

Model # 517

FUSE LIST

Power Supply Board D-8345			Sound Board D-8223 (Type-2)		
F1	100V Display Power Input	0.25A, 250V, SB	F1	Power Input	4A, 250V, SB
F2	Solenoids	2.5A, 250V, SB	F2	Power Input	4A, 250V, SB
F3	Controlled lamps 18V	8A, 250V, SB	Back Box		
F4	Flippers	10A, 250V SB	BR1	Bridge Rectifier 18V	8A, 250V, SB
F5	5V & 12V Logic Power Input	7A, 250V, SB	BR2	Bridge Rectifier 34V	8A, 250V, SB
F6	5V & 12V Logic Power Input	7A, 250V, SB	Line Filter		
F7	General Illumination	20A, 250V	Foreign	(220-230V)	4A, 250V, SB
			Domestic	(110-120V)	8A, 250V, SB



SOLENOID/FLASHER TABLE

Sol. No.	Function	Solenoid Type	Wire Color ¹	Wire Color ²	Connections		Driver Transistor	Solenoid Part Number
					Driver Board	Playfield / Cabinet		
1A	Left Bank Drop Target #1 Reset (Bottom)	Controlled	Gry-Brn	Vio-Brn	2J11-4	8P3-1	Q15	SA5-24-750-DC
1B	Right Bank Drop Target #1 Reset (Bottom)	Controlled	Gry-Brn	Blk-Brn	2J11-4	8P3-1	Q15	SA5-24-750-DC
2A	Left Bank Drop Target #2 Reset	Controlled	Gry-Red	Vio-Red	2J11-5	8P3-2	Q17	SA5-24-750-DC
2B	Right Bank Drop Target #2 Reset	Controlled	Gry-Red	Blk-Red	2J11-5	8P3-2	Q17	SA5-24-750-DC
3A	Left Bank Drop Target #3 Reset	Controlled	Gry-Orn	Vio-Orn	2J11-7	8P3-3	Q19	SA5-24-750-DC
3B	Right Bank Drop Target #3 Reset	Controlled	Gry-Orn	Blk-Orn	2J11-7	8P3-3	Q19	SA5-24-750-DC
4A	Left Bank Drop Target #4 Reset	Controlled	Gry-Yel	Vio-Yel	2J11-8	8P3-4	Q21	SA5-24-750-DC
4B	Right Bank Drop Target #4 Reset	Controlled	Gry-Yel	Blk-Yel	2J11-8	8P3-4	Q21	SA5-24-750-DC
5A	Left Bank Drop Target #5 Reset (Top)	Controlled	Gry-Grn	Vio-Grn	2J11-9	8P3-5	Q23	SA5-24-750-DC
5B	Right Bank Drop Target #5 Reset (Top)	Controlled	Gry-Grn	Blk-Grn	2J11-9	8P3-5	Q23	SA5-24-750-DC
6A	Left Bank Drop Target Release	Controlled	Gry-Blu	Vio-Blu	2J11-3	8P3-6	Q25	SA6-24-750-DC
6B	Right Bank Drop Target Release	Controlled	Gry-Blu	Blk-Blu	2J11-3	8P3-6	Q25	SA6-24-750-DC
7A	Disappearing Pod Target Reset (Bottom)	Controlled	Gry-Vio	Vio-Blk	2J11-2	8P3-7	Q27	SA5-24-750-DC
7B	Disappearing Pod Target Reset (Top)	Controlled	Gry-Vio	Blk-Vio	2J11-2	8P3-7	Q27	SA5-24-750-DC
8A	Ball Release	Controlled	Gry-Blk	Vio-Gry	2J11-1	8P3-8	Q29	SG1-23-850-DC
8B	Lockup Trough Release	Controlled	Gry-Blk	Blk-Gry	2J11-1	8P3-8	Q29	SG1-23-850-DC
9A	Disappearing Baiter Target Reset (Bottom)	Controlled	Brn-Blk	Vio-Wht	2J9-9	8P3-9	Q31	SA5-24-750-DC
9B	Disappearing Baiter Target Reset (Center)	Controlled	Brn-Blk	Blk-Wht	2J9-9	8P3-9	Q31	SA5-24-750-DC
10A	Disappearing Baiter Target Reset (Top)	Controlled	Brn-Red	Orn-Wht	2J9-7	8P3-10	Q33	SA5-24-750-DC
10B	Disappearing Baiter Target Release Relay	Controlled	Brn-Red	Blu-Wht	2J9-7	8P3-10	Q33	A-8592
11	Solenoid B+ Select Relay	Controlled	Brn-Orn		2J9-1	3P7-1	Q35	A-8592
12	Outhole	Controlled	Brn-Yel		2J9-2	8P3-12	Q37	SA-23-850-DC
13	Reverse Ball Shooter	Controlled	Brn-Grn		2J9-3	8P3-13	Q39	SG-23-850-DC
14	General Illumination Relay	Controlled	Brn-Blu		2J9-4	8P3-14	Q41	5580-09555-00 ⁴
15	Bell	Controlled	Brn-Vio		2J9-5	7P1-17	Q43	SM-29-1000-DC
16	Coin Lockout Coil	Controlled	Brn-Gry		2J9-6	7P1-18, 7P2-4	Q45	904218-696
17	Left Jet Bumper	Special #1	Blu-Brn		2J12-7	8P3-17	Q2	SG-23-850-DC
		Sp. Switch #1	Orn-Brn		2J13-5	8P3-24	IC6	
18	Right Jet Bumper	Special #2	Blu-Red		2J12-4	8P3-18	Q4	SG-23-850-DC
		Sp. Switch #2	Orn-Red		2J13-3	8P3-25	IC6	
19	Left Slingshot	Special #3	Blu-Orn		2J12-3	8P3-19	Q6	SG1-23-850-DC
		Sp. Switch #3	Orn-Blk		2J13-2	8P3-26	IC6	
20	Right Slingshot	Special #4	Blu-Yel		2J12-6	8P3-20	Q8	SG1-23-850-DC
		Sp. Switch #4	Orn-Yel		2J13-4	8P3-27	IC6	
21	Not Used	Special #5	Blu-Grn		2J12-8	8P3-21	Q10	
		Sp. Switch #5	Orn-Grn		2J13-8	8P3-28	IC7	
22	Ball Shooter Return Gate	Special #6	Blu-Blk		2J12-9	8P3-22	Q12	SZ-35-4000-DC
		Sp. Switch #6	Orn-Blu		2J13-5	8P3-29	IC7	
Flipper Circuits								
	Right Flipper	Flipper	Blu-Vio	7P1-8	8P3-34			SFL19-400 / 30-750-DC
	Right Flipper switch ³	Switch	Orn-Vio	2P12-1	7P1-7			
	Lower Left Flipper	Flipper	Blu-Gry	7J1-10	8P3-32			SFL19-400 / 30-750-DC
	Left Flipper switch ³	Switch	Orn-Gry	2P12-2	7P1-9			
	Upper Left Flipper	Flipper	Blk-Blu	7P1-30	8P3-33			SFL19-400 / 30-750-DC
Notes:								
1. Wire colors, except flipper Orn-Vio and Orn-Gry, are ground connections (to coil terminal with unbanded end of diode). Flipper Orn-Vio and Orn-Gry wires connect from CPU Board to flipper button switch on cabinet.								
2. Wire between isolation diode and solenoid								
3. Flipper connections are from flipper button switch to flipper coil.								
4. Relay is mounted on Power Supply Board D-8345 in the backbox.								

LAMP MATRIX

Column Row	Red ← Yellow (B+) →							
	1 Yel-Brn 2J5-8 Q63	2 Yel-Red 2J5-9 Q65	3 Yel-Orn 2J5-6 Q67	4 Yel-Blk 2J5-7 Q69	5 Yel-Grn 2J5-3 Q71	6 Yel-Blu 2J5-5 Q73	7 Yel-Vio 2J5-1 Q75	8 Yel-Gry 2J5-2 Q77
1 Red-Brn 2J7-1 Q47	Shoot Again (Backbox) 1	Humanoid 1 (Left) 9	Humanoid 9 17	Right Mutant 2 25	Humanoid Value -5,000 33	Bomber Lane 3 41	Smart Bomb 1 (Bottom) 49	Baiter 3 (Top) 57
2 Red-Blk 2J7-2 Q49	Ball in Play 2	Humanoid 2 10	Humanoid 10 (Right) 18	Right Mutant 3 26	Humanoid Value Multiplier 2X 34	Bomber Lane 4 42	Smart Bomb 2 (Center) 50	Shoot Again (Playfield) 58
3 Red-Orn 2J7-3 Q51	Tilt 3	Humanoid 3 11	Left Mutant 1 (Bottom) 19	Right Mutant 4 27	Humanoid Value Multiplier 3X 35	Swarmer 1 (Upper Right) 43	Smart Bomb 3 (Top) 51	Warp When Lit 59
4 Red-Yel 2J7-4 Q53	Game Over 4	Humanoid 4 12	Left Mutant 2 20	Right Mutant 5 Top) 28	Humanoid Value Multiplier 4X 36	Swarmer 2 (Center Right) 44	Lockup 1 52	MULTI-BALL Play 60
5 Red-Grn 2J7-5 Q55	Match 5	Humanoid 5 13	Left Mutant 3 21	Humanoid Value -1,000 29	Humanoid Value Multiplier 5X 37	Swarmer 3 (Lower Right) 45	Lockup 2 53	Reverse 61
6 Red-Blu 2J7-6 Q57	High Score 6	Humanoid 6 14	Left Mutant 4 22	Humanoid Value -2,000 30	Humanoid Value Multiplier 10X 38	Swarmer 4 (Lower Left) 46	Lockup 3 54	Gate 62
7 Red-Vio 2J7-9 Q61	Not Used 7	Humanoid 7 15	Left Mutant 5 (Top) 23	Humanoid Value -3,000 31	Bomber Lane 1 39	Swarmer 5 (Center Left) 47	Baiter 1 (Bottom) 55	Not Used 63
8 Red-Gry 2J7-8 Q59	Wave in Play 8	Humanoid 8 16	Right Mutant 1 (Bottom) 24	Humanoid Value -4,000 32	Bomber Lane 2 40	Swarmer 6 (Upper Left) 48	Baiter 2 (Center) 56	Not Used 64

SWITCH MATRIX

Column Row	White → Green							
	1 Grn-Brn 2J2-9 IC17	2 Grn-Red 2J2-8 IC17	3 Grn-Orn 2J2-7 IC17	4 Grn-Yel 2J2-6 IC17	5 Grn-Blk 2J2-5 IC18	6 Grn-Blu 2J2-3 IC18	7 Grn-Vio 2J2-2 IC18	8 Grn-Gry 2J2-1 IC18
1 Wht-Brn 2J3-9 IC15	Plumb Bob Tilt 1	Bomber Lane 1 Rollover 9	Left Lander Drop Target 5 (Top) 17	Right Lander Drop Target 3 25	Disappearing Baiter Target (Bottom) 33	Bull's Eye Target 41	Left Ball Trough 49	Left Slingshot 57
2 Wht-Red 2J3-8 IC15	Ball Roll Tilt 2	Bomber Lane 2 Rollover 10	Left Mutant Bull's Eye Target 1 (Bottom) 18	Right Lander Drop Target 4 26	Disappearing Baiter Target (Center) 34	Lockup Trough (Bottom) 42	Ball Shooter Lane 50	Right Slingshot 58
3 Wht-Orn 2J3-7 IC15	Credit Button 3	Bomber Lane 3 Rollover 11	Left Mutant Bull's Eye Target 2 19	Right Lander Drop Target 5 (Top) 27	Disappearing Baiter Target (Top) 35	Lockup Trough (Center) 43	Left Outlane 51	Lane Change Switch 59
4 Wht-Yel 2J3-6 IC15	Right Coin Chute 4	Bomber Lane 4 Rollover 12	Left Mutant Bull's Eye Target 3 20	Right Mutant Bull's Eye Target 1 (Bottom) 28	Swarmer Bull's Eye Target (Top) 36	Lockup Trough (Top) 44	Right Outlane 52	Smart Bomb 60
5 Wht-Grn 2J3-5 IC16	Center Coin Chute 5	Left Lander Drop Target 1 (Bottom) 13	Left Mutant Bull's Eye Target 4 21	Right Mutant Bull's Eye Target 2 29	Swarmer Bull's Eye Target (Bottom) 37	Lockup Trough Rollover 45	Left Flipper Return Lane 53	Reverse 61
6 Wht-Blu 2J3-4 IC16	Left Coin Chute 6	Left Lander Drop Target 2 14	Left Mutant Bull's Eye Target 5 (Top) 22	Right Mutant Bull's Eye Target 3 30	Swarmer Standup 38	Outhole 46	Right Flipper Return Lane 54	Not Used 62
7 Wht-Vio 2J3-3 IC16	Slam Tilt 7	Left Lander Drop Target 3 15	Right Lander Drop Target 1 (Bottom) 23	Right Mutant Bull's Eye Target 4 31	Disappearing Pod Target (Bottom) 39	Right Ball Trough 47	Left Jet Bumper 55	Playfield Tilt 63
8 Wht-Gry 2J3-1 IC16	High Score Reset 8	Left Lander Drop Target 4 16	Right Lander Drop Target 2 24	Right Mutant Bull's Eye Target 5 (Top) 32	Disappearing Pod Target (Top) 40	Center Ball Trough 48	Right Jet Bumper 56	Not Used 64