man Mansion		
61	man Mansion		
62	man Mansion		
63	man Mansion		
64	pinB L1		

*Indicates Insert Lamp



Switch Test

From the Display Manual test, operate STEP push-button switch. Player 1 and 2 displays indicate SWITCH TEST. Close each switch and observe the displays. The Player 1 and 2 displays will indicate the switch name, the Player 3 display indicates the row and column wire colors, and the Player 4 display indicates the switch number. When a switch is released, the name and number disappear until another switch is closed or the test is exited.

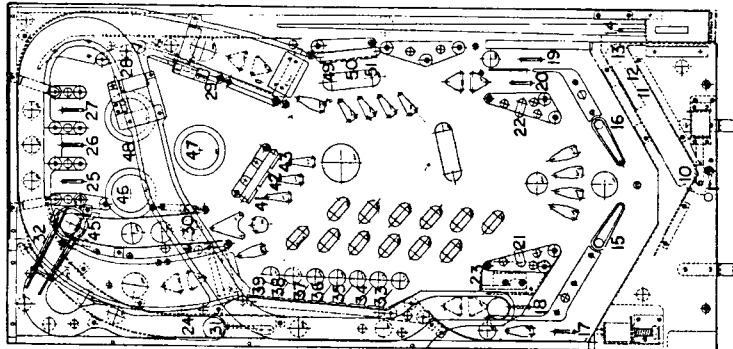
Active Switches

Operate the STEP push-button switch from the Switch Test. Player 1 and 2 Displays indicate ACTIVE SWITCHES. If any switches are stuck closed (or made from the presence of a ball), the Player 1 and 2 displays sequence through switch names, the Player 3 display indicates the row and column wire colors, and the switch numbers are indicated in the Player 4 display. This cycle continues until all switches are cleared or until the STEP push-button switch is depressed.

Bad Switches

Operate the STEP push-button switch from the Switch Test. Player 1 and 2 Displays indicate BAD SWITCHES. During game play, the system keeps track of the last game in which each switch was made. Should a switch not be made for 100 games, it is considered to be bad. If there are any, the Player 1 and 2 displays sequence through switch names, the Player 3 display indicates the row and column wire colors, and the switch numbers are indicated in the Player 4 display. This cycle continues until the STEP push-button switch is depressed.

Number Description	Part No.	Number Description	Part No.
01* Plumb Tilt	500-5023-00	Out Hole	180-5011-00
02 Not Used		Trough #1	180-5009-00
03 Credit Button	500-5097-00	Trough #2	180-5009-00
04* Right Coin	180-5024-00	Trough #3	180-5010-00
05* Center Coin	180-5024-00	Shooter Lane	500-5142-00
06* Left Coin	180-5024-00	Left Flip, Instant Info.	180-5026-00
07* Slam Tilt	180-5022-00	Left EOS	180-5018-00
08 Not Used		Right EOS	180-5018-00
		Left Outlane	500-5143-00
		Left Return Lane	180-5003-00
		Right Outlane	515-5138-00
		Right Return Lane	180-5003-00
		Left Slingshot Trigger Sw.	180-5054-00
		Left Slingshot Point Sw.	180-5055-00
		Right Slingshot Trigger Sw.	180-5054-00
		Right Slingshot Point Sw.	180-5055-00
		Champagne Kicker	180-5040-00
		Grotto 1	180-5028-00
		Left Top Lane	515-5138-00
		Center Top Lane	515-5138-00
		Right Top Lane	515-5138-00
		Ramp Center	180-5010-00
		Ramp Right	180-5010-00
		Left Spinnner	180-5004-00
		Grotto 2	180-5040-00
		Ramp Left	180-5034-00
		P-Target	515-5124-18
		L-Target	515-5124-08
		A-Target	515-5124-18
		B-Target	515-5124-18
		O-Target	515-5124-18
		2nd Y-Target	515-5124-18
		Not Used	
		Center 3 Bank Left	515-5124-18
		Center 3 Bank Middle	515-5124-18
		Center 3 Bank Right	515-5124-18
		Not Used	
		VUK	180-5041-00
		Left Pop Bumper	180-5036-00
		Center Pop Bumper	180-5036-00
		Right Pop Bumper	180-5036-00
		Drop 1 (Top)	180-5025-01
		Drop 2 (Center)	180-5025-01
		Drop 3 (Bottom)	180-5025-01
		Not Used Thru 64	



*INDICATES CABINET SWITCHES.

SWITCH MATRIX CHART

Column Row (*)	1	2	3	4	5	6	7	8
1	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
2	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
3	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
4	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
5	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
6	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
7	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used
8	1 WHT-BRN Plumb Tilt Used	2 WHT-RED Not Used	3 WHT-ORN Credit Button Used	4 WHT-YEL Right Coin Used	5 WHT-GRN Center Coin Used	6 WHT-BLU Left Coin Used	7 WHT-VIO Slam Tilt Used	8 WHT-GRY Not Used

(*) 2 DIGIT NUMBER IN PARENTHESES INDICATES RESISTOR WIRE COLOR CODE NUMBER DISPLAYED DURING DIAGNOSTICS.