

# BLACKOUT

## INSTRUCTION BOOKLET

This booklet provides game operation, bookkeeping, game adjustment, and diagnostic procedures for BLACKOUT. For installation and special maintenance information refer to the blue-covered game manual. For detailed information refer to Williams Solid State Flipper Maintenance Manual.

### SPECIAL CONSIDERATIONS WHEN REPLACING CIRCUIT BOARDS

#### CPU Board

1. For memory protection feature, revision level 6 CPU Boards (batteries located on lower right corner of board) must be used. Revision level 4 CPU Boards equipped with IC14 and IC26 sockets may be used but the memory protection feature is lost.
2. Must be equipped with green-labeled BLACKOUT PROMs or game ROM and green-labeled flipper ROMs.
3. When Game ROM is used, jumper J3 must be connected and J4 removed.

#### Sound Board

1. Model D 8224 with jumper J1 removed required for speech.
2. Must be jumpered for white-labeled sound ROM operation and be equipped with Sound ROM 2. (Jumpers W2, W5, W7, W9, W10, and W15 connected; W3, W4, W6, W8, W11, W12, and W13 removed)

#### Power Supply Board

1. Fuse F4 (10A SB) for flipper solenoids must be installed.

#### Optional Speech Module

1. Requires 5T4951 (IC7), 5T4952 (IC5), and 5T4953 (IC6) speech ROMs.

### GAME OPERATION

\*Indicates adjustable features

**Game Over Mode** - Turn game ON; player scores show zero, high score to date\* alternates with player 1 score, player 1 up lamp flashes, game over lamp lights, all playfield lamps except for credit lamp cycle in attract mode.

**Credit Posting** - Insert coin; knocker sounds, number of credits displayed. If maximum credits\* exceeded by coin or high score to date\*, credits are posted correctly, coin lockout de-energized until remaining credits are below maximum. No credits may be won and coins are rejected while lockout is energized.

**Game Start** - Push credit button; start-up tune played, ball served, credit display reduced by one, player 1 up lamp flashes until first scoring switch is made, ball in play shows 1. Pushing credit button before ball 2 displayed allows additional players.\*

**Bonus Advance** - 1, 2, and 3 Rollovers, top left target, green targets when flashing, top 3-bank drop targets; 3 advances for Special rollovers and, when lit, bottom inside rollovers. Bonus multiplier advanced by spotting "1-2-3". "1-2-3" lamps rotate by actuating right flipper (*LANE CHANGE™* feature).

**Green Targets** - Making five green targets scores 10,000, lights eject hole green lamp, advances lighting of left spinner lamps, lights inside rollovers, and lights outlanes for Special.

**Top 3-Bank** - Making top 3-bank lights eject hole yellow lamp, advances lighting of top 3-bank target lamps, lights right spinners, and lights eject hole BLACKOUT lamp.

**Center 3-Bank** - Making center 3-Bank lights eject hole red lamp. Lighting of jet bumpers is controlled by center 3-bank and top left target. Center 3-bank target lamps rotate from spinners.

**Spinner Loop** - Making complete loop between left and top right spinners collects and advances left spinner lamp values. Advancing lamps past 20,000 lights eject hole for Extra Ball.

**BLACKOUT** - Lit when eject green, yellow, and red lamps lit. When lit, doubles eject hole value.

**Extra Ball** - Maximum of one Extra Ball per ball. Making spinner loop shot to collect 20,000 (or making 5 green targets when spinner loop 20,000 lit) lights eject hole for Extra Ball. Making eject hole when lit awards Extra Ball.

**Tilts** - Ball in play tilted on first closure of Playfield and Ball Roll tilts and third\* closure of Plumb Bob. Slam Tilt returns game to game over.

**Memory** - Lit "1-3" rollovers, green target lamps, eject hole lamps until made for 30,000 and/or Extra Ball, and \*bonus multipliers below 5x.

**End of Game** - Match Digits\* appears in ball in play display, \*credit awarded for match. Exceeding high score to date awards \*three credits. Match, High Score to Date, and Game Over sounds made as appropriate.

With optional Speech Module, the following phrases are produced during game play:

#### ACHIEVEMENT

Game Start  
Making 5-bank  
Making center 3-bank  
Making top 3-bank  
Making spinner loop shot  
Winning Extra Ball  
Making Special  
Making eject hole with BLACKOUT Lit

#### PHRASE

Launch mission.  
Condition green.  
Condition red.  
Condition yellow.  
Orbit completed.  
Resume mission.  
Mission completed.  
BLACKOUT

#### Game Over Random Phrase

Resume BLACKOUT orbit.  
BLACKOUT orbit.  
Completed mission green.  
Resume red condition.  
BLACKOUT mission completed.  
Resume BLACKOUT condition.  
Yellow launch completed.  
Orbit completed.

Resume orbit.  
Completed BLACKOUT mission.  
Mission red completed.  
Mission green completed.  
BLACKOUT, BLACKOUT, BLACKOUT  
Resume green orbit.  
Launch completed.

## BOOKKEEPING AND EVALUATION TOTALS

(Functions 01-12)

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. Operate the ADVANCE pushbutton to display each function on the ball in play display (see Table 1) and record each total from Player 1 display. (To re-view a total that has been advanced past, set toggle switch to MANUAL-DOWN and operate the ADVANCE pushbutton.)
3. Calculate the following if desired:  
 $\% \text{ Paid Credits} = \text{Function 04} \div \text{Function 08}$
4. Turn the game OFF and back ON to return to game over mode.
5. To change current High Score to Date to value of Function 13, momentarily depress HIGH SCORE RESET pushbutton.
6. To zero Functions 01-11, see page 7

## GAME ADJUSTMENT PROCEDURE

(Functions 13-35)

*Coin door must be open to change settings.*

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. To raise Function number in ball in play display, operate ADVANCE pushbutton with switch set to AUTO-UP. To lower Function number operate ADVANCE with it set to MANUAL-DOWN.
3. With desired Function indicated in ball in play display, raise value in player 1 display by operating credit button with switch set to AUTO-UP; lower value by operating credit button with it set to MANUAL-DOWN. Value left of Player 1 display is new setting. For values see Table 1 and (for pricing) Table 2.
4. Repeat steps 2 and 3 until all required adjustments have been made.
5. Turn game OFF and back ON to return to game over mode.
6. To restore factory settings and zero audit totals, see page 7.

## DIAGNOSTIC PROCEDURES

(Display Digits, Lamp, Solenoid, and Switch Tests)

1. In game over mode, set toggle switch to MANUAL-DOWN and depress ADVANCE. All displays should go blank.
2. Momentarily depress ADVANCE and set toggle switch to AUTO-UP. Display Digits test is performed.
3. Momentarily depress ADVANCE. Test 01 is indicated on number of credits display and Lamp Test is performed.
4. Set toggle switch to MANUAL-DOWN and momentarily depress ADVANCE. Test 02 is indicated on number of credits display and solenoid 01 on the ball in play display; solenoid 01 is pulsed by driver board.
5. Operate ADVANCE to pulse each solenoid (see Figure 3).
6. Set toggle switch to AUTO-UP and momentarily depress ADVANCE. Test 03 is indicated on number of credits display and stuck switches on ball in play display.
7. See Figure 4. Operate switches; switch number is indicated on ball in play display.
8. Turn game OFF and back ON to return to game over mode.
9. To set up Auto-Cycle Mode (Display Digits, Lamp, and Solenoid Tests) see page 7.

Table 1. Game Adjustments

FUNCTION	DESCRIPTION	NOTES	FACTORY SETTING
00	Game Identification	1	1495 1
01	Coins, Left Chute (Closest to coin door hinge)	1	—
02	Coins, Center Chute	1	—
03	Coins, Right Chute	1	—
04	Total Paid Credits	1	—
05	Total Specials	1	—
06	Total Replay (Extra Ball) Scores	1	—
07	Match and High Score to Date Credits	1	—
08	Total Credits	1,2	—
09	Total Extra Balls	1,3	—
10	Total Ball Time in Minutes	1	—
11	Total Number of Balls Played	1	—
12	Current High Score to Date	4	600,000
13	Backup High Score to Date - 650,000	5	500,000
14	Replay 1 Score 440,000	6	600,000
15	Replay 2 Score 590,000	6	440,000
16	Replay 3 Score —	6	590,000
17	Replay 4 Score —	6	0
18	Maximum Credits - 10	7	20
0019	Standard and Custom Pricing Control (00-07)	8	02
0020	Left Coin Slot Multiplier	8	01
0021	Center Coin Slot Multiplier	8	04
0022	Right Coin Slot Multiplier	8	01
0023	Coin Units Required for Credit	8	01
0024	Coin Units Bonus Point	8	00
0025	High Score Credits	5	03
0026	Match (00=ON, 01=OFF)	—	00
0027	Special	—	00
	00 = Awards Credit		
	01 = Awards Extra Ball		
	02 = Awards Points		
0028	Scoring Awards	—	00
	00 = Credits at Replay Score		
	01 = Extra Ball at Replay Score		
0029	Maximum Plumb Bob Tilts (1-9)	—	03
0030	Number of Balls (03 or 05)	—	03
0031	Extra Ball Difficulty	—	01
	00 = Conservative, Left Spinner 5,000 Not Lit Initially		
	01 = Moderate, Left Spinner 5,000 Lit Initially		
0032	Outlane Special Difficulty	—	01
	00 = Conservative, Left and Right Inside Rollovers Lit Separately		
	01 = Moderate, Left and Right Inside Rollovers Lit Together		
0033	Right Spinners	—	01
	00 = Conservative, Spinners Lit Separately		
	01 = Moderate, Spinners Lit Together		
0034	Extra Ball Control	—	00
	00 = Extra Ball Allowed		
	01 = No Extra Ball		
13-35	Background Sound/Bonus Multiplier Memory/Attract Mode Sound	9	03
	1st Setting = With attract mode sounds. 2nd Setting = Without attract mode sounds.		
	00/10 = No Background Sound, No Bonus Multiplier Memory		
	01/11 = Background Sound On, No Bonus Multiplier Memory		
	02/12 = No Background Sound, Bonus Multiplier on Memory		
	03/13 = Background Sound On, Bonus Multiplier on Memory		

012345678910  
01234567101112

Notes:

1. Functions 00-11 cannot be changed from the coin door; however, Functions 01-11 can be set to zero as described on page 7.
2. Total Credits (Function 08) is the sum of Function 04 and as applicable, Functions 05, 06, and 07.
3. Total Extra Balls (Function 09) is the sum of the game extra ball feature and Functions 05 and 06, as applicable.
4. Current High Score to Date (Function 12) can be changed to the value of the Backup High Score to Date (Function 13) by operating the HIGH SCORE RESET switch while in the game over mode.
5. Function 13 may be set to any multiple of 10,000 points. Setting Function 25 to zero with Function 13 set to any score but zero permits the High Score to Date feature to operate but no credits are awarded.
6. Functions 14-17 (Replay Scores) may be set to any multiple of 10,000 points. Setting a function to zero disables the replay score point. **Always disable the Replay 4 level first, the Replay 3 level second, etc. The replay levels must be set with ascending values.**
7. Setting Maximum Credits (Function 18) to zero places the game in a free play mode.
8. With Function 19 set to 00, Functions 20-24 must be set manually. Refer to Table 2 for seven standard pricing schemes (selected by values of 01-07 for Function 19) and custom pricing values.
9. For 5-Ball play, it is recommended that Function 35 be set to 01.

## RECOMMENDED SCORE LEVELS

### CREDIT GAMES

- 3-Ball: \*440,000; 590,000;  
or 460,000; 610,000, 710,000  
5-Ball: 560,000; 760,000  
(See Note 9)

### EXTRA BALL

- 3-Ball: 350,000  
5-Ball: 450,000

\*Factory setting

Table 2. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION						
		19	20	21	22	23	24	
Twin-Quarter Quarter, Dollar, Quarter	1/25¢, 3/50¢, 7/1	00	03	12	03	02	12	
	1/25¢, 3/50¢, 7/1 coin only	00	03	14	03	02	00	
	1/25¢, 7/1 coin only	00	01	07	01	01	00	
	1/25¢, 3/50¢, 6/1	00	01	04	01	01	02	
	1/25¢, 6/1 coin only	00	01	06	01	01	00	
	•1/25¢, 5/1	05	01	04	01	01	04	
	1/25¢, 5/1 coin only	00	01	05	01	01	00	
	•1/25¢, 4/1	02	01	04	01	01	00	
	•1/50¢, 3/1	01	01	04	01	02	04	
	1/50¢	00	01	04	01	02	00	
1DM, 5DM, 2DM	•1/1DM, 3/2DM, 10/5DM	03	09	45	18	05	45	
	2/1DM, 5/2DM, 14/5DM	00	13	65	26	05	65	
20-Cent, 50-Cent	1/20¢, 3/50¢	00	06	00	15	05	00	
1 Franc, 10 Franc, 5 Franc	•1/2F, 3/5F only, 8/10F only	04	01	16	06	02	00	
	•1/25¢, 4/1G	06	01	00	04	01	00	
25 Cent, 1 Guilder,	1/25¢, 5/1G	00	01	00	04	01	04	
50 Yen, 100 Yen	•1/50Y, 2/100Y	07	01	00	02	01	00	
1 Franc or Twin-1 Franc	1/1F, 3/2F	00	01	01	01	01	02	
	1/1F	00	01	01	01	01	00	
5 Franc, 10 Franc	•1/5F, 2/10F	07	01	00	02	01	00	
	1/10F	00	01	00	02	02	00	
Twin-2 Franc	•1/2F	02	01	04	01	01	00	
10, 20 Franc	•1/10F, 2/20F	07	01	00	02	01	00	
Twin-1 Sucre	1/3S, 2/5S	00	02	00	02	05	00	

•Indicates standard price settings by adjusting only Function 19. For other price settings, set Function 19 to 00 and set Functions 20 through 24 to the values indicated in the chart.

## RESETTING AUDIT TOTALS AND ADJUSTMENTS; INITIATING AUTO-CYCLE MODE

1. In game over mode, set the AUTO-UP/MANUAL-DOWN switch to MANUAL-DOWN and momentarily depress the ADVANCE pushbutton. All displays should go blank.
2. Remove the backglass and unlatch and open the insert door.
3. Set all switches on the MASTER COMMAND slide switch to OFF (move to the right).
4. Set switch on MASTER COMMAND switch to ON (move to left):
  - a. To zero audit totals (Functions 01-11) set switch 8 to ON.
  - b. To restore factory settings **and** zero audit totals, set switch 7 to ON. *Coin Door must remain open to restore factory settings.*
  - c. For Auto-Cycle Mode set switch 6 to ON.
5. Momentarily depress MASTER COMMAND ENTER pushbutton. The LEDs should blink once.
6.
  - a. After zeroing audit totals turn game OFF and ON to return to game over mode.
  - b. After restoring factory settings, turn game OFF and on **twice** to return to game over mode.
  - c. To initiate Auto-Cycle Mode, set toggle switch to AUTO-UP and momentarily depress the ADVANCE pushbutton. Each cycle of this mode sequences through display digits test, flashes all multiplexed lamps 64 times and pulses each solenoid. To terminate the Auto-Cycle mode and go to game over, turn the game OFF and ON.

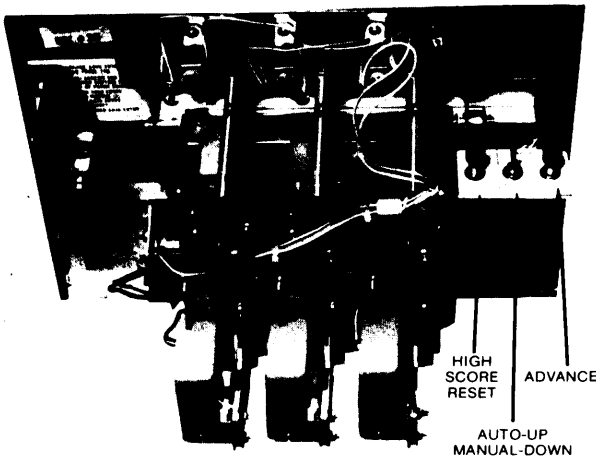


Figure 1. Coin Door Diagnostic Switches

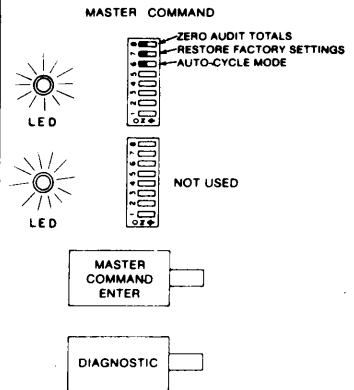
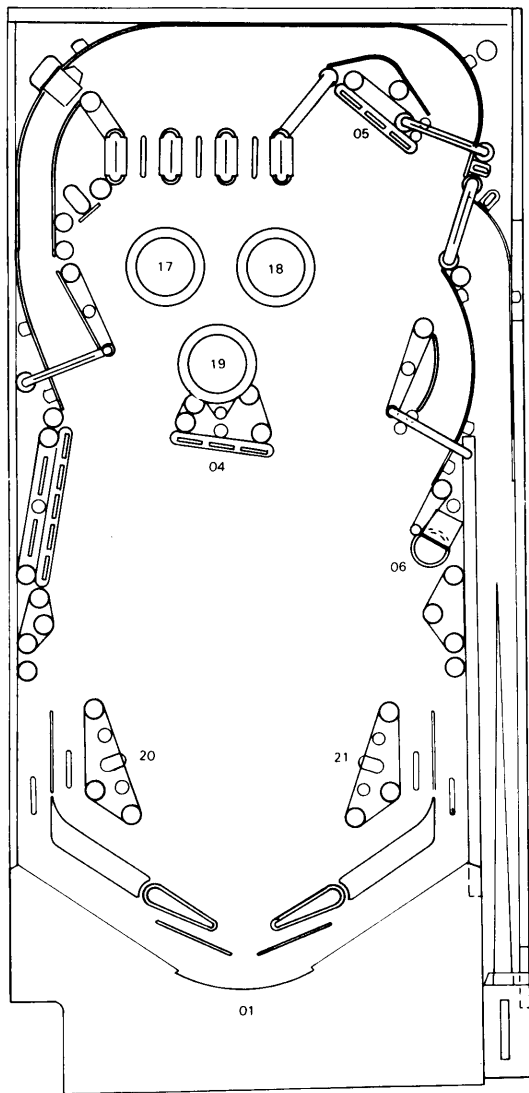


Figure 2.  
Master Command  
Settings Switch



Sol. No.	Function
01	Ball Release
02	Not Used
03	Not Used
04	Center 3-Bank Drop Targets Reset
05	Top 3-Bank Drop Targets Reset
06	Eject Hole
07	Not Used
08	Not Used
09	Sound
10	Sound
11	Sound
12	Sound
13	Sound
14	Credit Knocker
15	Special Relay
16	Coin Lockout
17	Left Jet Bumper
18	Right Jet Bumper
19	Bottom Jet Bumper
20	Left Kicker
21	Right Kicker
22	Not Used

Figure 3. Playfield Solenoid Locations and Solenoid Chart



Table 3. Solenoid Connections

SOL. NO.	FUNCTION	WIRE COLOR	CONNECTIONS	DRIVER TRANS.	SOLENOID PART NO.
01	Ball Release	GRY-BRN	2P11-4, 8P3-17	Q15	SA-23-850-DC
02	Not Used	GRY-RED	2P11-5, 8P3-18	Q17	-
03	Not Used	GRY-ORN	2P11-7, 8P3-19	Q19	-
04	Center 3-Bank Reset	GRY-YEL	2P11-8, 8P3-20	Q21	SA3-23-850-DC
05	Top 3-Bank Reset	GRY-GRN	2P11-9, 8P3-21	Q23	SA3-23-850-DC
06	Eject Hole	GRY-BLU	2P11-3, 8P3-22	Q25	SG-23-850-DC
07	Not Used	GRY-VIO	2P11-2, 8P3-23	Q27	-
08	Not Used	GRY-BLK	2P11-1, 8P3-24	Q29	-
09	Sound	BRN-BLK	2P9-9, 10P3-3	Q31	-
10	Sound	BRN-RED	2P9-7, 10P3-2	Q33	-
11	Sound	BRN-ORN	2P9-1, 10P3-5	Q35	-
12	Sound	BRN-YEL	2P9-2, 10P3-4	Q37	-
13	Sound	BRN-GRN	2P9-3, 10P3-7	Q39	-
14	Credit Knocker	BRN-BLU	2P9-4, 7P1-16	Q41	SA2-23-850-DC
15	Special Relay	BRN-VIO	2P9-5, 6P2	Q43	5A-9384
16	Coin Lockout	BRN-GRY	2P9-6, 7P1-18, 7P2-4	Q45	SM-35-4000-DC
*17	Left Jet Bumper	BLU-BRN	2P12-7, 8P3-11	Q2	SG-23-850-DC
*18	Right Jet Bumper	BLU-RED	2P12-4, 8P3-12	Q4	SG-23-850-DC
*19	Bottom Jet Bumper	BLU-ORN	2P12-3, 8P3-13	Q6	SG-23-850-DC
*20	Left Kicker	BLU-YEL	2P12-6, 8P3-14	Q8	SG-23-850-DC
*21	Right Kicker	BLU-GRN	2P12-8, 8P3-15	Q10	SG-23-850-DC
*22	Not Used	BLU-BLK	2P12-9, 8P3-16	Q12	-
*	Right Flipper	BLU-VIO	7P1-8, 8P3-3	-	SFL-19-400/ 30-750-DC
*	Left Flipper	BLU-GRY	7P1-10, 8P3-4	-	SFL-19-400/ 30-750-DC

**\*NOTES:**

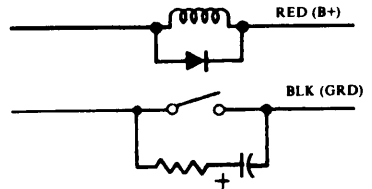
1. Special switch connections for solenoids 17 through 22 are as follows:

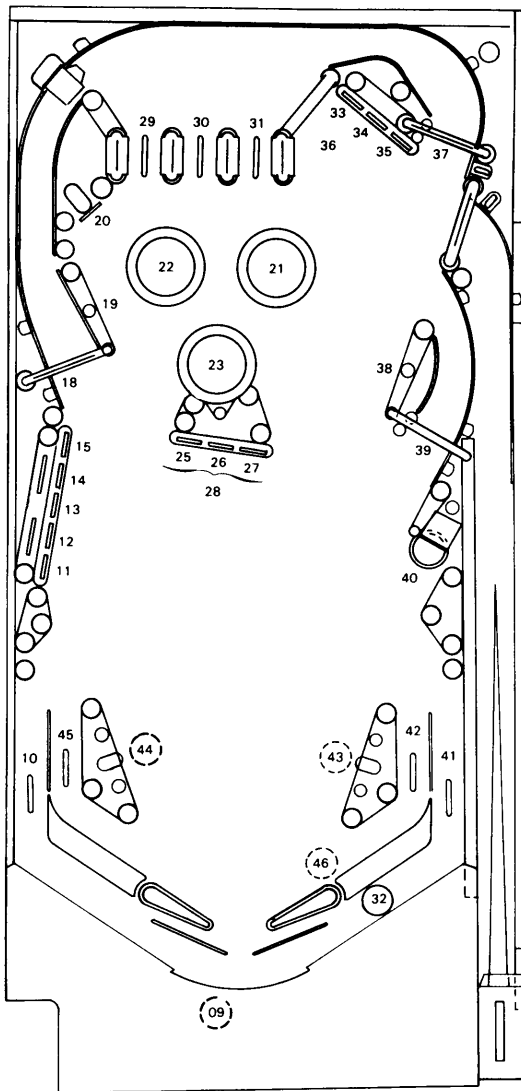
- 17 - ORN-BRN - 2P13-5, 8P3-5
- 18 - ORN-RED - 2P13-3, 8P3-6
- 19 - ORN-BLK - 2P13-2, 8P3-7
- 20 - ORN-YEL - 2P13-4, 8P3-8
- 21 - ORN-GRN - 2P13-8, 8P3-9
- 22 - ORN-BLU - 2P13-9, 8P3-10

2. Flipper button connections are as follows:

- Right - ORN-VIO - 2P12-1, 7P1-7
- Left - ORN-GRY - 2P12-2, 7P1-9

3. Typical wiring for solenoids and special switches:





### Switch

No.	Function (Score)
01	Plumb Bob Tilt
02	Ball Roll Tilt
03	Credit Button
04	Right Coin Switch
05	Center Coin Switch
06	Left Coin Switch
07	Slam Switch
08	High Score Reset
09	Outhole
10	Left Outside Rollover (2,000)
11	Green Target #1 Bottom (2,000/5,000)
12	Green Target #2 (2,000/5,000)
13	Green Target #3 (2,000/5,000)
14	Green Target #4 (2,000/5,000)
15	Green Target #5 Top (2,000/5,000)
16	Not Used
17	Not Used
18	Left Spinner (100)
19	Left Spinner Standup (50)
20	Upper Left Target (1,000)
21	Right Jet Bumper (100/1,000)
22	Left Jet Bumper (100/1,000)
23	Bottom Jet Bumper (100/1,000)
24	Not Used
25	Center 3 Bank Left (2,000/5,000)
26	Center 3 Bank Center (2,000/5,000)
27	Center 3 Bank Right (2,000/5,000)
28	Center 3 Bank Series (10,000)
29	1 Rollover (1,000)
30	2 Rollover (1,000)
31	3 Rollover (1,000)
32	Playfield Tilt
33	Top 3 Bank Left (2,000/5,000)
34	Top 3 Bank Center (2,000/5,000)
35	Top 3 Bank Right (2,000/5,000)
36	Top 3 Bank Series (10,000)
37	Upper Right Spinner (100/1,000)
38	Middle Right Standup (50)
39	Middle Right Spinner (100/1,000)
40	Eject Hole (1,000 lit value)
41	Right Outside Rollover (2,000)
42	Right Inside Rollover (1,000/3,000)
43	Right Kicker (10)
44	Left Kicker (10)
45	Left Inside Rollover (1,000/3,000)
46	Right Flipper Lane Change Switch

Note: Second value is lit or flashing value.

Figure 4. Playfield Switch Locations and Switch Chart

COLUMN ROW	1	2	3	4	5	6	7	8
	GRN-BRN	GRN-RED	GRN-ORN	GRN-YEL	GRN-BLK	GRN-BLU	GRN-VIO	GRN-GRY
1 WHT- BRN	PLUMB BOB TILT 1	OUTHOLE 9	NOT USED 17	CENTER 3 BANK (LEFT) 25	TOP 3 BANK (LEFT) 33	RIGHT OUTSIDE ROLLOVER 41	NOT USED 49	NOT USED 57
2 WHT- RED	BALL ROLL TILT 2	LEFT OUTSIDE ROLLOVER 10	LEFT SPINNER 18	CENTER 3 BANK (CENTER) 26	TOP 3 BANK (CENTER) 34	RIGHT INSIDE ROLLOVER 42	NOT USED 50	NOT USED 58
3 WHT- ORN	CREDIT BUTTON 3	GREEN TARGET #1 (BOTTOM) 11	LEFT SPINNER STANDUP 19	CENTER 3 BANK (RIGHT) 27	TOP 3 BANK (RIGHT) 35	RIGHT KICKER 10 43	NOT USED 51	NOT USED 59
4 WHT- YEL	RIGHT COIN SWITCH 4	GREEN TARGET #2 12	UPPER LEFT TARGET 20	CENTER 3 BANK SERIES 28	TOP 3 BANK SERIES 36	LEFT KICKER 10 44	NOT USED 52	NOT USED 60
5 WHT- GRN	CENTER COIN SWITCH 5	GREEN TARGET #3 13	RIGHT JET BUMPER 21	1 ROLLOVER 29	UPPER RIGHT SPINNER 37	LEFT INSIDE ROLLOVER 45	NOT USED 53	NOT USED 61
6 WHT- BLU	LEFT COIN SWITCH 6	GREEN TARGET #4 14	LEFT JET BUMPER 22	2 ROLLOVER 30	MIDDLE RIGHT STANDUP 39	RIGHT FLIPPER LANE CHANGE SWITCH 46	NOT USED 54	NOT USED 62
7 WHT- VIO	SLAM SWITCH 7	5 BANK #5 (TOP) 15	BOTTOM JET BUMPER 23	3 ROLLOVER 31	MIDDLE RIGHT SPINNER 39	NOT USED 47	NOT USED 55	NOT USED 63
8 WHT- GRY	HIGH SCORE RESET 8	NOT USED 16	NOT USED 24	PLAYFIELD TILT 32	EJECT HOLE 40	NOT USED 48	NOT USED 56	NOT USED 64

Figure 5. Switch Matrix

COLUMN ROW	1 YEL-BRN	2 YEL-RED	3 YEL-ORN	4 YEL-BLK	5 YEL-GRN	6 YEL-BLU	7 YEL-VIO	8 YEL-GRY
1 RED- BRN	SAME PLAYER SHOOT AGAIN (PLAYFIELD)	8,000 BONUS	GREEN TARGET #1 ARROW (BOTTOM)	RIGHT JET BUMPER	LOOP 5,000	TOP RIGHT SPINNER	20,000 BONUS	#1 PLAYER UP
2 RED- BLK	1,000 BONUS	9,000 BONUS	GREEN TARGET #2 ARROW	LEFT JET BUMPER	LOOP 10,000	MIDDLE RIGHT SPINNER	1 CAN PLAY	#2 PLAYER UP
3 RED- ORN	2,000 BONUS	NOT USED	GREEN TARGET #3 ARROW	BOTTOM JET BUMPER	LOOP 15,000	EJECT HOLE GREEN 5,000	2 CAN PLAY	#3 PLAYER UP
4 RED- YEL	3,000 BONUS	10,000 BONUS	GREEN TARGET #4 ARROW	"1"	LOOP 20,000	EJECT HOLE YELLOW 5,000	3 CAN PLAY	#4 PLAYER UP
5 RED- GRN	4,000 BONUS	2X	GREEN TARGET #5 ARROW (TOP)	"2"	EXTRA BALL WHEN LIT	EJECT HOLE RED 5,000	4 CAN PLAY	TILT
6 RED- BLU	5,000 BONUS	3X	CENTER 3 BANK ARROW (LEFT)	"3"	TOP 3 BANK ARROW (LEFT)	EJECT HOLE BLACKOUT	MATCH	GAME OVER
7 RED- VIO	6,000 BONUS	4X	CENTER 3 BANK ARROW	LEFT INSIDE ROLLOVER (CENTER)	TOP 3 BANK ARROW (CENTER)	LEFT SPECIAL	BALL IN PLAY	SAME PLAYER SHOOT (BACKBOX)
8 RED- GRY	7,000 BONUS	5X	CENTER 3 BANK ARROW	RIGHT INSIDE ROLLOVER (RIGHT)	TOP 3 BANK ARROW (RIGHT)	RIGHT SPECIAL	CREDITS (PLAYFIELD)	HIGH SCORE TO DATE

Figure 6. Lamp Matrix