

Instruction Manual *for* **STRATO-FLITE**



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Williams ELECTRONICS

A DIVISION OF THE SEEBURG CORPORATION OF DELAWARE

3401 N. California Ave.
(312) 267-2240

AUGUST
1974

Chicago, Ill. 60618, U.S.A.
Cable Address: Wilcoin

STRATO FLITE

4 PLAYER

GAME OPERATES AS FOLLOWS:

MAKING 3 LETTERS IN A LETTER GROUP, EXAMPLE- 3 A's,
LITES A STAR.

LITING 1 STAR DOUBLES BONUS VALUE. LITING 2 STARS
TRIPLES BONUS VALUE AND LITES LEFT BOTTOM (INSIDE) ROLL-
OVER LANE TO SCORE EXTRA BALL. LITING ALL FOUR STARS
WILL LITE CENTER TARGET "SPECIAL" LITE.

HITTING CENTER TARGET WHEN LIT FOR "SPECIAL" SCORES
1 OR 2 REPLAYS OR 1 EXTRA BALL. (SEE "EXTRA BALL ADJUST-
MENT JACK" AND "CENTER TARGET ADJUSTMENT JACK" ON PAGE 5.

1 REPLAY FOR EACH PLAYER MATCHING LAST TWO NUMBERS
ON SCORE REELS TO LITED NUMBER THAT APPEARS ON BACK GLASS
WHEN GAME IS OVER.

MAXIMUM 1 EXTRA BALL PER BALL IN PLAY.

TILT PENALTY--- BALL IN PLAY.

TILT DOES NOT DISQUALIFY PLAYER.

ADDITIONAL CIRCUIT FOR 1 COIN 1 PLAY & 2 COINS 3 PLAYS

IMPORTANT: WHEN IN "ON" POSITION, 10¢ ADJUSTMENT MUST BE IN # 2 POSITION AND 25¢ ADJUSTMENT IN # 6 POSITION

COIN SET UP RELAY

J-	B	M&B
R-O		
R-B		
-O-	A	N.O.
-BLU-		

OPENS IN CIRCUIT TO 25¢ RELAY AND CLOSURES TO 10¢ RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

WILLIAMS ELECTRONICS A DIVISION OF THE SEEBURG CORP. OF DELAWARE
3401 N. CALIFORNIA AVE. CHICAGO, ILLINOIS-60618

1. GENERAL

NEVER EXPERIMENT with any of the mechanism. Locate any trouble with the aid of Wiring Diagrams or Operating & Servicing Information supplied with the machine, then check for proper adjustment of the units involved before making any changes. Improper adjustment or make-shift repair will only cause serious damage to other parts of the machine or repeated failure of the part.

NOTE: Always look for a possible loose wire, bad connection at a plug and socket, broken or unhooked springs on step-up units, relays, etc., before adjustments are made or wires reconnected.

2. FUSES

IMPORTANT: Never replace fuses with any rating other than specified on the fuse block; this block is located adjacent to the transformer.

3. LUBRICATION

Over-lubrication causes far more trouble in coin operated equipment than under-lubrication. Practically all cases of poor contact on switches and wiper discs are due to oil or grease, or oil vapor, which forms a film or residue on the contacts and will not allow current to pass through. Excess lubricant may also seep into clutches causing them to slip.

IMPORTANT: NEVER USE VASELINE FOR LUBRICATION OF ANY PART OF THE MACHINE. Vaseline is not a true lubricant. It leaves a dirty and gummy residue and it becomes very thick when cold. A special Coin Machine Lubricant is supplied with each machine.

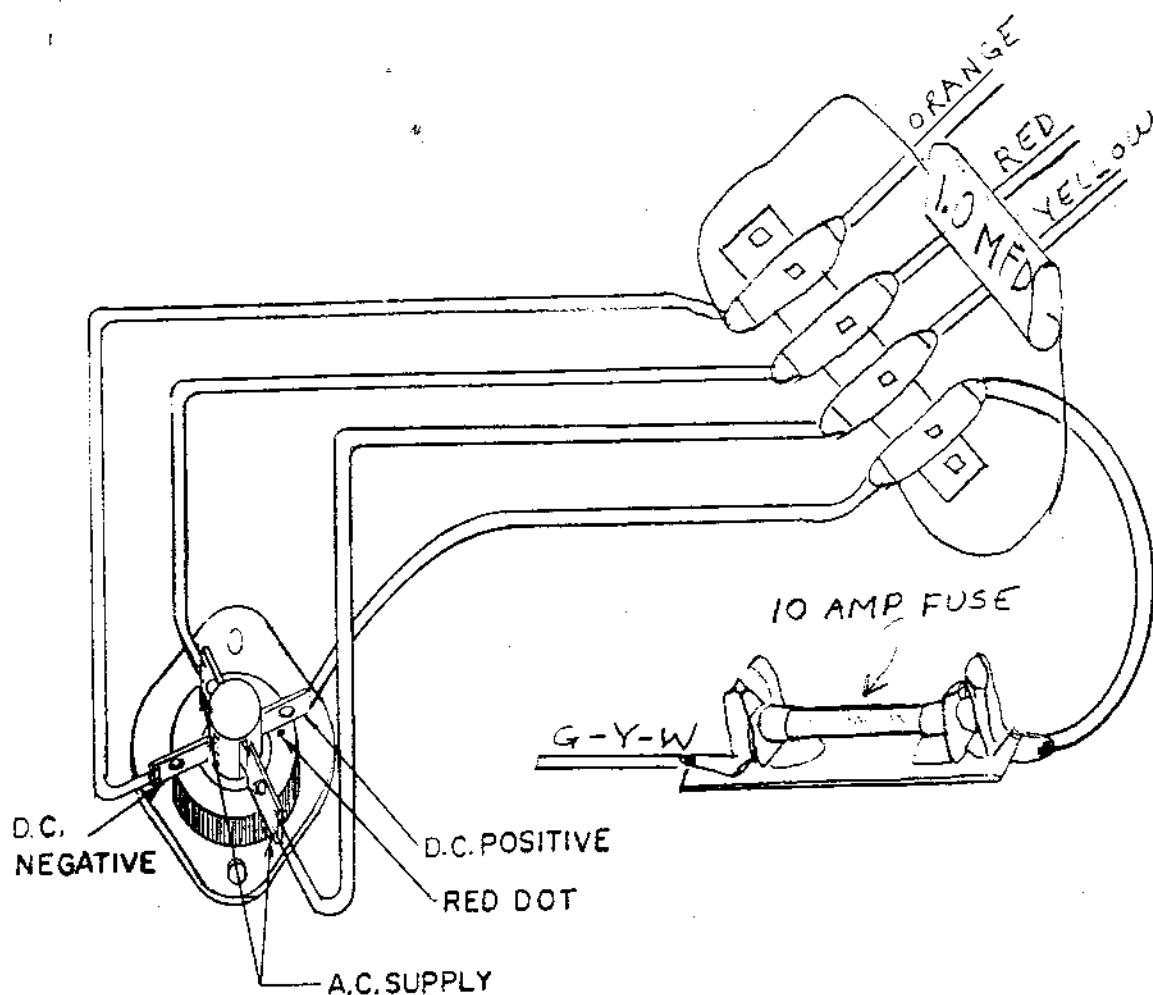
STEP-UP Levers, Ratchets, Cams, Shafts and other sliding or oscillating parts should be very lightly greased with special Coin Machine Lubricant (supplied with machine) not oftener than every six months. The bakelite discs (biscuits) on the Motor Units and Step-up Units will require lubrication with the special Coin Machine Lubricant only after the grease is completely evaporated (3 to 12 months, depending on climate) or when the film of grease becomes dirty. In either event, clean the parts thoroughly with a solvent, then apply an extremely thin coat of the special grease.

Solenoid plungers should not have a lubricant of any kind. Should there be a sluggish tendency or if plungers are sticking, the parts should be cleaned with a solvent and flaked graphite applied on reassembly.

SWITCH ADJUSTMENT

BEFORE ADJUSTING SWITCHES, MAKE CERTAIN THE SCREWS HOLDING THE SWITCH STACKS ARE DOWN TIGHTLY. BAKELITE SPACERS IN THE SWITCH STACKS, DUE TO EXCESSIVE MOISTURE, HAVE OCCASIONALLY SHRUNK BY DRYING OUT, CAUSING POOR ADJUSTMENT.

SILICON BRIDGE RECTIFIER



THE FUNCTION OF THE RECTIFIER AND CAPACITOR IS TO CONVERT THE ALTERNATING CURRENT (A.C.) TO DIRECT CURRENT (D.C.), SUPPLYING D.C. TO THE BUMPERS, KICKERS ETC.

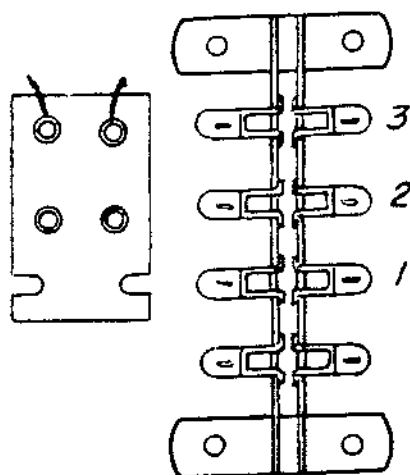
THE BRIDGE RECTIFIER SHOULD PRACTICALLY NEVER NEED REPLACING, AS IT IS RATED WELL OVER THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IT SUPPLIES.

IF, HOWEVER, THE 15 AMP 24 VOLT FUSE ON THE MECHANISM PANEL OPENS, IT COULD BE DUE TO A FAULTY RECTIFIER. DISCONNECT THE A.C. INPUT TO RECTIFIER, REPLACE FUSE, AND RECHECK.

IF THE 10 AMP FUSE LOCATED NEXT TO THE RECTIFIER OPENS, CHECK ALL D.C. COMPONENTS I.E. BUMPERS, KICKERS ETC. FOR SHORTS.

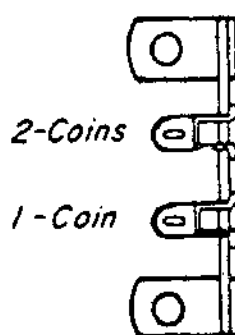
ADJUSTMENTS ON MECHANISM PANEL

10¢ Adjustment



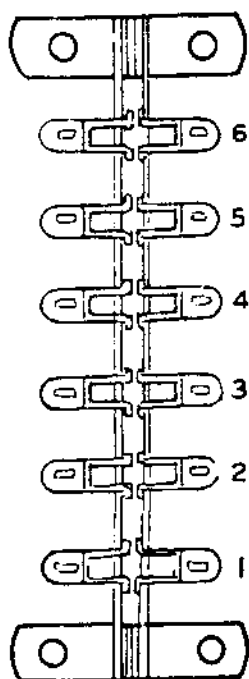
PROVIDES
1, 2 OR
3 PLAYS
FOR ONE
COIN.

5¢ Adjustment



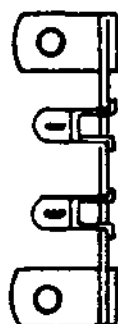
IN "2 COINS FOR
1 PLAY", CIRCUIT
TO COIN RELAY
PASSES THRU SW.
ON ALTERNATOR
UNIT.

25¢ Adjustment



PROVIDES 1, 2, 3, 4, 5
OR 6 PLAYS FOR 25¢.

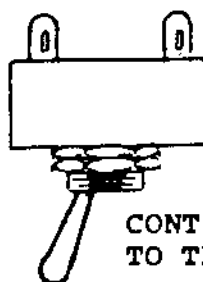
Motor Service Jack



INSERT PHONE TIP IN
"OFF" POSITION - CAMS
CAN BE TURNED BY HAND
TO CHECK ADJUSTMENT OF
SWITCHES.

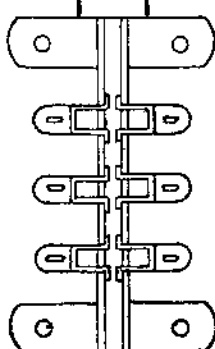
MASTER ON-OFF SW.

(Located under front of
Cabinet)



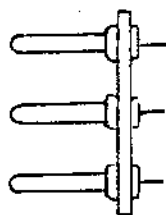
CONTROLS POWER
TO TRANSFORMER

OFF ON

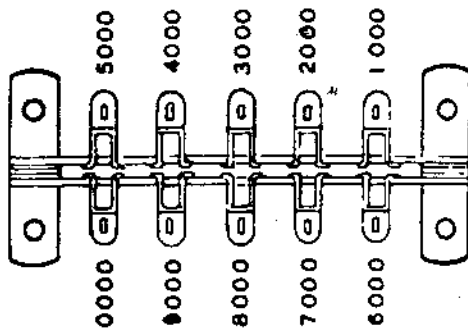


1 COIN- 1 PLAY
2 COINS- 3 PLAYS

SEE PAGE 1 FOR
EXPLANATION &
CIRCUITRY.



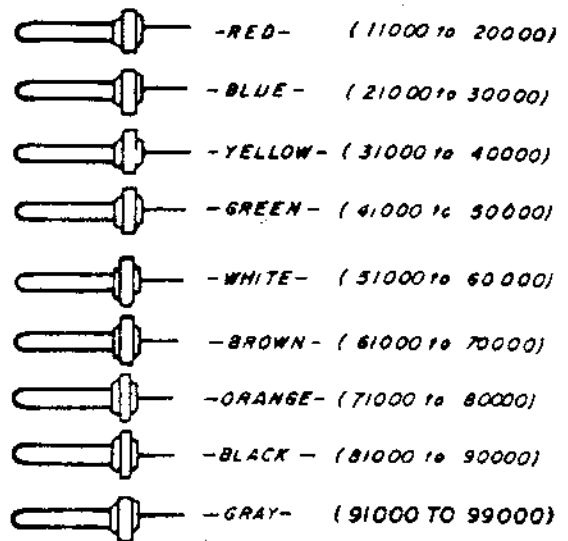
Hi-Score Adjustment



Insert plugs into 10 Point Female at desired positions.

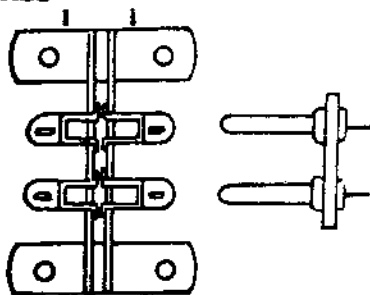
Examples:

Yellow wire into 3000 position scores at 33000.
Yellow wire into 0000 position scores at 40000.



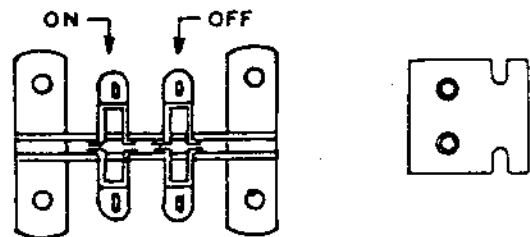
No. of Balls Adjustment

3 BALL 5 BALL



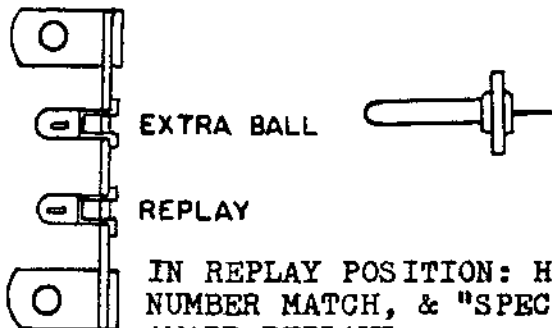
THIS JACK CHANGES 3 BALL TO 5 BALL PLAY OR VICE VERSA.

NUMBER MATCH ADJUSTMENT



In 'ON' position, a number match lite will appear when game is over. To award replays, when number is matched, Extra Ball Adjustment Jack must be in 'Replay' position. In 'Off' position, Number Match is inoperative.

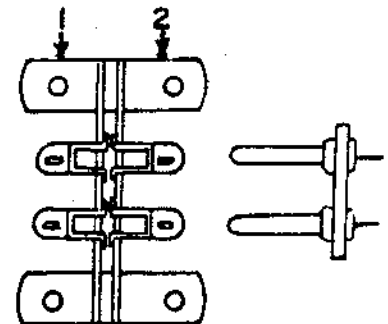
Extra Ball Jack Adj.



IN REPLAY POSITION: HI SCORES, NUMBER MATCH, & "SPECIAL" WILL AWARD REPLAYS.

IN EXTRA BALL POSITION: HI-SCORES OR "SPECIAL" WILL AWARD EXTRA BALLS.

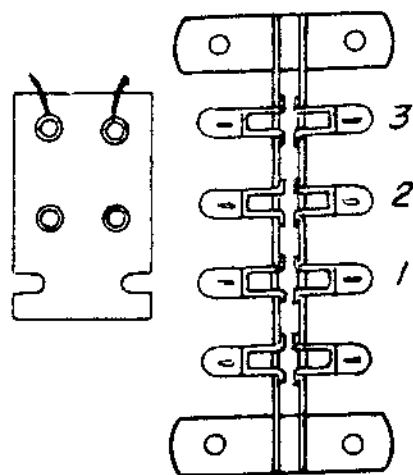
CENTER TARGET ADJUSTMENT ON PLAYFIELD



HITTING CENTER TARGET SWITCH, WHEN ALL A, B, C AND D RELAYS ARE TRIPPED, WILL ENERGIZE SPECIAL RELAY TO SCORE ONE OR TWO REPLAYS OR ONE EXTRA BALL.

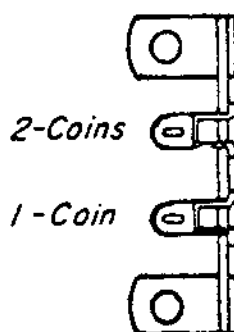
ADJUSTMENTS ON MECHANISM PANEL

10¢ Adjustment



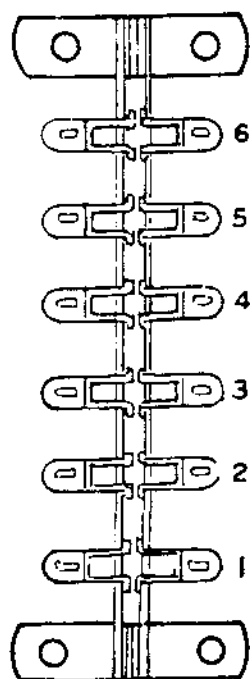
PROVIDES
1, 2 OR
3 PLAYS
FOR ONE
COIN.

5¢ Adjustment



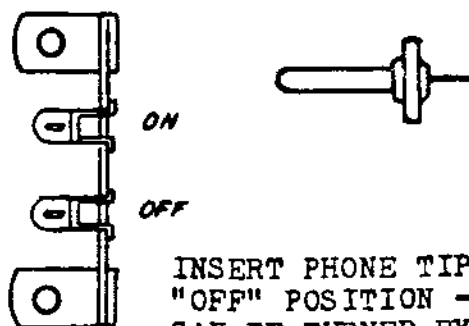
IN "2 COINS FOR
1 PLAY", CIRCUIT
TO COIN RELAY
PASSES THRU SW.
ON ALTERNATOR
UNIT.

25¢ Adjustment



PROVIDES 1, 2, 3, 4, 5
OR 6 PLAYS FOR 25¢.

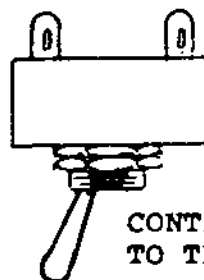
Motor Service Jack



INSERT PHONE TIP IN
"OFF" POSITION - CAMS
CAN BE TURNED BY HAND
TO CHECK ADJUSTMENT OF
SWITCHES.

MASTER ON-OFF SW.

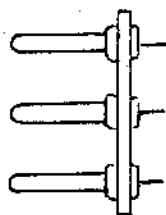
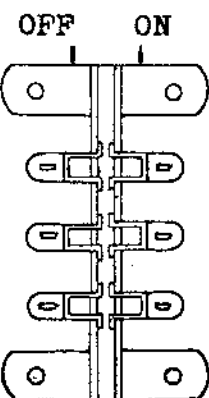
(Located under front of
Cabinet)



CONTROLS POWER
TO TRANSFORMER

1 COIN- 1 PLAY
2 COINS- 3 PLAYS

SEE PAGE 1 FOR
EXPLANATION &
CIRCUITRY.



WARRANTY

THE MOTORS IN ALL NEW WILLIAMS PRODUCTS ARE UN-CONDITIONALLY GUARANTEED FOR 6 MONTHS FROM DATE OF PURCHASE.

ANY DEFECTIVE MOTORS RETURNED DURING THE WARRANTY PERIOD WILL BE REPLACED FREE OF CHARGE BY YOUR WILLIAMS DISTRIBUTOR.

IMPORTANT NOTICE

WHEN ORDERING PARTS ALWAYS SPECIFY NAME OF UNIT, GAME AND SERIAL NUMBER, IN ADDITION TO A CLEAR DESCRIPTION OF THE PART AND PART NUMBER IF POSSIBLE.

UNIT PARTS LIST

UNIT NAME	CONTACT DISC	WIPER ASSEMBLY	RATCHET GEAR ASSEMBLY	MOTORS
REPLAY	-----	-----	A-6400-1	SCORE MOTOR 14A-7883 (60 CYCLE) 14A-7884 (50 CYCLE)
BALL COUNT	C-6414	B-7456-4	A-6402-5	
NO. MATCH	C-6417	C-6521	A-6403	
PLAYER	C-6417	C-6521	A-6404-3	
COIN	C-6414	B-7456-9	A-6402-3	
BONUS	C-6417	B-7456-33	A-6402-10	
10 POINT	B-7253	A-6294	3C-7272	
100 POINT	-----	-----	3C-7272	
1000 POINT	B-7253	A-6294	3C-7272	
10000 POINT	B-7253	A-6294	3C-7272	
ALTERNATOR	-----	-----	3C-7272	

"STRATO FLITE" COIL CHART

NOTICE:

THIS GAME OPERATES ON 24 VOLTS. WHEN ORDERING REPLACEMENT TRANSFORMERS, MOTORS, COILS OR METERS ... MAKE SURE TO SPECIFY CORRECT PART NUMBER.

NUMBER	DESCRIPTION	LOCATION
14 A-7883	CONTROL MOTOR - 60 CYCLE	MECH. PANEL
14 A-7884	CONTROL MOTOR - 50 CYCLE	MECH. PANEL
15 A-6771	TRANSFORMER - 60 CYCLE	MECH. PANEL
15 A-6782-1	TRANSFORMER - 50 CYCLE	MECH. PANEL
B 6396	METER - 24 VOLT	MECH. PANEL
<u>SOLENOID COILS</u>		
A 22-550	COIN UNIT STEP UP	MECH. PANEL
	BONUS UNIT STEP UP	PLAYFIELD
	PLAYER UNIT STEP UP	INSERT
	BALL RELEASE	PLAYFIELD
A 23-600	BALL COUNT UNIT STEP UP	MECH. PANEL
	REPLAY UNIT STEP UP	INSERT
	NUMBER MATCH UNIT STEP UP	INSERT
A 2-23-750	KNOCKER	CABINET
A 2-26-1300	CHIME COILS ... (3 req'd.)	CABINET
B 1-26-800	BALL COUNT UNIT RESET	MECH. PANEL
	COIN UNIT RESET	MECH. PANEL
	ALTERNATOR UNIT STEP UP	MECH. PANEL
	PLAYER UNIT RESET	INSERT
	REPLAY UNIT RESET	INSERT
	SCORE DRUM UNITS ... (16 req'd.)	INSERT
	BONUS UNIT RESET	PLAYFIELD
FL 20-300/ 28-400	FLIPPERS ... (2 req'd.)	PLAYFIELD
G 23-750 D.C.	JET BUMPER COILS ... (3 req'd.)	PLAYFIELD
	AUTOMATIC KICKERS ... (2 req'd.)	PLAYFIELD
G 23-750	EJECT COIL	PLAYFIELD
M 29-900	1 - 2 RESET RELAY	INSERT
	3 - 4 RESET RELAY	INSERT
M 29-1000	GAME OVER RELAY TRIP	MECH. PANEL
	RESET RELAY	MECH. PANEL
M 29-1100	10 PT. RELAY	INSERT
	100 PT. RELAY	INSERT
	1,000 PT. RELAY	INSERT
	ADVANCE RELAY	PLAYFIELD
	SPECIAL RELAY	PLAYFIELD
	50 PT. RELAY	PLAYFIELD
	5,000 PT. RELAY	PLAYFIELD
	BONUS RELAY	PLAYFIELD
	5¢ RELAY	MECH. PANEL
	10¢ RELAY	MECH. PANEL
	25¢ RELAY	MECH. PANEL
M 1-31-1500	COIN LOCKOUT COIL	FRONT DOOR
XM 27-675	TOTAL PLAY METER COIL	MECH. PANEL
Z 27-1000	GAME OVER RELAY LATCH	MECH. PANEL
	PLAYER RESET RELAY	MECH. PANEL
	REPLAY RELAY	MECH. PANEL
	COIN RELAY	MECH. PANEL
	OUTHOLE RELAY	MECH. PANEL
	EJECT RELAY	MECH. PANEL
Z 28-1150	TILT RELAY	MECH. PANEL
	BALL INDEX RELAY	MECH. PANEL
	EXTRA BALL RELAY	MECH. PANEL
Z 29-1250	LOCK RELAY	MECH. PANEL
D 1-22-1150	BANK RESET COIL	PLAYFIELD
S 27-500	BANK TRIP COIL (15 req'd.)	PLAYFIELD
Z 28-1200	BOTTOM GATE RELAY	PLAYFIELD
M 30-1300	TOP GATE RELAY	PLAYFIELD
	COIN SET UP RELAY	MECH. PANEL

IMPORTANT NOTICE

**KINDLY INFORM LOCATIONS THAT THEY
CAN TURN DISPLAY LIGHTS ON BY PRESSING
LEFT FLIPPER BUTTON. MACHINE CAN STILL
BE SHUT OFF BY TAPPING BOTTOM OF
CABINET.**

**MASTER SWITCH (ON-OFF) IS LOCATED
UNDERNEATH FRONT PART OF CABINET.**

CAUTION!

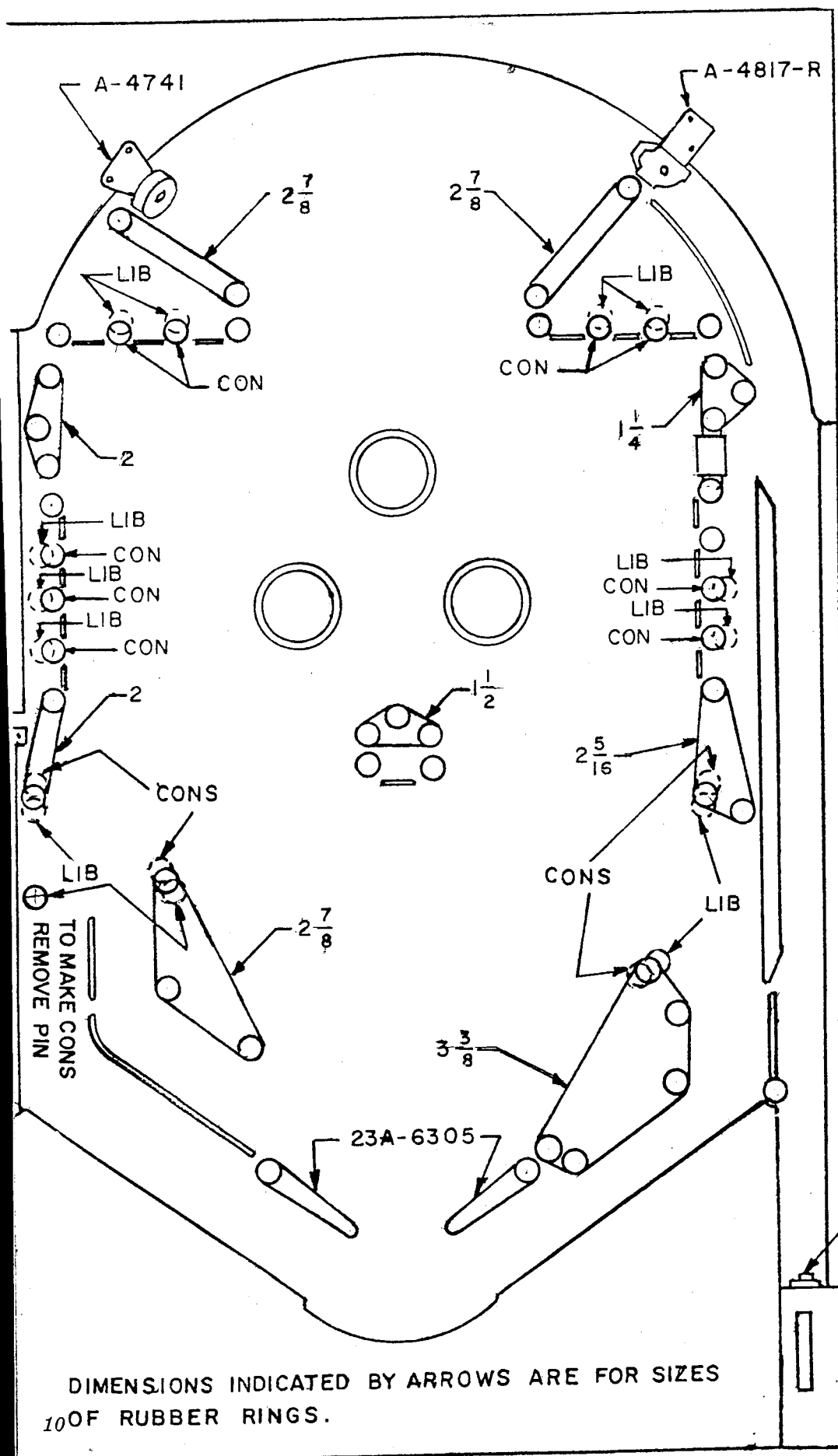
The playboard on this machine has an improved finish with excellent wearing properties. Do not under any circumstances clean the board with water, water soap solutions or harsh abrasives. Avoid such things as steel wool, kitchen cleansers or abrasive hand soap. Water will weaken the adhering of the paint to the board and abrasives shorten the board life by many thousand plays. A wax base cleaner with negligible abrasive qualities used lightly, but frequently, will extend the board life to its full capabilities.

SERVICEMAN TO REMOVE BACKGLASS:

- WITH BACK DOOR REMOVED, PULL BACK ON BRACKETS AT INSIDE TOP OF LITE BOX.
- FROM THE FRONT OF GAME, LIFT GLASS UP AND OUT.

"STRATO-FLITE"-POST ADJUSTMENT SHEET

TO MAKE GAME MORE CONSERVATIVE OR LIBERAL MOVE POST 3/16 AS SHOWN IN SKETCH BELOW SPOTTING HOLES ARE PROVIDED AND CAN BE SEEN ON REMOVAL OF POSTS.



ABBREVIATIONS:
CONS - CONSERVATIVE
LIB - LIBERAL

RUBBER RING NUMBERS

23A-6300	5/16" I.D.
23A-6303	1 1/4 I.D.
23A-6304	1 1/2 I.D.
23A-6305	2" I.D.
23A-6306	2 5/16 I.D.
23A-6307	2 7/8 I.D.
23A-6308	3 3/8 I.D.
23A-6309	3 7/8 I.D.

A-4741 REBOUND ASS'Y
A-4817-R BALL GATE ASS'Y

23A-6327 BALL SHOOTER
RUBBER TIP

DIMENSIONS INDICATED BY ARROWS ARE FOR SIZES
10 OF RUBBER RINGS.

JACK LAYOUT

GAME STRATO-FLITE

POSITION P.F. - INS. SIZE 14

1	<u>BLU</u> Y-3	PLAYER LITES
2	<u>GRY</u> O-1	G-O- LITE
3	<u>G</u> R-2	1000 RT. RE.
4	<u>Y</u> BR-4	TOP GATE
5	<u>O</u> R-5	SMALL CHINE
6		BLANK
		PAN = PANEL

G/A	10-PT. RE.
W/R	100- " "
B/Y	" "
R/Y	1000- " "
N/	" "
BLU-3	500 EJECT LITE
R/Y-A	" " "
R/G-A	" " "
BLANK	
N.S. = NOISE AND BACK BOX	

② = PLASTIC 115 V.

PAN = PAN.

P.F. = PLAYFIELD

MS. = MS. 17-18 BACH 102

JACK LAYOUT

GAME STRATO - FLITE

POSITION PAN - P.F. SIZE 22



FEED	-B-
"	-R-
"	R/Y/W
EX-BALL RE.	Y/B
SHOOT AGAIN	W/W
LITE	G-4
BONUS PRESET	BR-W-6
"	R/R-4
"	R/BLU-1
"	RE. R-3
BONUS S.V.	BLU/BR-3
FEED	BLU.

1	G/W-3 BONUS RE.
2	B/BLU-1 OUTHOLE RE.
3	W/R-1 " "
4	BLU/W-4 BALL RELEASE
5	Y/R-2 TILT RE.
6	Y-FEED
7	B/W-4 R.P.S.U.
8	W-FEED
9	Y/BR-5 BONUS S.V.
10	BLU/Y/W-1 FEED
11	Y/BLU-3 TOP GATE RE.

JACK LAYOUT

GAME STRATO - FLITE

POSITION PAN - P.F. SIZE 18



1	BANK RESET BR-10
2	" " B(P)
3	1000 PT. RE. GRY/W
4	" " " O-3
5	" " " O/BLU-3
6	" " " O/W-3
7	" " " O/R-4
8	R.P. B/CONTRAL RE. O-3
9	RESET RE. BLU/BR-1

1	G/O-3 EFFECT RE.
2	GRY/O-4 " "
3	O/G MOTON
4	B/W-5 1-FLIPPER
5	BR/W-5 R- " "
6	R/O-3 R.P.S.U.
7	R/BR. 50-PT. RE.
8	R/BLU-4 EFFECT COIL
	W/TOP
	BR-4 GATE RE.

JACK LAYOUT

JACK LAYOUT

GAME STRATO - FLITE

GAME STRATO - FLITE

POSITION PAN - INS. SIZE 24

POSITION PAN - INS. SIZE 20

FEED	BR	1
"	BR	2
COIN	BR	3
LOCKOUT	BR	4
REPLAY RE.	W/O	5
"	W/O	6
"	W/O	7
KNOCKER	BR/W	8
RESET RE.	BR/W	9
BALL COUNT	BR/W	10
S.U.	BR/W	11
No. 1	BR/W	12
BALL LITE	BR/W	
FEED	BR	
BLANK		

BR/Y-1	BALL COUNT S.U.	1
BR/G-1	"	2
BR/R-1	PLAYER S.U.	3
BR/Y-1	PLAYER RESET	4
BR/B-1	EX-BALL RE.	5
BR/O-1	RESET RE.	6
GRY	R.P.S.U.	7
Y-	FEED	8
W/G-4	SHOOT AGAIN LITE	9
BR/Y-6	No. 2 BALL LITE	10
BR/BLU.	3-4 RESET RE.	11
	BLANK	12

No. 3 BALL LITE	GRY/Y-1	1
1ST. PLAYER MATCH	BLU-2	2
2ND. PLAYER MATCH	BR/BR-2	3
3ND. PLAYER MATCH	BR/O	4
4TH. PLAYER MATCH	BR/Y-5	5
GRY P.S.U.	GRY/BR-2	6
LARGE CHIME	BR/G-3	7
TIKT LITE	BLU/BR-2	8
BALL IND. RE.	BR/G-4	9
R.P. RESET	BR/Y	10

GRY/W-3	1-CAN PLAY LITE	1
Y/G-1	2-11	2
O/W-3	3-11	3
O/R-3	4-11	4
R/W	BALL COUNT S.U.	5
BLU/R-4	G-O-RE.	6
BLU/Y-5	"	7
BLU/R-4	"	8
GRY/G-2	No. 4 BALL LITE	9
GRY/BR-2	No. 5 BALL LITE	10

BALL COUNT UNIT DISC

THIS UNIT RESETS AT THE START OF A NEW GAME, (DURING RESET CYCLE). IT ADVANCES ONE STEP EACH TIME THE LAST PLAYER COMPLETES HIS TURN.

View looking at WIPER FINGER side
with WIPER in ZERO position.

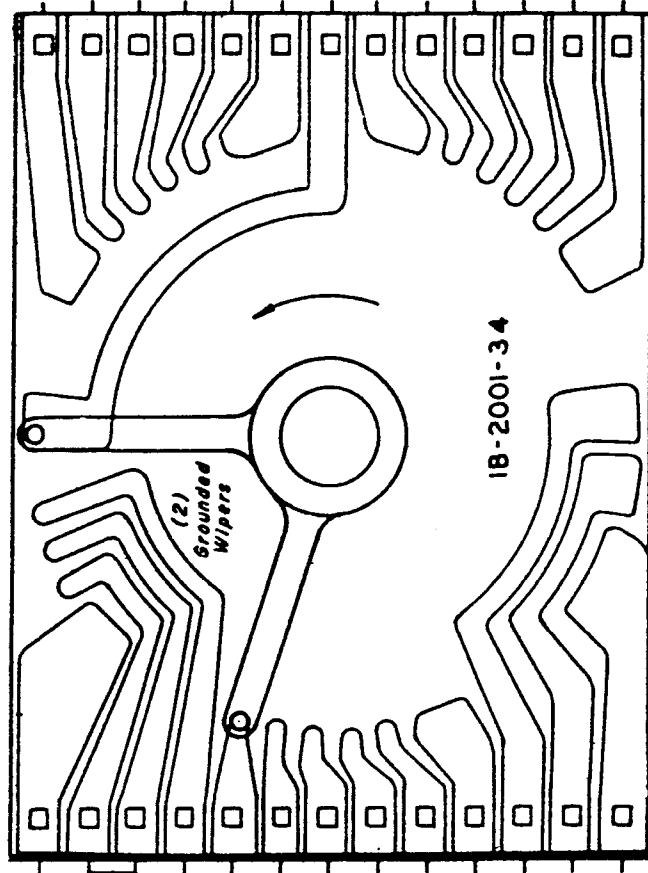
DIAGRAM
LOCATION
↓

TRIPS GAME OVER RELAY
IN 5 BALL GAME.

TRIPS GAME OVER RELAY
IN 3 BALL GAME.

1 2 3 4 5
BALL IN PLAY LITES

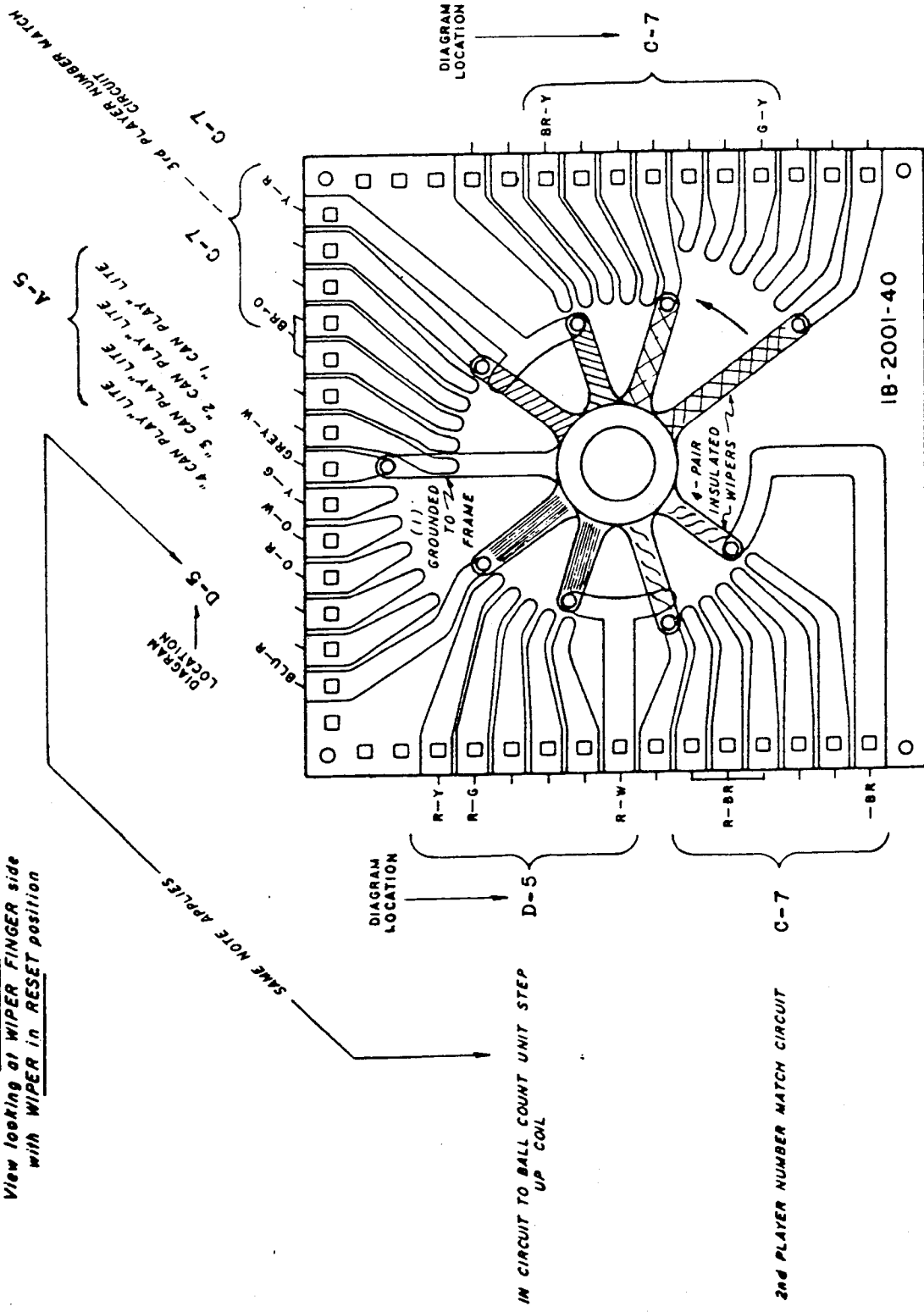
C-14 BLU-R C-14 BLU-BR
W-B B-Y
GREY-Y
GREY-G
GREY-BR



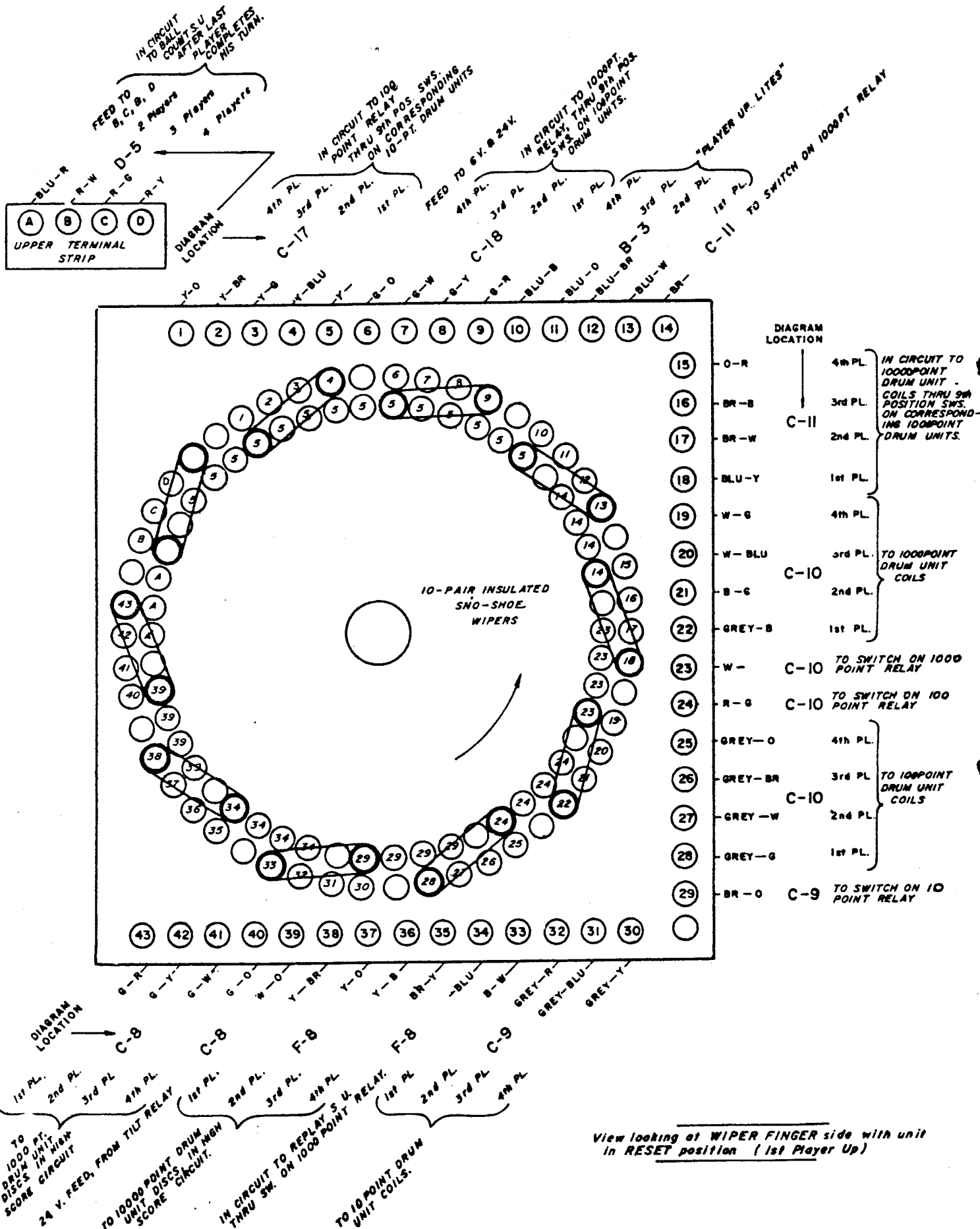
COIN S. U. DISC

THIS UNIT RESETS AT START OF A GAME (DURING RESET CYCLE). IT THEN ADVANCES ONE STEP EACH TIME THE COIN RELAY IS PULSED.

View looking at WIPER FINGER side
with WIPER in RESET position



PLAYER UNIT DISC



BONUS UNIT

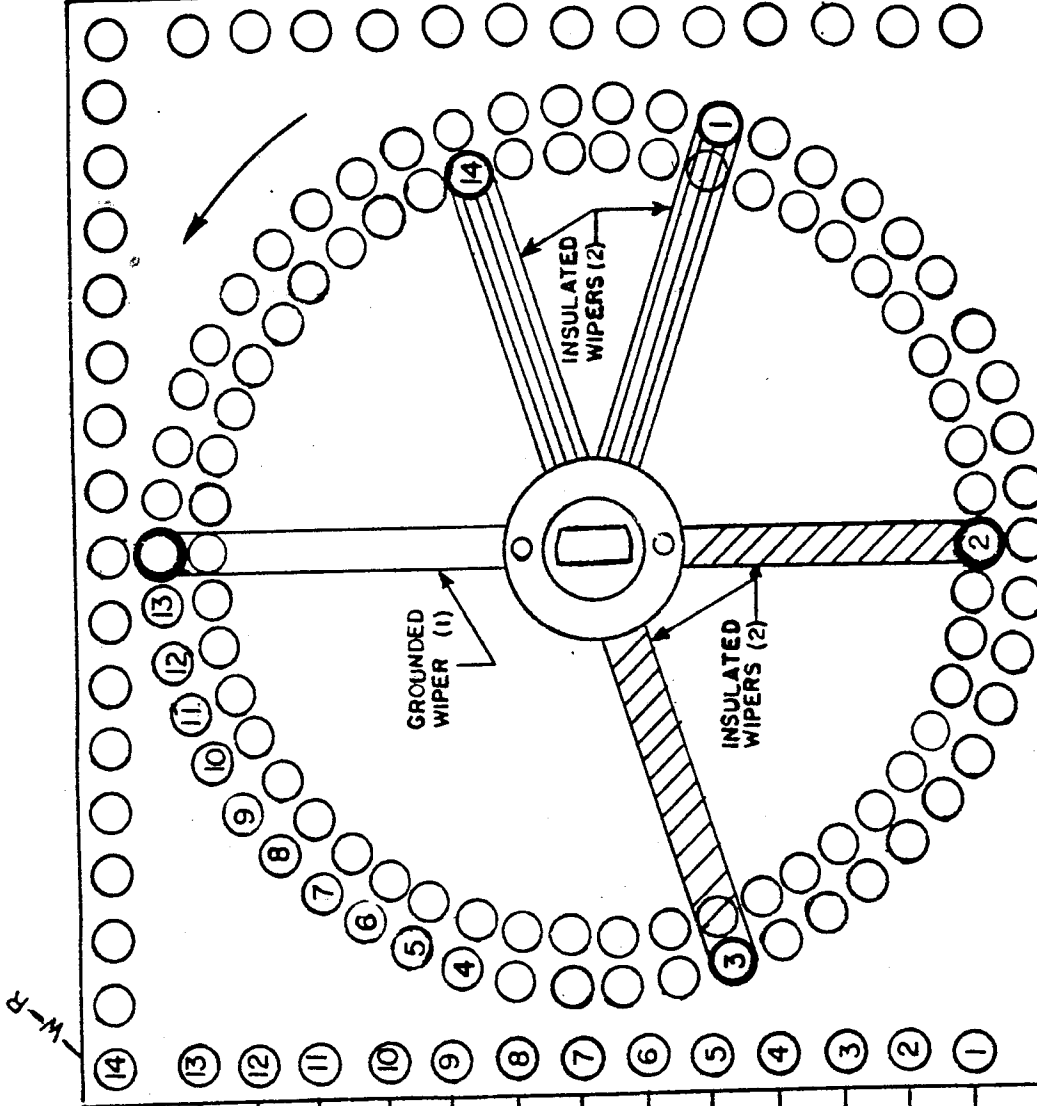
THIS UNIT STEPS UP EACH TIME THE ADVANCE RELAY OR EJECT RELAY IS ENERGIZED.

ALSO, AFTER THIS UNIT HAS BEEN RESET TO ZERO, THE STEP-UP COIL IS ENERGIZED ONCE BY SCORE MOTOR CAM SWITCH 6A, THRU BONUS UNIT WIPER FINGERS. THE RESET COIL IS ENERGIZED BY BONUS RELAY, THRU DOUBLE BONUS RELAY AND SCORE MOTOR CAM SWITCH 4C OR IMPULSE CAM SWITCH A.

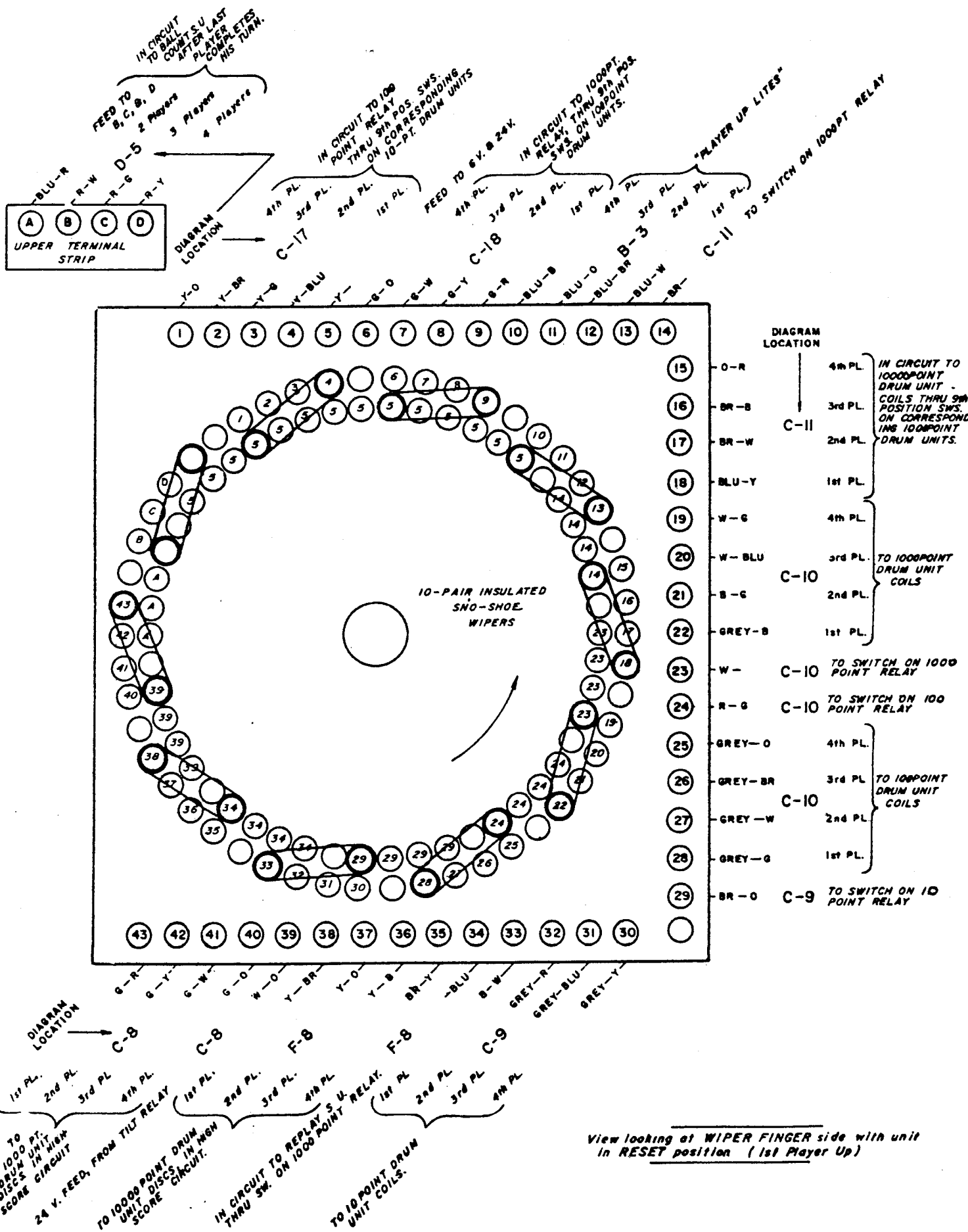
A-9		A-10	D-12	D-13
1000		10,000		
2000				
3000				
4000				
5000				
6000				
7000				
8000				
9000				

SEE #1 (B-BLU) D-13 W-R

VIEW LOOKING AT WIPER FINGER SIDE, WITH WIPER IN ZERO POSITION.



PLAYER UNIT DISC

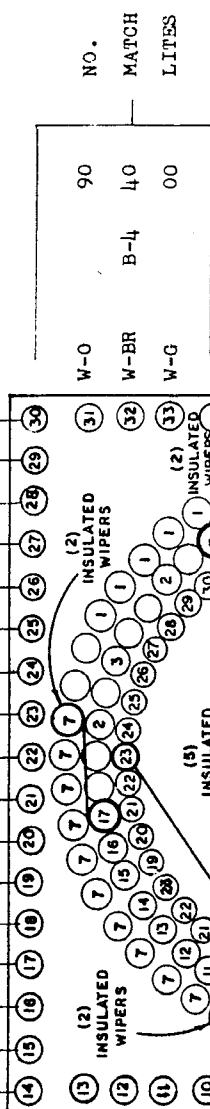
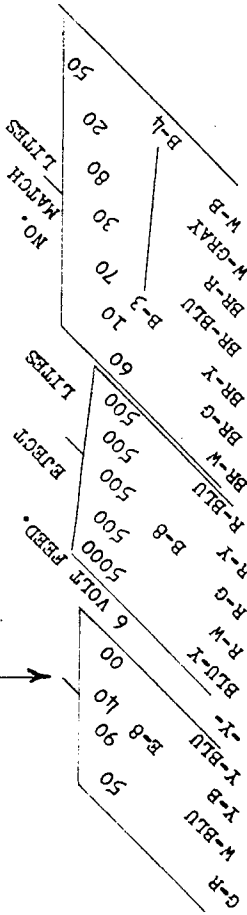


No. MATCH UNIT

VIEW LOOKING AT
WIPER FINGER SIDE

THIS IS A NON-RESETTABLE, CONTINUOUS STEPPING UNIT. IT ADVANCES EACH TIME THE 100 POINT RELAY IS PULSED.

SAME NOTE APPLIES



20	Y-BR	NO. MATCH FEED TO REPLAY S.U.	E-8	GRAY-R
80	G-O	TO 100 POINT RELAY.	D-17	W-R
30	Y-O	TO 1,000 POINT RELAY.	D-17	BR-Y
70	E-8	FEED FROM SW. ON EJECT RELAY.	C-17	G-R
10	Y-G	TO TOP GATE RELAY.	D-21	B-Y
60	G-Y	TO BOTTOM GATE RELAY.	D-21	B-G
		FEED FROM SW. ON EJECT RELAY.	D-21	Y-BR

W-O	90	NO.
W-BR	B-4	MATCH
W-G	00	LITES

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
1-A RELAY	1D	GRAY-G -J-	C-20	N.O.	IN SERIES WITH SWITCH 3D ON 2-A RELAY.
	1C	-J- -Y-	C-19	N.O.	IN SERIES WITH SWITCH 3C ON 2-A RELAY.
	1B	-Y- -J-	C-20	N.O.	IN SERIES WITH SWITCH 3B ON 2-A RELAY.
	1A	O-R -W-	A-6	N.O.	TO 1-A TARGET LITE. ALSO IN SERIES WITH SW. 3A ON 2-A RELAY.
	2C	-J- R-BLU Y-B	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 50 POINT RELAY (WHEN BALL HITS 1-A TARGET SWITCH).
	2B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 4B ON 2-A RELAY.
	2A	-J- B-G	B-7	N.O.	TO "SPECIAL" TARGET LITE. CIRCUIT ORIGINATES AT SWITCH 23A ON 3-D RELAY.
2-A RELAY	3D	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 5D ON 3-A RELAY.
	3C	-J- -J-	D-19	N.O.	IN SERIES WITH SWITCH 5C ON 3-A RELAY.
	3B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 5B ON 3-A RELAY.
	3A	O-R -J-	A-6	N.O.	IN SERIES WITH SWITCH 5A ON 3-A RELAY.
	4D	-J- R-W Y-B	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 50 POINT RELAY. (WHEN BALL HITS 2-A TARGET SW.).
	4C	GRAY-B -W-	A-7	N.O.	TO 2-A TARGET LITE.
	4B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 6B ON 3-A RELAY.
	4A	-J- -J-	B-7	N.O.	IN SERIES WITH SWITCH 2A ON 1-A RELAY.
3-A RELAY	5L	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 7D ON 1-B RELAY.

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
3-A RELAY	5C	-J- -J-	D-19	N.O.	IN CIRCUIT TO DOUBLE BONUS RELAY. (SEE SWITCH 1C ON 1-A RELAY).
	5B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 7B ON 1-B RELAY AND SWITCH 19.B ON 1-D RELAY.
	5A	-O- -J-	B-6	N.O.	TO "A" STAR LITE.
	6D	-J- R-O Y-B	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSSES TO 50 POINT RELAY. (WHEN BALL HITS 3-A TARGET SW.).
	6C	GRAY-O -W-	A-7	N.O.	TO 3-A TARGET LITE.
	6B	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
	6A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 4A ON 2-A RELAY.
1-B RELAY	7D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 9D ON 2-B RELAY.
	7C	-J- -Y-	C-19	N.O.	IN SERIES WITH SWITCH 9C ON 2-B RELAY.
	7B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 9B ON 2-B RELAY.
	7A	-W- O-G	A-6	N.O.	TO 1-B TARGET LITE. ALSO IN SERIES WITH SW. 9A ON 2-B RELAY.
	8C	-J- R-B W-R	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSSES TO 100 POINT RELAY. (WHEN BALL HITS 1-B TARGET SW.).
	8B	-Y- -J-	C-20	N.O.	IN SERIES WITH SWITCH 10B ON 2-B RELAY.
	8A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 6A ON 3-A RELAY.
2-B RELAY	9D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 11D ON 3-B RELAY.
	9C	-J- -J-	D-19	N.O.	IN SERIES WITH SWITCH 11C ON 3-B RELAY.
	9B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 11B ON 3-B RELAY.

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
2-B RELAY	9A	-J- O-G	A-6	N.O.	IN SERIES WITH SWITCH 11A ON 3-B RELAY.
	10D	-J- BLU-R W-R	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 100 POINT RELAY. (WHEN BALL HITS 2-B TARGET SW.).
	10C	R-Y -W-	A-7	N.O.	TO 2-B TARGET LITE.
	10B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 12B ON 3-B RELAY.
	10A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 8A ON 1-B RELAY.
3-B RELAY	11D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 13 D ON 1-C RELAY.
	11C	-J- -J-	D-19	N.O.	IN CIRCUIT TO DOUBLE BONUS RELAY. (SEE SWITCH 7C ON 1-B RELAY).
	11B	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
	11A	-J- O-BLU	B-6	N.O.	TO "B" STAR LITE.
	12D	-J- BLU-Y W-R	E-15	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 100 POINT RELAY. (WHEN BALL HITS 3-B TARGET SW.).
	12C	G-W -W-	A-7	N.O.	TO 3-B TARGET LITE.
	12B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 13B ON 1C RELAY AND 20B ON 1-D RELAY.
	12A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 10A ON 2-B RELAY.
1-C RELAY	13D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 15D ON 2-C RELAY.
	13C	-J- -Y-	C-19	N.O.	IN SERIES WITH SWITCH 15C ON 2-C RELAY.
	13B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 15B ON 2-C RELAY.

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
1-C	13A	-W- O-B	A-6	N.O.	TO 1-C TARGET LITE. ALSO IN SERIES WITH SWITCH 15A ON 2-C RELAY.
RELAY	14C	-J- BLU-O W-R	E-16	M&B	OPEN TO COIL ON THIS RELAY AND CLOSES TO 100 POINT RELAY. (WHEN BALL HITS 1-C TARGET SW.).
	14B	-Y- -J-	C-20	N.O.	IN SERIES WITH SWITCH 16B ON 2-C RELAY.
	14A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 12A ON 3-B RELAY.
2-C	15D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 17D ON 3-C RELAY.
	15C	-J- -J-	D-19	N.O.	IN SERIES WITH SWITCH 17C ON 3-C RELAY.
	15B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 17B ON 3-C RELAY.
	15A	-J- O-B	A-6	N.O.	IN SERIES WITH SWITCH 17A ON 3-C RELAY.
	16D	-J- BLU-B W-R	E-16	N.O.	OPENS TO COIL ON THIS RELAY AND CLOSES TO 100 POINT RELAY. (WHEN BALL HITS 2-C TARGET SW.).
	16C	W-O -W-	A-7	N.O.	TO 2-C TARGET LITE.
	16B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 18B ON 3-C RELAY.
	16A	-J- -J-	A-7	N.O.	IN SERIES WITH SWITCH 14A ON 1-C RELAY.
3-C	17D	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 19D ON 1-D RELAY.
RELAY	17C	-J- -J-	D-19	N.O.	IN CIRCUIT TO DOUBLE BONUS RELAY. (SEE SWITCH 13C ON 1-C RELAY).
	17B	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
	17A	-J- O-W	B-6	N.O.	TO "C" STAR LITE.

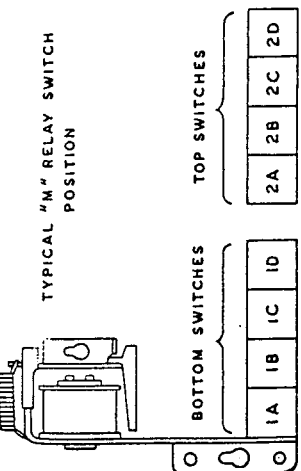
RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
3-C RELAY	18D	-J- Y-R W-R	E-16	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 100 POINT RELAY. (WHEN BALL HITS 3-C TARGET SW.).
	18C	O-G -W-	A-7	N.O.	TO 3-C TARGET LITE.
	18B	-J- -J-	C-20	N.O.	IN SERIES WITH SWITCH 2B ON 1-A RELAY AND 20A ON 1-D RELAY.
	18A	-J- -J-	B-7	N.O.	IN SERIES WITH SWITCH 16A ON 2-C RELAY.
1-D RELAY	19D	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 21D ON 2-D RELAY.
	19C	-J- -Y-	C-19	N.O.	IN SERIES WITH SWITCH 21C ON 2-D RELAY.
	19B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 21B-ON 2-D RELAY.
	19A	-J- B-R	B-7	N.O.	TO "D" STAR LITE. ALSO IN SERIES WITH SWITCH 25B ON REPLAY CONTROL RELAY.
	20D	-J- Y-BLU Y-B	E-16	M&B	OPENS TO COIL ON THIS RELAY AND CLOSES TO 50 POINT RELAY. (WHEN BALL HITS 1-D TARGET SW.).
	20C	B-BLU -W-	A-8	N.O.	TO 1-D TARGET LITE.
	20B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 22B ON 2-D RELAY.
	20A	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 22A ON 2-D RELAY.
2-D RELAY	21D	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 23D ON 3-D RELAY.
	21C	-J- -J-	D-19	N.O.	IN SERIES WITH SWITCH 23C ON 3-D RELAY.
	21B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 23B ON 3-D RELAY.
	21A	-J- B-Y	A-7	N.O.	IN SERIES WITH SWITCH 19A ON 1-D RELAY.

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
2-D	22D	-J- Y-G Y-B	E-16	M&B	OPENS TO COIL ON THIS RELAY AND CLOSSES TO 50 POINT RELAY. (WHEN BALL HITS 2-D TARGET SW.).
RELAY	22C	B-W -W-	A-8	N.O.	TO 2-D TARGET LITE.
	22B	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 24B ON 3-D RELAY.
	22A	-J- -J-	D-20	N.O.	IN SERIES WITH SWITCH 24A ON 3-D RELAY.
3-D	23D	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 25A ON REPLAY CONTROL RELAY.
RELAY	23C	-J- -J-	D-19	N.O.	IN CIRCUIT TO DOUBLE BONUS RELAY. (SEE SWITCH 19C ON 1-D RELAY.
	23B	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
	23A	-W- B-Y	A-7	N.O.	TO 3-D TARGET LITE. ALSO IN SERIES WITH 21A ON 2-D RELAY.
	24C	-J- Y-O Y-B	E-16	M&B	OPENS TO COIL ON THIS RELAY AND CLOSSES TO 50 POINT RELAY. (WHEN BALL HITS 3-D TARGET SW.).
	24B	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
	24A	-J- -J-	E-20	N.O.	IN SERIES WITH SWITCH 30B ON TRIPLE BONUS RELAY.
REPLAY CONTROL RELAY	25B	-J- B-R	B-7	N.C.	IN SERIES WITH SWITCH 18A ON 3-C RELAY.
	25A	B-R -J-	E-20	N.C.	TO SPECIAL RELAY COIL. CIRCUIT ORIGINATES AT SWITCH 1D ON 1-A RELAY.
DOUBLE BONUS RELAY	27B	R-B BLU-R R-BLU	D-12	M&B	IN CIRCUIT TO BONUS UNIT RESET COIL.
	27A	O-R -J-	B-8	N.O.	TO "DOUBLE BONUS" LITE, THRU SW. ON TRIPLE BONUS RELAY.
	28B	-O- O-B O-BLU	D-19	M&B	IN CIRCUIT TO 1,000 POINT RELAY (WHEN COLLECTING BONUS).

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
DOUBLE BONUS RELAY	28A	-J- -J-	E-19	N.C.	TO COIL ON THIS RELAY. (4 DIFFERENT CIRCUITS TO THIS SWITCH ORIGINATE AT SWITCHES 1C, 7C, 13C AND 19C).
TRIPLE BONUS RELAY	29A	Y-B GRAY-BR	E-14	N.O.	ENERGIZES EXTRA BALL RELAY, THRU LEFT BOTTOM (INSIDE) ROLLOVER SW.
	30C	-J- -W- B-Y	A-8	M&B	OPENS IN SERIES WITH SWITCH 27A ON DOU- BLE BONUS RELAY AND CLOSSES TO "TRIPLE BONUS" LITE AND "EXTRA BALL WHEN LIT" LITE.
	30B	-J- -J-	E-20	N.C.	TO COIL ON THIS RELAY. (6 DIFFERENT CIRCUITS TO THIS SWITCH ORIGINATE AT 1B, 8B AND 14B.
	30A	O-W O-BLU	D-19	N.O.	IN CIRCUIT TO 1,000 POINT RELAY (WHEN COLLECTING BONUS).

RELAYS & SWITCHES

LOCATED ON MECHANISM PANEL



LOCK

IS ENERGIZED BY 5¢ RELAY, LEFT FLIPPER SWITCH OR SCORE MOTOR CAM SWITCH 5A.

SWITCH TYPE

DIAGRAM LOCATION

N.C.	D	-Y- BLU-R	C-13
N.O.	C	BR-Y-W G-Y-W	A-1
N.O.	B	BLU-Y-W G-Y-W	A-1
N.O.	A	B-O O-B	D-4

ENERGIZES GAME-OVER RELAY (TRIP COIL).

6 VOLTS FROM TRANSFORMER TO LITES.

6 VOLTS FROM TRANSFORMER TO LITES.

HOLD CIRCUIT TO THIS RELAY, THRU CABINET BOTTOM KICK-OPP SWITCH.

OUTHOLE

IS ENERGIZED BY SCORE MOTOR CAM SWITCH 6B, THRU BONUS UNIT DISC (IN ZERO POSITION).

M&B	F	G-B -Y- B-W G-O G-W	C-14 C-6
N-C	E	W-BR -Y- -Y- O-G	D-13
N.C.	D	PURPLE -BLU-	C-14
N.O.	C	R-BR B-BLU	G-4
N.O.	B		B-1
N.O.	A		E-13

OPENS IN HOLD CIRCUIT TO BALL INDEX RELAY AND CLOSSES IN SERIES WITH SWITCH C ON EXTRA BALL RELAY.

IN CIRCUIT TO BONUS RELAY.

IN CIRCUIT TO TILT RELAY.

RUNS SCORE MOTOR.

ENERGIZES 115 VOLT RELAY BANK RESET COIL, THRU CAM SWITCH 3A.

IN HOLD CIRCUIT TO THIS RELAY.

PLAYER RESET

IS ENERGIZED BY BALL COUNT UNIT END-OF-STROKE SWITCH. IT THEN HOLDS IN THRU SCORE MOTOR INDEX CAM SWITCH D.

M&B	C	Y-BR W-BR G-Y	D-6
N.O.	B	GRAY-B GRAY-G	E-7
N.O.	A	R-BR R-G	C-6

OPENS IN CIRCUIT TO PLAYER UNIT S.U. COIL AND CLOSSES TO PLAYER UNIT RESET COIL.

IN NUMBER MATCH CIRCUIT TO REPLAY S.U. COIL.

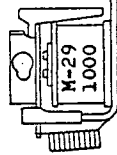
IN HOLD CIRCUIT TO THIS RELAY.

RESET

IS ENERGIZED BY COIN RELAY, THRU SWITCH ON GAME-OVER RELAY.

M&B	2 C	BLU-Y
		-Y-
		O-G
		G-O
N.O.	2 B	BR-B
N.O.	2 A	BLU-BR
		BLU-W

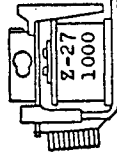
N.C.	1 D	BLU-Y-W
		R-Y-W
M&B	1 C	W-BLU
		BLU-O
		O-BLU
N.O.	1 B	G-Y
		O-BLU
N.O.	1 A	-BLU-
		PURPLE



REPLAY

IS ENERGIZED BY REPLAY BUTTON, THRU ZERO SWITCH ON REPLAY UNIT.

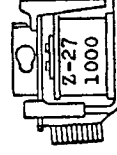
N.C.	D	W-
		W-GRAY
N.O.	C	BLU-O
		R-Y
N.O.	B	R-BR
		G-W
N.O.	A	R-BR
		W-BLU



COIN

IS ENERGIZED BY COIN SWITCH OR REPLAY RELAY---ALSO BY 5¢ RELAY, THRU SWITCH ON ALTERNATOR UNIT---ALSO BY 25¢ RELAY, IF GAME IS ADJUSTED TO "6 PLAYS FOR 25¢".

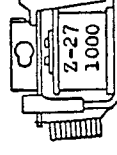
N.O.	D	-Y-
		BLU-Y
N.O.	C	-Y-
		O-R
N.O.	B	-Y-
		O-G
N.O.	A	R-BR
		G-W



EJECT

IS ENERGIZED BY EJECT POCKET SWITCH, THRU SCORE MOTOR INDEX CAM SWITCH D.

N.O.	F	-Y-
		O-G
N.O.	E	GRAY-N
		O-R
N.O.	D	Y-BH
		R-O
N.O.	C	R-BLU
		GRAY-BLU
N.O.	B	BLU-BR
		GRAY-BLU
N.O.	A	R-BR
		GRAY-O



OPENS IN CIRCUIT TO REPLAY RELAY AND COIN LOCKOUT COIL---CLOSES TO RUN SCORE MOTOR.

ENERGIZES BONUS RELAY, THRU INDEX CAM SWITCH D.

IN HOLD CIRCUIT TO THIS RELAY.

OPENS MOST CIRCUITS TO PLAYFIELD SWITCHES.

OPENS IN CIRCUIT TO COIN UNIT S.U. COIL AND CLOSES TO RESET COILS ON COIN, BALL COUNT AND GAME-OVER.

IN CIRCUIT TO PLAYER UNIT RESET COIL.

ENERGIZES 115 VOLT RELAY BANK RESET COIL, THRU SCORE MOTOR CAM SWITCH 3A.

OPENS CIRCUIT TO COIN LOCKOUT COIL.

PULSES REPLAY UNIT RESET COIL, THRU CAM SWITCH 1B.

ENERGIZES COIN RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

TRIPS GAME-OVER RELAY, THRU ZERO SWITCH ON PLAYER UNIT OR BALL COUNT UNIT.

ENERGIZES RESET RELAY, THRU SWITCH C ON GAME-OVER RELAY.

RUNS SCORE MOTOR.

IN HOLD CIRCUIT TO THIS RELAY.

RUNS SCORE MOTOR.

IN CIRCUIT TO PULSE 100 OR 1,000 POINT RELAY, THRU NUMBER MATCH UNIT DISC.

IN CIRCUIT TO ENERGIZE TOP GATE RELAY OR BOTTOM GATE RELAY, THRU NUMBER MATCH UNIT DISC.

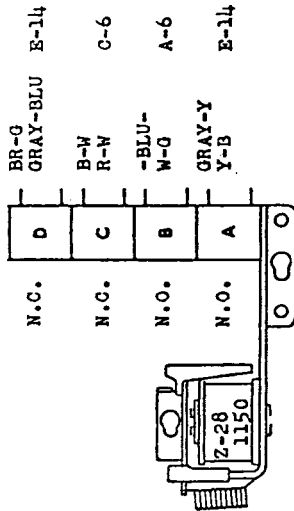
PULSES EJECT COIL, THRU CAM SWITCH 4B.

ENERGIZES BONUS UNIT S.U. COIL, THRU CAM SWITCH 4B.

IN HOLD CIRCUIT TO THIS RELAY.

EXTRA BALL

IS ENERGIZED BY TRIPLE BONUS RELAY, THRU LEFT BOTTOM (INSIDE) ROLLOVER SWITCH--- ALSO BY HI-SCORE CIRCUIT, THRU "REPLAY-EXTRA BALL" ADJUSTMENT JACK.



IN CIRCUIT TO ENERGIZE BALL INDEX RELAY.

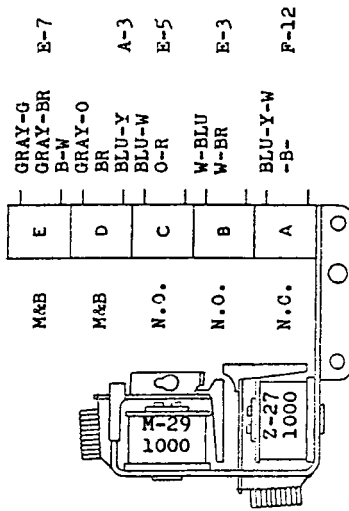
IN SERIES WITH SWITCH B ON BALL INDEX RELAY.

TO "SHOOT AGAIN" LITES.

IN HOLD CIRCUIT TO THIS RELAY.

GAME-OVER INTERLOCK

LATCH COIL IS ENERGIZED BY SCORE MOTOR GAM SWITCH 1B, THRU COIN RELAY AND RESET RELAY.
TRIP COIL IS ENERGIZED BY LOCK RELAY OR WIPER FINGER ON BALL COUNT UNIT---ALSO BY COIN RELAY, THRU A ZERO SWITCH ON EITHER THE BALL COUNT UNIT OR PLAYER UNIT.



OPENS IN HI-SCORE CIRCUITS AND CLOSSES TO NUMBER MATCH CIRCUITS.

OPENS TO "PLAYER UP" LITES AND CLOSSES TO "GAME-OVER" AND "NUMBER MATCH" LITES.

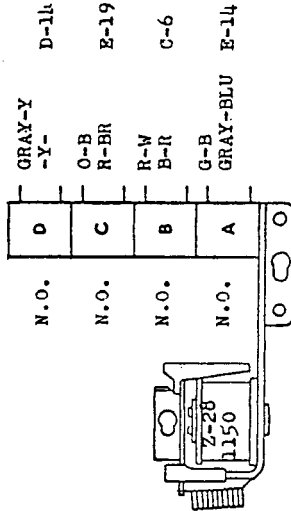
IN CIRCUIT TO RESET RELAY, THRU SWITCH ON COIN RELAY.

IN CIRCUIT TO REPLAY RELAY.

OPENS MOST CIRCUITS TO PLAYFIELD SWITCHES.

BALL INDEX

IS ENERGIZED BY 10 POINT, 100 POINT OR 1,000 POINT RELAY, THRU SWITCH ON EXTRA BALL RELAY---ALSO BY TILT RELAY.



IN SERIES WITH SWITCH A ON EXTRA BALL RELAY.

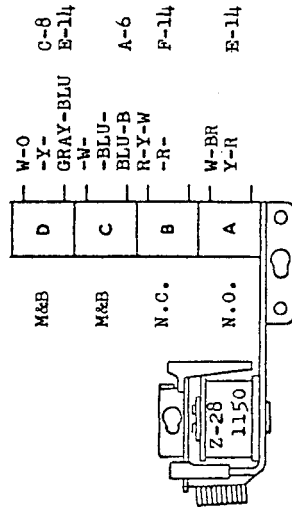
IN CIRCUIT TO 1,000 POINT RELAY WHEN COLLECTING BONUS.

IN CIRCUIT TO BALL COUNT S.U. COIL---ALSO IN SERIES WITH SWITCH C ON PLAYER RESET RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

TILT

IS ENERGIZED BY PLUMB BOB TILT, BALL ROLLOVER TILT OR PLAYFIELD VIBRATION TILT SWITCH.



OPENS IN HI-SCORE CIRCUIT TO REPLAY S.U. AND CLOSSES TO ENERGIZE BALL INDEX RELAY.

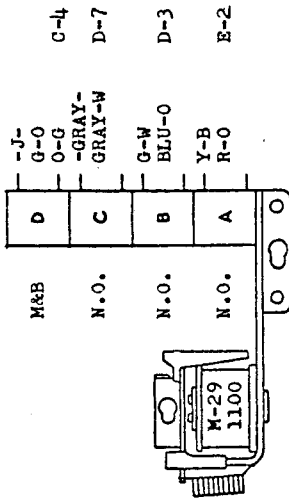
OPENS IN CIRCUIT TO MOST PLAYFIELD LITES AND CLOSSES TO "TILT" LITE.

OPENS CIRCUITS TO MOST PLAYFIELD SWITCHES.

HOLD CIRCUIT TO THIS RELAY, THRU SWITCH ON OUTHOLE RELAY.

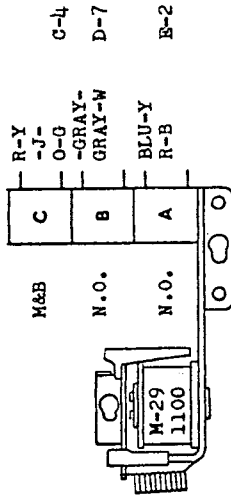
25¢

IS ENERGIZED BY 25¢ COIN SWITCH.



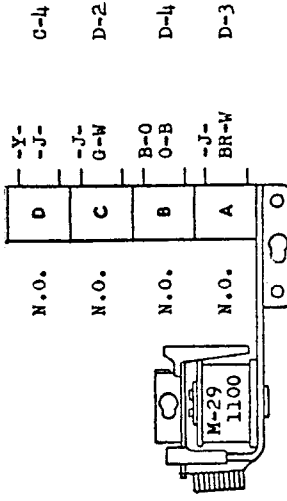
10¢

IS ENERGIZED BY 10¢ COIN SWITCH, IF 10¢ ADJUSTMENT JACK IS IN "2 PLAYS" OR "3 PLAYS" ADJUSTMENT JACK.



5¢

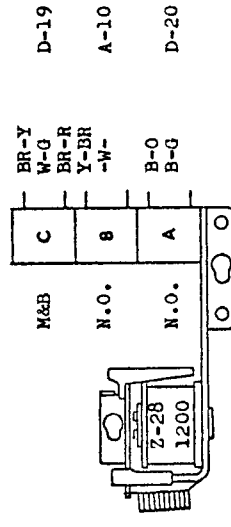
IS ENERGIZED BY 5¢ COIN SWITCH.



BOTTOM GATE

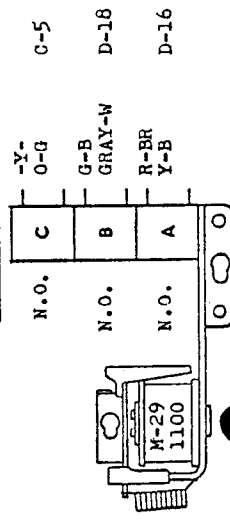
IS ENERGIZED BY EJECT RELAY, THRU NUMBER MATCH UNIT DISC AND CAM SWITCH 1E.

LOCATED ON PLAYFIELD.



50 POINT

IS ENERGIZED BY TARGET SWITCHES 1A, 2A, 3A, 1D, 2D OR 3D.



OPENS IN CIRCUIT TO KNOCKER COIL AND CLOSES TO RUN SCORE MOTOR.

PULSES REPLAY S.U. COIL, THRU IMPULSE CAM SWITCH B.

ENERGIZES COIN RELAY IN "6 PLAYS FOR 25¢" ADJUSTMENT.

IN HOLD CIRCUIT TO THIS RELAY.

OPENS IN CIRCUIT TO KNOCKER COIL AND CLOSES TO RUN SCORE MOTOR.

PULSES REPLAY S.U. COIL, THRU IMPULSE CAM SWITCH B.

IN HOLD CIRCUIT TO THIS RELAY.

ENERGIZES ALTERNATOR UNIT S.U. COIL.

ENERGIZES COIN RELAY, THRU SWITCH ON ALTERNATOR UNIT.

ENERGIZES LOCK RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

OPENS IN CIRCUIT TO 1,000 POINT RELAY AND CLOSES TO 5,000 RELAY (WHEN MAKING RIGHT BOTTOM ROLLOVER SW.).

TO "BOTTOM GATE" LITE.

HOLD CIRCUIT TO THIS RELAY, THRU BOTTOM TROUGH SWITCH.

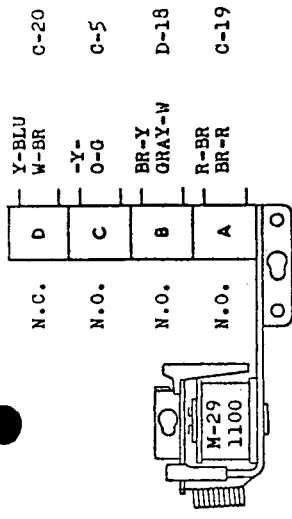
RUNS SCORE MOTOR.

IN CIRCUIT TO PULSE 10 POINT RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

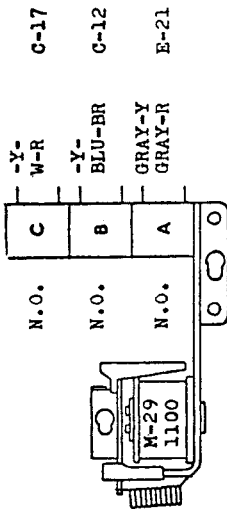
5000

IS ENERGIZED BY TOP TROUGH SWITCH, THRU TOP GATE RELAY---ALSO BY RIGHT BOTTOM ROLLOVER SWITCH, THRU BOTTOM GATE RELAY.



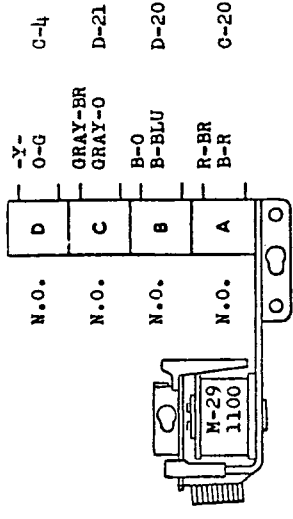
ADVANCE

IS ENERGIZED BY LEFT SIDE, RIGHT SIDE OR CENTER TARGET SWITCH---ALSO BY RIGHT TOP STAND-UP SWITCH.



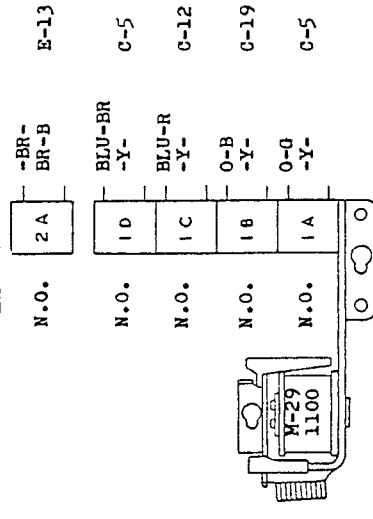
SPECIAL

IS ENERGIZED BY CENTER TARGET SWITCH, THRU 12 SWITCHES IN SERIES ON 1, 2 AND 3-A, B, C AND D RELAYS AND SWITCH ON REPLAY CONTROL RELAY.



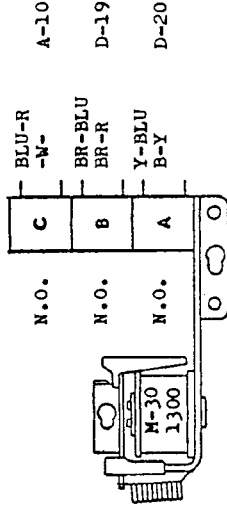
BONUS

IS ENERGIZED BY RESET RELAY, THRU INDEX CAM SWITCH D---ALSO BY OUTHOLE SWITCH, THRU OUTHOLE RELAY AND INDEX CAM SWITCH D.



TOP GATE

IS ENERGIZED BY EJECT RELAY, THRU NUMBER MATCH UNIT DISC AND CAM SWITCH 1E.



IN HOLD CIRCUIT TO TOP GATE RELAY.

RUNS SCORE MOTOR.

IN CIRCUIT TO PULSE 1,000 POINT RELAY.

HOLD CIRCUIT TO THIS RELAY, THRU CAM SWITCH 5B.

PULSES 100 POINT RELAY.

ENERGIZES BONUS UNIT S.U. COIL.

HOLD CIRCUIT TO THIS RELAY, THRU END-OF-STROKE SWITCH ON BONUS UNIT.

RUNS SCORE MOTOR.

IN CIRCUIT TO SCORE A REPLAY OR EXTRA BALL, THRU "CENTER TARGET ADJUSTMENT JACK".

ENERGIZES "REPLAY CONTROL RELAY", THRU SCORE MOTOR CAM SWITCH 3A.

IN HOLD CIRCUIT TO THIS RELAY.

HOLD CIRCUIT TO THIS RELAY, THRU ZERO POSITION SWITCH ON BONUS UNIT.

IN HOLD CIRCUIT TO RESET RELAY.

IN SERIES WITH SWITCH 27B ON DOUBLE BONUS RELAY (ON RELAY BANK).

IN SERIES WITH SWITCH 28B ON DOUBLE BONUS RELAY.

RUNS SCORE MOTOR.

TO "TOP GATE" LITE.

ENERGIZES 5,000 RELAY, THRU TOP TROUGH SWITCH.

IN HOLD CIRCUIT TO THIS RELAY.

10 POINT

IS PULSED BY:

1. STAND-UP SWITCHES.
2. KICKER SWITCHES.
3. 50 POINT RELAY.

IN SERIES WITH SWITCH A ON EXTRA BALL RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

PULSES 10 POINT DRUM UNITS, THRU PLAYER UP UNIT DISC.

ENERGIZES MEDIUM CHIME COIL.

IN SERIES WITH SWITCH D ON EXTRA BALL RELAY.

PULSES 100 POINT RELAY, THRU 9TH POSITION SWITCHES ON 10 POINT DRUM UNITS.

100 POINT

IS PULSED BY:

1. ADVANCE RELAY.
2. EJECT RELAY, THRU NUMBER MATCH UNIT DISC.
3. TARGET SWITCHES 1B, 2B, 3B, 1C, 2C AND 3C.
4. (3) JET BUMPER SWITCHES.

IN SERIES WITH SWITCH 2B ON 10 POINT RELAY.

IN SERIES WITH SWITCH D ON EXTRA BALL RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

PULSES 100 POINT DRUM UNITS, THRU PLAYER UP DISC.

PULSES NUMBER MATCH S.U. COIL, THRU SCORE MOTOR INDEX CAM SWITCH C.

ENERGIZES SMALL CHIME COIL.

PULSES 1,000 POINT RELAY, THRU 9TH POSITION SWITCHES ON 100 POINT DRUM UNITS.

1000 POINT

IS PULSED BY:

1. EJECT RELAY THRU NUMBER MATCH UNIT DISC.
2. 5,000 RELAY.
3. LEFT BOTTOM (INSIDE) ROLLOVER SWITCH.
4. LEFT BOTTOM (OUTSIDE) ROLLOVER SWITCH.
5. RIGHT BOTTOM ROLLOVER SWITCH, THRU BOTTOM GATE RELAY.
6. BONUS RELAY, THRU SWITCH ON DOUBLE BONUS RELAY (WHEN COLLECTING BONUS).

OPENS IN SERIES WITH SWITCH 2C ON 100 POINT RELAY AND CLOSES IN SERIES WITH SWITCH D ON EXTRA BALL RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

PULSES 1,000 POINT DRUM UNITS, THRU PLAYER UP DISC.

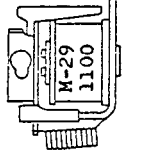
PULSES 10,000 POINT DRUM UNITS, THRU 9TH POSITION SWITCHES ON 1,000 POINT DRUM UNITS.

ENERGIZES LARGE CHIME COIL.

IN HI-SCORE CIRCUIT TO REPLAY S.U. COIL OR EXTRA BALL RELAY.

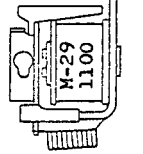
N.C.	2 B	-J- GRAY-Y	E-14
N.O.	2 A	W-BLU G-B	E-18

N.O.	1 D	BR-O W-O	C-9
N.O.	1 C	-O- -Y-	C-22
N.O.	1 B	-Y- BR-G	C-14
N.O.	1 A	B-G W-R	E-17



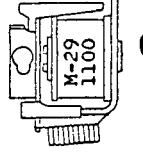
N.C.	2 C	-J- -J-	D-14
N.O.	2 B	-Y- BR-G	C-14
N.O.	2 A	W-B W-R	E-17

N.O.	1 D	R-G W-O	C-10
N.O.	1 C	BLU-W BR-B	D-22
N.O.	1 B	O-R -Y-	C-22
N.O.	1 A	BR-Y O-BLU	E-18



M&B	2 B	-J- -Y-	C-14
N.O.	2 A	BR-G BLU-R BR-Y	C-14
N.O.			E-18

N.O.	1 D	-W- W-O	C-11
N.O.	1 C	-BR- W-O	C-11
N.O.	1 B	-Y- B-G	C-22
N.O.	1 A	-BLU- B-W	F-8

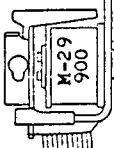


142 RESET

IS PULSED BY IMPULSE CAM SWITCH P, THRU SWITCH 2A ON RESET RELAY.

THESE SWITCHES PULSE THE INDICATED DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

N.O.	2 D	R-B -Y-	D-10	2ND PLAYER 100 POINT DRUM UNIT.
N.O.	2 C	-O- -Y-	D-9	1ST PLAYER 10 POINT DRUM UNIT.
N.O.	2 B	R-O -Y-	D-11	2ND PLAYER 10,000 POINT DRUM UNIT.
N.O.	2 A	BR-BLU -Y-	D-11	1ST PLAYER 10,000 POINT DRUM UNIT.
N.O.	1 D	-Y- GRAY-BLU	D-9	2ND PLAYER 10 POINT DRUM UNIT.
N.O.	1 C	-Y- O-B	D-10	1ST PLAYER 100 POINT DRUM UNIT.
N.O.	1 B	-Y- BR-G	D-11	2ND PLAYER 10,000 POINT DRUM UNIT.
N.O.	1 A	-Y- B-Y	D-11	1ST PLAYER 1,000 POINT DRUM UNIT.

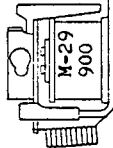


344 RESET

IS PULSED BY IMPULSE CAM SWITCH A, THRU SWITCH 2A ON RESET RELAY.

THESE SWITCHES PULSE THE INDICATED DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

N.O.	2 D	GRAY-R -Y-	D-10	4TH PLAYER 100 POINT DRUM UNIT.
N.O.	2 C	O-G -Y-	D-10	4TH PLAYER 10 POINT DRUM UNIT.
N.O.	2 B	BR-R -Y-	D-11	4TH PLAYER 1,000 POINT DRUM UNIT.
N.O.	2 A	BR-O -Y-	D-11	3RD PLAYER 10,000 POINT DRUM UNIT.
N.O.	1 D	-Y- BLU-O	D-10	3RD PLAYER 10 POINT DRUM UNIT.
N.O.	1 C	-Y- BLU-W	D-10	3RD PLAYER 100 POINT DRUM UNIT.
N.O.	1 B	-Y- O-O	D-12	4TH PLAYER 10,000 POINT DRUM UNIT.
N.O.	1 A	-Y- BR-W	D-11	3RD PLAYER 1,000 POINT DRUM UNIT.



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PRICE LIST

ARRANGED IN NUMERICAL ORDER

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>PRICE</u>
1A-624	Mounting Bracket.....	.10
1A-2048	Switch Cover Plate.....	.03
1A-2646	Target Switch Plate.....	.14
1B-3233	"J" Relay Mounting Frame.....	.97
1A-3863	Mounting Bracket-Relay.....	.76
1A-3864	Mounting Bracket - Gate.....	.56
1A-6106	Spacer for Playfield Plastic.....	.72
3A-7264-6	Plastic Target - Yellow.....	.18
11D-192-DD-A	Wood Playfield Arch.....	5.20
12A-6368	Wireform No. 1 - Link.....	.29
12A-6369	Wireform No. 2 - Gate.....	.66
30C-445	Playfield Plastics - "Strato-Flite" set of 7....	20.70
M-30-1300	"M" Relay Coil.....	2.10
SW-1M-1S	Make Switch.....	.7c
SW-1M-3S	Make Switch.....	.7c
SW-10A-42	Target Switch.....	1.00
A-6515	"J" Relay Armature Assembly.....	1.38
B-6607-2	Ball Gate Assembly Complete.....	12.20
A-7518-1	Target Switch Assembly.....	1.74
	#5 x 7/8 Flat Head Woodscrew - Phillips.....	.01

B-6607-2
BALL GATE ASSEMBLY

