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WARNING: THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. AS TEMPORARILY PERMITTED BY REGULATION IT HAS NOT BEEN TESTED FOR COMPLIANCE WITH THE LIMITS FOR CLASS A COMPUTING DEVICES PURSUANT TO SUBPART J OF PART 15 OF FCC RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CASE THE USER AT HIS OWN EXPENSE WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.

SECTION I. INSTALLATION

Assemble the game as follows:

Bolt legs to cabinet. Using flat washers under bolt heads, bolt back box to cabinet. Feed cable connectors and ground braid through cable port in back box. Screw ground braid to braid in back box. Insert connectors so they are completely seated on printed circuit board assemblies.

On all games there are some items that must be checked after shipment. Making these visual inspections may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable connectors may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switches should always be adjusted after game is set on location and leg levelers are adjusted.

Visual inspections before plugging in line cord:

1. Check that wiring of transformer corresponds to location voltage.
2. Check the transformer for any foreign material shorting across wiring lugs.
3. Check that fuses are firmly seated and making good contact.
4. Check wire on coils for proper soldering. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
5. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
6. Check for any wires that may have become disconnected.
7. Check that all cable connectors are completely seated on printed circuit board assemblies.
8. Check that cables are clear of all moving parts.

Check adjustment of the two (normally open) tilt switches:

1. Plumb bob tilt on left side of cabinet near front door.
2. Ball tilt above plumb bob tilt. Insert the smaller ball (gold 15/16" dia.) into ball tilt assembly, and adjust the bracket so the ball will roll free to contact the switch blade, if front of cabinet is raised.

STATIC DISCHARGE CAUTION

Integrated circuit chips can be damaged by static discharge from the body. Before touching chips, discharge body by touching any ground path.

SECTION II. ROUTINE MAINTENANCE ON LOCATION

Self tests, which are programmed into the design of the game, are very helpful. As with any solid state piece of equipment the three prong grounding receptacle is an important piece part of the game, that must not be tampered with and must be used properly.

MPU MODULE SELF-TEST:

During power-up, the MPU assembly tests itself, which can visibly be seen by the flashing of a LED on the board. When the game is turned on, the LED will flash, have a pause, flash again, a longer pause, then flash five more times and then will be dimly lit. Accompanying each flash is one note (total of seven), this indicates proper MPU game operation conditions.

GAME SELF-DIAGNOSTIC TESTS:

Pressing the Self-Test button inside the coin door activates the game into its "Self-Diagnostic Test."

1. BURN IN TEST - All outputs tested.
2. FEATURE LAMPS - All feature lamps will flash on and off continuously, determining any burnt lamps.
3. DISPLAYS - Each digit on all displays will cycle from 0 thru 9, then (a) number 9 will shift left to right. This test will recycle continuously.
4. SOLENOIDS - Each solenoid will be energized, one at a time, in a continuous sequence. (Holding both flipper buttons "in" during this test will cause the flipper coils to be energized). The number appearing on the "Player Score" display is the same as the number assigned to the solenoid and also the same transistor number on the SDU board. The sound of a solenoid pulling-in as a number appears indicates proper operation (providing transistor is being used), the absence of a solenoid sound shows a fault. If sound is absent, see Solenoid I.D. page in book for help in Solenoid Identification. (After the solenoids are tested, the game sounds are tested.)
5. SWITCHES - The MPU will look at each switch assembly for stuck contacts. *(Flipper Button and flipper End of Stroke switches are not included). If there are any stuck, the lowest number encountered is flashed on the Player Score displays. The number remains until the fault is corrected. See Switch I.D. page in book for help in switch identification. Other numbers may follow if more stuck contacts are present. If there are no stuck switches, the "Match/Ball in Play" display flashes '0'. DO NOT BURNISH OR FILE GOLD PLATED SWITCH CONTACTS.
6. GAME LEVELS AND BOOKKEEPING FUNCTIONS: - Pressing the Self-Test button eighteen more times causes the MPU to step thru the game levels and bookkeeping functions and finally to repeat the power-up test. To bypass these functions, turn the game off, then on. The game is now ready to play, after the MPU Self-Test.

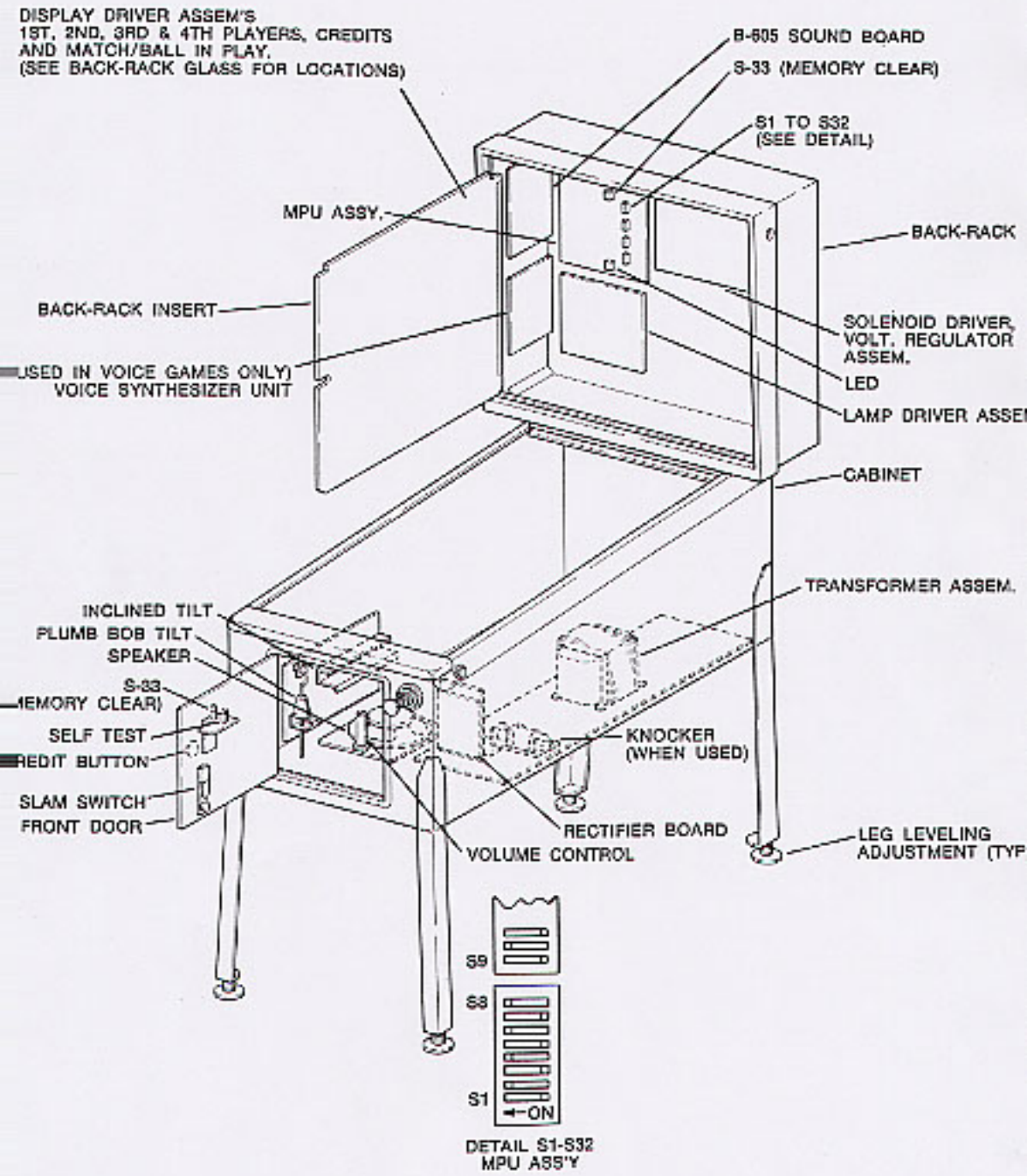
PLAYFIELD SWITCH ADJUSTMENTS

All contact switches should be adjusted to have a gap 1/16" in the open position, and have .010" overtravel closed. All contact switches (except for flipper buttons & flipper end of stroke switches) are gold plated to resist corrosion and, **SHOULD NOT BE FILED OR BURNISHED.** If contacts have dirt or dust on them, a clean piece of paper should be used to clean them, by closing the contacts and wiping gently.

FLIPPER BUTTON & FLIPPER SWITCHES ONLY. Tarnish or pitted contacts can be corrected with a contact file followed by a burnishing tool. Severely pitted contact must be replaced as an assembly.

CLEAN AND WAX THE PLAYFIELD

Stern playfields have a durable long life playing finish. Its life expectancy, as well as playing appeal can be greatly extended by periodic cleaning. Inspect and hand polish the ball with a clean cloth. A chipped ball must be replaced, as it will ruin the finish on the playfield. (DO NOT USE WATER IN LARGE QUANTITIES, HIGHLY CAUSTIC CLEANERS, ABRASIVE CLEANERS OR CLEANING PADS ON THE PLAYFIELD SURFACE.



ELECTRONIC PIN BALL GAME

SECTION III. GENERAL GAME OPERATION

PLACE BALL INTO PLAYFIELD BY OUTHOLE:

COIN GAME. Plug in line cord. (For proper game operation grounding circuit must be used). Move power ON-OFF toggle switch at bottom right front corner of cabinet to "ON" position. Seven singular tones will be heard to indicate game-readiness. Feature lites will flash in a programmed attract mode, "HIGH SCORE" lite is lit, player displays flash high score to date, numbers 1 to 7 will display from right to left, all 7's will flash, "HIGH SCORE" lite goes off, previous played scores are flashed, "Coin lock-out coil" is energized and game is ready for play. Coin Game. The game should accept the coin and post credits for coins accepted (*). Pressing the credit button on the door will reset drop targets and cause the outhole kicker to move the ball to the shooter lane. The first player display will flash 00.

One player is registered each time the credit button is pressed (one to four can play). The credits are reduced by one each time the credit button is pressed until the credits are reduced to zero. (Credit button is in-operative after 4 players are registered). Shooting the ball initiates play.

When the ball enters the outhole, the bonus score is added to the player's score. The player-up and/or ball in play on the back box is advanced one position. The bonus score starts at ** points. The outhole kicker moves the ball to the shooter lane and play is resumed. This continues until each player has played the allowable number of balls per game (3 or 5). At this time the "Game Over" lite becomes lit. A random "Match" number appears and the "Match" lite becomes lit. If the match number is the same as the last two digits in the player's score a free game can be awarded (*).

Extra ball won during the course of the game is played immediately after the player's regular ball enters the outhole. The player-up and/or ball in play is not advanced for extra ball play. Bonus score is added to the player's score, the bonus is reset to ** and the bonus multiplier earned is restored (memory) or reset (*) before the game moves the extra ball for play.

At the end of the game, a "High Game" is flashed on all players scores. If the "High Game" is beat, this feature (*) can award up to 3 free games.

Tilting while playing the game results in loss of the ball in play. The flippers, thumper-bumper, etc., go "dead". Bonus score is not added. The purpose of the tilt penalty is to discourage the player from jostling the machine in an attempt to prolong play. Game action becomes normal after the outhole kicker moves the ball to the shooter lane.

Slamming the machine results in the loss of the game. All feature lites go out and the game becomes "dead" through a built-in time delay circuit. The purpose of the time delay circuit is to discourage abuse of the machine. After the delay, the "Game Over" lite lites. "Shoot Again" lite flashes and the game is ready for play. The time delay occurs anytime one of the slam switches is made to contact.

There is a slam switch on the front door, one on the tilt board. (Any number of slam switches could be installed by the operator, to meet his individual requirement). The switch should be adjusted to have approximately 1/16" gap between the contacts. The weighted blade should be adjusted to attain the desired sensitivity. Decreasing gap between contacts will make the switch more sensitive. Opening the gap will reduce sensitivity.

*Some tunes and features can be disabled by operator if so desired.

**Bonus starts at 1000 pts.

See back box adjustments.

SPLIT SECOND OPERATION

Split Second is a multi-ball game for 1-4 players. The object of the game is to keep each ball in play for as long as possible, scoring as many points as possible.

Each player gets 3 or 5 balls per game (option), an extra ball on the final ball when two balls are captive, none have been previously released and the top speed is reached on the Loop.

Shooting the 1st ball initiates play. If a ball (maximum 2) is captured on the upper playfield, another ball is kicked into the shooting lane for continued play. If all three balls are captured, one is immediately kicked out. Captured balls can be released with the top playfield Black Star drop target feature and lit release rollovers. Liting numbers 1-5, lites the outlane Specials.

Both hitting the outside targets on the lower playfield and hitting all targets on the upper playfield spots a letter in SPLIT SECOND. The numbers 1-5 can be lit by hitting either the numbered stand-up targets or rollovers, and each one increases Bonus points.

The object of the Loop feature is to complete the Loop as fast as possible, top speed awards the most points and lites the "Release All" rollover, (setting up the extra ball feature. — See Paragraph 2).

Hitting all of the right or middle drop targets increases the Bonus Multiplier up to 15 times.

After each ball goes down the outhole, the player collects the Bonus points times the Bonus Multiplier.

SECTION IV. SELF TEST AND BOOKKEEPING FUNCTIONS

The game is designed to allow the operator to perform certain diagnostic tests as well as accounting functions as follows:

TABLE 4-1. SELF TEST FUNCTIONS

1st		Burn in test - all outputs tested.
2nd		Lamp test - all feature lamps on and off.
3rd		Display test - all digits display 0000000 thru 9999999 then an 8 shifts from left to right.
4th		Solenoid test - continuous sequence of solenoids pulsed with solenoid driver transistor, "Q" number displayed.
5th	Flashing 0 if all cabinet switches are open and all balls moved from the outhole to the shooter position.	Switch test - switch I.D. Number appears on display when it is manually closed.

TABLE 4-2. BOOKKEEPING FUNCTIONS

TEST SWITCH PUSH NUMBER	BALL/MATCH DISPLAY	DESCRIPTION	DISPLAYS
6th	01	1st Threshold (High Score)	
7th	02	2nd Threshold (High Score)	
8th	03	3rd Threshold (High Score)	
9th	04	Current High Game Threshold	
10th	05	Current Credits	00 to 99
11th	06	Total Plays	00 to 999999
12th	07	Total Replays	00 to 999999
13th	08	Total times high score is passed	00 to 999999
14th	09	Number of coins thru Chute No. 2	00 to 999999
15th	10	Number of coins thru Chute No. 1	00 to 999999
16th	11	Number of coins thru Chute No. 3	00 to 999999
17th	12	Total balls played	00 to 999999
18th	13	Total Extra Balls Awarded	00 to 999999
19th	14	Total Playfield Special Awards	00 to 999999
20th	15	N/U	00
21st	16	Total level 1 passed	00 to 999999
22nd	17	Total level 2 passed	00 to 999999
23rd	18	Total level 3 passed	00 to 999999

SECTION V. FRONT DOOR GAME ADJUSTMENTS:

HIGH SCORE FEATURE ADJUSTMENTS:

The game is designed to award an "Extra Ball" or "Free Game" (option) at three score levels. (See High Score Feature). The recommended levels are listed below.

Any level from 10,000 or 9,990,000 can be set, as desired. It is possible to reset or turn off (00) any or all of the levels, if desired.

1. Push and release Self-Test button at one second intervals six times or until number 01 appears on the Match/Ball in Play display.
2. The number on the Player Score Displays is the first score level*. It can be increased, if desired, by holding the credit button in. To decrease the score level, reset to '00', and then hold the credit button in. Release the credit button when the desired High Score appears. Note that the level changes 10,000 points at a time. If the number '00' is left on the displays, the high score feature is eliminated for that level.
3. Repeat steps 1 and 2 for the second and third high score levels. The number '02' and '03' on the Match/Ball-in-Play display are for the second and third levels, respectively.

HIGH GAME TO DATE FEATURE:

The game is designed to award up to 3 free games (option) when "High Score to Date" is beat. **For the recommended, factory preset level,** see below.

It is recommended that the level, which will build with game play, be periodically reset to the factory recommended level to encourage game play. The adjustment procedure is the same as for the High Score Feature Adjustments, Steps 1 and 2. Continue pusing the Self-Test button until the number '04' appears on the Match/Ball-in-Play display and then do Step 2.

Any level from '00' to 9,990,000 can be set as described. It is to be noted that '00' does not turn off the feature, as it does on High Score feature. The feature can be turned off by positioning the correct MPU switches.

*Can be quickly set to '00' by pressing S33 on the MPU assembly in the back box or front door.

RECOMMENDED SETTING

SPLIT SECOND

3 BALLS

1ST LEVEL PAST	360,000	1 CREDIT
2ND LEVEL PAST	660,000	1 CREDIT
3RD LEVEL PAST	———	———
4TH LEVEL PAST	1,000,000	HIGH SCORE TO DATE

5 BALLS

1ST LEVEL PAST	890,000	1 CREDIT
2ND LEVEL PAST	1,480,000	1 CREDIT
3RD LEVEL PAST	———	———
4TH LEVEL PAST	1,900,000	HIGH SCORE TO DATE

GAME ADJUSTMENTS

A. PLAYFIELD POST ADJUSTMENTS:

Posts that control left and right outlane openings on playfield can be moved to make access to outlanes conservative or liberal for ball to enter. (See appropriate illustrations).

Conservative entry will decrease playing time and scoring.

Liberal entry will increase playing time and scoring.

B. BACK BOX GAME ADJUSTMENTS:

Each game has thirty-two switches located on the MPU module, located in the back box, that allows play to be customized to the location. (See Fig. 1). Credits per coin, maximum credits, credit display, balls (3 or 5) per game, match feature, high game feature, special award, maximum extra balls and background sound are selectable by means of switches. The switches are contained in four-sixteen lead packages numbered S1-8, S9-16, S17-24, and S25-32 for easy identification. The "On" position is marked on the assembly. TURN OFF POWER BEFORE MAKING ADJUSTMENTS. MAKE ADJUSTMENTS BEFORE TURNING POWER BACK ON.

SPLIT SECOND SWITCH ASSIGNMENTS

			ON	OFF
32	Red Special	NONE: OFF OFF	32	
31		1 BALL: ON OFF	31	
		100K: OFF ON		
		REPLAY: ON ON		
30	Special Feature		30	1/ball	1/game
29	Special 2/1 lit		29	ON	OFF
28	Coin Chute #1		28	See Catalog Or Label On Side Of Cabinet
27			27	
26			26	
25			25	
24	5 Bank Lites Carry Over		24	ON	OFF
23	Extra Ball		23	1/ball	1/game
22	Extra Ball		22	ON	OFF
21	Match		21	ON	OFF
20	Display Credits		20	ON	OFF
19	Maximum Credit	10: OFF OFF	19		
18		15: OFF ON	18		
		25: ON OFF			
		40: ON ON			
17	Talking Sound		17	ON	OFF
16	High Score Feature	0: OFF OFF	16		
15		1: OFF ON	15		
		2: ON OFF			
		3: ON ON			
14	Add-A-Ball (Memory)		14	5	3
13	Add-A-Ball		13	ON	OFF
12	Coin Chute #3		12	See Catalog Or Label On Side Of Cabinet
11			11	
10			10	
9			9	
8	Not Used		8		
7	Ball Per Game		7	5	3
6	High Score Feature		6	Replay	X-Ball
5	Bonus Ball		5	ON	OFF
4	Coin Chute #2		4	See Catalog Or Label On Side Of Cabinet
3			3	
2			2	
1			1	

SECTION VII. CREDIT/COIN AND GAME ADJUSTMENTS

CREDITS/COIN ADJUSTMENTS:

The credits given are selectable by means of MPU switches. Sixteen credit ratios are available. The MPU switch settings and resultant credits/coin are as follows:

TABLE 7-1. CREDITS/COIN ADJUSTMENTS

MPU SWITCHES

SWITCH No. 1 (BLU) (NEXT TO HINGE)	28	27	26	25	CREDITS	COIN
SWITCH No. 2 (BRN-WHITE) (CENTER)	4	3	2	1		
SWITCH No. 3 (RED-WHITE) (NEXT TO LOCK)	12	11	10	9		
	OFF	OFF	OFF	OFF	1	Per 1
	OFF	OFF	OFF	ON	2	
	OFF	OFF	ON	OFF	3	
	OFF	OFF	ON	ON	4	
	OFF	ON	OFF	OFF	5	
	OFF	ON	OFF	ON	6	
	OFF	ON	ON	OFF	7	
	OFF	ON	ON	ON	10	
	ON	OFF	OFF	OFF	14	

			CREDITS	COINS	SEQUENCE OF CREDITS PER COIN 1	2	3	4
ON	OFF	OFF	ON	1	2	0	1	
ON	OFF	ON	OFF	3	2	1	2	
ON	OFF	ON	ON	5	2	0	5	
ON	ON	OFF	OFF	7	2	0	7	
ON	ON	OFF	ON	3	4	0	1	0 2
ON	ON	ON	OFF	5	4	1	1	1 2
ON	ON	ON	ON	7	4	1	2	1 3

If two or three coin chutes are adjusted the same for multiple coins, credits will increase as if dropped in same chute.

Credit sequence will reset when:

1) credit button is pressed
2) any points are scored

BALLS PER GAME:

NO. OF BALLS PER GAME	MPU SWITCH 7
3	OFF
5	ON

ADD-A-BALL (MEMORY):

This adjustment can store in memory 3 or 5 "Add-A-Balls."

ADD-A-BALL (MEMORY)	MPU SWITCH 13
3	OFF
5	ON

CREDIT DISPLAY:

CREDIT DISPLAY	MPU SWITCH 20
YES	ON
NO	OFF

AWARDED MAXIMUM CREDITS:

In answer to public demand, we at "STERN" are trying to give the players what they want — *MORE* playfield excitement. In order to do this, additional features are *NEEDED*.

In an effort to do so, we have added a coil on the playfield, and eliminated the "Coin Lock-Out Coil" (often called a nuisance by operators).

This Stern game has a new feature not used in any previous Stern pinball:
Coins will be accepted and credit given for the amount of coins inserted.

There are no MPU switches to limit the amount of credits given as in older Stern pinballs (it is even possible to attain 99 credits). There are, however, two (2) MPU switches that will limit the amount of replays awarded. These two switches can be set for a limit of 10, 15, 25, and 40 replays. If the amount of credits shown in the credit/match window is greater than the MPU switches are set for, no replay credit will be awarded.

AWARDED MAXIMUM CREDITS	MPU SWITCHES	
	18	19
10	OFF	OFF
15	ON	OFF
25	OFF	ON
40	ON	ON

HIGH SCORE FEATURE:

The game is designed to award an "Extra Ball" or "Free Game" at one, two or three "High Score" levels. (See "Front Door Game Adjustments" for setting levels.)

AWARD	MPU SWITCH 6
Extra Ball	OFF
Replay	ON

HIGH GAME TO DATE FEATURE:

The game is designed to award up to 3 free games when "High Score to Date" is beat. Each time this happens, the winning score becomes the new "High Game Score to Beat". This score is displayed on all 4 player score displays at the end of each game as an incentive to play.

AWARD	MPU SWITCHES 15	18
No Free Game	OFF	OFF
1 Free Game	ON	OFF
2 Free Games	OFF	ON
3 Free Games	ON	ON

MATCH FEATURE:

When the "Match Feature" is ON, a random tens digit number appears in the "Match/Ball in Play" window and the word "Match" is illuminated. If the number matches the ten digit in a player's score, a free game is awarded. The "Match Feature" creates an incentive to play.

MATCH	MPU SWITCH 21
ON	ON
OFF	OFF

EXTRA BALL:	MPU SWITCH 23
1 Per Ball	ON
1 Per Game	OFF

EXTRA BALL:	MPU SWITCH 22
ON	ON
OFF	OFF

BONUS BALL FEATURE:	MPU SWITCH 5
ON	ON
OFF	OFF

SPECIAL 2/1 LIT:

This adjustment gives the option for alternating left and right outlane special lites or both outlane special lites lit.

	MPU SWITCH 29
ON	ON
OFF	OFF

RED SPECIAL FEATURE:

SPECIALS	MPU SWITCH 30
1 Per Ball	ON
1 Per Game	OFF

RED SPECIAL AWARD:

SPECIAL AWARD	MPU SWITCHES 31	32
No Award	OFF	OFF
Extra Ball	OFF	ON
100,000 Points	ON	OFF
Replay	ON	ON

OUTHOLE REFLEX (Pl. Sw. No. 4)
Collects Bonus points times Bonus Multiplier and advances the ball to the outhole runway switches.

SPINNER & SEE/SAW (Pl. Sw. No. 5)
Scores 300 points plus 200 points for each lit letter when lit.

ROLLOVER BUTTON (Pl. Sw. No. 8)
Scores 5000 points and awards Special and 100,000 points when lit.
When the Middle Drop Target lite is lit and the Red Star Target stands alone, hitting the Red Star Target lites the Rollover Button.

ROLLOVER 1 & STAND-UP TARGET 1 (Pl. Sw. No. 9)
Lites #1's, scores 500 points, advances bonus and scores 5,000 points when lit. Lites when 1-3 are lit.

ROLLOVER 2 & STAND-UP TARGET 2 (Pl. Sw. No. 10)
Lites #2's, scores 500 points, advances bonus and scores 5,000 points when lit. Lites when 1-3 are lit.

ROLLOVER 3 & STAND-UP TARGET 3 (Pl. Sw. No. 11)
Lites #3's, scores 500 points, advances bonus and scores 5,000 points when lit. Lites when 1-3 are lit.

ROLLOVER 4 & STAND-UP TARGET 4 (Pl. Sw. No. 12)
Lites #4's, scores 5,000 points and advances bonus.

LEFT & RIGHT SLINGSHOTS (Pl. Sw. No. 13 (rt.) & No. 14 (lt.))
Scores 10 points and alternates spinner, Right and Middle Drop Target lites — and Specials when lit.

LEFT & RIGHT THUMPER BUMPERS (Pl. Sw. No. 15 (rt.) & 16 (lt.))
Scores 1,000 points and alternates Right and Middle Drop Target lites — and Specials when lit.

RIGHT 3-BANK DROP TARGETS (Pl. Sw. No. 17, 18, 19)
Outside targets score 500 points and spot a letter in "SPLIT SECOND" when lit. Middle target scores 1,000 points and lites Extra Ball Lane when Blue Star Spot is lit. All targets down scores 10,000 points and increases Bonus Multiplier (up to 15X).

LOOP (Pl. Sw. No. 20 (lt.) & No. 21 (rt.))
Completing the Loop in:
.3 seconds and under scores 50,000 points and lites "Release All Captive Balls" Arrow & Red Loop lite.
.4 seconds scores 40,000 points and lites White Loop lamp.
.5 seconds scores 30,000 points and lites Blue Loop lamp.
.6 seconds scores 20,000 points and lites Yellow Loop lamp.
.7 seconds and over scores 10,000 points and lites Purple Loop lamp.

RIGHT RETURN LANE (Pl. Sw. No. 22)
Scores 3,000 points and releases all captive balls when lit. Lites either when 50,000 points is made on Loop or when all letters S-P-L-I-T S-E-C-O-N-D are lit (and only when there are 2 captive balls).

LEFT RETURN LANE (Pl. Sw. No. 23)
Scores 3,000 points and awards Extra Ball when lit. When Right Drop Target lite is lit and the Blue Star Target stands alone, hitting Blue Star Target lites Extra Ball lane.

ROLLOVER 5 & STAND-UP TARGET 5 (Pl. Sw. No. 24)
Lites #5's, scores 5,000 points and advances bonus.

MIDDLE 3-BANK DROP TARGETS (Pl. Sw. No. 25, 26, 27)
Outside targets score 500 points and spot a letter in "SPLIT SECOND" when lit. Middle target scores 1,000 points and lites Star Rollover Button when Red Star Spot is lit. All targets down scores 10,000 points and increases the Bonus Multiplier.

TOP 5-BANK DROP TARGETS (Pl. Sw. No. 28, 29, 30, 31, 32)
Each target scores 500 points.
All targets down scores lit value:

While lamp lit - 10,000 points and spots 1 letter
Blue lamp lit - 20,000 points and spots 1 letter
Yellow lamp lit - 30,000 points and spots 1 letter

BLACK STAR DROP TARGET FEATURE:
When 1 or 2 Balls are captive and the Blue or Yellow lamp is lit, hitting any one Black Star target starts the "Release One Ball" lite flashing for 10 seconds in which time hitting the remaining two Black Star targets releases one ball.

OUTHOLE LANE SWITCHES (Pl. Sw. No. (rt.) 33, (ctr.) 34, (lt.) 35)
Ball count switches.

CAPTIVE KICKOUT HOLE (Pl. Sw. No. 36)
Scores 10,000 points.

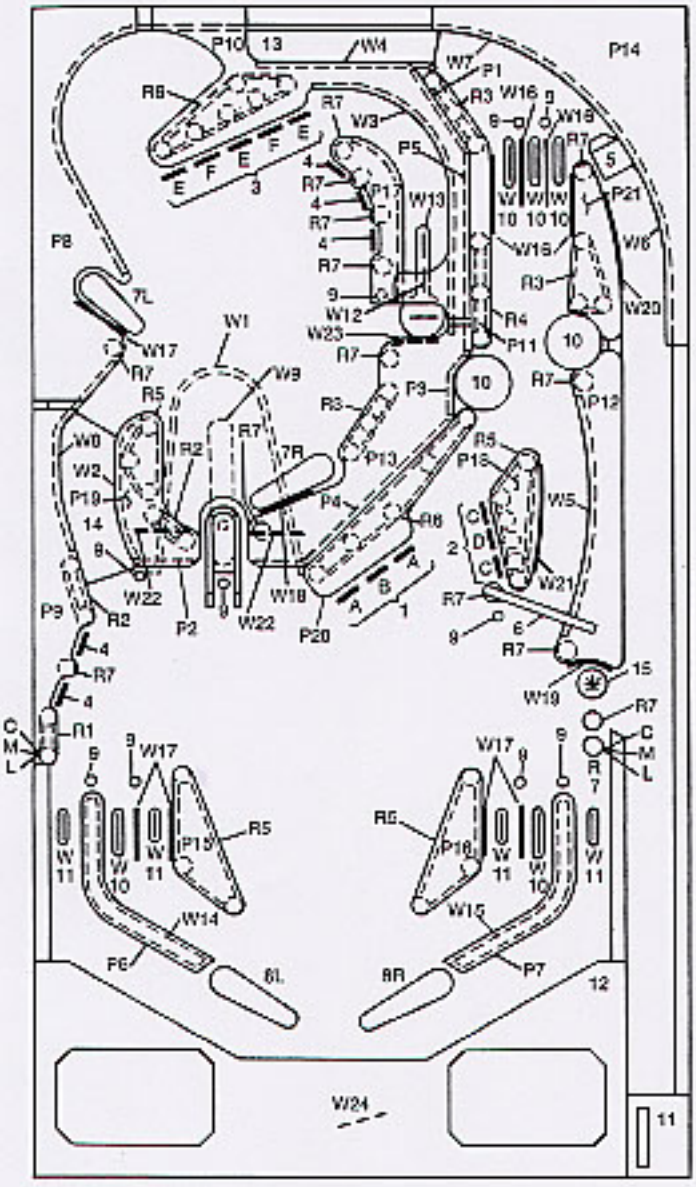
CENTER CAPTIVE LANE (Pl. Sw. No. 37)
Scores 10,000 points when 1 ball is captive.

TOP CAPTIVE LANE (Pl. Sw. No. 38)
Scores 10,000 points and signals coil to kick out one ball when 2 balls are captive. Releases all balls when release Arrow is lit. Lites when all letters are lit with 2 balls captive.

LEFT & RIGHT OUT LANES (Pl. Sw. No. 39 (lt.) & No. 40 (rt.))
Scores 15,000 points and awards Special and 100,000 points when lit.

BONUS BALL FEATURE:
A Bonus Ball is awarded if the Captive Ball Feature has not been made and "Release All Captive Balls" lite is lit on the last ball.

SPLIT SECOND
PLAYFIELD PARTS



GAME ADJUSTMENT

C - CONSERVATIVE

M - MEDIUM

L - LIBERAL

RUBBER RINGS

R1-7A-120-100	R5-7A-120-250
R2-7A-120-125	R6-7A-120-300
R3-7A-120-150	R7-7A-135
R4-7A-120-225	

BALL GUIDES & ROLL-OVERS

W1-A-900	W13-A-985
W2-A-901	W14-A-892-L
W3-A-902	W15-A-892-R
W4-A-903	W16-6A-101
W5-B-904	W17-6A-101-G
W6-B-905	W18-6A-101-O
W7-C-906	W19-6A-300
W8-B-941	W20-6A-301
W9-A-966	W21-6A-302
W10-19-149	W22-6A-307
W11-A-383	W23-6A-311
W12-A-984	W24-A-960

PLASTIC ASSEMBLIES

A-893 thru A-897
(P1 thru P5)
P6-A-898-L
P7-A-898-R

PLASTIC SHIELDS

13C-144-1 thru -7
(P8 thru P14)
P15-13C-144-14L
P16-13C-144-14R
13C-144-15 thru -19
(P17 thru P21)

MISC. PARTS & ASSEMBLIES

1. 3 Bank Drop Targ. D-823-3D
   A-13A-20-5 (Target Only)
   B-13A-11-R (Target Only)
2. 3 Bank Drop Targ. D-823-3E
   C-13A-20-6 (Target Only)
   D-13A-11-B (Target Only)
3. 5 Bank Drop Targ. D-823-5B
   E-13A-11-BL (Target Only)
   F-13A-20-1 (Target Only)
4. (5) Stand-Up Targets
   (A-763-L-2)
5. Ball Gate Assembly
   (A-611-R)
6. Spin Target Assembly
   (A-663-4)
7. Flipper Assemblies (Upper)
   B-634-1-Ry and B-634-1-Ly (RT.&LT.)
8. Flipper Assemblies (Lower)
   B-634-R1-Y and B-634-2-LY (RT.&LT.)
9. Ball Guide Post 2A-200
   (Rubber Ring 7A-125)
10. Thumper Cap 4A-317-B
11. Shooter Gauge 14A-2-13
12. Instruction Plate 14B-16-1
13. Top Ramp 1A-976
14. Bottom Ramp 1C-977
15. Roll Over Button 4B-276

PARTS LIST
SPLIT SECOND

MISCELLANEOUS	PART NUMBER
Transformer (Domestic or Export)	169-6
Transformer & Rectifier Board	B438-4
Bulbs, #44	BA-101
U1	E126-U1C14
U2	E126-U2C14
U5	E126-U5C14
U6	E126-U6C14
U9 Voice E-Prom	E126-U9VO
U10 Voice E-Prom	E126-U10VO

ASSEMBLY COILS (Diodes are 1N-4004 on coils)

5 Drop Target Bank (1)	B-24-1600
3 Drop Target Bank (2)	B-27-2300
Flippers (4)	J-25-475/34-4500
Bottom Slingshot (2)	J-26-1500
Ball Ejector	J-28-2300
Ball Ejector Release	J28-2300
Ball Trap (1)	J28-2300
Knocker	N-26-1200
Thumper Bumper (2)	J-26-1200

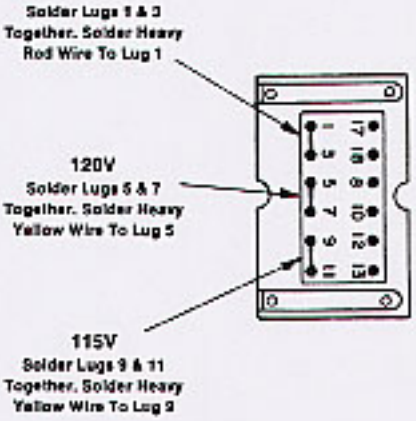
MODULES

Lamp Driver	B-431
Display Driver	A-545
Match and Ball in Play Display	A-434
Solenoid Driver/Voltage Regulator	B-432
MPU (FOR E PROM SEE MISCELLANEOUS ABOVE)	C-602
Rectifier Board	A-430
Sound Module	C-605
Voice Synthesizer Unit (E PROM SEE MISCELLANEOUS ABOVE)	A-720

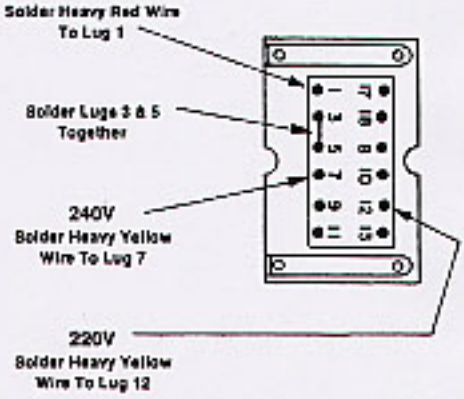
PLAYFIELD PARTS — SEE PLAYFIELD DIAGRAM

FIGURE 8-1. STERN 16B-6 TRANSFORMER WIRING CONNECTION INSTRUCTIONS

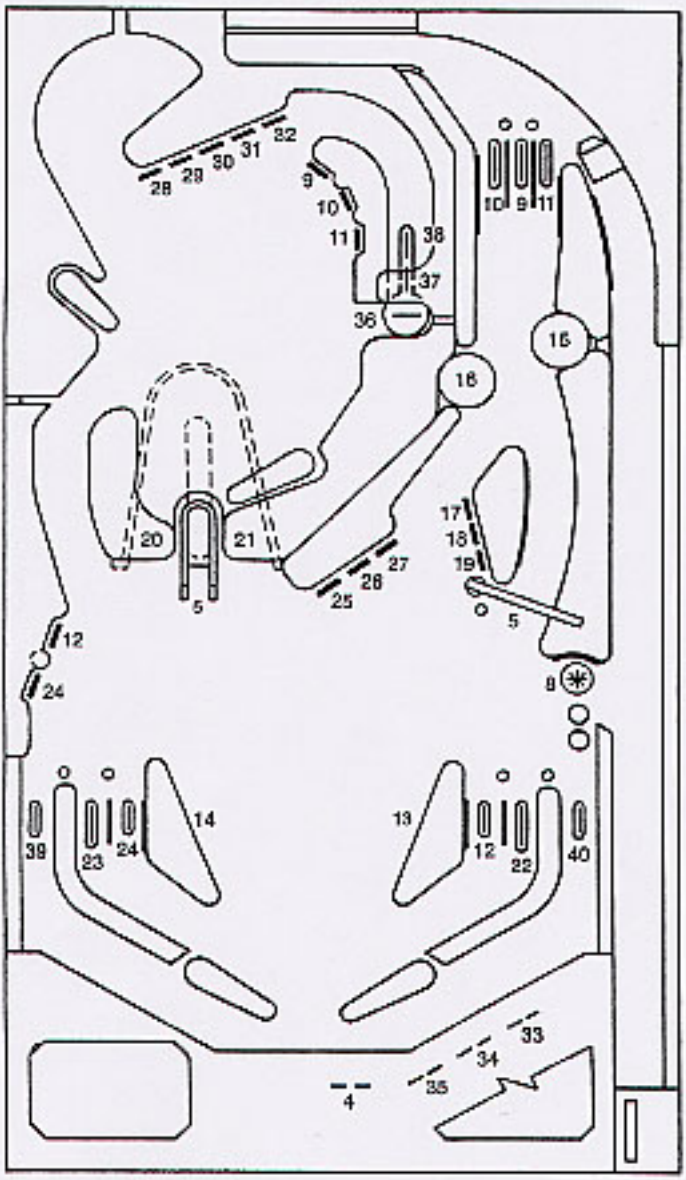
115/120V., 50/60 Cycle Input.
Varistor - Soldered to Line Filter on Left Side of Cabinet
Must Be Stern Part No. 25A-18-1.



220/240V., 50/60 Cycle Input.
Varistor - Soldered to Line Filter on Left Side of Cabinet
Must be Stern Part No. 25A-18-2.



SPLIT SECOND
SWITCHES

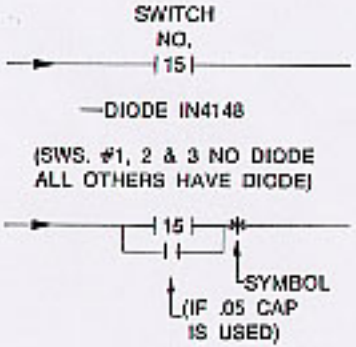


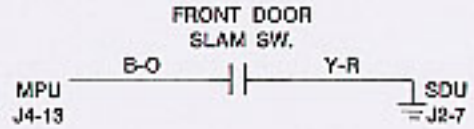
SWITCHES NOT ON PLAYFIELD

1. *LEFT CHUTE
2. *CENTER CHUTE
3. *RIGHT CHUTE
6. CREDIT BUTTON
7. TILT

*SEE DRAWG. ON SWITCH IDENTIFICATION PAGE

SPLIT SECOND
SWITCH IDENTIFICATION





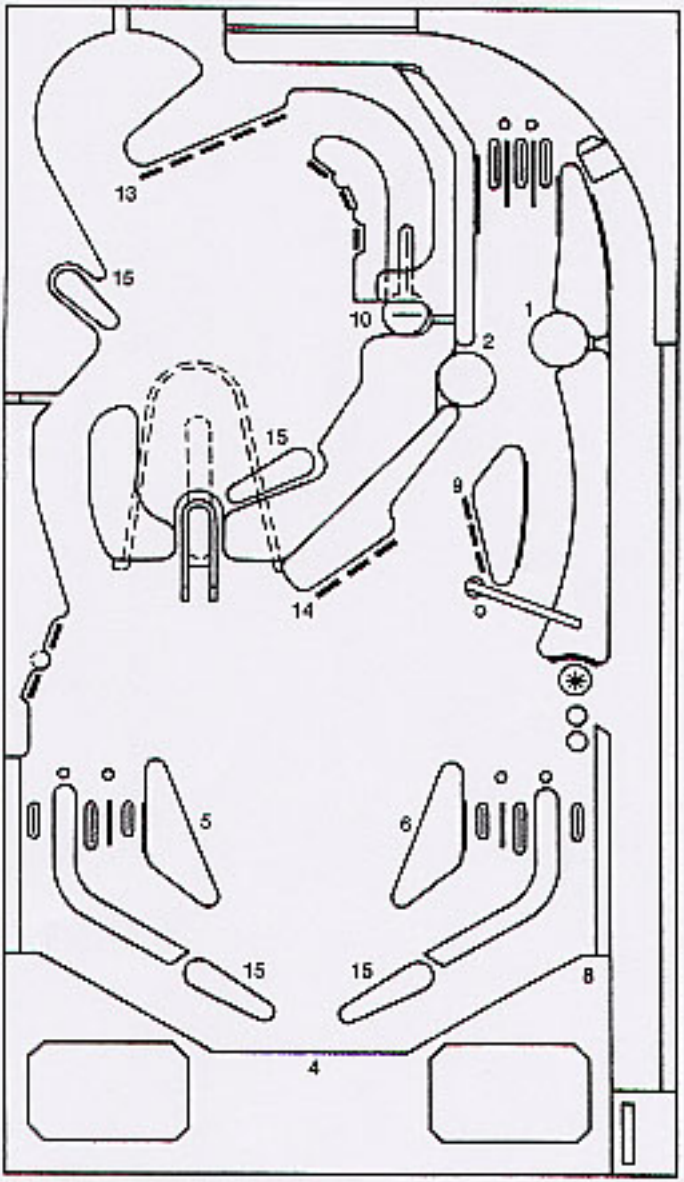
W-R (J2-1) R-Y (J3-2) BRN-W (J2-2)

SWITCH NO.	WIRE COLOR	JACK NO.	DESCRIPTION
1	BLU	J3-9	• COIN CHUTE #1
2	BRN-W	J3-10	• COIN CHUTE #2
3	R-W	J3-11	• COIN CHUTE #3
4	W-B	J2-11	• OUTHOLE REFLEX
5	W-G	J2-12	• SPINNER / SEE/SAW
6	BLU-W	J3-14	• CREDIT (START) BUTTON
7	BLU-O	J3-15	• TILT
8 *	-Y-	J3-16	• ROLLOVER BUTTON
9	BRN	J2-8	• ROLLOVER 1/S.U. TARGET 1
10		J2-9	• ROLLOVER 2/S.U. TARGET 2
11	W-O	J2-10	• ROLLOVER 3/S.U. TARGET 3
12	W-B	J2-11	• ROLLOVER 4/S.U. TARGET 4
13 *	W-G	J2-12	• RT. SLINGSHOT
14 *	W-BRN	J2-13	• L. SLINGSHOT
15 *	BRN-Y	J2-14	• RT. THUMPER
16 *	-O-	J2-15	• L. THUMPER

W-BLU (J2-3) W-Y (J2-4) Y-R (J2-5)

SWITCH NO.	WIRE COLOR	JACK NO.	DESCRIPTION
17	BRN	J2-8	• RIGHT DROP BANK (LEFT)
18	GREY	J2-9	• RIGHT DROP BANK (MID.)
19	W-O	J2-10	• RIGHT DROP BANK (RIGHT)
20	W-B	J2-11	• LOOP (LEFT)
21	W-G	J2-12	• LOOP (RIGHT)
22	W-BRN	J2-13	• RT. RETURN LANE
23	BRN-Y	J2-14	• L. RETURN LANE
24	-O-	J2-15	• ROLLOVER 5/S.U. TARGET 5
25 *	BRN	J2-8	• MIDDLE DROP BANK (LEFT)
26 *	GREY	J2-9	• MIDDLE DROP BANK (MID.)
27 *	W-O	J2-10	• MIDDLE DROP BANK (RIGHT)
28 *	W-B	J2-11	• TOP DROP BANK (LEFT)
29 *	W-G	J2-12	• TOP DROP BANK (LEFT 2)
30 *	W-BRN	J2-13	• TOP DROP BANK (MID.)
31 *	BRN-Y	J2-14	• TOP DROP BANK (RIGHT 2)
32 *	-O-	J2-15	• TOP DROP BANK (RIGHT)
33	BRN	J2-8	• RIGHT OUTHOLE
34	GREY	J2-9	• MIDDLE OUTHOLE
35	W-O	J2-10	• LEFT OUTHOLE
36	W-B	J2-11	• CAPTIVE KICKOUT HOLE
37	W-G	J2-12	• CENTER CAPTIVE LANE
38	W-BRN	J2-13	• TOP CAPTIVE LANE
39	BRN-Y	J2-14	• LEFT OUTLANE
40	-O-	J2-15	• RIGHT OUTLANE

SPLIT SECOND
SOLENOIDS



SOLENOID NOT ON PLAYFIELD

3. KNOCKER

TABLE 8-3. SPLIT SECOND SOLENOID IDENTIFICATION

I.D. NUMBER	TRANS. NUMBER	JACK	WIRE COLOR	DESCRIPTION
1	Q1	J2-9	G-O	RIGHT THUMPER
2	Q2	J2-4	G-BLU	LEFT THUMPER
3	Q3	J2-5	G-B	KNOCKER
4	Q4	J1-5	B-BLU	OUTHOLE REFLEX
5	Q5	J2-10	G-Y	LEFT SLINGSHOT
6	Q6	J2-11	G-R	RIGHT SLINGSHOT
7	Q7	J2-12	R-Y	N/U
8	Q8	J5-10	B-O	TURN STYLE
9	Q9	J5-9	R-BLU	RIGHT DROP BANK
10	Q10	J5-15	O-W	CAPTIVE KICKOUT HOLE
11	Q11	N/U	N/U	N/U
12	Q12	N/U	N/U	N/U
13	Q13	J5-12	B-Y	TOP DROP BANK
14	Q14	J5-11	B-G	MIDDLE DROP BANK
15	Q15	J1-8, 9	8-G, 9-O	FLIPPER ENABLE RELAY
16	Q16	N/U	N/U	N/U
17	Q17	N/U	N/U	N/U
18	Q18	J2-15	R-W	N/U
19	Q19	N/U	N/U	N/U

TABLE 6-4. MPU-200 JUMPER COMBINATIONS

The MPU-200 can be converted to use 25A Roms or E-Proms or any combination of Roms or E-Proms. Below are listed the jumpers needed for each memory chip.

U1

ROM Stern #25A-	E-PROMS (paper on top)
E9 to E8	E9 to E10
E29 to E26	E28 to E27

U2

ROM	E-PROM
E5 to E1	E5 to E7
E2 to E6	E2 to E3

U5

ROM	E-PROM
E19 to E20	E19 to E21
E29 to E31	E29 to E30

U6

ROM	E-PROM
E13 to E12	E13 to E14
E25 to E22	E25 to E23

The MPU-200 can be down graded to act as a MPU-100 (Rom's Only) following are jumper modifications:

Remove - E32 - E33
Remove - E34 - E35

U2
ROM
E5 to E7

U6
ROM
E11 to E13

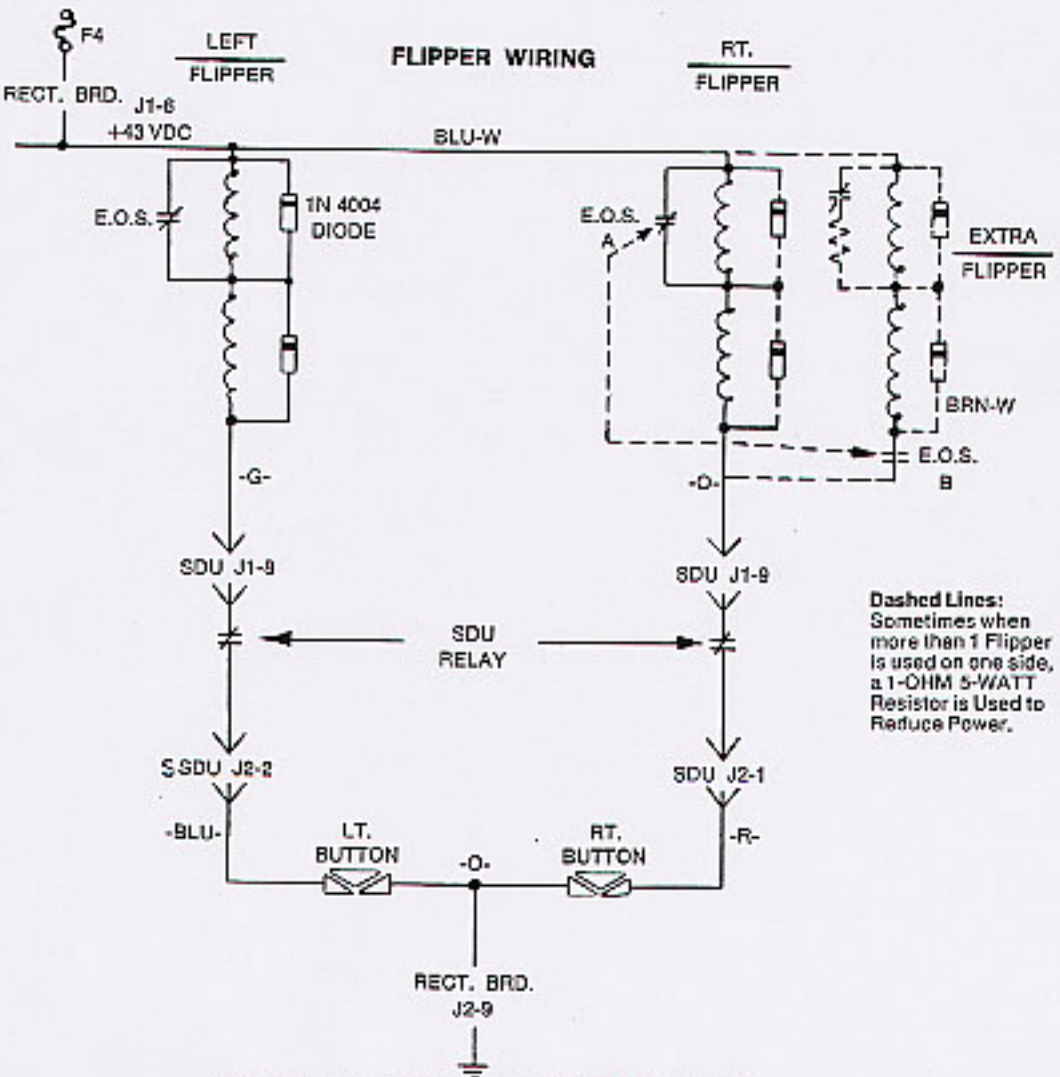


FIGURE 6-4. ADDITIONAL FLIPPER WIRING

STERN®

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(312) 935-4600, Telex 25-4657
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