



FOR AMUSEMENT ONLY

 96

 OR  40

 OR  16

 OR  10

 OR  6

  OR  4

 ANY..... 2

FORM SPORTSMAN-76-2

  ... 800

 96

 OR  40

 OR  16

 OR  10

 OR  6

  OR  4

 ANY..... 2

FORM SPORTSMAN-80-2

  ..1200

 96


 OR  40

 OR  16

 OR  10

 OR  6

  OR  4

 ANY..... 2

FORM SPORTSMAN-1200-2

Warranty

MOTORS in new Bally products are guaranteed against defective materials or poor workmanship for 6 months from date of purchase. Any defective motors returned during the warranty-period will be replaced, without cost, by your Bally Distributor.

Bally[®] **MANUFACTURING COMPANY**
2640 BELMONT AVENUE, CHICAGO 18, ILLINOIS

IMPORTANT INSTRUCTIONS

This Means Money in Your Pocket!

You invested in this Ballygame to earn profit by providing amusement to the public.

PLAYS VS. REPLAYS

While the public measures amusement in terms of replays—the number of plays that the average player can play "for free" before depositing another coin—you must measure profit in terms of plays.

Therefore, to earn the maximum profit on your investment you must be sure that replays—the right to play without depositing coins—are properly balanced with total plays.

"TOO TOUGH" --- BAD

If the average player cannot score enough replays to satisfy his ego, he gets discouraged—just as an average golfer may get discouraged on an unusually difficult course.

CASH-BOX CAN FOOL YOU

For a while—if the game is "too tough"—the cash-box may fool you into thinking you are going to earn a very good profit. But the cash-box does not tell the whole story of the players' reaction to a game. Because, even if the cash-box looks good, if players cannot show their skill by scoring replays, they feel they are not having fun. As a result, they play less, and you earn less.

Moreover, you cannot always take time to count the cash-box just to see if players are scoring enough replays to hold their interest.

“TOO EASY” --- BAD

What happens, if—instead of being “too tough”—the game is “too easy” and players score an excessive number of replays?

First, players play “for free” so much of the time that you do not get enough cash through the chute to earn a profit.

Second, players get bored—just as a golfer would get bored if the fairways funneled the ball into each hole. And players do not continue to play a game that bores them.

2 METERS HELP YOU

How can you balance plays and replays? Simply by checking the 2 meters in this game.

TOTAL PLAYS meter (left) records every play—whether by depositing

cash in the chute or by pressing red or yellow button.

REPLAYS meter (right) records every replay registered as a result of scoring by skill.

Simply by comparing the reading of TOTAL PLAYS meter with reading of REPLAYS meter—without counting cash or other calculations—you can tell in a minute if the game is "too easy" or "too tough" or "just right" to attract and hold play that will pay a profit to you.

COLLECTION CONVENIENCE

The 2 meters—in addition to keeping the game in balance for maximum continuous profit—simplify collection. You need not count all the cash. Deduct REPLAYS from TOTAL PLAYS to find profit. Take your percentage of profit. Balance in the cash-box is location-owner's share.

Bally[®]

SPORTSMAN

OPERATING INSTRUCTIONS AND PARTS CATALOG

Part Numbers are marked on illustrations
and a list of miscellaneous parts appears
on back cover.

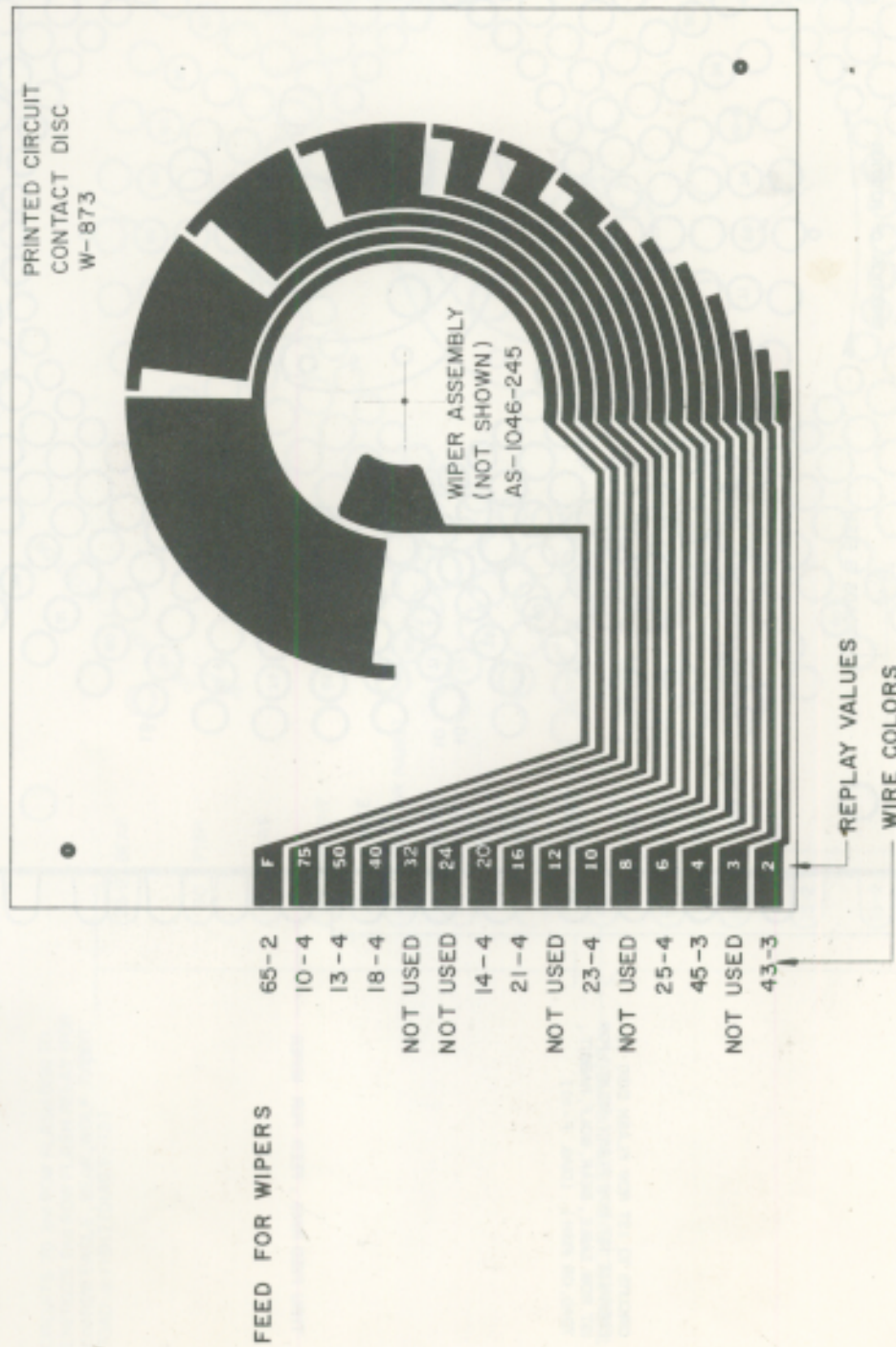
**FOR QUICKEST SERVICE
STATE CORRECT PART NUMBER
WHEN ORDERING PARTS**

Code	
N.C. ---	Normally closed
N.O. ---	Normally open
M.B.B. ---	Make before break
S.P.D.T. ---	Single pole double throw

Home of Ballygames and Ballyrides

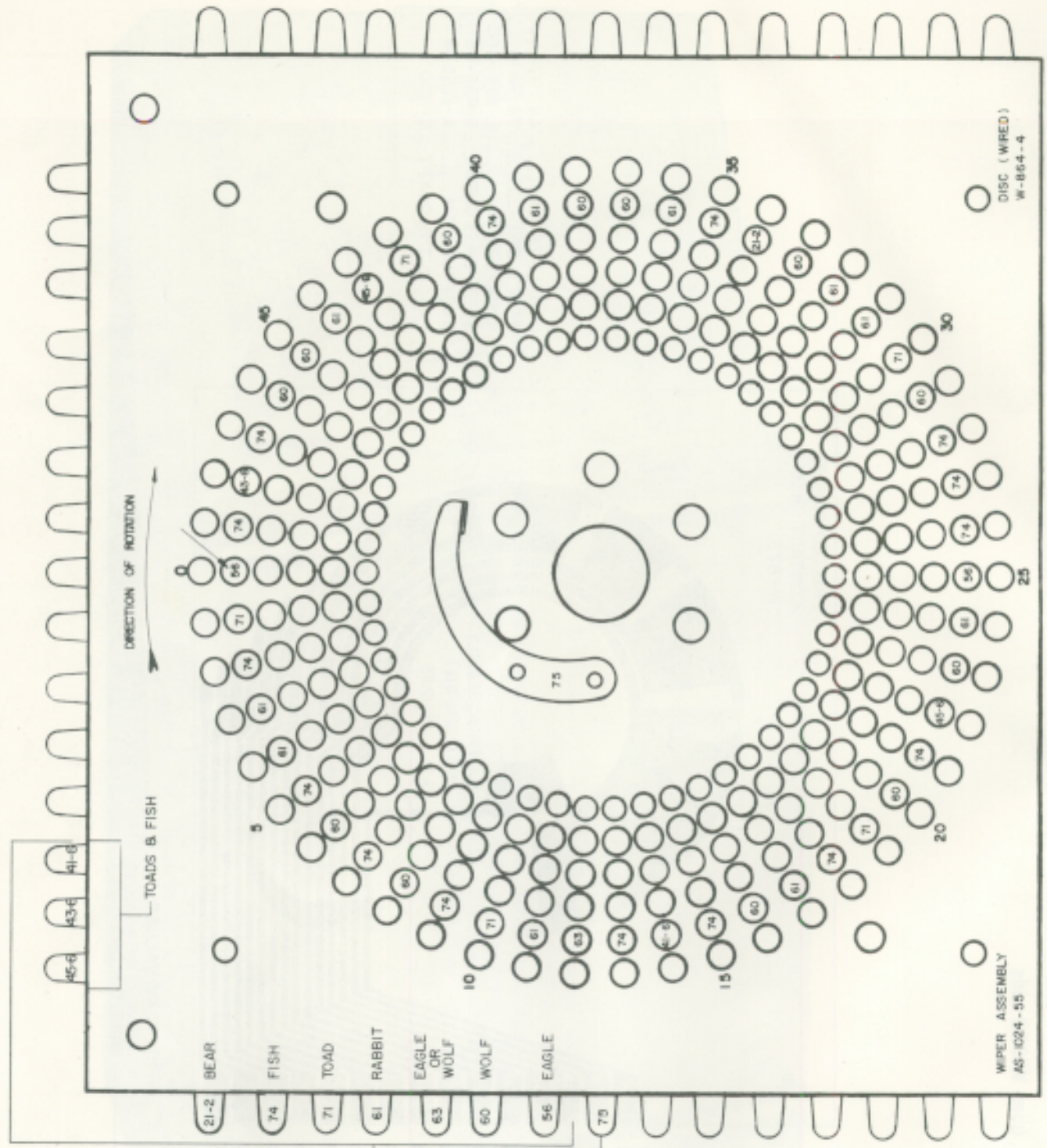


REPLAY COUNTER viewed from WIPER side



- COMPLETE UNIT.....AS-797-44
- RESET COIL.....28-R-15
- STEP-UP COIL.....E-184-160
- STEP-UP PLUNGER...S-496-116
- STEP-UP ARM.....A-1765-4
- RATCHET & SHAFT...C-100

1st ROW SPOTTING DISC viewed from BUTTON or WIPER side



CONNECTS TO 1ST ROW FLASH DISC TO ENERGIZE 1ST ROW FLASH RELAY (FOR 1ST ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH) (DANG. F-10)

THRU FEED RING, FEED FOR WIPER

WIPER ASSEMBLY
AS-0294-55

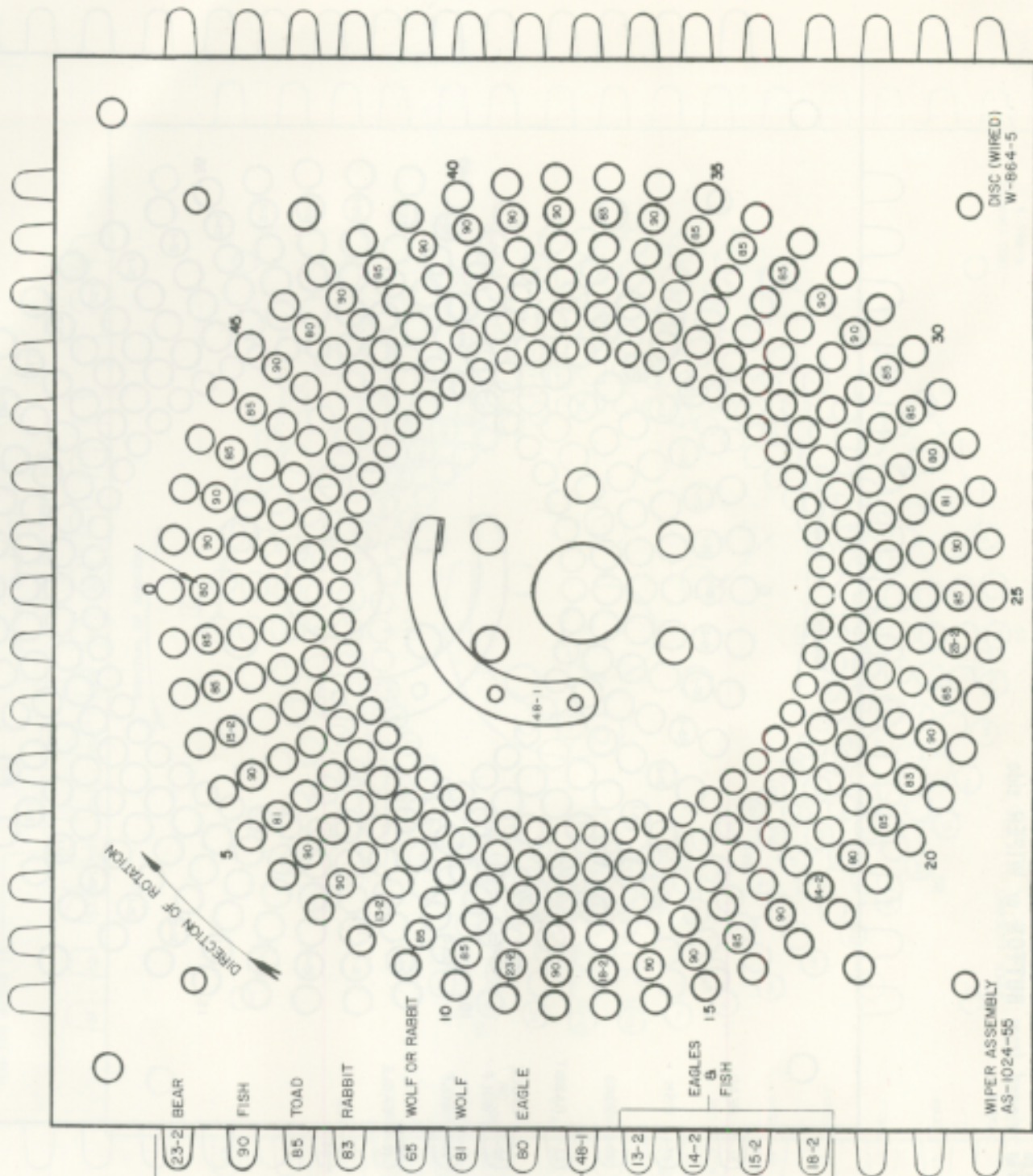
DISC (WIRED)
W-864-4

2nd ROW SPOTTING DISC

viewed from **BUTTON** or **WIPER** side

CIRCUITS TO 2nd ROW FLASH DISC TO ENERGIZE 2nd ROW FLASH RELAY (FOR 2nd ROW EAGLE, BEAR, WOLF, RABBIT, TOAD - or FISH) (DIAG F-13)

THRU FEED RING, FEED FOR WIPER



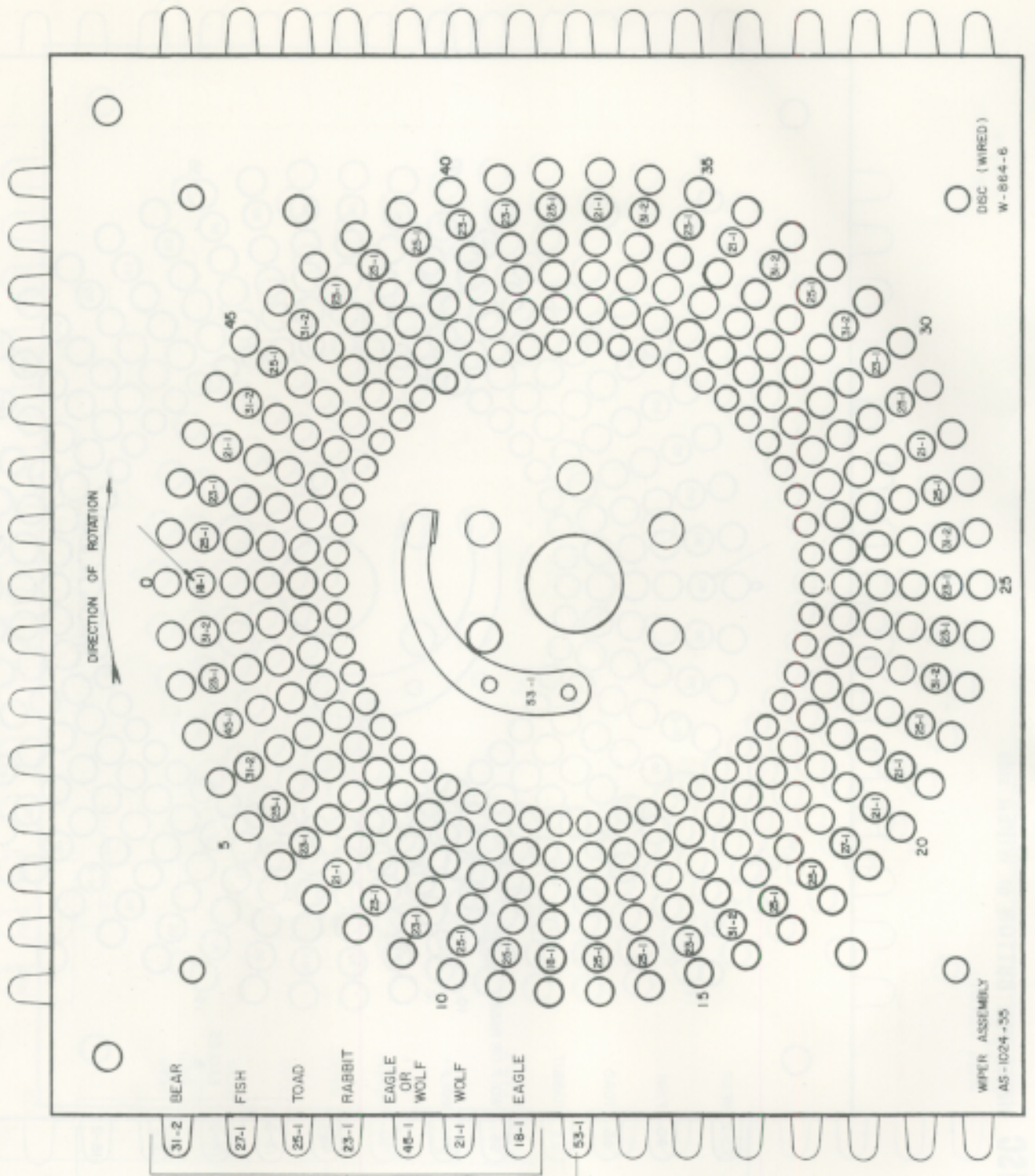
WIPER ASSEMBLY
AS-1024-55

DISC (WIRED)
W-864-5

3rd ROW SPOTTING DISC viewed from **BUTTON** or **WIPER** side

CIRCUITS TO 3RD ROW FLASH DISC TO ENERGIZE 3RD ROW FLASH RELAY (FOR 3RD ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH.) (DMG. P-15)

THRU FEED RING, FEED FOR WIPER.



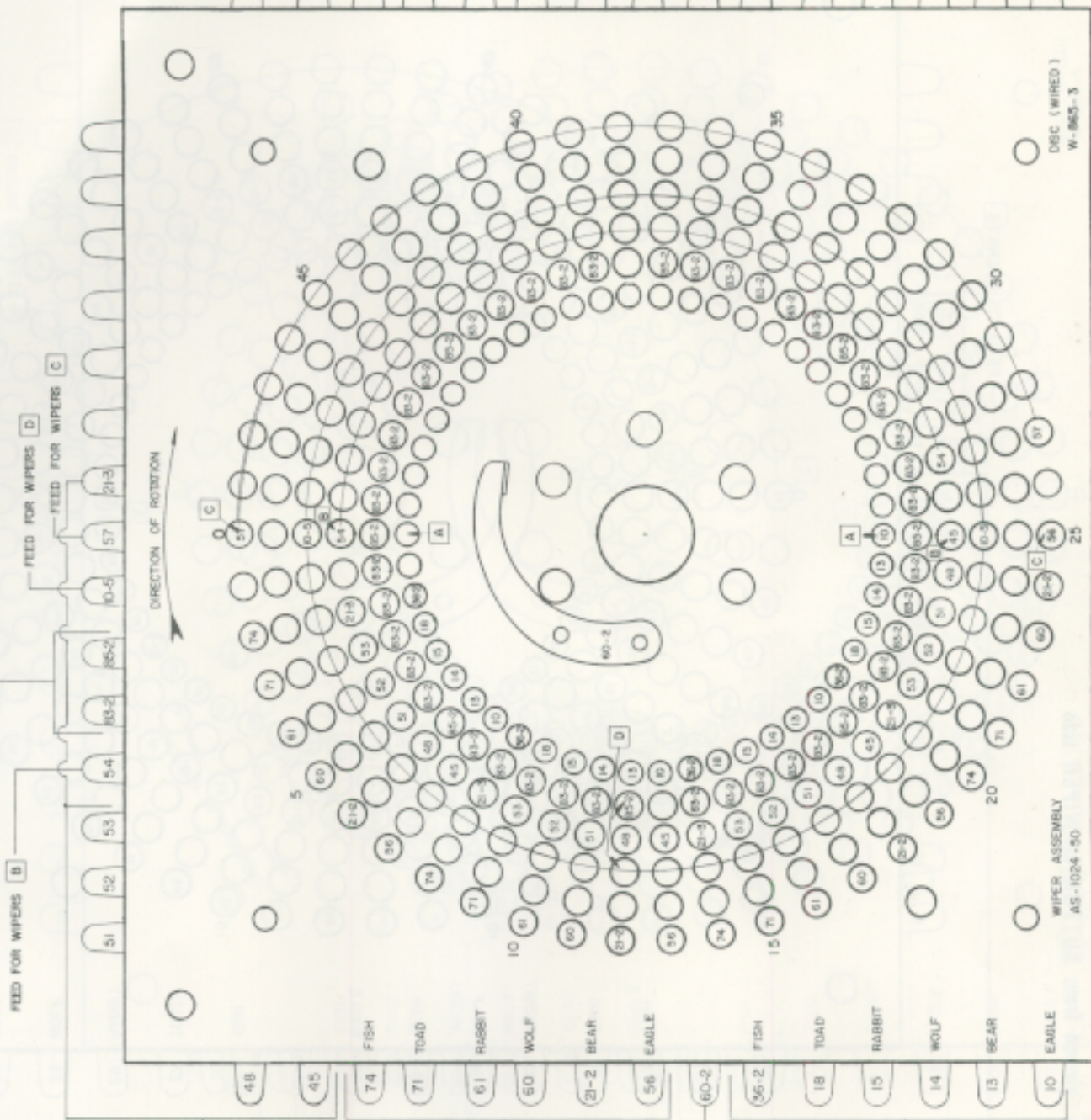
- 31-2 BEAR
- 27-1 FISH
- 25-1 TOAD
- 23-1 RABBIT
- 46-1 EAGLE OR WOLF
- 21-1 WOLF
- 18-1 EAGLE
- 53-1 THRU FEED RING, FEED FOR WIPER.

DISC (WIRED)
W-864-6

WIPER ASSEMBLY
45-1024-35

1st ROW FLASH DISC viewed from BUTTON or WIPER side

THRU WIPERS [D], CIRCUITS TO MULTIPLIER CAM SWITCHES, TO PULSE REPLAY COUNTER STEP-UP COIL, WHEN SCORING. (DIAG. D-30)



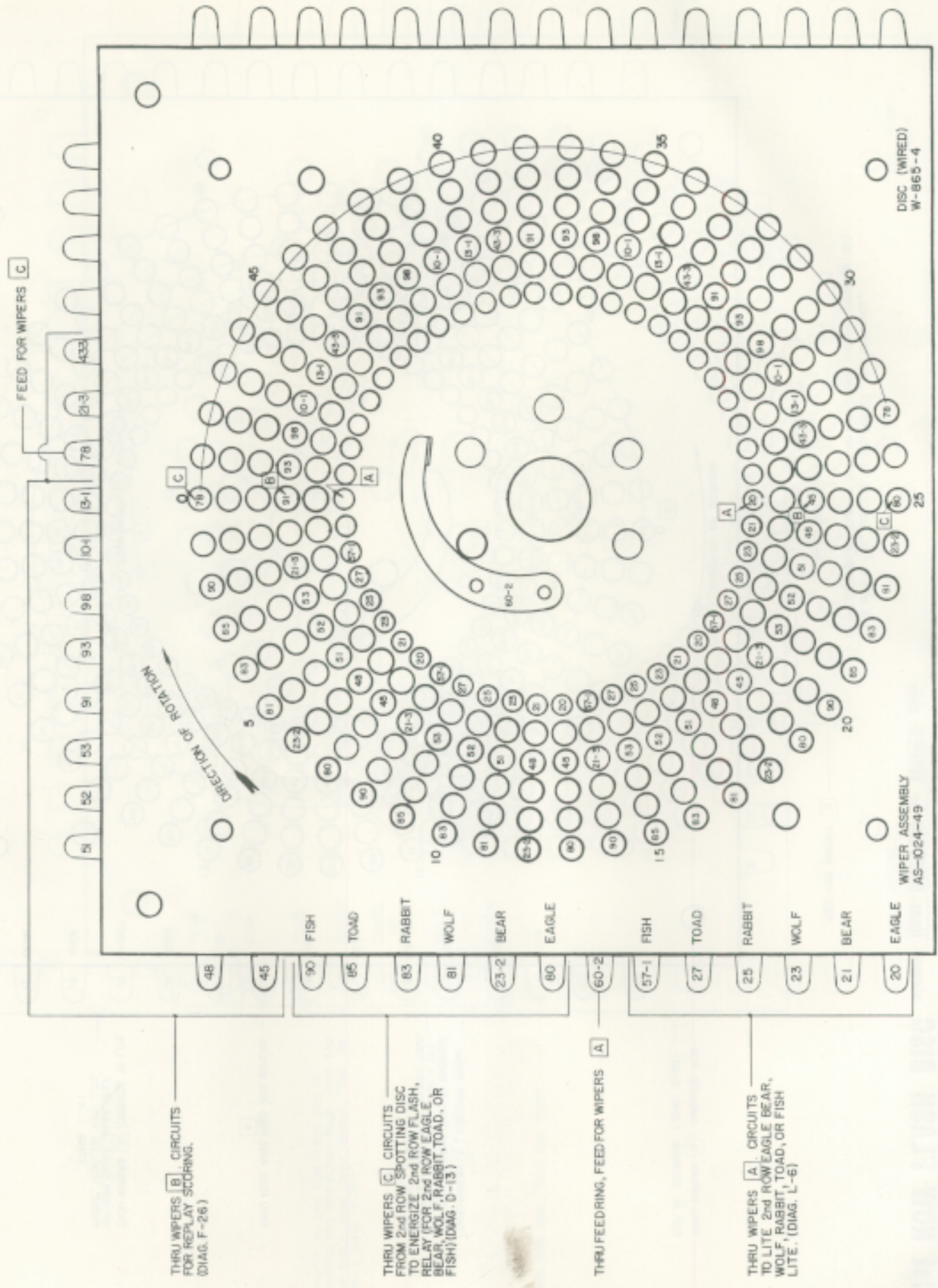
THRU WIPERS [B], CIRCUITS FOR REPLAY SCORING. (DIAG. G-26)

THRU WIPERS [C], CIRCUITS FROM 1ST ROW SPOTTING DISC TO ENGINEER 1ST ROW FLASH RELAY FOR A 1ST ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH (DIAG. D-10)

THRU FEED RING, FEED FOR WIPERS [A]

THRU WIPERS [A], CIRCUITS TO LITE 1ST ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH LITE (DIAG. L-4)

2nd ROW FLASH DISC viewed from BUTTON or WIPER side



THRU WIPERS [B] CIRCUITS FOR REPLAY SCORING. (DIAG. F-26)

THRU WIPERS [C] CIRCUITS FROM 2nd ROW SPOTTING DISC TO ENERGIZE 2nd ROW FLASH RELAY (FOR 2nd ROW FLASH, BEAR, WOLF, RABBIT, TOAD, OR FISH) (DIAG. D-13)

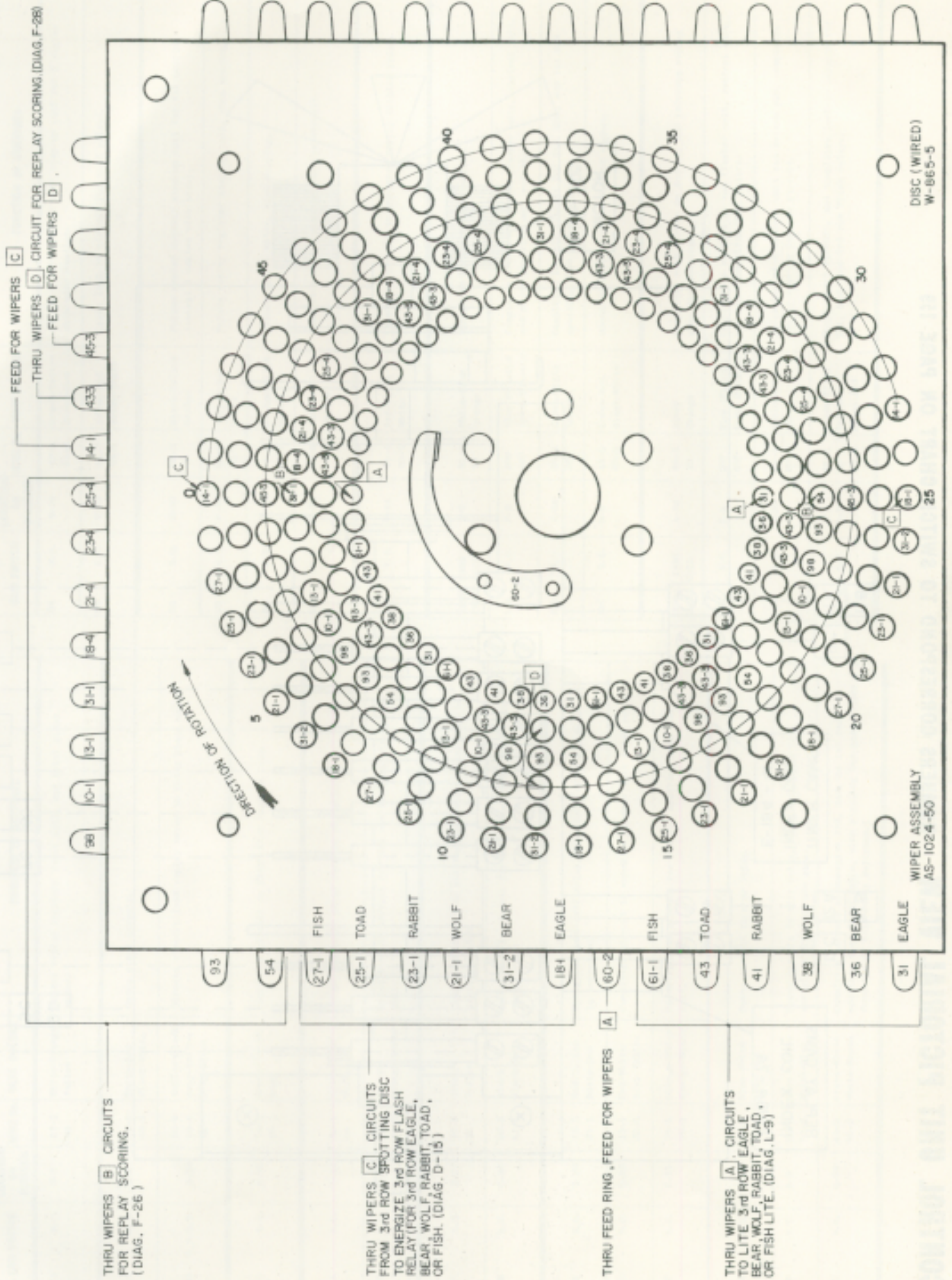
THRU FEED RING, FEED FOR WIPERS [A]

THRU WIPERS [A] CIRCUITS TO LITE 2nd ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH LITE. (DIAG. L-6)

DISC (WIRED)
W-865-4

WIPER ASSEMBLY
AS-1024-49

3rd ROW FLASH DISC viewed from BUTTON or WIPER side

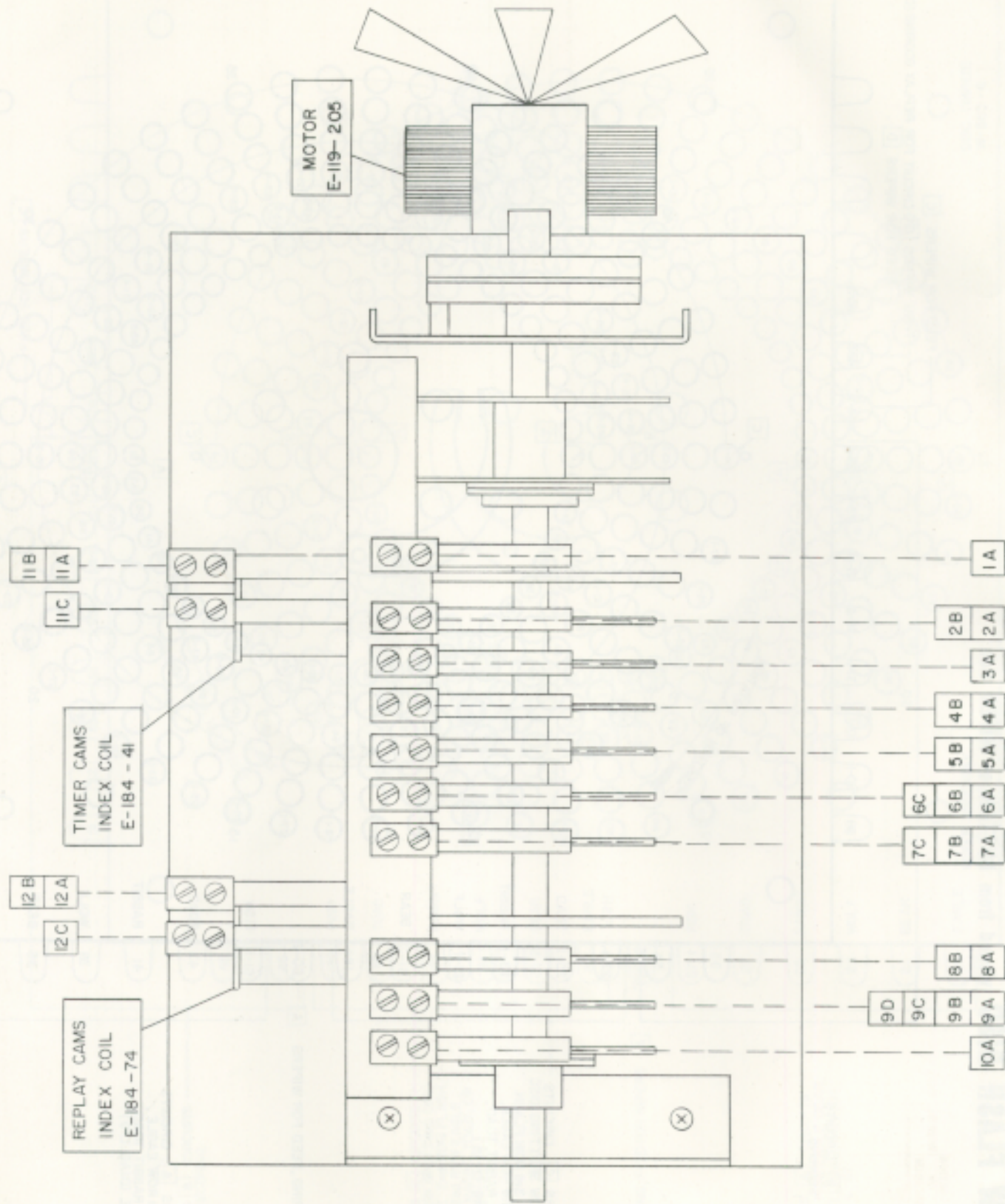


THRU WIPERS B CIRCUITS FOR REPLAY SCORING. (DIAG. F-26)

THRU WIPERS C CIRCUITS FROM 3rd ROW SPOTTING DISC TO ENERGIZE 3rd ROW FLASH RELAY (FOR 3rd ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH. (DIAG. D-15))

THRU FEED RING, FEED FOR WIPERS A

THRU WIPERS A CIRCUITS TO LITE 3rd ROW EAGLE, BEAR, WOLF, RABBIT, TOAD, OR FISH LITE. (DIAG. L-9)



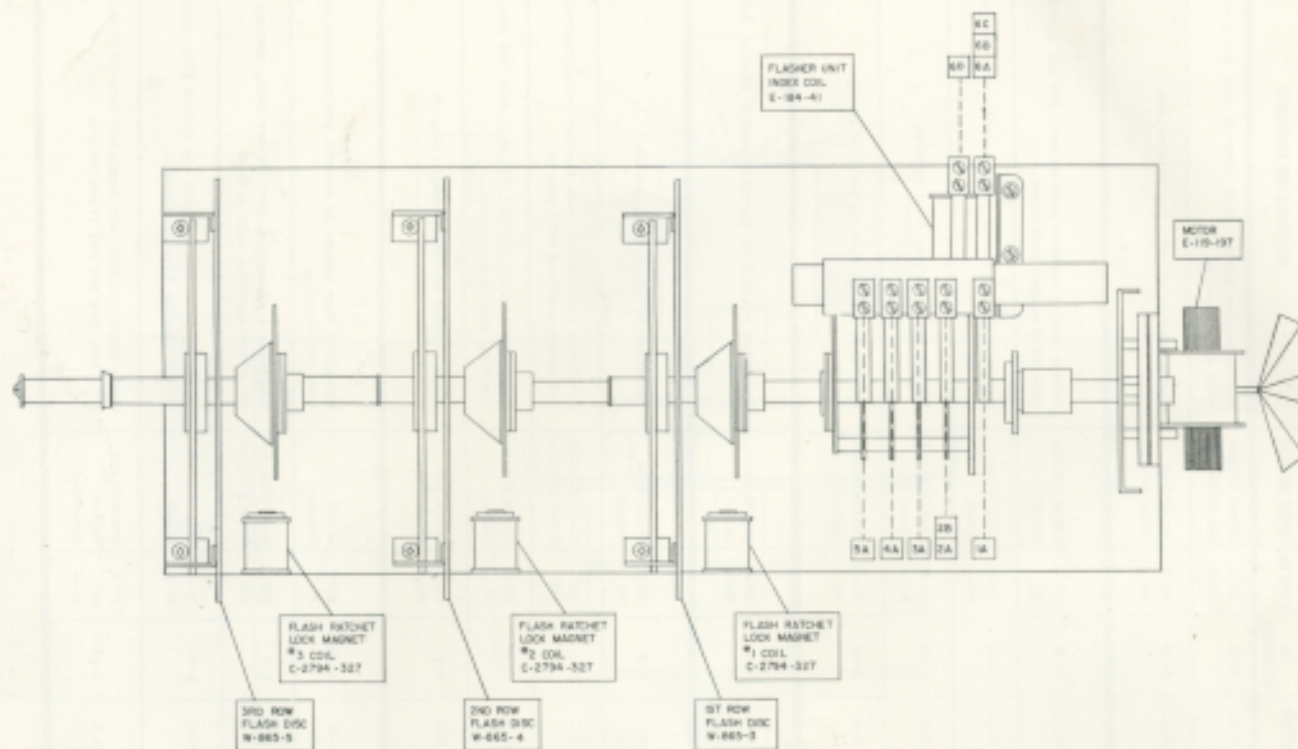
CONTROL UNIT CAM SWITCH CHART FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ON PAGE 158

CAM SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
8A	S.O.	8-29 81-2	Green-Yellow Black-Red	Pulses replay counter unit step-up coil for 3 eagles with star scoring.
8B	S.C.	41-2 85-4	Green-Red Brown-White	Opens lock-in circuit for hold relays.
8A	S.O.	83-2 70	Black-Yellow Orange	Pulses replay counter step-up coil for all scoring (except 3 eagles with star).
8B	S.O.	31-3 80-2	Yellow-Red Black	Pulses replay register step-up coil, when scoring.
8C	S.O.	78-2 80-2	Orange-Black Black	Pulses replay meter, when scoring.
8D	S.O.	38-3 30	Yellow-Black Yellow	Completes replay scoring lock-in circuit.
80A	S.O.	15-4 50-2	Red-White White	Completes circuit to energize replay doubler relay.
TIMER CAMS INDEX COIL	A-9	52-2 70	White-Blue Orange	Energized by start relay switch.
11A	S.O.	50P 60P	Blue (Plastic) Green (Plastic)	Completes a circuit to run flasher unit, control unit, and mixer spotting unit motors.
11B	S.O.	65-3 30	Brown-White Yellow	Completes lock-in circuit for 3rd, 2nd, and 1st row spotting disc index coils.
11C	S.C.	41-3 85-3	Green-Red Black-White	Opens circuit to coin lock-out magnet.
REPLAY CAMS INDEX COIL	A-32	80-2 70	Black Orange	Energized when winner is scored, and releases replay cam for scoring.
12A	S.O.	50P 40P	Blue (Plastic) Green (Plastic)	Completes a circuit to run flasher unit, control unit, and mixer-spotting unit motors.
12B	S.O.	38-3 80-2	Yellow-Black Black	In series with control unit row switch #8B, completes replay scoring lock-in circuit.
12C	S.P.D.T.	48-2 30 61-4	Green-Black Yellow Brown-Red	Opens start circuit, and completes lock-in circuit for 1st, 2nd, and 3rd row flash relays.

CAM SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1A	S.O.	57-2 30	White-Orange Yellow	Pulses replay register reset coil, and total plays meter.
2A	S.C.	51-2 85-4	White-Red Black-White	Opens start circuit.
2B	S.P.D.T.	38-4 93-4 98-4	Yellow-Black Gray-Yellow Gray-Black	Directs circuit from replay meter to total plays meter.
3A	S.O.	74-1 90-1	Orange-Green Gray	Completes circuit to flash star feature lite.
4A	S.C.	1-17 30	White-Blue Yellow	Opens game-over relay lock-in circuit.
4B	S.C.	66-1 74-3	Brown Orange-Green	Opens lock-in circuit for 3rd row spotting disc index coil.
5A	S.O.	40-2 30	Green Yellow	Completes circuit to put replay doubler relay back to start position.
5B	S.C.	80-3 81-3	Black Black-Red	Opens lock-in circuit for 1st row spotting disc index coil.
6A	S.O.	13-5 51-1	Red-Yellow White-Red	Energizes game-over relay, when hold relay #1, #2 or #3 is energized.
6B	S.O.	15-1 80-5	Red-White Gray-Yellow	Completes circuit to energize flasher unit index coil.
6C	S.C.	75-2 78-2	Orange-White Orange-Black	Opens lock-in circuit for 2nd row spotting disc index coil.
7A	S.C.	25-2 91-1	Blue-White Gray-Red	Opens circuit to star relay.
7B	S.C.	29-5 52-2	Blue-Yellow White-Blue	Opens circuit to tilt relay, after relay has been energized starting new game.
7C	S.O.	45-2 50-2	Green-White White-Brown	Completes circuit to energize 3rd, 2nd, or 1st row spotting disc index coils, when starting new game. (See function of hold relay switches.)

FLASHER UNIT PICTORIAL VIEW

NUMBERS CORRESPOND TO SWITCH CHART BELOW

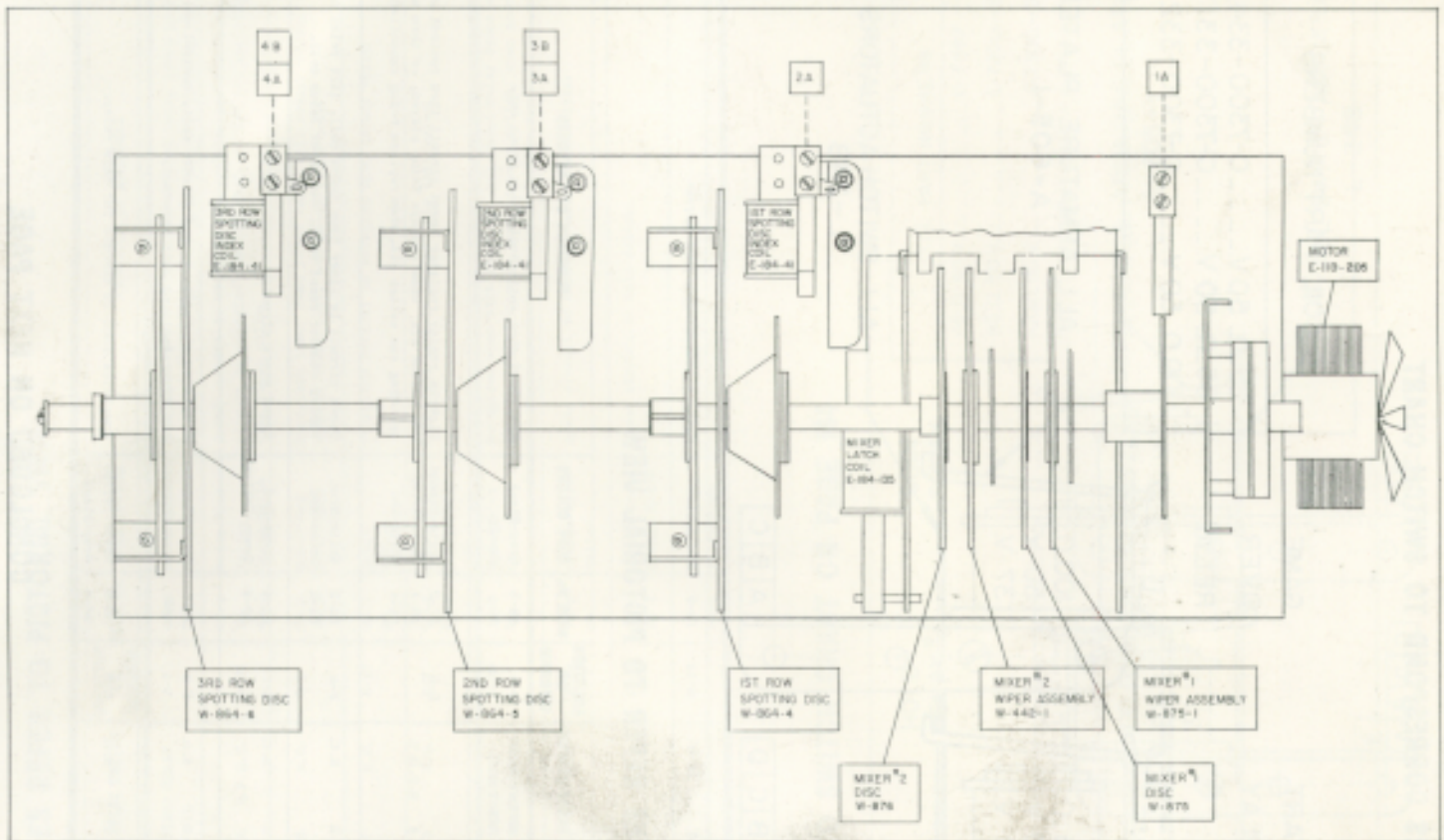


FLASHER UNIT SWITCH CHART

FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW

CAM SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1A	N. C.	G-18 36-5 65-4	Yellow-Brown Brown-White	Opens spin safety relay lock-in circuit.
2A	N. C.	H-26 50-7 54	White White-Green	In series with replay scoring circuit.
2B	N. C.	D-23 75-4 93-5	Orange-White Gray-Yellow	Opens flasher unit index coil lock-in circuit.
3A	N. O.	H-11 61-4 75	Brown-Red Orange-White	Energizes 1st row flash relay, when circuit complete thru other factors.
4A	N. O.	H-13 38-5 48-1	Yellow-Black Green-Black	Energizes 2nd row flash relay, when circuit complete thru other factors.
5A	N. O.	G-14 25-5 53-1	Blue-White White-Yellow	Energizes 3rd row flash relay, when circuit complete thru other factors.
FLASHER UNIT INDEX COIL	A-23	75-4 70	Orange-White Orange	Energized by control unit cam switch #6B, and releases flasher cams for cycle.
6A	N. O.	G-23 15-1 93-5	Red-White Gray-Yellow	Completes lock-in circuit for this coil.
6B	N. O.	I-12 61-4 30	Brown-Red Yellow	Completes lock-in circuit for 1st, 2nd, and 3rd row flash relays.
6C	N. C.	I-8 48-2 85-4	Green-Black Black-White	Opens start relay circuit.
6D	N. O.	F-1 20P 40P	Blue (Plastic) Green (Plastic)	Completes a circuit to run flasher unit, control unit, and mixer-spotting unit motors.

MIXER AND SPOTTING UNIT PICTORIAL VIEW NUMBERS CORRESPOND TO SWITCH CHART



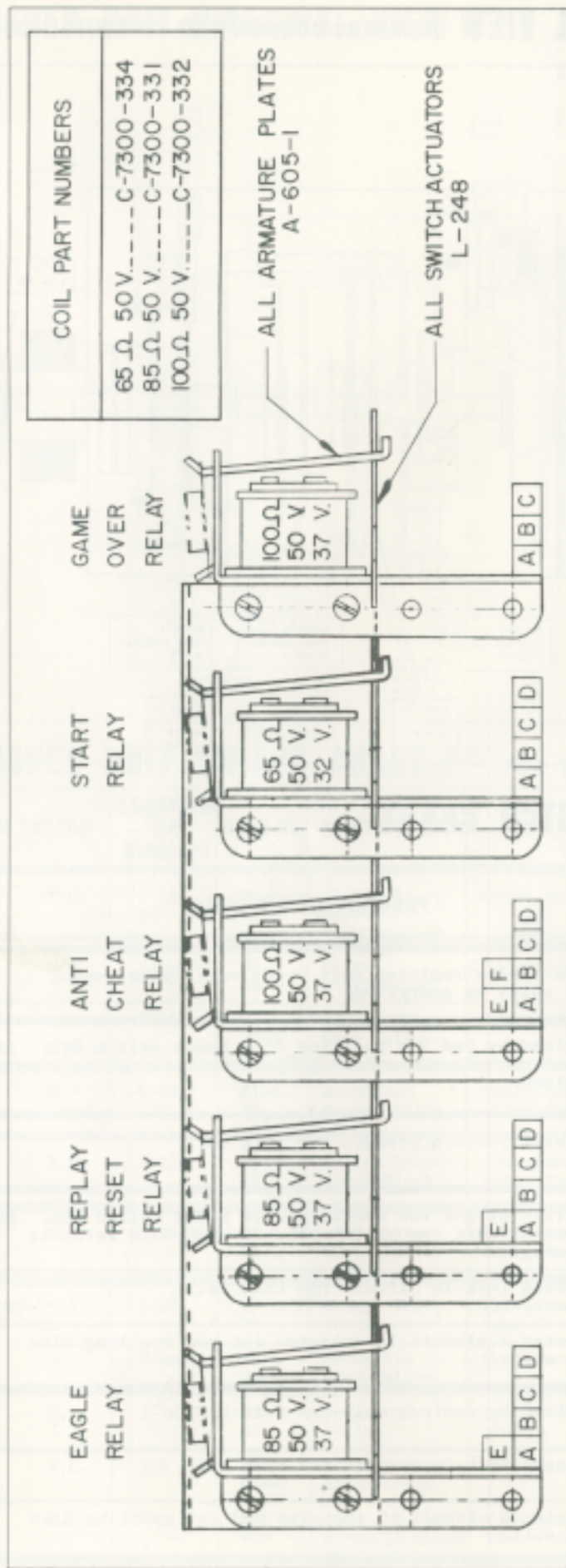
MIXER AND SPOTTING UNIT CAM SWITCH CHART

FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW

CAM SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
12 PULSE 1A N.O.	E-6	51-4 98-5	White-Red Gray-Black	Pulses replay register unit reset coil, when replay reset relay is energized.
1st ROW SPOTTING DISC INDEX COIL	A-35	81-3 70	Black-Red Orange	Energized by 2nd row spotting disc index switch #3B. Also by control unit cam switch #7C, when #1 and #2 hold relays energized.
2A N.O.	G-35	65-3 71-2	Brown-White Orange-Red	Completes lock-in circuit for this coil.
2nd ROW SPOTTING DISC INDEX COIL	A-34	78-3 70	Orange-Black Orange	Energized by 3rd row spotting disc index switch #4B. Also by control unit cam switch #7C, when #3 hold relay is energized.
3A N.O.	G-34	65-3 75-3	Brown-White Orange-White	Completes lock-in circuit for this coil.
3B N.O.	H-35	65-3 71-2	Brown-White Orange-Red	Completes a circuit to energize 1st row spotting disc index coil.
3rd ROW SPOTTING DISC INDEX COIL	A-34	74-3 70	Orange-Green Orange	Energized by control unit cam switch #7C.
4A N.O.	G-34	60-1 65-3	Brown Brown-White	Completes lock-in circuit for this coil.
4B N.O.	H-34	63-2 65-3	Brown-Yellow Brown-White	Completes a circuit to energize 2nd row spotting disc index coil.

5 RELAY BANK PICTORIAL VIEW

LETTERS CORRESPOND TO SWITCH CHART



5 RELAY BANK SWITCH CHART FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
EAGLE RELAY COIL	A-24	31-1 70	Yellow-Red Orange	Energized thru 2nd row flash disc, for scoring combinations using eagle in 2nd row.
A	F-24	12-6 91	Red-Yellow Gray-Red	In series with 1st and 2nd row flash disc, completes 2 eagles replay scoring circuit.
B	E-25	18-4 90	Red-Black Gray-Yellow	In series with 1st and 2nd row flash disc, completes 2 bears - eagle replay scoring circuit.
C	F-26	21-4 98	Blue-Red Gray-Black	In series with 1st and 2nd row flash disc, completes 2 wolves - eagle replay scoring circuit.
D	E-27	10-1 93-4	Red Blue-Yellow	In series with 1st and 2nd row flash disc, completes 2 rabbits - eagle replay scoring circuit.
E	E-27	13-1 95-4	Red-Yellow Blue-White	In series with 1st and 2nd row flash disc, completes 2 loads - eagle replay scoring circuit.

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
REPLAY RESET RELAY COIL	A-6	36-5 70	Gray-Black Orange	Energized when anti-cheat relay drops out.
A	C-6	57-2 59-1 51-4	White-Orange White-Green White-Red	Directs replay register reset circuit thru control unit cam switch #14, when replays being played, or thru mixer-spotting cam actuator #14, when replays being assembled.
B	F-8	59-2 61-2	White-Blue Brown-Red	Opens circuit to timer cam index coil, (11) relay coil, replay counter reset coil, and mixer latch coil.
C	C-7	41-4 43-4	Green-Red Green-Yellow	Opens start circuit.
D	F-3	269 409	Blue (Plastic) Green (Plastic)	Completes a circuit to run flasher unit, control unit, and mixer-spotting unit motors.
E	E-6	53-2 86-5	White-Yellow Gray-Black	Completes lock-in circuit for this relay.

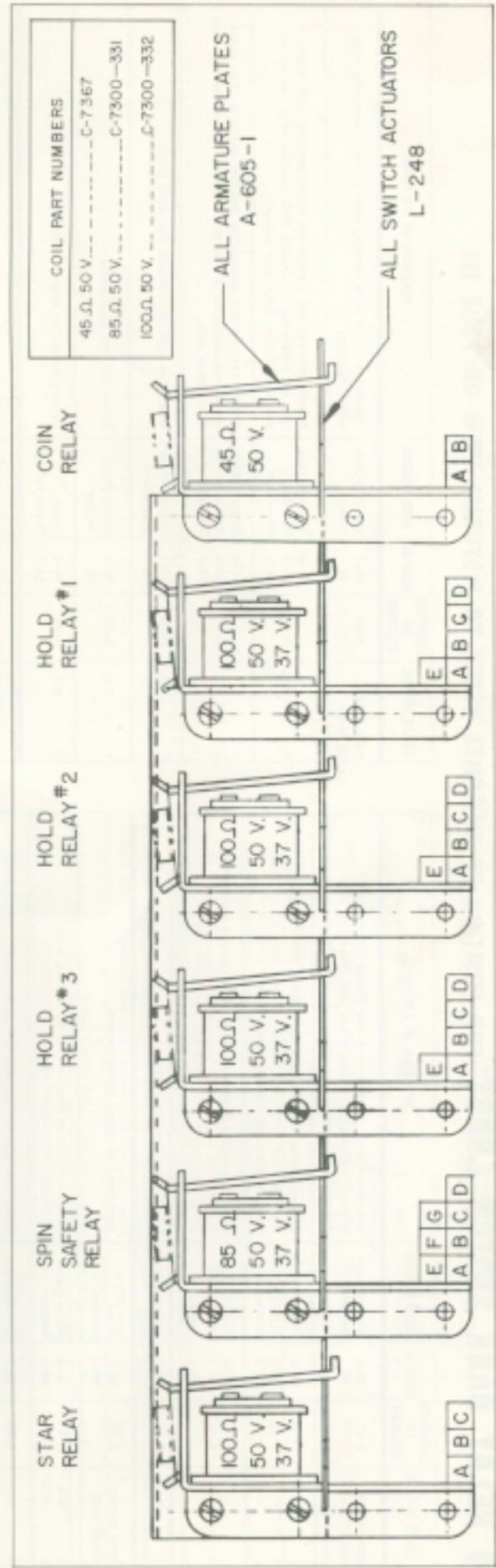
CONCLUDED ON NEXT PAGE

5 RELAY BANK SWITCH CHART FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW

RELAY SWITCH	LOCATION ON ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
ANTI-CHEAT RELAY COIL	J-36	14-3 71-3	Red-Green Orange-Red	Energized by coin relay. Switches on this relay protect replay scoring, game playing, and tilt circuits.
A S.P.D.T.	F-7	98-5 53-2 45-4	Gray-Black White-Yellow Green-White	Breaks start circuit, and completes circuit to energize replay reset relay, when this relay drops out.
B S.P.D.T.	H-18	13-5 31-5 36-5	Red-Yellow Yellow-Red Yellow-Brown	Breaks circuit to spin safety relay, and completes circuit to energize game-over relay, when this relay drops out.
C S.C.	J-2	54-4 30	White-Green Yellow	Lites tilt lite, when this relay drops out.
D S.O.	K-2	30 40	Blue Green	Opens 6 volt lite circuit, when this relay drops out.
E S.O.	G-36	71-3 30	Orange-Red Yellow	Lock-in circuit for this relay.
F S.O.	H-24	31-5 85-1	Yellow-Red Black-White	Opens replay scoring circuit, when this relay drops out.

RELAY SWITCH	LOCATION ON ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
START RELAY COIL	A-7	43-4 70	Green-Yellow Orange	Energized by free-play button switch using (free plays) or by coin relay switch (using coin) when starting new game.
A S.P.D.T.	H-34	52-1 50 45-2	White-Blue Yellow Green-White	Opens circuit to energize hold relays, and completes a circuit to energize the 3rd, 2nd, or 1st row spotting disc index coils.
B S.O.	G-8	51-2 51-2	White-Red Brown-Red	Energizes timer cam index coil, tilt relay, replay counter reset coil, and mixer latch coil.
C S.O.	H-17	80-1 30	Black Yellow	Completes circuit to energize spin safety relay.
D S.O.	G-7	45-4 51-2	Green-Red White-Red	Completes lock-in circuit for this relay.
GAME-OVER RELAY COIL	A-18	13-5 70	Red-Yellow Orange	Energized when tilt relay or anti-cheat relay drops out. Also by replay counter open at zero switch, when scoring. Also by control unit cam switch phs, when holding.
A S.C.	K-12	75-2 30	Orange-White Yellow	Opens circuit to hold and draw feature 111e.
B S.C.	G-20	74-2 78-1	Orange-Green Orange-Black	Opens circuit to hold relays.
C S.O.	H-17	12-5 52-5	Red-Yellow White-Blue	Lock-in circuit for this relay.

6 RELAY BANK PICTORIAL VIEW LETTERS CORRESPOND TO SWITCH CHART ON PAGE 164

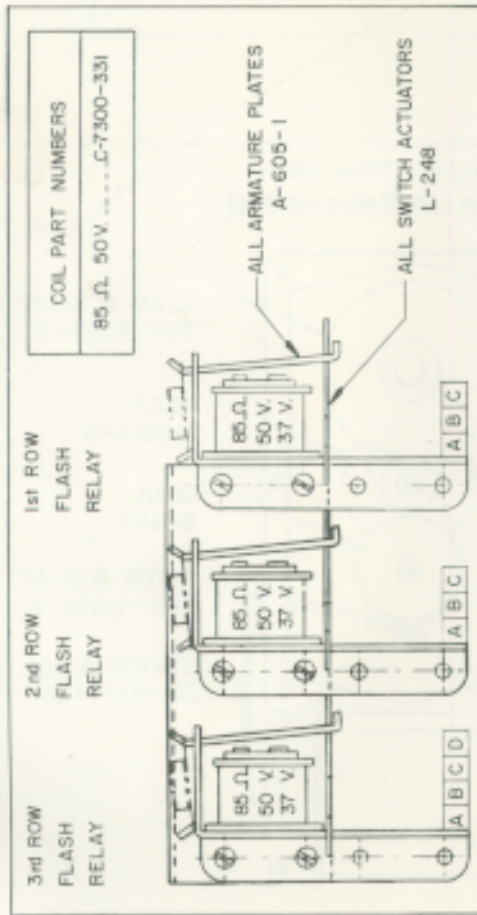


6 RELAY BANK SWITCH CHART FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ON PAGE 163

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
STAR RELAY COIL	A-17	27-2 70	Blue-Orange Orange	Energized thru control unit cam switch #7A, when a circuit is completed thru mixer #2. (Only if star feature adjustment is in use).
A S.P.D.T.	D-20	85-2 85-2 81-2	Black-Yellow Black-White Black-Red	Breaks replay counter stop-up circuit for 3 eagles scoring, and completes replay counter stop-up circuit for 3 eagles and star scoring.
B S.P.D.T.	E-24	65-2 13-6 15-4	Brown-White Red-Yellow Red-White	Breaks 3 eagles replay scoring circuit, and completes 3 eagle and star replay scoring circuit.
C S.O.	K-12	74-1 90-1	Orange-Green Gray	Lites star feature lite.
SPIN MARETT RELAY COIL	A-17	80-1 70	Black Orange	Energized by start relay switch.
A S.C.	J-1	54-2 30	White-Green Yellow	Opens circuit to play-now lite, during spins.
B S.O.	H-20	15-1 30	Red-White Yellow	Completes circuit to energize flasher unit index coil, and the 3 flash ratchet lock magnets. Also completes a circuit to energize game-over relay if any hold relay was energized from previous game.
C S.O.	E-18	65-4 80-1	Brown-White Black	Lock-in circuit for this relay.
D S.O.	E-18	41-2 90-1	Green-Red Gray-Black	Safety lock-in circuit for hold relays, during spins.
E S.C.	F-20	31-4 74-2	Yellow-Red Orange-Green	Opens circuit for energizing hold relays, during spins.
F S.C.	E-20	30-3 74-2	Yellow-Brown Orange-Green	Opens circuit for energizing hold relays, during spins.
G S.C.	H-20	50-1 70-1	White-Blue Orange-Black	Opens circuit for energizing hold relays, during spins.
HOLD RELAY #3 COIL	A-20	92-1 70	Gray-Yellow Orange	Energized by #3 hold button, when circuit complete thru other factors.
A S.P.D.T.	D-20	41-1 15-1 51-1	Green-Red Red-White White-Red	Breaks circuit for energizing flash ratchet lock-magnet #3, and completes a circuit thru control unit cam switch #3A, to energize game-over relay.
B S.P.D.T.	F-24	60-1 50-2 60-2	Brown White-Brown Brown-Yellow	Breaks circuit for energizing 3rd row spotting disc index coil, and completes a circuit to energize 2nd row or 1st row spotting disc index coil.
C S.O.	C-20	90-1 90-1	Gray-Yellow Gray-Black	Completes lock-in circuit for this relay.
D S.O.	K-11	71-1 30	Orange-Red Yellow	Lites 3rd row hold lite.
E S.C.	H-11	49-1 50-1	Green-Yellow White	Opens circuit to mixer latch coil.

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
HOLD RELAY #2 COIL	A-20	83-1 70	Black-Yellow Orange	Energized by #2 hold button, when circuit complete thru other factors.
A S.P.D.T.	D-22	38-1 10-1 51-1	Yellow-Black Red-White White-Red	Breaks circuit for energizing flash ratchet lock magnet #2, and completes a circuit thru control unit cam switch #2A to energize game-over relay.
B S.P.D.T.	F-24	75-3 63-2 71-2	Orange-White Brown-Yellow Orange-Red	Breaks circuit for energizing 2nd row spotting disc index coil, and completes a circuit to energize 1st row spotting disc index coil.
C S.O.	C-19	83-1 68-1	Black-Yellow Gray-Black	Completes lock-in circuit for this relay.
D S.O.	K-11	65-1 30	Brown-White Yellow	Lites 2nd row hold lite.
E S.C.	C-10	40-1 43-1	Green Green-Yellow	Opens circuit to mixer latch coil.
HOLD RELAY #1 COIL	A-19	70-1 70	Orange-White Orange	Energized by #1 hold button, when circuit complete thru other factors.
A S.P.D.T.	D-22	56-1 10-1 51-1	Yellow-Brown Red-White White-Red	Breaks circuit for energizing flash ratchet lock magnet #1, and completes a circuit thru control unit cam switch #1A to energize game-over relay.
B S.C.	E-20	71-2 80-3	Orange-Red Black	Opens circuit for energizing 1st row spotting disc index coil.
C S.O.	C-19	70-1 68-1	Orange-White Gray-Black	Completes lock-in circuit for this relay.
D S.O.	K-11	63-1 30	Brown-Yellow Yellow	Lites 1st row hold lite.
E S.C.	C-10	40-1 52-2	Green White-Blue	Opens circuit to mixer latch coil.
COIN RELAY COIL	A-7	60-3 70	Brown Orange	Energized by coin switch.
A S.O.	H-26	71-3 30	Orange-Red Yellow	Completes circuit to energize anti-cheat relay.
B S.O.	H-31	90-2 30	Gray Yellow	Thru coin or credit adjustment plug, completes a circuit to energize start relay, or pulse replay register reset coil.

3 RELAY BANK PICTORIAL VIEW NUMBERS CORRESPOND TO SWITCH CHART BELOW



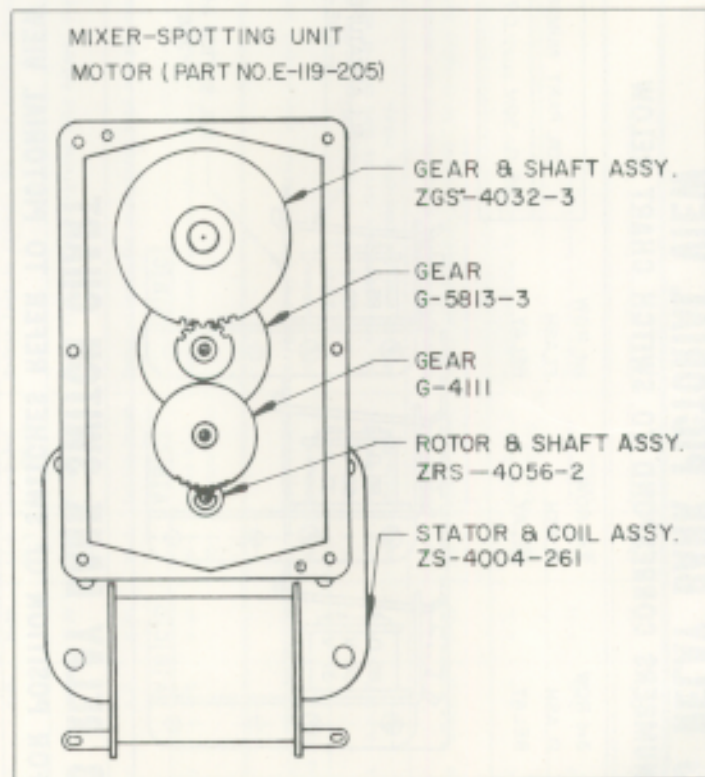
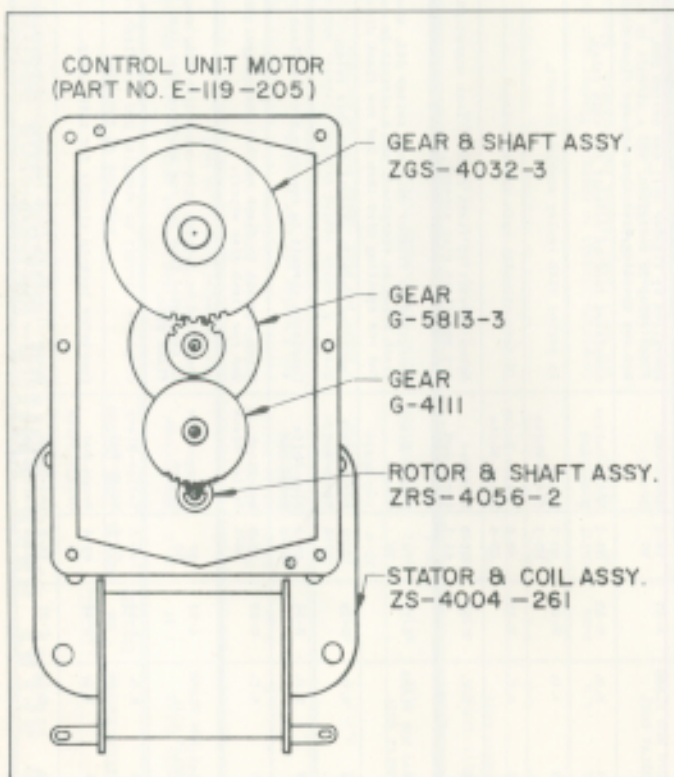
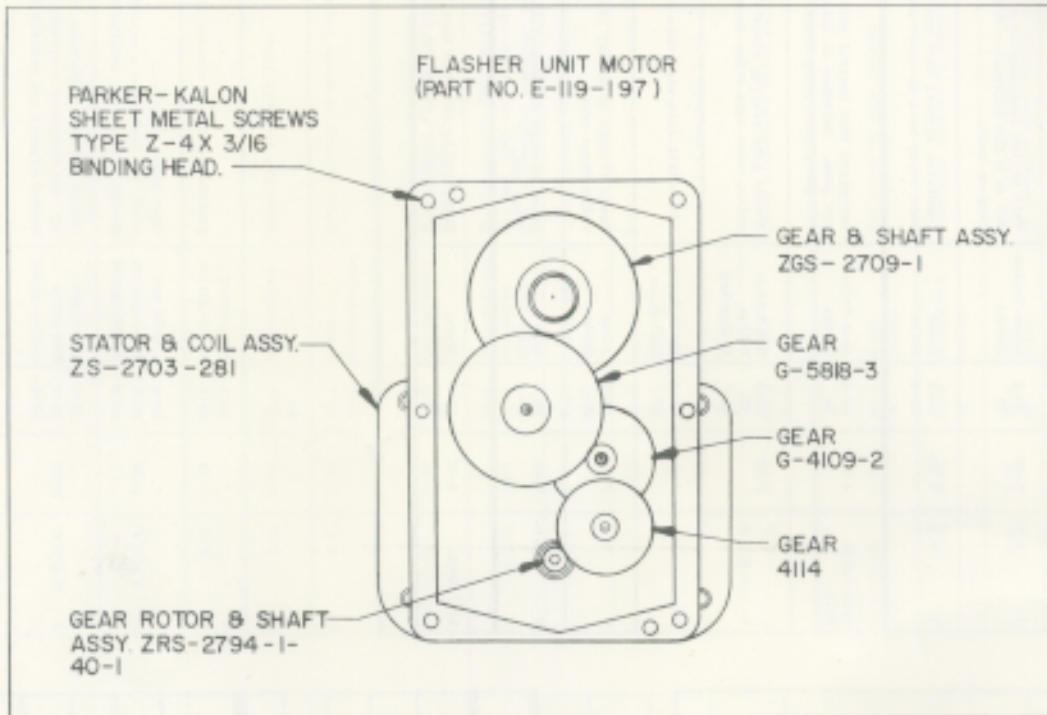
3 RELAY BANK SWITCH CHART FOR POSITION OF SWITCHES REFER TO PICTORIAL VIEW ABOVE

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
3rd ROW FLASH RELAY COIL	A-15	14-1 70	Red-Green Orange	Energized by Flasher unit cam switch #8A, when 2nd row Flash relay is energized, and a circuit is completed from 3rd row spotting disc thru 3rd row Flash disc.
A	N.O.	52-1 61-4	White-Yellow Brown-Red	Completes lock-in circuit for this relay.
B	N.O.	50-7 65-1	White Black-White	In series with replay scoring circuit.
C	N.C.	36-5 65-4	Yellow-Green Brown-White	(Safety circuit) spin safety relay.
D	N.C.	21-5 41-1	Blue-Red Green-Red	Opens circuit to Flash ratchet lock magnet #3. (To stop 3rd row Flash disc wiper).
2nd ROW FLASH RELAY COIL	A-13	78 70	Orange-Black Orange	Energized by Flasher unit cam switch #8A, when 1st row Flash relay is energized, and a circuit is completed from 2nd row spotting disc thru 2nd row Flash disc.
A	N.O.	48-1 61-4	Green-Black Brown-Red	Completes lock-in circuit for this relay.
B	N.O.	25-5 61-4	Blue-White Brown-Red	Completes circuit to energize 3rd row Flash relay.
C	N.C.	18-5 38-1	Red-Black Yellow-Black	Opens circuit to Flash ratchet lock magnet #2. (To stop 2nd row Flash disc wiper).
1st ROW FLASH RELAY COIL	A-11	37 70	White-Orange Orange	Energized by Flasher unit cam switch #8A, when a circuit is completed from 1st row spotting disc thru 1st row Flash disc.
A	N.O.	38-5 61-4	Yellow-Black Brown-Red	Completes circuit to energize 2nd row Flash relay.
B	N.O.	61-4 75	Brown-Red Orange-White	Completes lock-in circuit for this relays.
C	N.C.	14-5 36-1	Red-Green Yellow-Green	Opens circuit to Flash ratchet lock magnet #1. (To stop 1st row Flash disc wiper).

MISCELLANEOUS RELAYS SWITCH CHART

RELAY SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
REPLAY DOZZIER RELAY	A-25	90-2 70	White Orange	Energized by control unit cam switch #10A, only for 3 engines and star replay scoring circuit.
A	N.C.	43-2 70	Green-Yellow Orange	This switch functions to make control unit cam switch #8A act as a X10 multiplier for stepping replay counter step-up unit.
B	N.O.	40-2 50-2	Green White	Completes circuit thru control unit cam switch #8A to put this relay back to start position, when starting new game.
TILT RELAY COIL	A-9	23-5 70	Blue-Yellow Orange	Energized thru control unit cam switch #70, when starting new game. Switches on this relay complete circuits to end game, when relay drops out.
A	S.P.D.T.	13-5 30 31-5	Red-Yellow Yellow Yellow-Red	Breaks game playing circuit, and energizes game-over relay, when this relay drops out.
B	N.C.	54-4 30	White-Green Yellow	Lites tilt lite when this relay drops out.
C	N.O.	60-2 30	Brown Yellow	Opens circuit to animal lite on backglass, when this relay drops out.
D	N.O.	90-3 90-3	Gray Gray	Opens circuit for energizing tilt coil, when this relay drops out.
TILT COIL	A-37	90-3 70	Gray Orange	Energized by the back door inertia tilt switch, or the front cabinet push-bob tilt.

When ordering gears for motors, be sure to refer to part numbers shown in drawings below.



MISCELLANEOUS PARTS

Part No.	Name of Part
A-1538-3	Armature plate for AS-277-55
G-300	Back glass
A-1272-34	Button & Pin—Cancel
A-1272-35	Button & Pin—Hold
A-1272-39	Button & Pin—Play
P-711-1	Cigarette Holder
C-6845	Coil for E-101-58 magnet
P-1900-48	Coin box
A-2304-1	Coin box cover
P-2210-8	Coin entry plate 5¢
P-2210-9	Coin entry plate 10¢
P-2210-15	Coin entry plate 25¢
E-101-58	Coin lockout magnet
A-1363	Coin slide and coin return cup
SW-100-38	Coin switch for 5 or 10 or 25¢
AS-277-55	Coin Switch and rejector mount assembly 5 or 10 or 25¢
E-130-10	Counter
A-254-55	Hinge—side door
M-1004	Instruction plate
M-281-6	Lock and keys—side door
M-281-24	Lock and keys—back door—Keyed alike
P-4005	Lock cam—M-281-6
P-2210-68	Plate 10¢
P-2210-69	Plate 25¢
P-2210-70	Plate 5¢
AS-1699-2	Rotor assembly for AS-277-55
AS-1941	Side Door Complete
CA-567-85	Side door only
M-280-15	Slug rejector 5¢
M-280-16	Slug rejector 10¢
M-280-20	Slug rejector 25¢
SW-100-166	Switch—back door lock
SW-100-56	Switch—Tilt
E-122-65	Transformer

Bally pin game lubricant now available in one half-pint (8 Oz.)
containers with plastic spout and screw cap.

COIN & COIN LOCKOUT ADJUSTMENTS #629

Coin plug in coin — spins game on drop of coin.

Coin plug in credit - registers 1 on free play register on drop of coin and game spins when play button is pushed.

BLUE PLUG (FIRST ROW)

Position A	-----	9 toads	15 fish
Position B	-----	7 toads	17 fish
Position C	-----	6 toads	18 fish
Position D	-----	5 toads	19 fish

RED PLUG (SECOND ROW)

Position A	-----	8 eagles	20 fish
Position B	-----	7 eagles	21 fish
Position C	-----	6 eagles	22 fish
Position D	-----	5 eagles	23 fish
Position E	-----	4 eagles	24 fish

DO NOT PLUG RED OR BLUE PLUGS IN ANY OTHER POSITIONS EXCEPT AS SHOWN.