

Instruction Manual for **LIBERTY BELL**



Williams[®] **ELECTRONICS, INC.**

A SUBSIDIARY OF
THE SEEBURG CORPORATION OF DELAWARE

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

APRIL
1977

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

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.

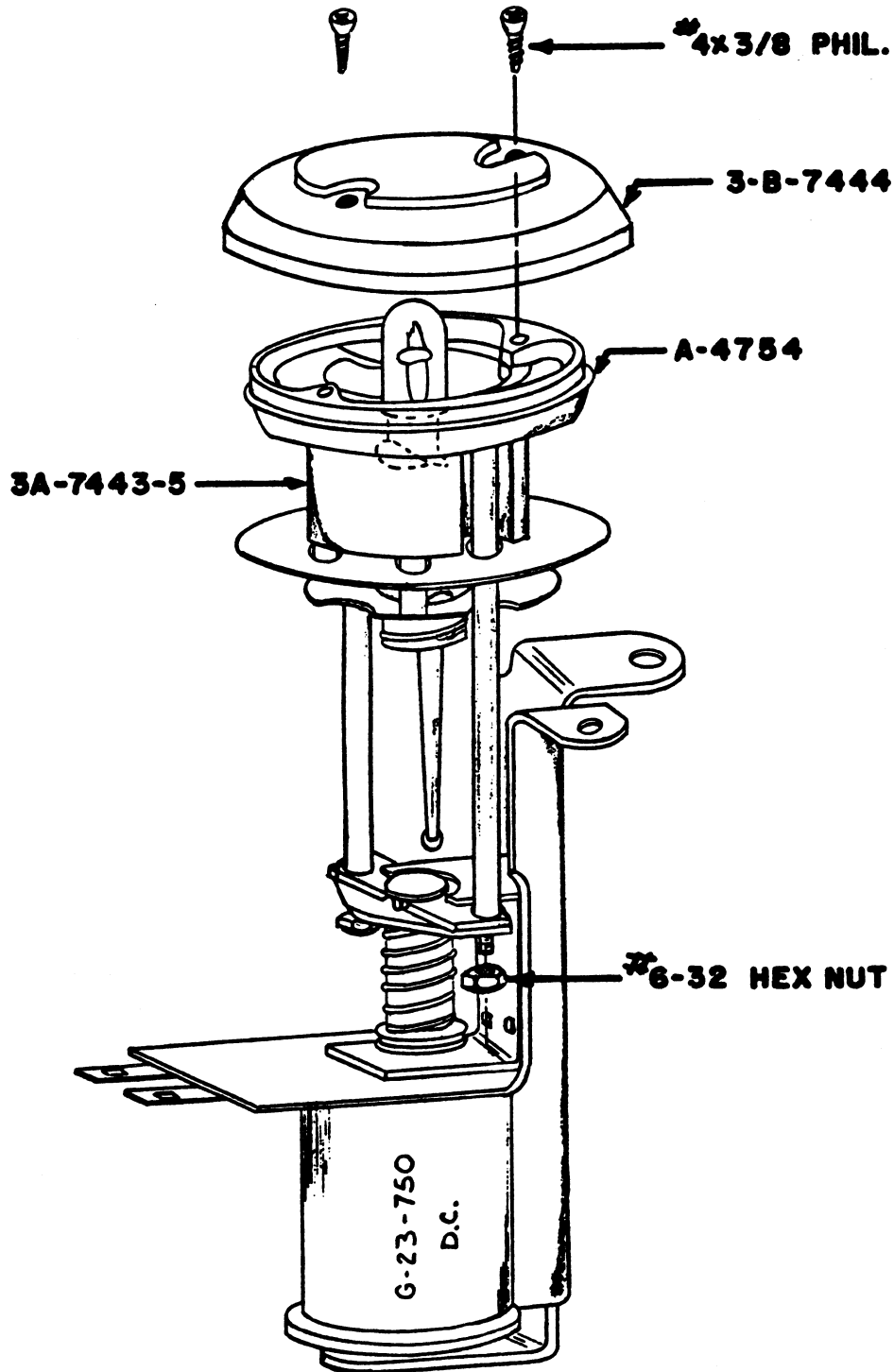
Solenoid Plungers should not have a lubricant of any kind. Should there be a sluggish tendency or if plungers are sticking, the parts should be cleaned with a solvent and flaked graphite applied on reassembly.

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.

B-7894

**NEW STYLE JET BUMPER ASSEMBLY
(WITH MORE EASILY REMOVABLE RODS AND RING)**

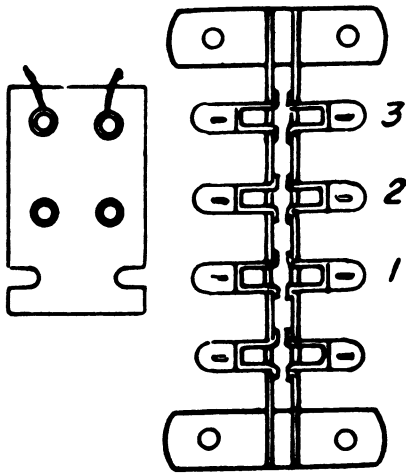


TO EASILY REPLACE METAL RING ASS'Y

- 1. REMOVE (2) 4X3/8 PHILLIPS SCREWS.**
- 2. REMOVE BUMPER CAP (3-B-7444).**
- 3. REMOVE (2) #6-32 HEX ELASTIC STOP NUTS.**
- 4. PULL METAL RING ASS'Y (A-4754) UP AND OUT.**
- 5. REPLACE METAL RING ASS'Y, NUTS, BUMPER CAP, AND SCREWS.**

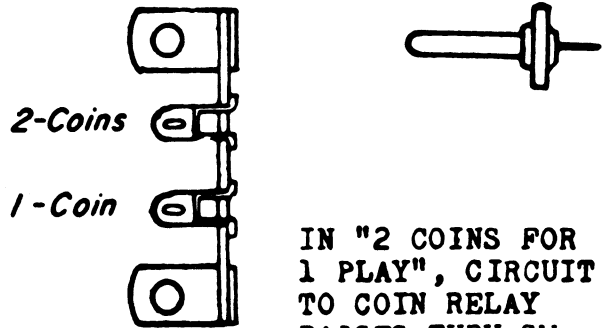
ADJUSTMENTS ON MECHANISM PANEL

10¢ Adjustment



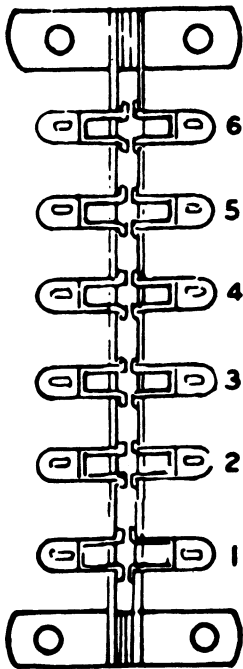
PROVIDES
1, 2 OR
3 PLAYS
FOR ONE
COIN.

5¢ Adjustment

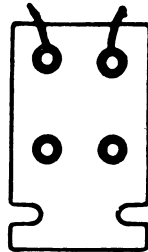


IN "2 COINS FOR
1 PLAY", CIRCUIT
TO COIN RELAY
PASSES THRU SW.
ON ALTERNATOR
UNIT.

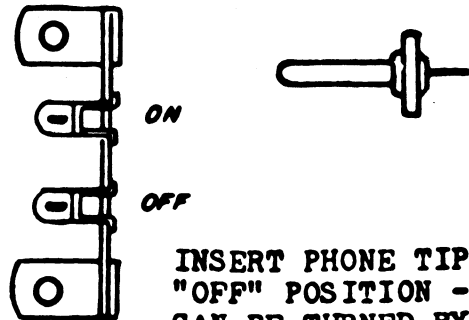
25¢ Adjustment



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



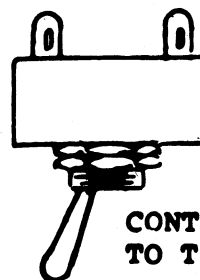
Motor Service Jack



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

MASTER ON-OFF SW.

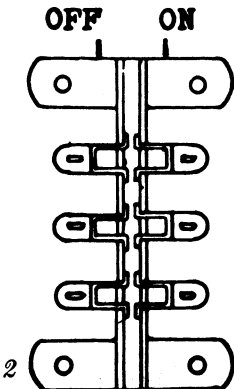
(Located under front of
Cabinet)



CONTROLS POWER
TO TRANSFORMER

1 COIN- 1 PLAY
2 COINS- 3 PLAYS

IN "ON" POSITION, 10¢
ADJUSTMENT MUST BE IN #2 PO-
SITION & 25¢ ADJUSTMENT MUST
BE IN #6 POSITION. FIRST
COIN ADVANCES CREDIT UNIT 1
STEP. SECOND COIN WILL AD-
VANCE CREDIT UNIT 2 STEPS.
IN "OFF" POSITION, 25¢
ADJUSTMENT AND/OR 10¢ AD-
JUSTMENT SHOULD BE PUT IN
PROPER POSITION.



ADJUSTMENTS IN BACKBOX

Hi-Score Adjustment

PLUG IN RED
WIRE FOR SCORES
110,000 TO 200,000

10,000 60,000

PLUG IN BLUE
WIRE FOR SCORES
210,000 TO 300,000

20,000 70,000

PLUG IN YELLOW
WIRE FOR SCORES
310,000 TO 400,000

30,000 80,000

40,000 90,000

50,000 00,000

PLUG IN GREEN
WIRE FOR SCORES
410,000 TO 500,000

PLUG IN GRAY
WIRE FOR SCORES
910,000 TO 990,000

PLUG IN WHITE
WIRE FOR SCORES
510,000 TO 600,000

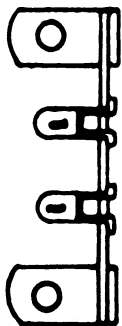
PLUG IN BROWN
WIRE FOR SCORES
610,000 TO 700,000

PLUG IN ORANGE
WIRE FOR SCORES
710,000 TO 800,000

PLUG IN BLACK
WIRE FOR SCORES
810,000 TO 900,000

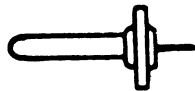
EXAMPLE: BLUE WIRE INTO 10,000 POSITION SCORES AT 210,000
OR BLUE WIRE INTO 00,000 POSITION SCORE AT 300,000.

PLAY ADJUSTMENT



CREDIT

EXTRA BALL

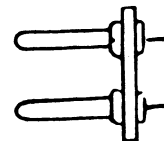
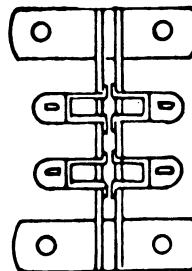


IN CREDIT POSITION: HI-SCORES & LEFT OR RIGHT BOTTOM ROLLOVER, WHEN LIT FOR "SPECIAL", WILL SCORE A CREDIT.

IN EXTRA BALL POSITION, THE ABOVE WILL PULSE EX. BALL RE.

NUMBER MATCH ADJUSTMENT

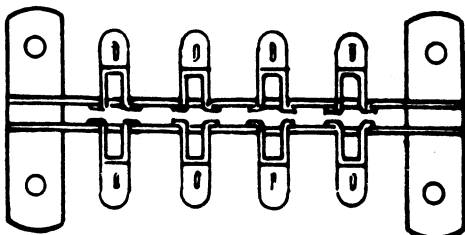
ON OFF



IN "ON" POSITION, A NUMBER MATCH LITE WILL APPEAR WHEN GAME IS OVER. TO AWARD CREDIT, WHEN NUMBER IS MATCHED, "PLAY" ADJUSTMENT MUST BE IN CREDIT POSITION.

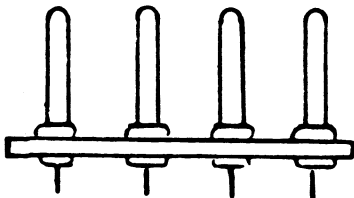
IN "OFF" POSITION, NUMBER MATCH IS INOPERATIVE.

No. of Balls Adjustment



5 BALL

3 BALL



Plug changes 3 to 5 ball play, or vice versa.

SUGGESTED SCORE CARDS

CREDIT

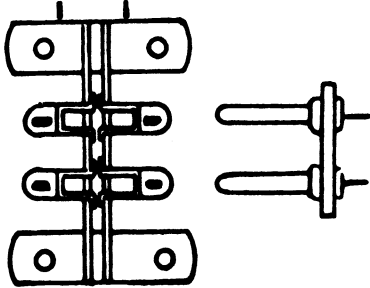
5 BALL PLAY..467-32
3 BALL PLAY..467-11

EXTRA BALL

5 BALL PLAY..467-45
3 BALL PLAY..467-42

LOCATED ON PLAYFIELD

CONS. LIB. ADJUSTMENT



IN LIBERAL POSITION , LEFT AND RIGHT BOTTOM ROLLOVERS WILL LITE ALTERNATELY FOR EXTRA BALL WHEN NO. 3 STAR IS LIT.

IN CONSERVATIVE POSITION, THE BOTTOM ROLLOVERS WILL LITE WHEN NO. 4 STAR IS LIT.

SEQUENCE OF OPERATION

RESET CYCLE

CREDIT UNIT RESET COIL IS ENERGIZED BY CREDIT BUTTON SWITCH, THRU ZERO SWITCH ON CREDIT UNIT AND 2nd COIN RELAY OR BALL COUNT UNIT ZERO SWITCH.

END-OF-STROKE SWITCH ON CREDIT UNIT RESET COIL WILL ENERGIZE COIN RELAY.

SWITCHES ON COIN RELAY WILL TRIP GAME-OVER RELAY, ENERGIZE RESET RELAY AND RUN SCORE MOTOR.

SWITCHES ON RESET RELAY WILL OPEN CIRCUITS TO PLAYFIELD SWITCHES AND OUTHOLE RELAY, RUN SCORE MOTOR, ENERGIZE BALL COUNT RESET, 2nd COIN RELAY LATCH AND GAME-OVER RELAY LATCH COILS--- PULSE THE SCORE RESET RELAY, AND ENERGIZE BONUS RELAY, THRU ZERO SWITCH ON BONUS UNIT.

SWITCHES ON SCORE RESET RELAY WILL PULSE THE (10) SCORING DRUMS UNTIL THEY REACH ZERO.

SWITCHES ON BONUS RELAY WILL RUN THE SCORE MOTOR--PULSE THE BONUS UNIT RESET COIL (BONUS RELAY IS HELD IN BY ZERO SWITCH ON BONUS UNIT).

WHEN BONUS RELAY DROPS OUT, OUTHOLE RELAY IS ENERGIZED THRU ANOTHER ZERO SWITCH ON BONUS UNIT AND SCORE MOTOR INDEX CAM SWITCH C.

SWITCHES ON OUTHOLE RELAY WILL RUN THE SCORE MOTOR--PULSE BONUS UNIT S.U. COIL ONCE--AND PULSE BALL RELEASE COIL TO PROPEL BALL TOWARD PLUNGER.

JACK LAYOUTGAME LIBERTY BELLPOSITION PAN - P.F. SIZE 24

FEED	-B-	1	G/ O-4	BONUS RESET	No.1 RE.	B/ W-3
"	-R-	2	O/ W-1	" "	" "	BR/ G-3
MOTOR	O/ G	3	GRY/ G-4	" RE.	" "	G/ Y-1
RESET RE.	BLU/ BR-1	4	GRY/ BLU-4	" "	No.2 "	G/ W-1
EJECT COILS	R/ Y	5	R/ B-4	" "	No.3 "	G/ O-2
" RE	BLU/ R	6	R/ W-2	" S.U.	No.4 "	W/ G-1
" "	R/ BR	7	GRY/ Y-2	" "	DBL. BONUS RE.	B/ R-3
TARGET RESET	G/ R	8	BLU/ W-4	BALL RELEASE	EX-BALL RE.	Y/ B-5
TILT RE.	W/ BR-4	9	Y/ R-1	10,000 PT. RE.	100 PT. RE.	BLU/ O-2
TARGET RESET	B/ O	10	W/ G-4	SHOOT AGAIN LITE	OUTHOLE RE.	B/ BLU-1
FEED	-Y-	11	Y/ B-1	TILT RE.	BLANK	
L-FLIPPER	B/ W-5	12	BR/ W-5	R-FLIPPER		

JACK LAYOUTGAME LIBERTY BELLPOSITION PAN - P.F. SIZE 22

	R/ Y/W	1		FEED	
	BLU/ B-1	2		100 PT. RE.	
	Y/ G-4	3		10,000 PT. RE.	
	Y/ BR-1	4		" " "	
	W/ B-3	5		" " "	
	BR/ R-3	6		" " "	
	GRY/ W-2	7		1000 " "	
	Y/ R-2	8		TILT RE.	
	BLU.	9		FEED	
	O/ B	10		TARGET RESET	
		11		BLANK	

JACK LAYOUT

GAME LIBERTY BELL

POSITION P.F. - INS. SIZE 12

CREDIT LITE	$\frac{GRY}{Y-3}$	1	$\frac{G}{B}$ 10-PT. RE.
BALL IND. RE.	$\frac{GRY}{R-2}$	2	$\frac{W}{R}$ 100 " "
CREDIT S.U.	$\frac{B}{W-1}$	3	$\frac{BR}{Y}$ 1000 " "
CHANGE RE.	$\frac{B}{R-1}$	4	$\frac{R}{O}$ 10,000 " "
ADV. RE.	$\frac{G}{W-3}$	5	$\frac{GRY}{BR-2}$ ADV. RE.
100 PT. RE.	$\frac{O}{W-3}$	6	O-2 MED. CHIME

"LIBERTY BELL"

GAME OPERATES AS FOLLOWS:

TOP EJECT HOLE ALWAYS ADVANCES BONUS ONE STEP. TOP EJECT HOLE SCORES 500 POINTS OR 5,000 POINTS WHEN #1 STAR IS LIT, 10,000 POINTS WHEN #2 STAR IS LIT, 20,000 POINTS WHEN #3 STAR IS LIT AND 30,000 POINTS WHEN #4 STAR IS LIT.

TWO SPINNERS ADVANCE BONUS. IN THREE BALL POSITION, ONE ADVANCE FOR EVERY FIVE STEPS AND IN FIVE BALL POSITION, ONE ADVANCE FOR EVERY TEN STEPS. SPINNERS, WHEN LIT, SCORE 1,000'S.

JET BUMPERS SCORE 1,000'S IN THREE BALL POSITION AND 100'S IN FIVE BALL POSITION.

MAKING TWO DROP TARGET TARGETS B AND E OR L AND L LIGHTS #1 STAR.

#1 STAR, WHEN LIT, LIGHTS TWO SIDE EJECT HOLES FOR DOUBLE BONUS.

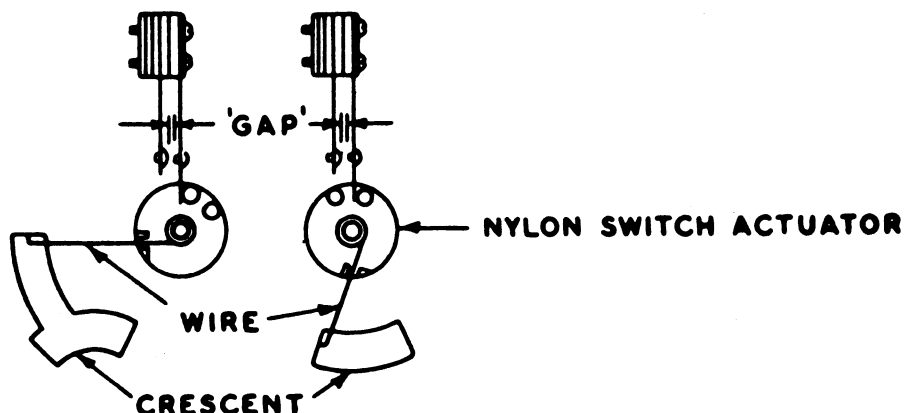
MAKING TWO DROP TARGETS B AND E OR L AND L AGAIN LIGHTS #2 STAR.

#3 STAR, WHEN LIT, LIGHTS TWO BOTTOM ROLLOVER LANES, ALTERNATELY, FOR EXTRA BALL. (ADJUSTABLE TO #4 STAR)

WHEN RED #4 STAR IS LIT, A SPECIAL IS SCORED AUTOMATICALLY EVERYTIME ALL FOUR TARGETS ARE KNOCKED DOWN.

INSTRUCTIONS FOR COIN TRIP SWITCH ADJUSTMENT

WIRE SHOULD BE IN CONTACT WITH END OF CRESCENT OPENING WHEN BLADE ADJUSTMENT IS MADE.



Long blade should be in contact with nylon switch actuator and have a maximum overtravel of 1/32.

or

Using a gram gauge, tension of long blade should not exceed 10 grams.

SWITCH ADJUSTMENT

1. For small coins, such as dimes, adjust short blade so that the 'gap' between the silver contacts is .045 to .055.
2. For larger & heavier coins the 'gap' should be .045 to .060.
3. Do not adjust 'gap' closer than .040.

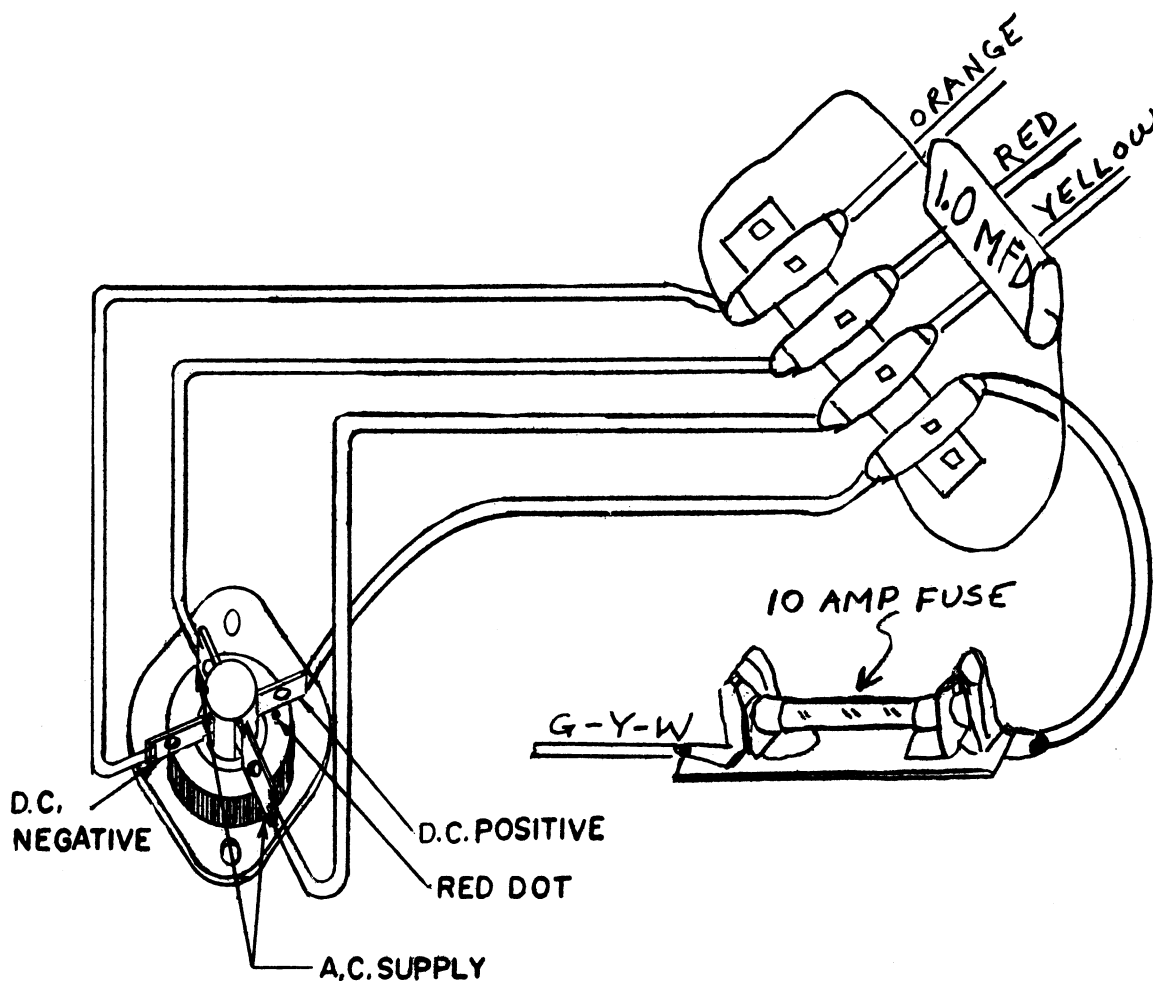
POWER TRANSFORMER:

LOCATED ON MECHANISM PANEL, IT IS EQUIPPED WITH A SECONDARY TAP. IF YOUR GAME IS ON LOCATION WITH EXTREMELY LOW LINE VOLTAGE, REMOVE LEAD FROM LUG MARKED 24 VOLTS AND SOLDER TO ALTERNATE LUG MARKED "HIGH". THIS WILL BOOST SECONDARY VOLTAGE APPROXIMATELY 2-3 VOLTS.

LEG LEVELERS:

ARE PROVIDED FOR TWO PURPOSES - 1ST TO LEVEL GAME ON LOCATION, 2ND TO INCREASE PITCH FOR GAME PERCENTAGING. IF IT IS DESIRED TO SPEED UP PLAY AND DECREASE SCORES, RAISE REAR LEG LEVELERS TO INCREASE PITCH.

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.

IMPORTANT NOTICE

**KINDLY INFORM LOCATIONS THAT THEY
CAN TURN DISPLAY LIGHTS ON BY FLIPPING
MASTER SWITCH ON.**

**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.

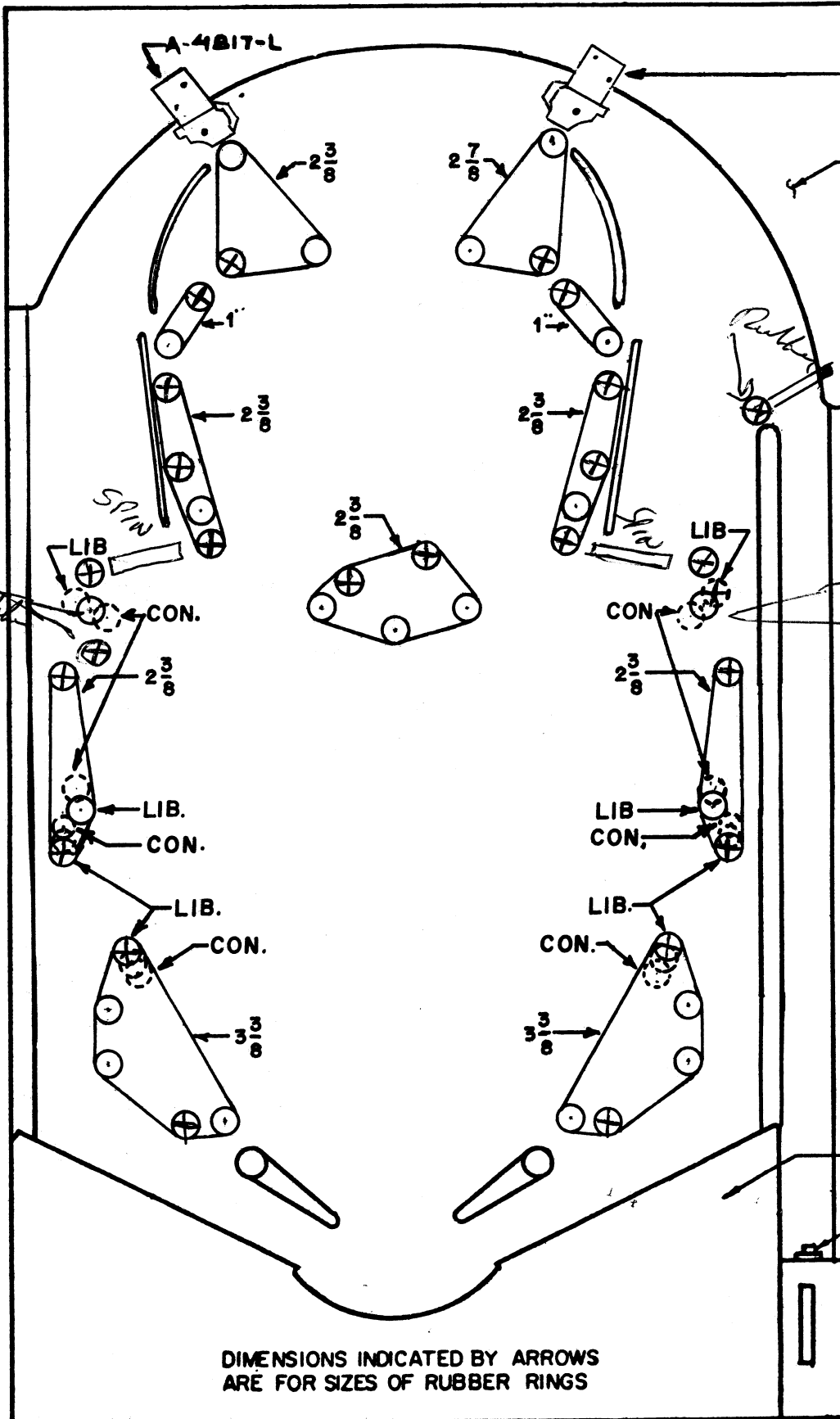
SERVICEMAN TO REMOVE BACKGLASS:

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

LIBERTY BELL

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.



A-4817
BALL GATE ASSEMBLY

IC-2852-467
TOP ARCH

ABBREVIATIONS:
CON. - CONSERVATIVE
LIB. - LIBERAL

RUBBER RING NUMBERS:
23A-6300 - 5/16 I.D.
23A-6302 - 1" I.D.
23A-6306 - 2 3/8 I.D.
23A-6307 - 2 7/8 I.D.
23A-6308 - 3 3/8 I.D.

GLASS SIZE 21X43

BALL SIZE 1 1/16 DIA.

ID-5573
BOTTOM ARCH

23A-6327
BALL SHOOTER RUBBER TIP

DIMENSIONS INDICATED BY ARROWS
ARE FOR SIZES OF RUBBER RINGS

"LIBERTY BELL" 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
<u>MOTORS & TRANSFORMERS</u>		
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
5 A-8867	24 VOLT METER	MECH. PANEL
<u>SOLENOID COILS</u>		
A 22-550	BONUS UNIT STEP UP BALL RELEASE COIL BALL COUNT UNIT STEP UP	PLAYFIELD PLAYFIELD INSERT
A 23-600	CREDIT UNIT STEP UP	INSERT
A2-23-750	KNOCKER	CABINET
A2-26-1300	TRIPLE CHIMES COILS (3 req'd.)	CABINET
B1-26-800	SCORE DRUM UNITS (10 req'd.) CREDIT UNIT RESET BALL COUNT UNIT RESET BONUS UNIT RESET	INSERT INSERT INSERT PLAYFIELD
FL 20-300/ 28-400	FLIPPERS (2 req'd.)	PLAYFIELD
G 22-550	DROP TARGET RESET (4 req'd.)	PLAYFIELD
G 23-750	EJECT COILS (3 req'd.)	PLAYFIELD
G 23-750 D.C.	D.C. JET BUMPER COILS (2 req'd.) D.C. KICKER COILS (2 req'd.)	PLAYFIELD PLAYFIELD
M 28-700	GAME OVER RELAY TRIP	MECH. PANEL
M 29-1000	NO. 1 SCORE RESET RELAY NO. 2 SCORE RESET RELAY 2ND COIN RELAY TRIP	INSERT INSERT MECH. PANEL
M 29-1100	10¢ RELAY 25¢ RELAY 10 POINT RELAY 100 POINT RELAY 1,000 POINT RELAY 10,000 POINT RELAY ADVANCE RELAY TARGET RELAY 50 POINT RELAY LEFT SPINNER RELAY RIGHT SPINNER RELAY BONUS RELAY	MECH. PANEL MECH. PANEL INSERT INSERT INSERT INSERT INSERT PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD
M 30-1300	COIN SET UP RELAY	MECH. PANEL
M 36-5500 D.C.	DELAY RELAY	PLAYFIELD
MX-31-1500	COIN LOCKOUT COIL	FRONT DOOR
XS 28-1000	ALTERNATOR UNIT NUMBER MATCH UNIT SPINNER UNIT	MECH. PANEL INSERT PLAYFIELD
Z 27-1000	COIN RELAY RESET RELAY 2ND COIN RELAY LATCH OUTHOLE RELAY GAME OVER RELAY MATCH TOP EJECT RELAY EJECT RELAY	MECH. PANEL MECH. PANEL MECH. PANEL MECH. PANEL MECH. PANEL PLAYFIELD PLAYFIELD
Z 28-1150	CHANGE RELAY NO. 2 RELAY NO. 3 RELAY NO. 4 RELAY DOUBLE BONUS RELAY BALL INDEX RELAY TILT RELAY EXTRA BALL RELAY NO. 1 PLAYER RELAY NO. 2 PLAYER RELAY NO. 1 RELAY	PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD MECH. PANEL MECH. PANEL MECH. PANEL INSERT INSERT PLAYFIELD
Z 29-1250	LOCK RELAY	MECH. PANEL

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	
BALL COUNT	C-6414	B-7456-10	A-6402-10	
(RIGHT SIDE)	B-7568	A-7614		
NO. MATCH	B-7569	A-7615	A-7595	SCORE MOTOR
(LEFT SIDE)	B-7568	A-7614		14A-7883 (60 CYCLE)
(RIGHT SIDE)	B-7569	A-7615	A-7548-1	
SPINNER	B-7568	A-7614		
(LEFT SIDE)	B-7569	A-7615		
BONUS	C-6417	B-7456-17	A-6402-10	14A-7884 (50 CYCLE)
10 POINT	B-7253	A-6294	3C-7272	
100 POINT	-----	-----	3C-7272	
1000 POINT	-----	-----	3C-7272	
10000 POINT	B-7253	A-6294	3C-7272	
100000 POINT	B-7253	A-6294	3C-7272	
ALTERNATOR	-----	-----	3C-7272	

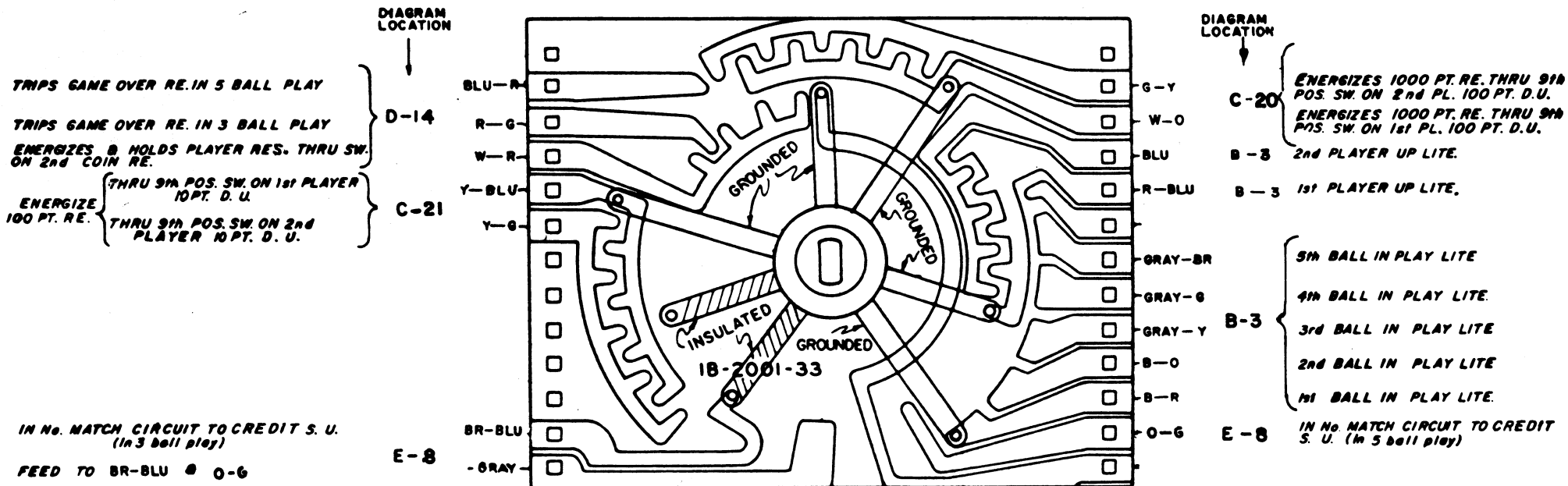
BALL COUNT UNIT

THIS UNIT RESETS AT THE START OF A NEW GAME.

IT ADVANCES WHEN THE OUTHOLE RELAY IS ENERGIZED.

IT ADVANCES ONE STEP AT A TIME WHEN TWO PEOPLE ARE PLAYING AND TWO STEPS IF ONLY ONE PERSON IS PLAYING.

VIEW LOOKING AT WIPER FINGERS, WITH WIPER IN RESET POSITION.

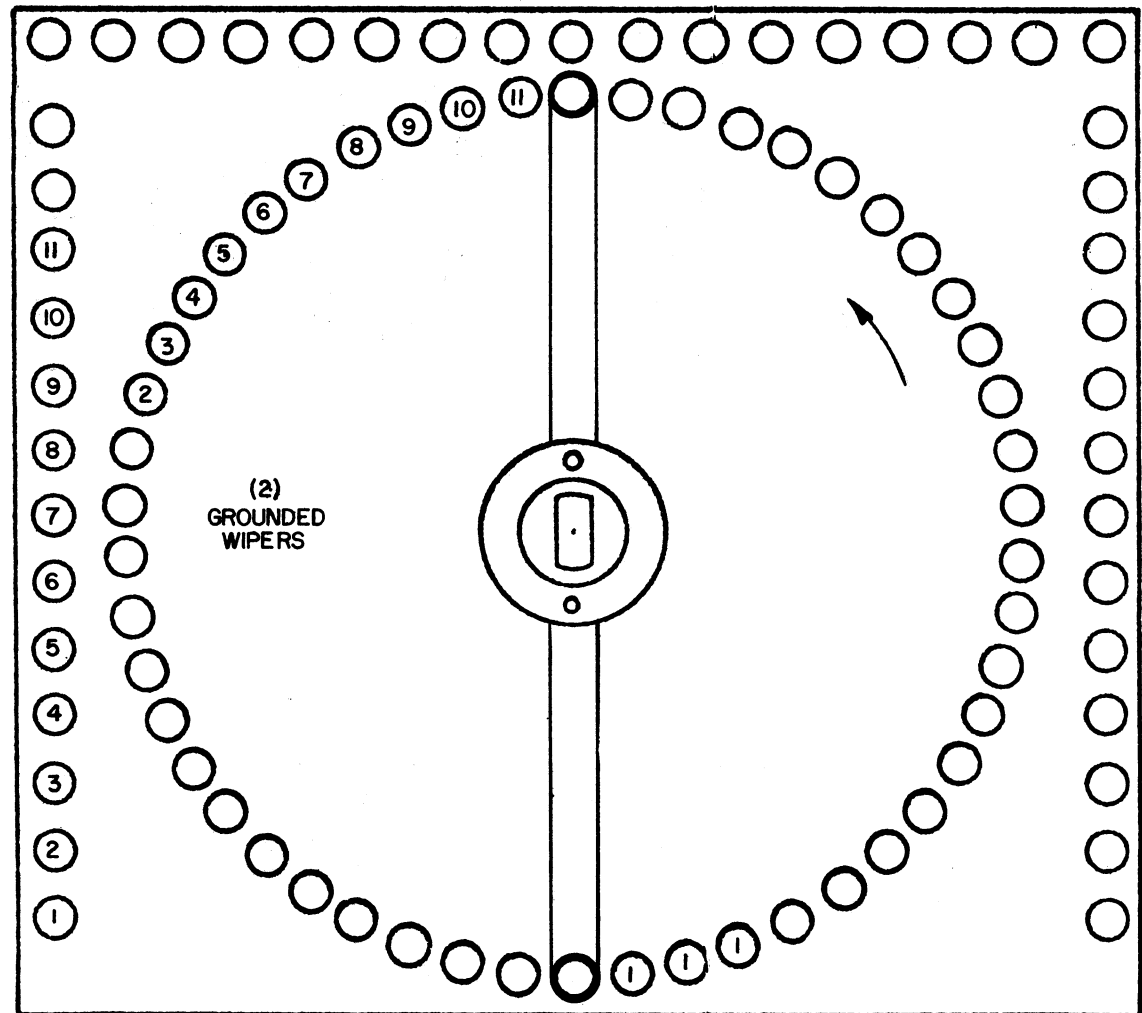
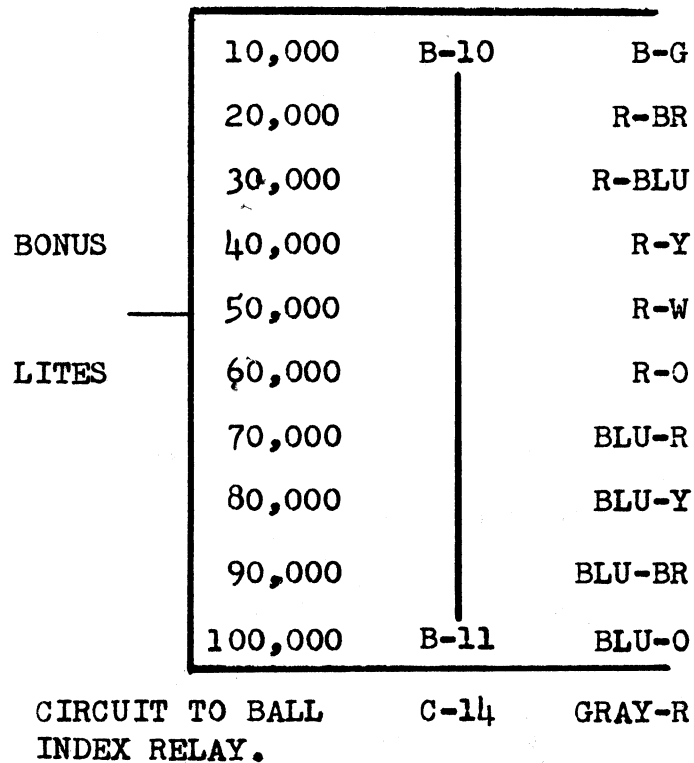


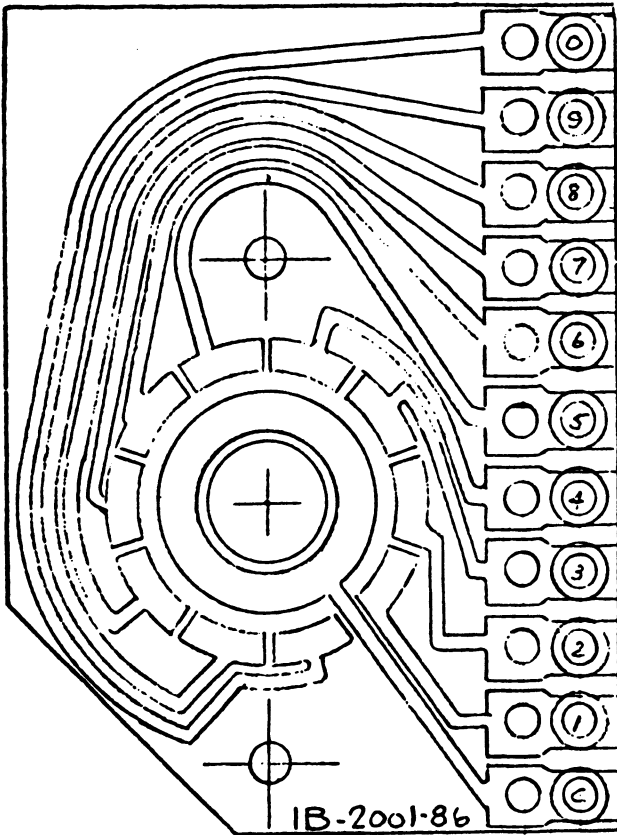
BONUS UNIT

THIS UNIT STEP UP WHEN THE ADVANCE RELAY OR TOP 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 3C, THRU SWITCH ON OUTHOLE RELAY.

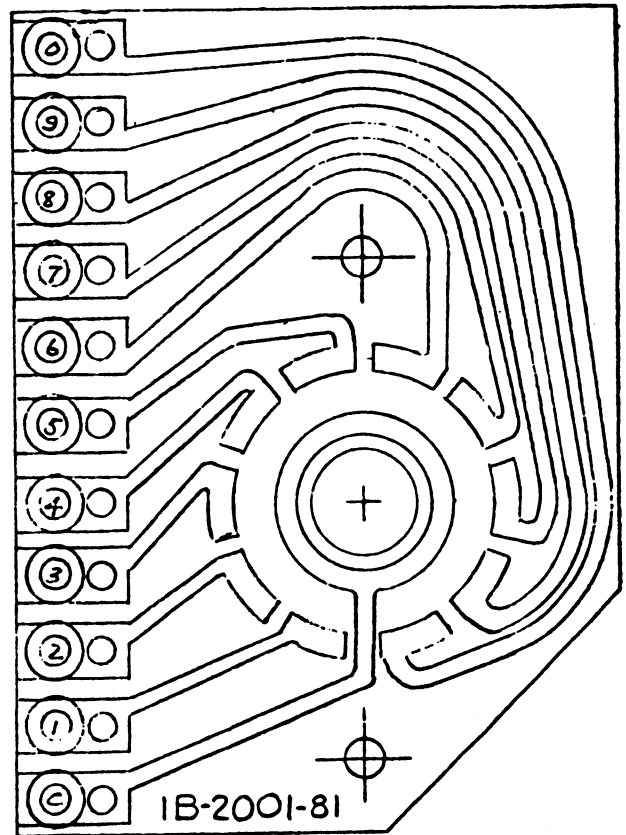
THE RESET COIL IS ENERGIZED BY BONUS RELAY, THRU DOUBLE BONUS RELAY AND
SCORE MOTOR CAM SWITCH 2E AND 5A OR IMPULSE CAM SWITCH B.

VIEW LOOKING AT WIPER FINGERS
SIDE WITH WIPERS IN ZERO POSITION.





ALTERNATOR SWITCH
IM-28-S



No. MATCH UNIT

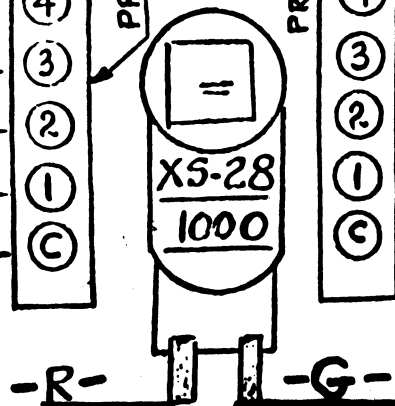
DIAGRAM LOCATION

B-5

00 LITE W/G	10
60 " BR/W	9
10 " BR/G	8
70 " BR/Y	7
30 " BR/BLU	6
80 " BR/R	5
20 " W/GRY	4
50 " W/B	3
90 " W/O	2
40 " W/BR	1
FEED Y-	C

PRINTED CIRCUIT- IB-2001-86

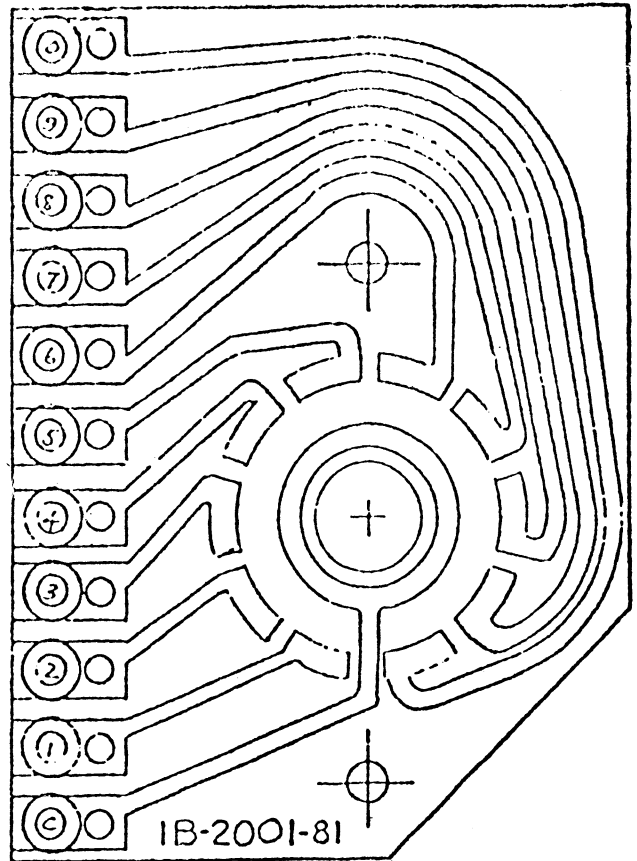
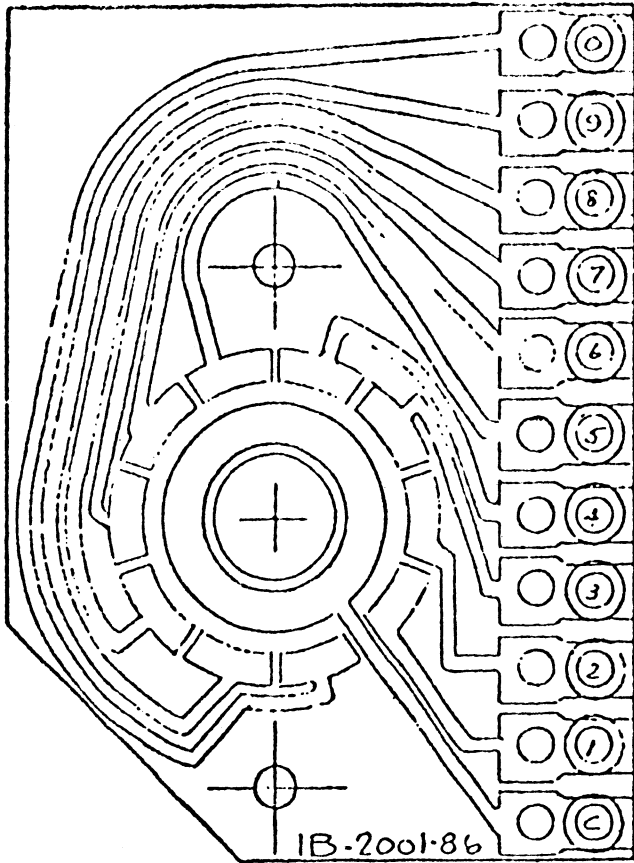
PRINTED CIRCUIT- IB-2001-81



DRIVE SPRING 10A-324-1

Y/BLU	00-MATCH
G/Y	60 "
Y/G	10 "
G/W	70 "
Y/R	30 "
G/O	80 "
Y/BR	20 "
G/R	50 "
W/BLU	90 "
Y/B	40 "
GRY/R	FEED

D-8



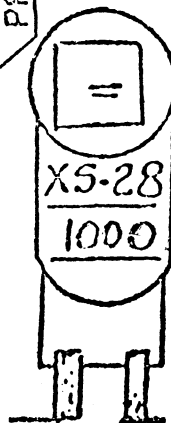
SPINNER UNIT

DIAGRAM LOCATION

B-8	LEFT AND	W-R	⑩
		W-BLU	⑨
		BR-B	⑧
	RIGHT	O-R	⑦
		O-BLU	⑥
		O-G	⑤
	SPINNER	O-W	④
		O-B	③
		B-BLU	②
B-8	LITES	B-Y	①
B-8	FEED	-Y-	ⓐ

PRINTED CIRCUIT-IB-2001-86

PRINTED CIRCUIT-IB-2001-81

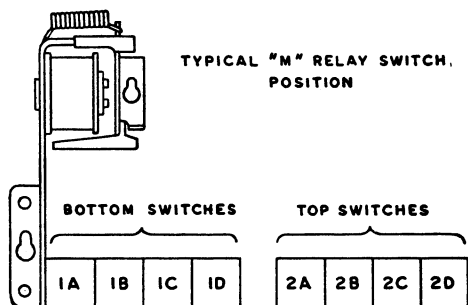


⑩	GRAY-BR	ADVANCE RE.	C-16
⑨			
⑧			
⑦			
⑥			
⑤	G-W	ADVANCE RE.	C-16
④			
③			
②			
①			
ⓐ			

DRIVE SPRING 10A-324-1

RELAYS & SWITCHES

LOCATED ON MECHANISM PANEL



GAME OVER

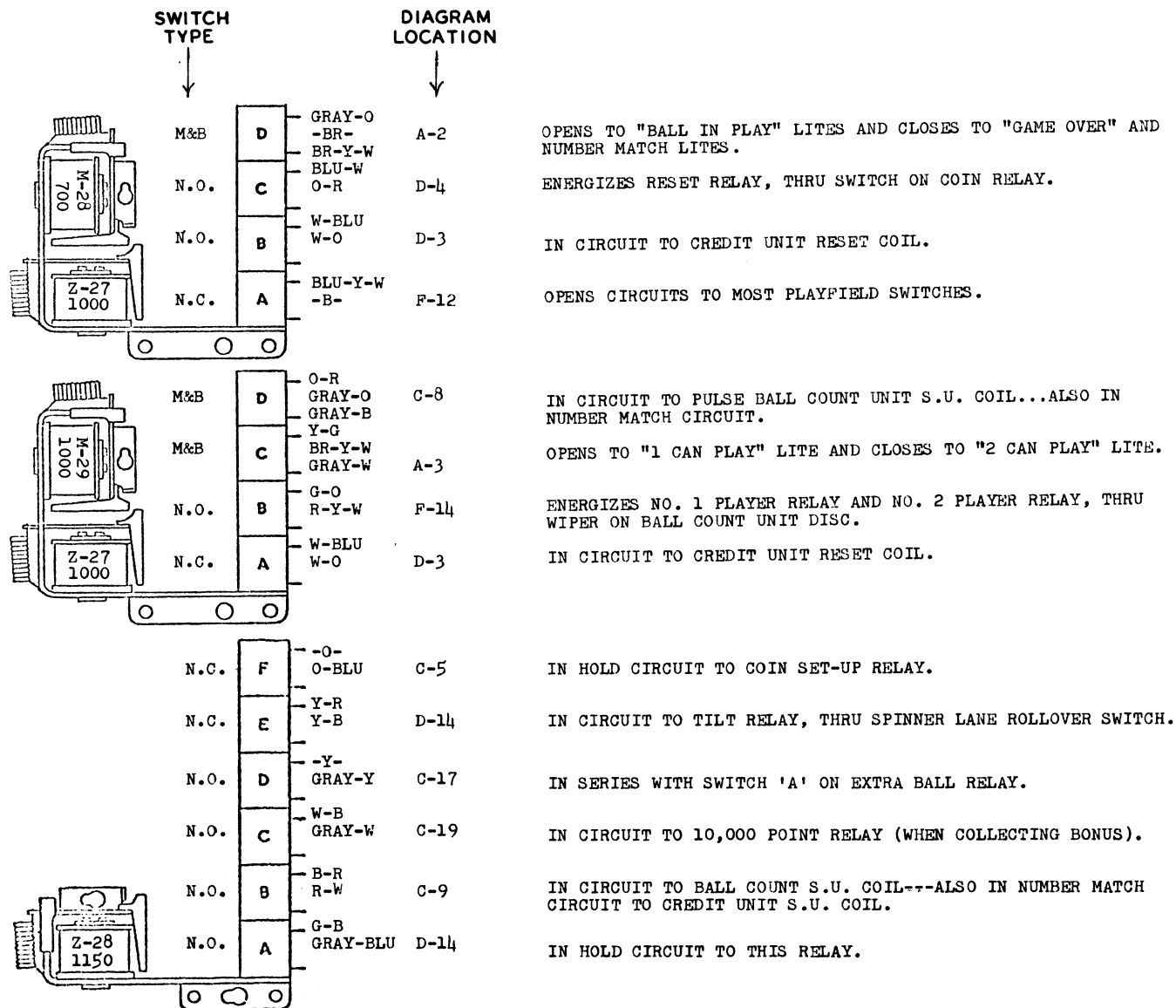
LATCH COIL IS ENERGIZED BY SCORE MOTOR CAM SWITCH '1A', THRU SWITCHES ON COIN RELAY AND RESET RELAY.
TRIP COIL IS ENERGIZED BY COIN RELAY, THRU ZERO SWITCH ON BALL COUNT UNIT--- ALSO BY LOCK RELAY---ALSO BY WIPER FINGER ON BALL COUNT UNIT DISC.

2ND. COIN

LATCH AND TRIP COILS ARE ENERGIZED BY COIN RELAY, THRU MAKE-BREAK SWITCH ON RESET RELAY.

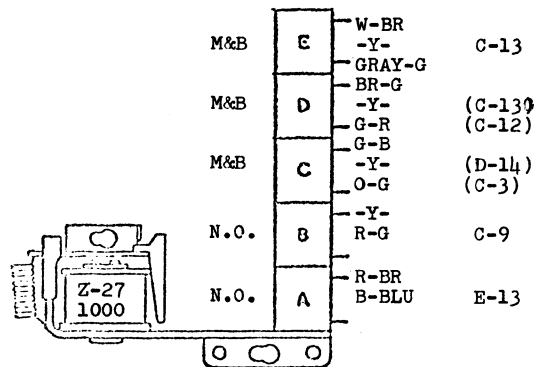
BALL INDEX

IS ENERGIZED BY 10 POINT, 100 POINT OR 1,000 POINT RELAY, THRU WIPER FINGER ON BONUS UNIT DISC---ALSO BY TILT RELAY.



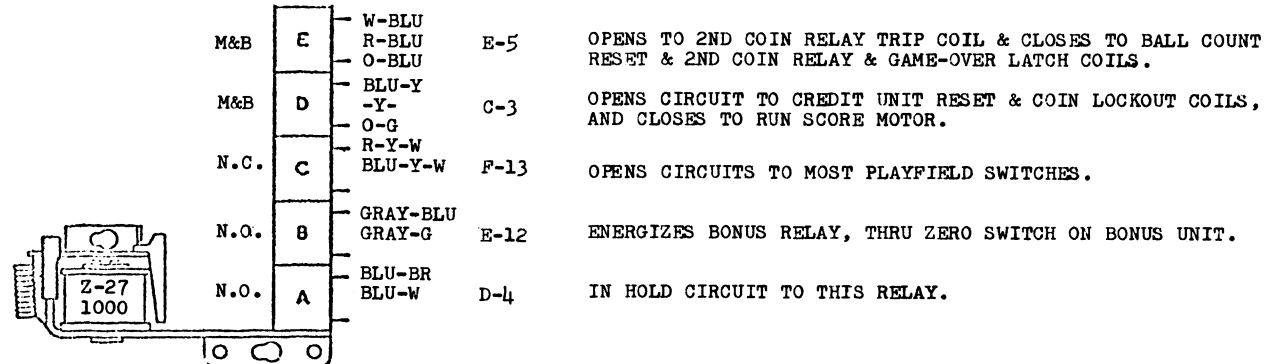
OUTHOLE

IS ENERGIZED BY ZERO SWITCH ON BONUS UNIT, THRU SWITCH ON BONUS RELAY.



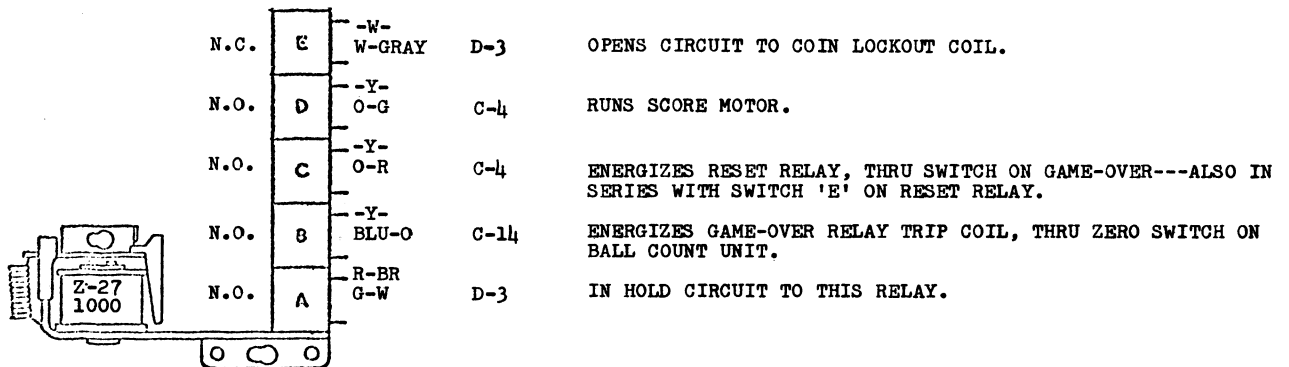
RESET

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



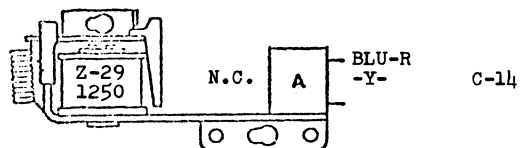
COIN

IS ENERGIZED BY COIN SWITCH OR CREDIT UNIT RESET COIL END-OF-STROKE SWITCH---ALSO BY 5¢ COIN SWITCH, THRU SWITCH ON ALTERNATOR UNIT---ALSO BY 25¢ RELAY IF GAME IS ADJUSTED TO "1 PLAY FOR 25¢" OR "6 PLAYS FOR 25¢".



LOCK

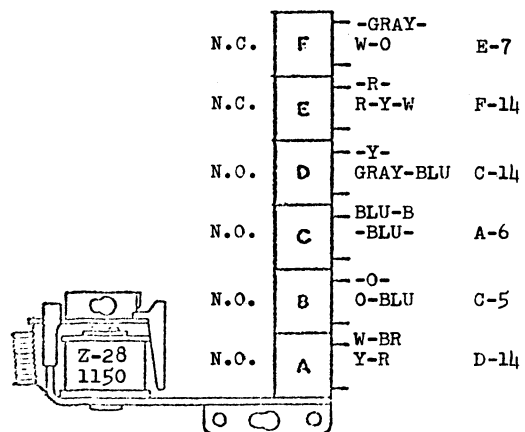
IS ENERGIZED WHEN POWER IS SUPPLIED TO TRANSFORMER.



ENERGIZES GAME-OVER RELAY TRIP COIL.

TILT

IS ENERGIZED BY PLUMB BOB TILT, BALL ROLL-DOWN TILT OR PLAYFIELD VIBRATION TILT SWITCH---ALSO BY LEFT SPINNER LANE ROLLOVER SWITCH, THRU BALL INDEX RELAY.



OPENS HI-SCORE CIRCUIT TO "CREDIT-EXTRA BALL" ADJUSTMENT JACK.

OPENS CIRCUITS TO MOST PLAYFIELD SWITCHES.

ENERGIZES BALL INDEX RELAY.

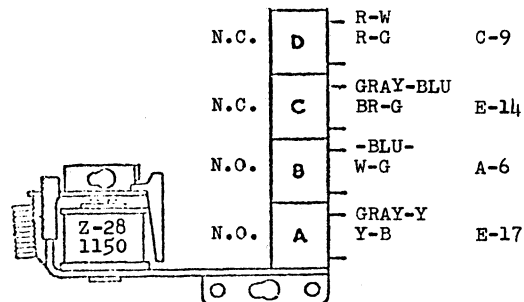
TO "TILT" LITE.

IN HOLD CIRCUIT TO COIN SET-UP RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

EXTRA BALL

IS ENERGIZED BY LEFT OR RIGHT BOTTOM ROLLOVER, THRU SWITCH ON CHANGE RELAY AND "LIBERAL-CONSERVATIVE" ADJUSTMENT JACK. ALSO, WITH "PLAY ADJUSTMENT" JACK IN EXTRA BALL POSITION, BY DROPPING B-E-L-L TARGETS WHEN NO. 4 RELAY IS ENERGIZED---AND BY HI-SCORES.



IN SERIES WITH SWITCH 'B' ON BALL INDEX RELAY.

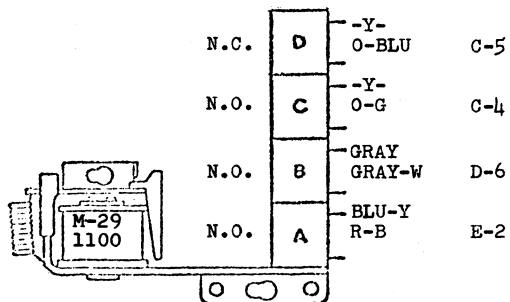
IN CIRCUIT TO BALL INDEX RELAY.

TO "SHOOT AGAIN" LITES.

IN HOLD CIRCUIT TO THIS RELAY.

10¢

IS ENERGIZED BY 10¢ COIN SWITCH, IF 10¢ ADJUSTMENT JACK IS IN "2 PLAYS" OR "3 PLAYS" POSITION---ALSO BY 25¢ COIN SWITCH, THRU SWITCH ON COIN SET-UP RELAY IF "2 COINS FOR 3 PLAYS" ADJUSTMENT IS "ON" POSITION.



IN HOLD CIRCUIT TO COIN SET-UP RELAY.

RUNS SCORE MOTOR.

PULSES CREDIT UNIT S.U. COIL, THRU IMPULSE CAM SWITCH 'A'.

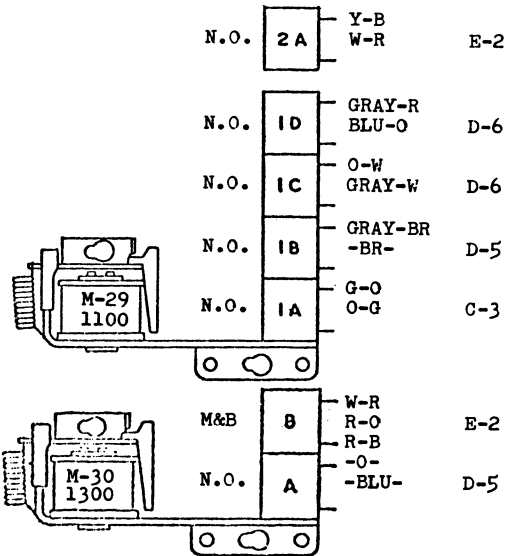
IN HOLD CIRCUIT TO THIS RELAY.

25¢

IS ENERGIZED BY 25¢ COIN SWITCH.

COIN SET UP

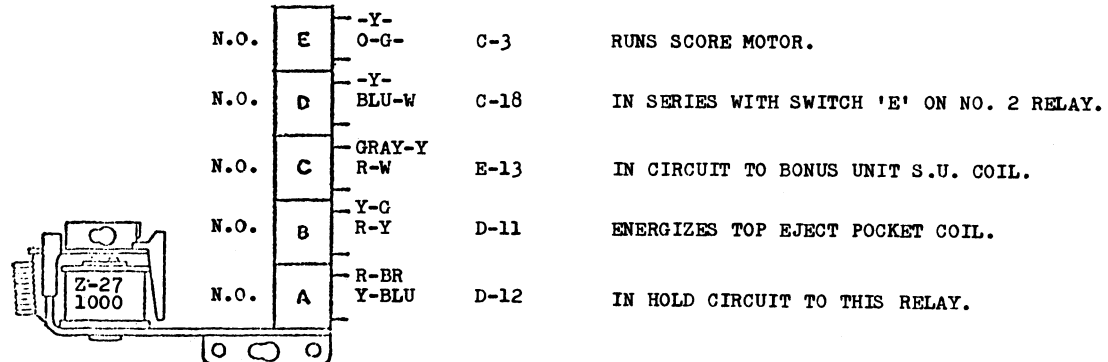
IS ENERGIZED BY 25¢ RELAY, IF "2 COINS FOR 3 PLAYS" ADJUSTMENT IS IN "ON" POSITION.



LOCATED ON PLAYFIELD

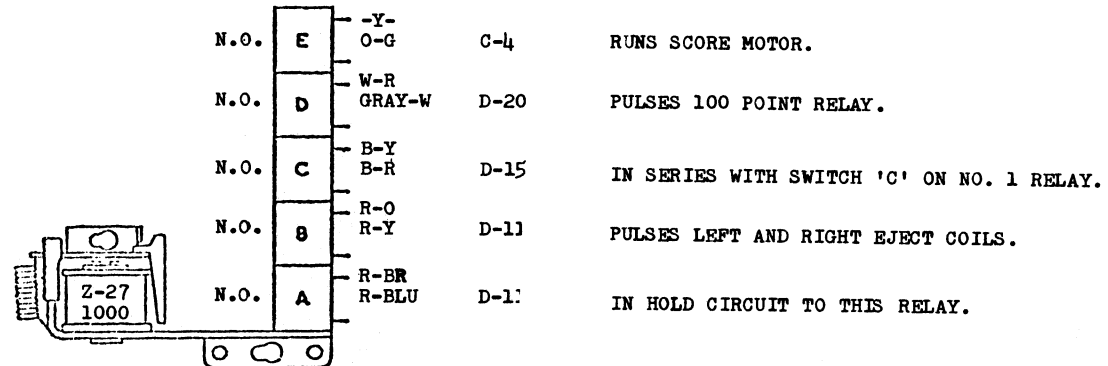
TOP EJECT

IS ENERGIZED BY TOP EJECT SWITCH, THRU NORMALLY CLOSED SWITCH ON DELAY RELAY.



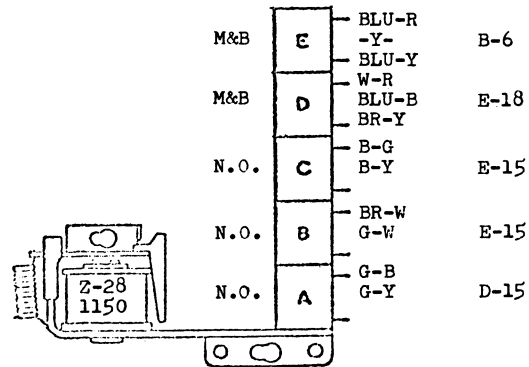
EJECT

IS ENERGIZED BY RIGHT OR LEFT EJECT SWITCH, THRU NORMALLY CLOSED SWITCH ON DELAY RELAY.



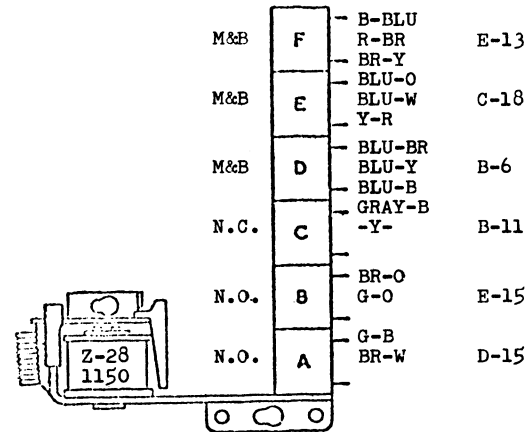
NO.1

IS ENERGIZED BY TARGET RELAY AT SCORE
MOTOR CAM SWITCH 4B.



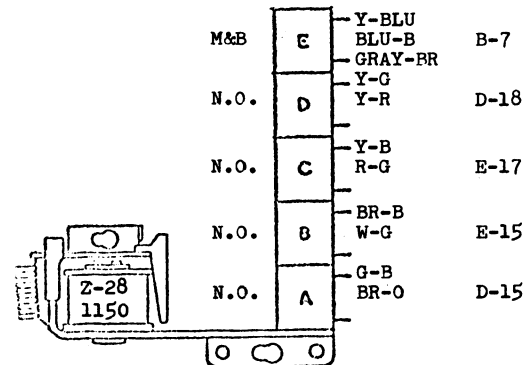
NO.2

IS ENERGIZED BY TARGET RELAY AT SCORE
MOTOR CAM SWITCH 3B AND SWITCH ON NO. 1
RELAY.



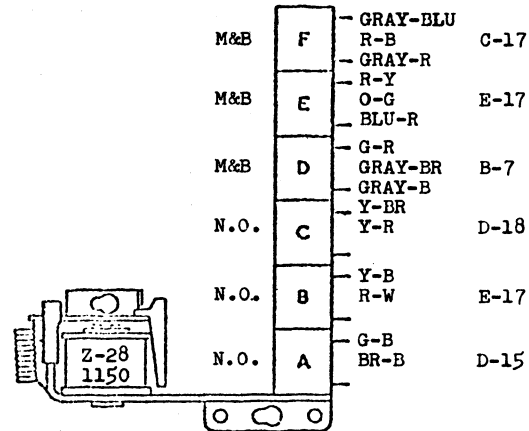
NO.3

IS ENERGIZED BY TARGET RELAY, THRU SCORE
MOTOR CAM SWITCH 2B AND SWITCH ON NO. 2
RELAY.



NO.4

IS ENERGIZED BY TARGET RELAY, THRU SCORE MOTOR CAM SWITCH 1B AND SWITCH ON NO. 3 RELAY.



OPENS IN CIRCUIT TO TARGET RELAY AND CLOSES IN SERIES WITH SWITCH 1D ON TARGET RELAY.

IN CIRCUIT TO TARGET RELAY.

OPENS TO TOP EJECT (20,000) LITE AND CLOSES TO TOP EJECT (30,000) AND NO. 4 STAR LITE.

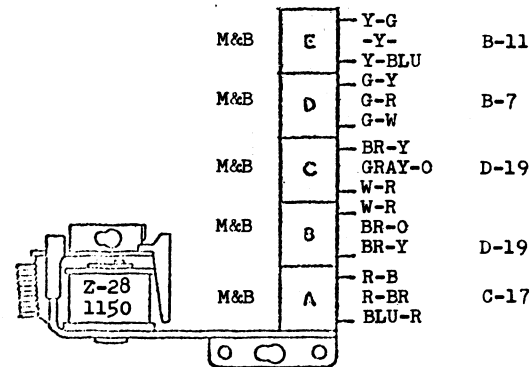
IN CIRCUIT TO PULSE 10,000 POINT RELAY.

TO EXTRA BALL RELAY FROM "LIBERAL-CONSERVATIVE" ADJUSTMENT JACK.

IN HOLD CIRCUIT TO THIS RELAY.

CHANGE

IS ENERGIZED BY NUMBER MATCH UNIT ALTERNATING SWITCH.



OPENS TO RIGHT SPINNER (1,000) LITE AND CLOSES TO LEFT SPINNER (1,000) LITE.

OPENS TO LEFT BOTTOM ROLLOVER LITE AND CLOSES TO RIGHT BOTTOM ROLLOVER LITE.

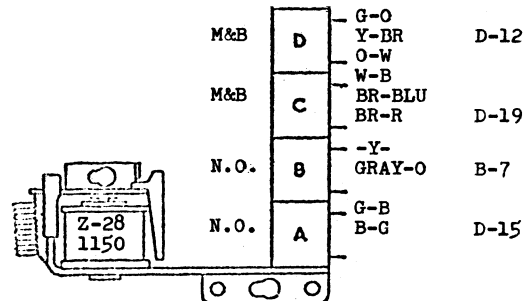
OPENS IN CIRCUIT TO 1,000 POINT RELAY AND CLOSES TO 100 POINT RELAY.

OPENS IN CIRCUIT TO 100 POINT RELAY AND CLOSES TO 1,000 POINT RELAY.

IN CIRCUIT TO EXTRA BALL RELAY WHEN MAKING LEFT OR RIGHT BOTTOM ROLLOVER SWITCH.

DOUBLE BONUS

IS ENERGIZED BY EJECT RELAY, THRU SWITCH ON NO. 1 RELAY.



IN SERIES WITH SWITCH '1A' ON BONUS RELAY.

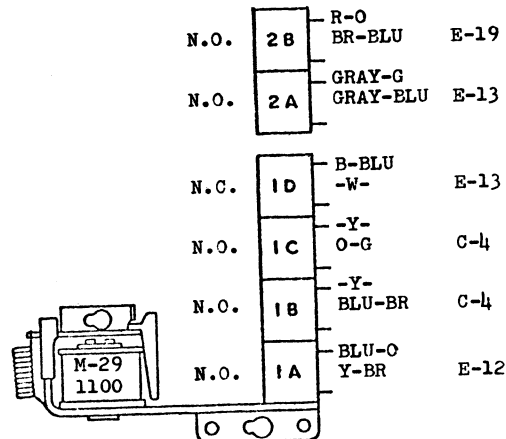
IN SERIES WITH SWITCH 2B ON BONUS RELAY.

TO "DOUBLE BONUS" LITE.

IN HOLD CIRCUIT TO THIS RELAY.

BONUS

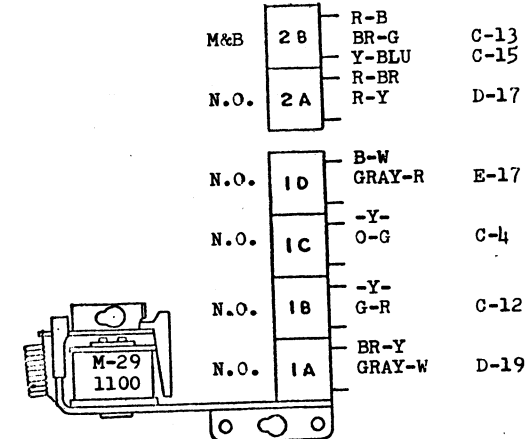
IS ENERGIZED BY RESET RELAY, THRU ZERO SWITCH ON BONUS UNIT---ALSO BY OUTHOLE SWITCH, THRU ANOTHER ZERO SWITCH ON BONUS UNIT.



IN CIRCUIT TO 10,000 POINT RELAY (WHEN COLLECTING BONUS).
 HOLD CIRCUIT TO THIS RELAY, THRU ZERO SWITCH ON BONUS UNIT.
 IN CIRCUIT TO OUTHOLE RELAY.
 RUNS SCORE MOTOR.
 IN HOLD CIRCUIT TO RESET RELAY.
 IN CIRCUIT TO BONUS UNIT RESET COIL.

TARGET

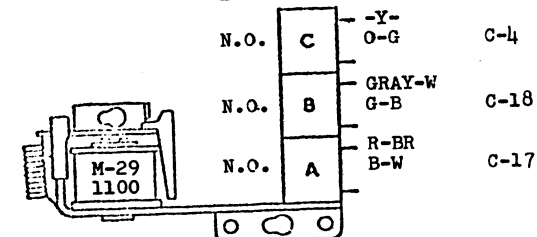
IS ENERGIZED BY 'B' AND 'E' TARGET SWITCHES OR 'L' AND 'L' TARGET SWITCHES. WHEN NO. 4 RELAY IS ENERGIZED, TARGET RELAY WILL PULL IN WHEN ALL FOUR TARGET SWITCHES (B-E-L-L) ARE MADE.



OPENS IN CIRCUIT TO ADVANCE RELAY AND 1,000 POINT RELAY, & CLOSSES TO NO. 1 THRU NO. 4 RELAYS.
 IN HOLD CIRCUIT TO THIS RELAY.
 IN CIRCUIT TO "CREDIT-EXTRA BALL" ADJUSTMENT JACK.
 RUNS SCORE MOTOR.
 ENERGIZES B-E-L-L TARGET RESET COILS, THRU LONG DWELL CAM SWITCHES 2A & 2B.
 PULSES 1,000 POINT RELAY.

50 POINT

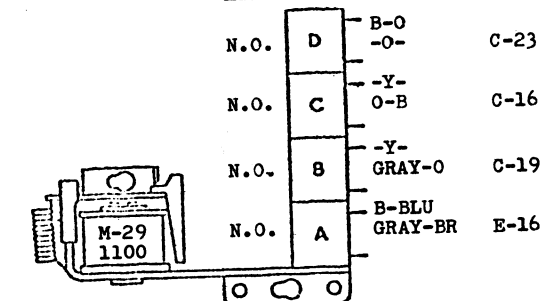
IS ENERGIZED BY LEFT OR RIGHT STAND-UP SWITCHES.



RUNS SCORE MOTOR.
 PULSES 10 POINT RELAY.
 IN HOLD CIRCUIT TO THIS RELAY.

RIGHT SPINNER

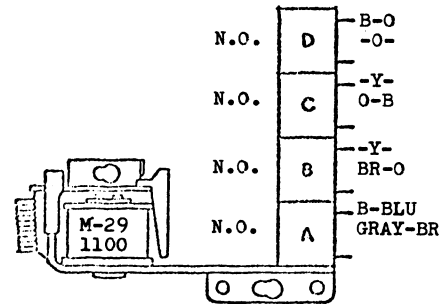
IS PULSED BY RIGHT SPINNER SWITCH.



ENERGIZES DELAY RELAY (D.C.).
 PULSES SPINNER UNIT COIL.
 IN SERIES WITH SWITCH 'C' ON CHANGE RELAY.
 ENERGIZES ADVANCE RELAY, THRU WIPER ON SPINNER UNIT.

RIGHT SPINNER

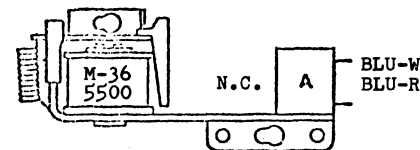
IS PULSED BY LEFT SPINNER SWITCH.



- | | |
|------|--|
| C-23 | ENERGIZES DELAY RELAY (D.C.). |
| C-16 | PULSES SPINNER UNIT COIL. |
| C-19 | IN SERIES WITH SWITCH 'B' ON CHANGE RELAY. |
| E-16 | ENERGIZES ADVANCE RELAY, THRU WIPER ON SPINNER UNIT. |

DELAY

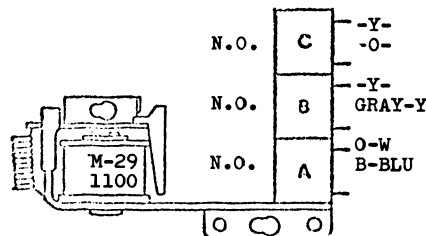
IS PULSED BY LEFT OR RIGHT SPINNER RELAY.



- | | |
|------|---|
| C-12 | OPENS CIRCUIT TO EJECT RELAY AND TOP EJECT RELAY. |
|------|---|

ADVANCE

IS PULSED BY LEFT OR RIGHT SPINNER RELAY, THRU WIPER FINGER ON SPINNER UNIT DISC---ALSO BY 'L' OR 'L' TARGET SWITCHES, THRU SWITCH ON NO. 2 RELAY.

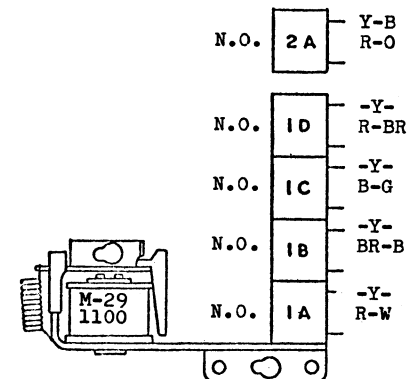


- | | |
|------|--|
| C-11 | ENERGIZES MEDIUM CHIME COIL. |
| C-13 | ENERGIZES BONUS UNIT S.U. COIL. |
| E-16 | HOLD CIRCUIT TO THIS RELAY, THRU END-OF-STROKE SWITCH ON BONUS UNIT. |

10,000 POINT

IS PULSED BY:

1. LEFT BOTTOM OR RIGHT BOTTOM ROLLOVER.
2. TOP EJECT RELAY, THRU SWITCH ON NO. 2 RELAY.
3. BONUS RELAY, THRU SWITCH ON DOUBLE BONUS RELAY AND BALL INDEX RELAY.

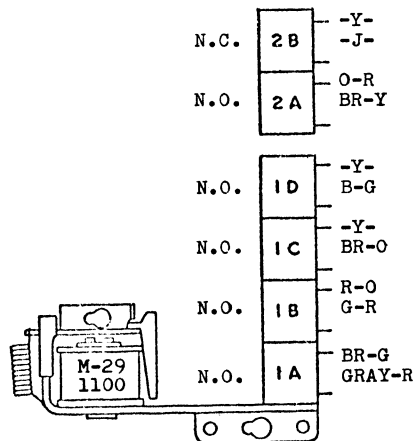


- | | |
|------|--|
| E-19 | IN HOLD CIRCUIT TO THIS RELAY. |
| C-10 | IN SERIES WITH SWITCH 'D' ON NO. 2 PLAYER RELAY. |
| C-11 | PULSES LARGE CHIME COIL. |
| C-10 | IN SERIES WITH SWITCH 'A' ON NO. 2 PLAYER RELAY. |
| C-6 | IN SERIES WITH SWITCH 'A' ON NO. 1 PLAYER RELAY. |

1,000 POINT

IS PULSED BY:

1. TOP EJECT RELAY, THRU SWITCH ON NO. 2 AND NO. 1 RELAYS.
2. 'L' OR 'L' TARGET SWITCH, THRU SWITCH ON NO. 2 RELAY.
3. TARGET RELAY.
4. LEFT OR RIGHT SPINNER RELAY, THRU SWITCH ON CHANGE RELAY.
5. LEFT OR RIGHT JET BUMPER SWITCH IN 3 BALL GAME.
6. 'B' OR 'E' TARGET SWITCH.



C-17 IN SERIES WITH SWITCH '2B' ON 100 POINT RELAY.

E-20 IN HOLD CIRCUIT TO THIS RELAY.

C-11 PULSES LARGE CHIME COIL.

C-10 IN SERIES WITH SWITCH 'B' ON NO. 2 PLAYER RELAY.

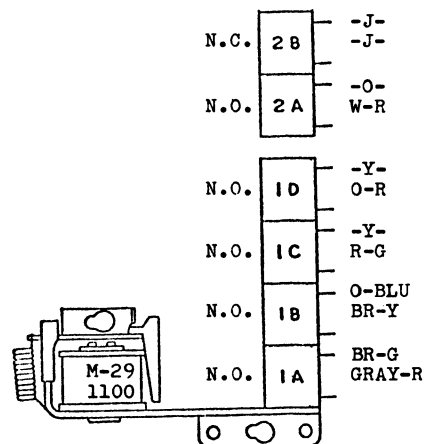
E-19 PULSES 10,000 POINT RELAY, THRU 9TH POSITION SWITCHES ON 1,000 POINT DRUM UNITS.

D-14 IN CIRCUIT TO ENERGIZE BALL INDEX RELAY, THRU WIPER ON BONUS UNIT.

100 POINT

IS PULSED BY:

1. EJECT RELAY.
2. TOP EJECT RELAY, THRU SWITCH ON NO. 2 AND NO. 1 RELAYS.
3. LEFT OR RIGHT SPINNER RELAY, THRU SWITCH ON CHANGE RELAY.
4. LEFT OR RIGHT JET BUMPER SWITCH IN 5 BALL GAME.



C-17 IN SERIES WITH SWITCH '2B' ON 10 POINT RELAY.

E-20 IN HOLD CIRCUIT TO THIS RELAY.

C-11 PULSES SMALL CHIME COIL.

C-9 IN SERIES WITH SWITCH 'D' ON NO. 1 PLAYER RELAY.

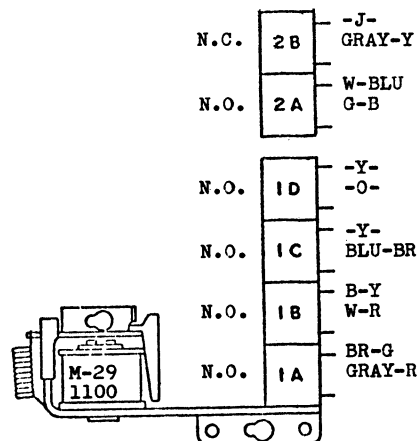
E-20 PULSES 1,000 POINT RELAY, THRU 9TH POSITION SWITCHES ON 100 POINT DRUM UNITS.

IN CIRCUIT TO ENERGIZE BALL INDEX RELAY, THRU WIPER ON BONUS UNIT.

10 POINT

IS PULSED BY:

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



D-17 IN SERIES WITH SWITCH 'A' ON EXTRA BALL RELAY.

E-18 IN HOLD CIRCUIT TO THIS RELAY.

C-11 PULSES MEDIUM CHIME COIL.

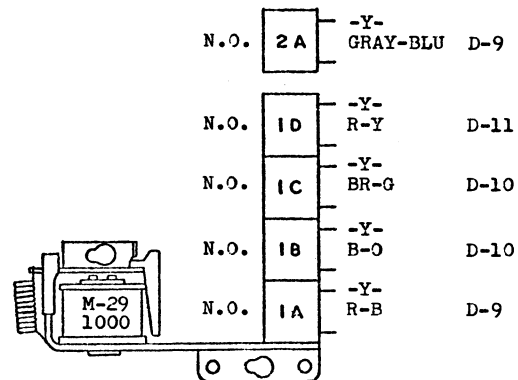
C-9 IN SERIES WITH SWITCH 'C' ON NO. 1 PLAYER RELAY.

E-21 PULSES 100 POINT RELAY, THRU 9TH POSITION SWITCHES ON 10 POINT DRUM UNITS.

D-14 IN CIRCUIT TO ENERGIZE BALL INDEX RELAY, THRU WIPER ON BONUS UNIT.

NO.2 SCORE RESET

IS PULSED BY IMPULSE CAM SWITCH 'D',
THRU SWITCH ON RESET RELAY.



PULSES 2ND PLAYER 10 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 2ND PLAYER 100,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

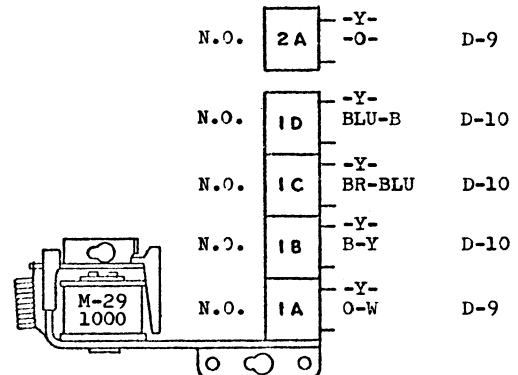
PULSE 2ND PLAYER 10,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 2ND PLAYER 1,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 2ND PLAYER 100 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

NO.1 SCORE RESET

IS PULSED THE SAME WAY AS NO. 2 SCORE
RESET RELAY.



PULSES 1ST PLAYER 10 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 1ST PLAYER 100,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

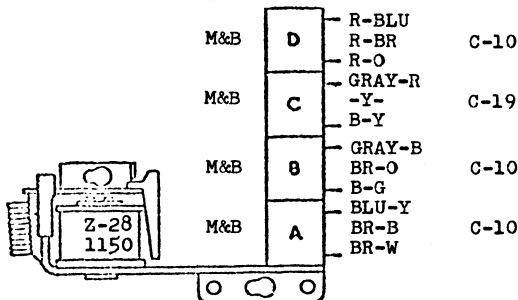
PULSES 1ST PLAYER 10,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 1ST PLAYER 1,000 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

PULSES 1ST PLAYER 100 POINT DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

NO.2 PLAYER

IS PULSED BY WIPER FINGER ON BALL COUNT
UNIT, THRU SWITCH ON 2ND COIN RELAY.



TO 100,000 POINT DRUM UNIT COILS, THRU 9TH POSITION SWITCHES ON 10,000 POINT DRUM UNITS.

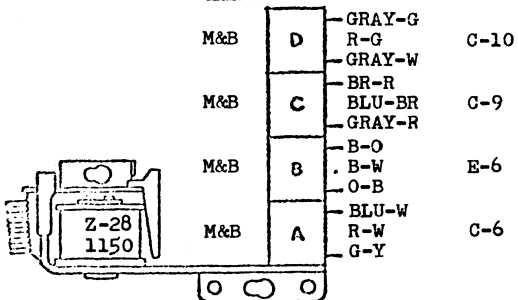
IN SERIES WITH SWITCH '1B' ON 1,000 POINT RELAY.

TO 1ST & 2ND PLAYER 1,000 POINT DRUM UNIT COILS.

TO 1ST & 2ND PLAYER 10,000 POINT DRUM UNIT COILS.

NO.1 PLAYER

IS PULSED THE SAME WAY AS NO. 2 PLAYER
RELAY.



TO 1ST & 2ND PLAYER 100 POINT DRUM UNIT COILS.

TO 1ST & 2ND PLAYER 10 POINT DRUM UNIT COILS.

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

IN SERIES WITH SWITCH 'B' ON THIS RELAY.

" LIBERTY BELL "

ADJUSTMENT SHEET

POST ADJUSTMENT

TO MAKE GAME MORE CONSERVATIVE, MOVE POSTS 3/16", AS SHOWN ON POST ADJUSTMENT SHEET. SPOTTING HOLES ARE PROVIDED AND CAN BE SEEN ON REMOVAL OF POSTS.

POWER TRANSFORMER ADJUSTMENT

POWER TRANSFORMER IS EQUIPPED WITH A SECONDARY TAP. IF YOUR GAME IS ON LOCATION WITH EXTREMELY LOW LINE VOLTAGE, REMOVE LEAD FROM LUG MARKED 24 VOLTS AND SOLDER TO ALTERNATE LUG MARKED "HIGH" . THIS WILL BOOST SECONDARY VOLTAGE BY APPROXIMATELY FOUR VOLTS.

LEG LEVELERS

LEG LEVELERS ARE PROVIDED FOR TWO PURPOSES - 1ST TO LEVEL GAME ON LOCATION, 2ND TO INCREASE PITCH OF GAME FOR PERCENTAGING. IF IT IS DESIRED TO SPEED UP PLAY OR DECREASE SCORES, RAISE REAR LEG LEVELERS TO INCREASE PITCH.

LOCATED UNDER FRONT OF CABINET

MASTER ON-OFF SWITCH. CONTROLS POWER TO TRANSFORMER.

NUMBER OF BALLS ADJUSTMENT - (BACK BOX)

THIS ADJUSTMENT CHANGES 3 BALL TO 5 BALL OR VICE VERSA.

IN 3 BALL POSITION, JET BUMPERS SCORE 1,000 POINTS AND TWO SPINNERS ADVANCE BONUS EVERY FIFTH STEP. IN 5 BALL POSITION, JET BUMPERS SCORE 100 POINTS AND TWO SPINNERS ADVANCE BONUS EVERY TENTH STEP.

NUMBER MATCH ADJUSTMENT - (BACK BOX)

IN "ON" POSITION, NUMBER MATCH LIGHT WILL APPEAR WHEN GAME IS OVER. IF THE NUMBER MATCHES THE LAST TWO DIGITS OF POINT SCORE, A REPLAY IS AWARDED. IN "OFF" POSITION, NUMBER MATCH IS INOPERATIVE. NOTE: WHEN GAME IS SET IN "EXTRA BALL" POSITION, NUMBER MATCH SHOULD BE IN "OFF" POSITION.

HI SCORE ADJUSTMENT - (BACK BOX)

INSERT JACKS INTO DESIRED POSITIONS TO CORRESPOND WITH SCORE CARD BEING USED. NOTE: WHEN GAME IS SET IN "EXTRA BALL" POSITION, AN EXTRA BALL IS AWARDED WHEN DESIRED SCORE IS OBTAINED. WHEN GAME IS SET IN "REPLAY" POSITION, ONE REPLAY IS AWARDED WHEN DESIRED SCORE IS OBTAINED.

"LIBERTY BELL"

GAME OPERATES AS FOLLOWS:

TOP EJECT HOLE ALWAYS ADVANCES BONUS ONE STEP. TOP EJECT HOLE SCORES 500 POINTS OR 5,000 POINTS WHEN #1 STAR IS LIT, 10,000 POINTS WHEN #2 STAR IS LIT, 20,000 POINTS WHEN #3 STAR IS LIT AND 30,000 POINTS WHEN #4 STAR IS LIT.

TWO SPINNERS ADVANCE BONUS. IN THREE BALL POSITION, ONE ADVANCE FOR EVERY FIVE STEPS AND IN FIVE BALL POSITION, ONE ADVANCE FOR EVERY TEN STEPS. SPINNERS, WHEN LIT, SCORE 1,000'S.

JET BUMPERS SCORE 1,000'S IN THREE BALL POSITION AND 100'S IN FIVE BALL POSITION.

MAKING TWO DROP TARGET TARGETS B AND E OR L AND L LIGHTS #1 STAR.

#1 STAR, WHEN LIT, LIGHTS TWO SIDE EJECT HOLES FOR DOUBLE BONUS.

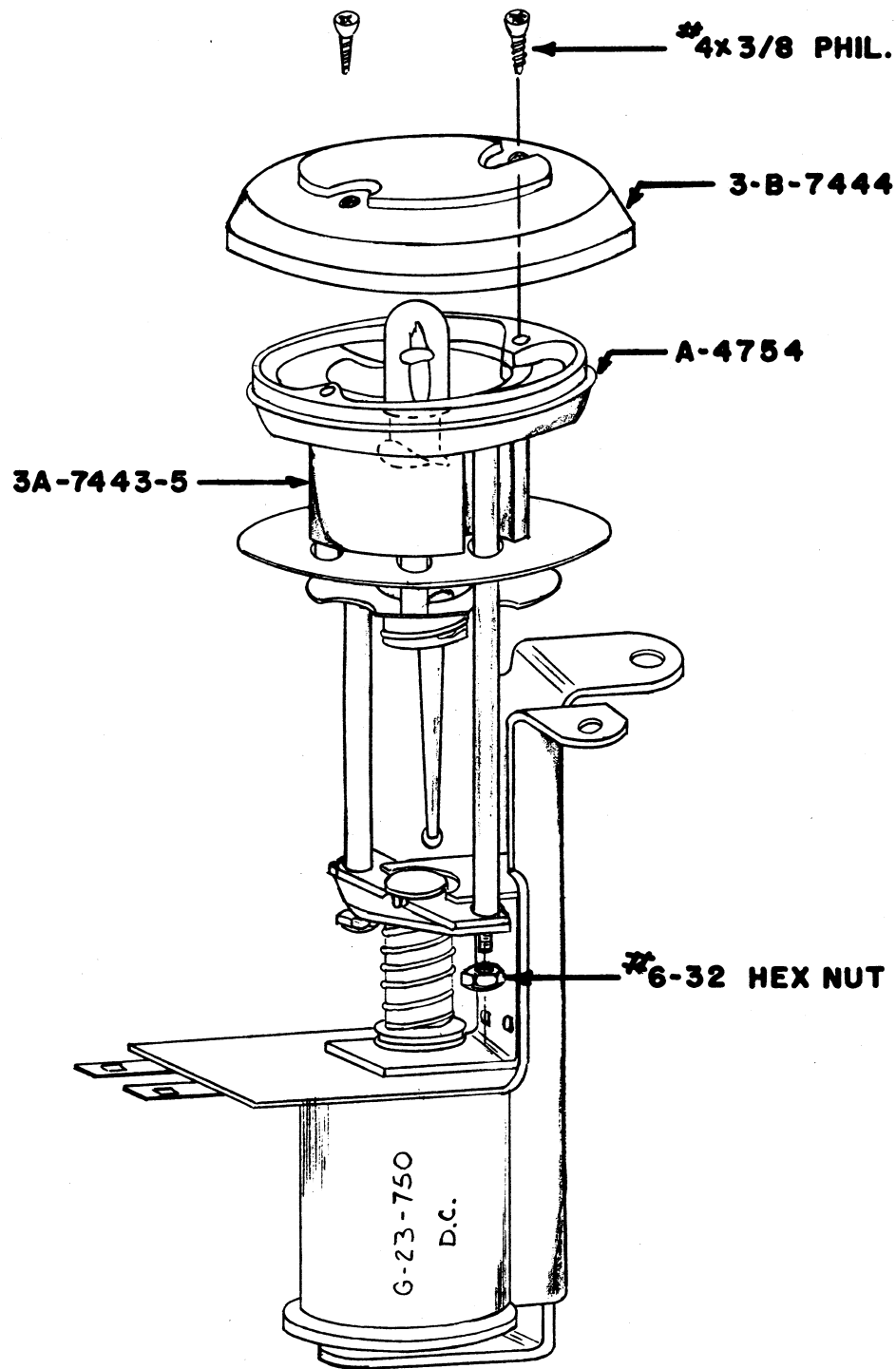
MAKING TWO DROP TARGETS B AND E OR L AND L AGAIN LIGHTS #2 STAR.

#3 STAR, WHEN LIT, LIGHTS TWO BOTTOM ROLLOVER LANES, ALTERNATELY, FOR EXTRA BALL. (ADJUSTABLE TO #4 STAR)

WHEN RED #4 STAR IS LIT, A SPECIAL IS SCORED AUTOMATICALLY EVERYTIME ALL FOUR TARGETS ARE KNOCKED DOWN.

B-7894

**NEW STYLE JET BUMPER ASSEMBLY
(WITH MORE EASILY REMOVABLE RODS AND RING)**



TO EASILY REPLACE METAL RING ASS'Y

- 1. REMOVE (2) 4x3/8 PHILLIPS SCREWS.**
- 2. REMOVE BUMPER CAP (3-B-7444).**
- 3. REMOVE (2) #6-32 HEX ELASTIC STOP NUTS.**
- 4. PULL METAL RING ASS'Y (A-4754) UP AND OUT.**
- 5. REPLACE METAL RING ASS'Y, NUTS, BUMPER CAP, AND SCREWS.**

ADJUSTMENTS ON PLAYFIELD ... CAN BE REACHED BY OPENING FRONT DOOR.

LIBERAL - CONSERVATIVE POSITION

LIBERAL TWO OUTSIDE ROLLOVER LANES LIGHT ALTERNATELY FOR EXTRA BALL WHEN #3 STAR IS MADE.

CONSERVATIVE TWO OUTSIDE ROLLOVER LANES LIGHT ALTERNATELY FOR EXTRA BALL WHEN #4 STAR IS MADE.

25¢ ADJUSTMENT

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

10¢ ADJUSTMENT

PROVIDES 1, 2, OR 3 PLAYS FOR COIN.

5¢ ADJUSTMENT

PROVIDES ONE PLAY FOR ONE OR TWO COINS.

EXTRA ADJUSTMENT

ONE COIN - ONE PLAY, TWO COINS - THREE PLAYS THIS ADJUSTMENT IS LOCATED ON MECHANISM PANEL.

IMPORTANT: WHEN IN "ON" POSITION, 10¢ ADJUSTMENT MUST BE IN NUMBER TWO POSITION AND 25¢ ADJUSTMENT IN NUMBER SIX POSITION.

SUGGESTED SCORE CARDS

5 BALL PLAY	467-32	(540,000 - 750,000)
3 BALL PLAY	467-11	(400,000 - 540,000 - 680,000)

EXTRA BALL PLAY

5 BALL PLAY	467-45	(450,000)
3 BALL PLAY	467-42	(280,000)