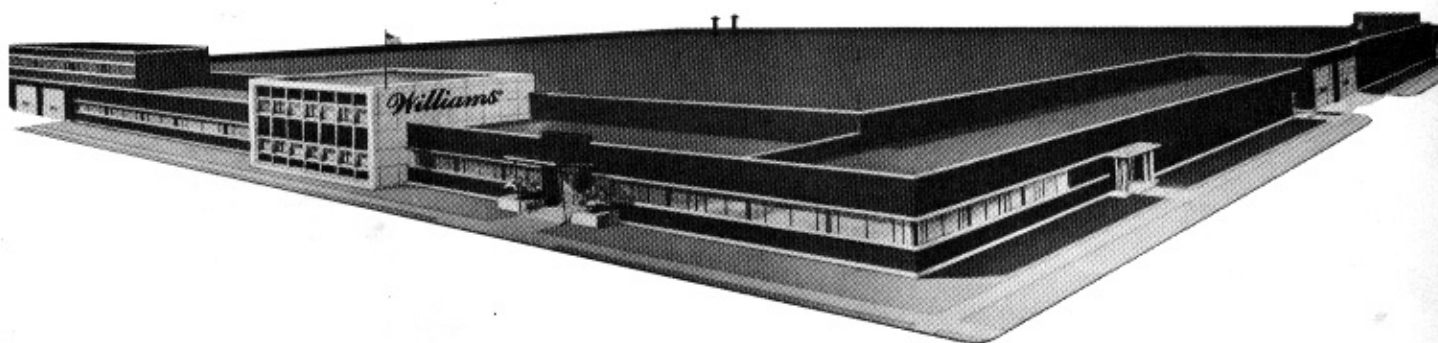


# Instruction Manual

*for*

# PHANTOM GUN

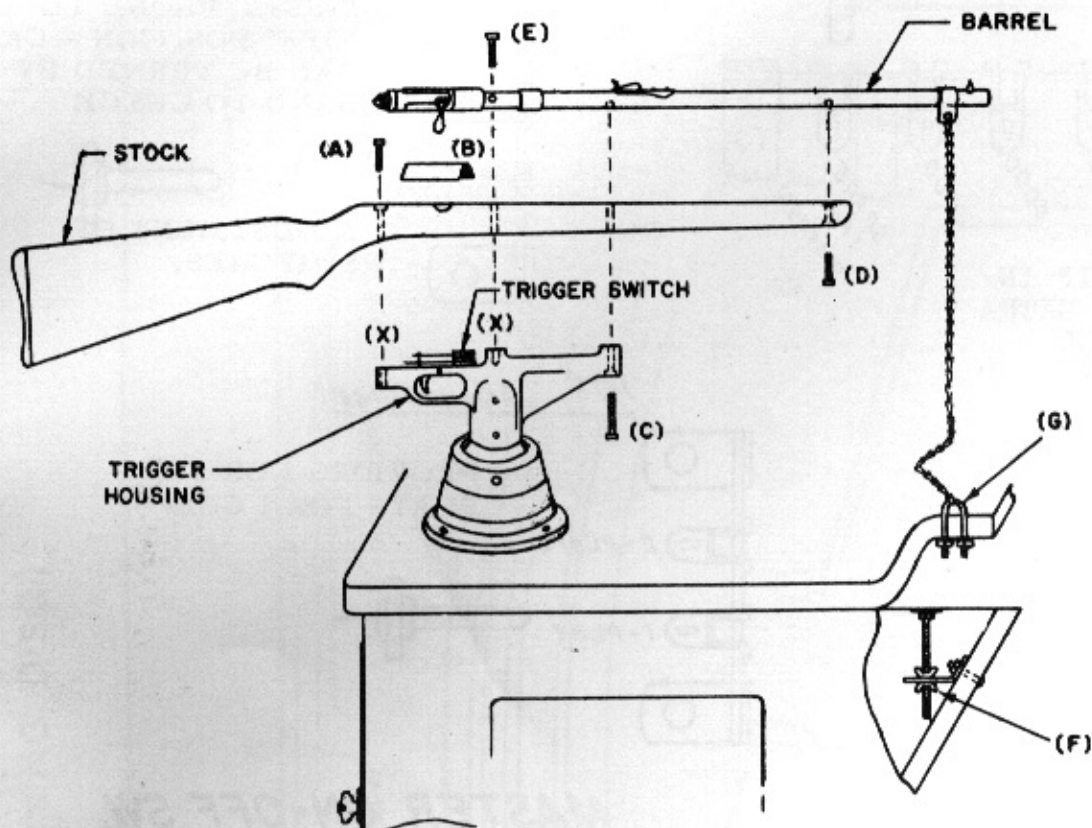


**Williams<sup>®</sup> ELECTRONICS, INC.**  
SUBSIDIARY OF THE SEEBURG CORPORATION

3401 N. California Ave.  
Phone 267-2240

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

## RIFLE ASSEMBLY INSTRUCTIONS



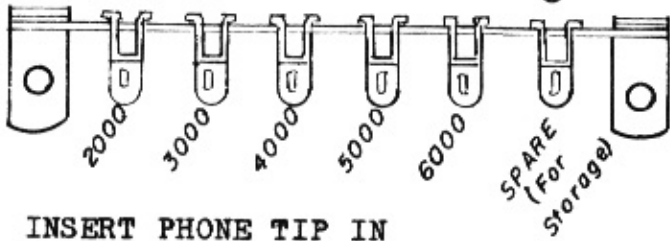
1. AFTER REMOVING RIFLE ASSEMBLY FROM CARTON, REMOVE PACKING FROM TRIGGER HOUSING. (2) CAP SCREWS ON TRIGGER HOUSING INDICATED AS (X) ARE TO BE REMOVED AND SAVED TO BE USED IN ASSEMBLY OF RIFLE AT LOCATION (A) AND (E).
2. PLACE STOCK OF RIFLE ON TRIGGER HOUSING, LINE UP HOLE AND TIGHTEN 1" SCREW (A).
3. PLACE PROTECTIVE FISHPAPER (B) OVER TRIGGER SWITCH, USING CAUTION NOT TO DISTURB SWITCH.
4. PLACE RIFLE BARREL ON STOCK AND TIGHTEN 1-1/2" SCREW (C). ALSO TIGHTEN SCREWS (D) & (E)
5. TO OPEN TOP PANEL, OPEN FRONT DOOR, REACH IN TO LOOSEN (2) BOTTOM WING NUTS (F). SLIDE CARRIAGE BOLTS FROM HOLDING BRACKETS AND RAISE TOP PANEL.
6. REMOVE (2) WASHERS AND NUTS FROM "U" BOLT (G), PLACE "U" BOLT THRU HOLES IN TOP PANEL, REPLACE WASHERS AND NUTS AND TIGHTEN.
7. CLOSE TOP PANEL MAKING SURE BRACKETS ARE BETWEEN WING NUTS AND TIGHTEN ALL WING NUTS.

**NOTE:**

ALLEN HEAD CAP SCREWS (C) AND (D) ARE PACKED IN CASH BOX ALONG WITH ALLEN HEAD WRENCH.

# ADJUSTMENTS ON MECHANISM PANEL

## Extra Shots Adjustment



INSERT PHONE TIP IN SCORE AT WHICH EXTRA SHOTS RELAY WILL ENERGIZE.

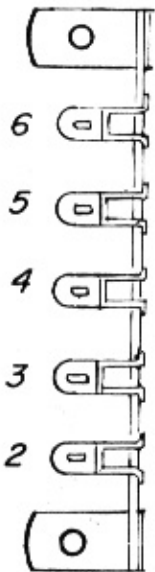
## Motor Service Jack



INSERT PHONE TIP IN 'OFF' POSITION - CAMS CAN BE TURNED BY HAND TO CHECK

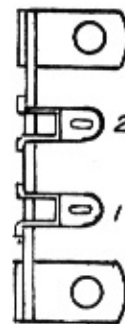
ADJUSTMENT OF SWITCHES.

## 25¢ Adjustment



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

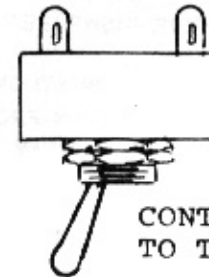
## 10¢ Adjustment



PROVIDES 1 OR 2 PLAYS FOR 1 COIN

## MASTER ON-OFF SW.

(Located under front of Cabinet)

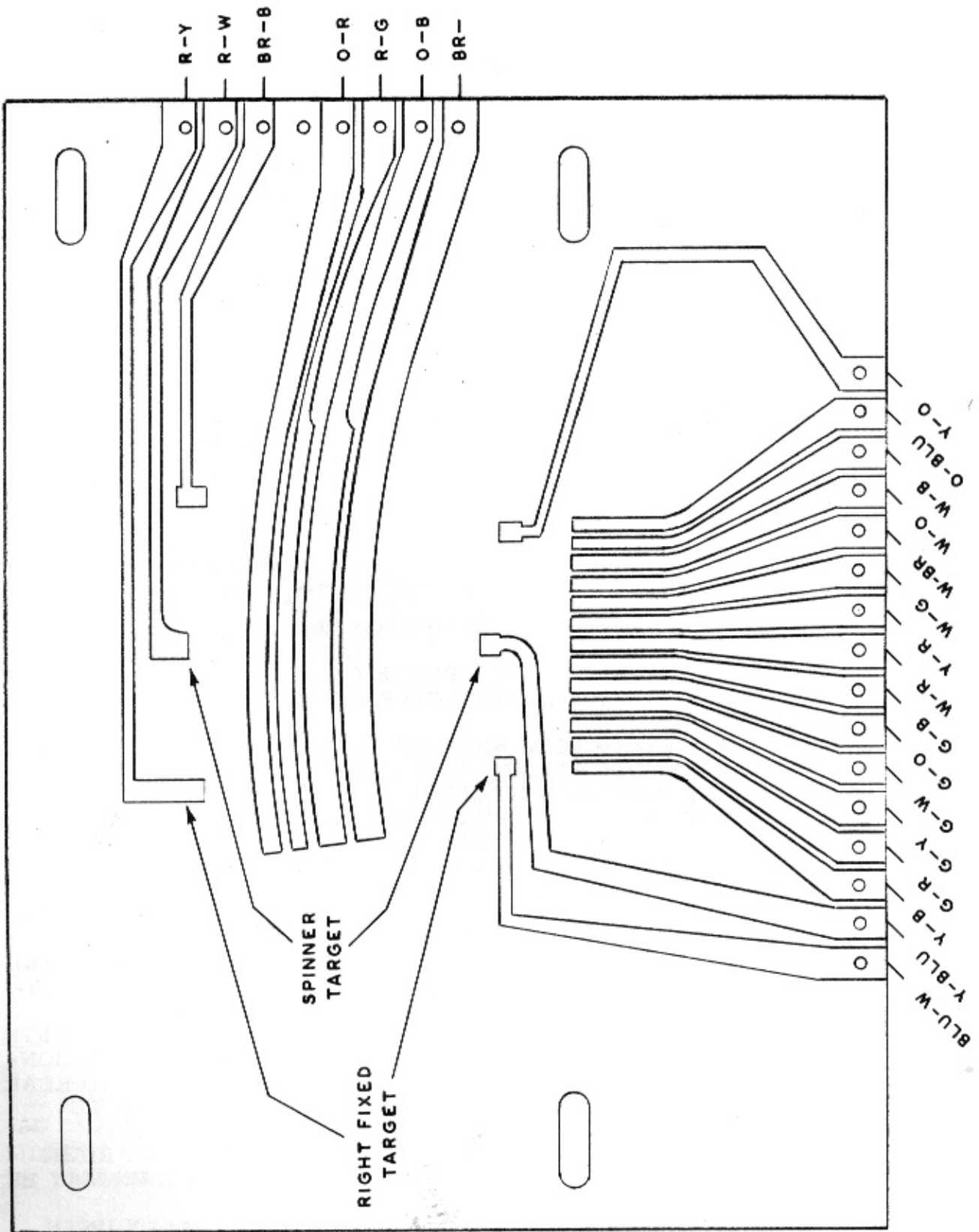


CONTROLS POWER TO TRANSFORMER

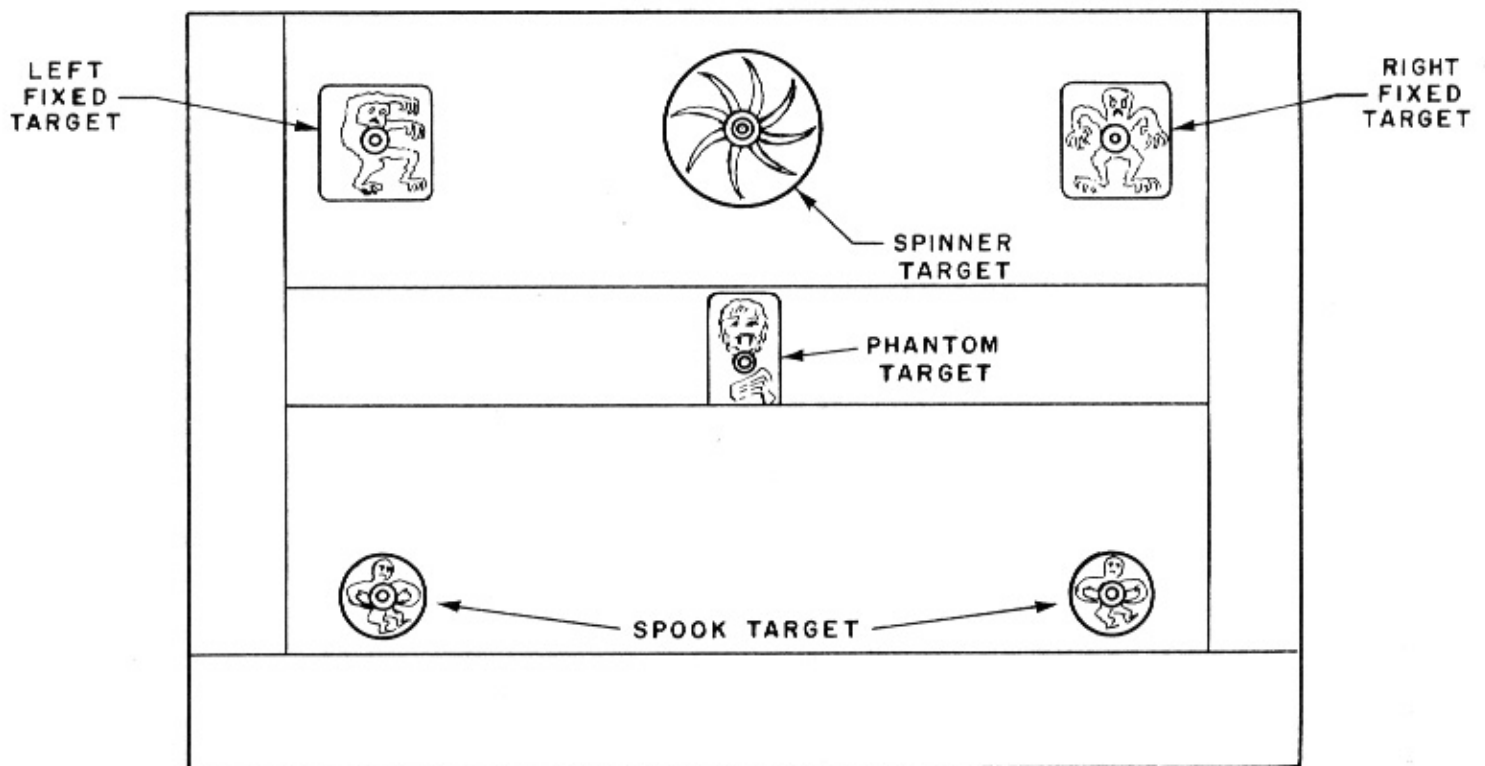
## THE POWER TRANSFORMER

IS LOCATED ON BACK DOOR. IF GAME IS ON LOCATION WITH EXTREMELY LOW LINE VOLTAGE, REMOVE FUSE FROM "50 VOLTS" POSITION ON FUSE BLOCK AND INSERT INTO "50 VOLTS LOW LINE" POSITION. THIS WILL INCREASE VOLTAGE APPROXIMATELY 5 VOLTS.

# RIFLE CONTACT PLATE (SCANNING DISC)



# " PHANTOM GUN " — RIFLE ALIGNMENT



## VIEW LOOKING INTO MIRROR

FOLLOWING STEPS SHOULD BE USED TO ALIGN RIFLE TO TARGETS:

1. NOTE THAT RIFLE CONTACT PLATE CAN BE MOVED FROM LEFT TO RIGHT, ALSO FROM FRONT TO REAR BY LOOSENING APPROPRIATE SCREWS.
2. SIGHT RIFLE ON CENTER SPOT OF LEFT FIXED TARGET. ADJUST RIFLE CONTACT PLATE SO THAT FRONT WIPER (STYLUS) IS ON HORIZONTAL CONTACT SEGMENT WHICH IS CONNECTED TO BROWN-BLACK WIRE, AND REAR WIPER ON VERTICAL CONTACT SEGMENT WHICH IS CONNECTED TO YELLOW-ORANGE WIRE. SLIGHTLY TIGHTEN ADJUSTMENT SCREWS TO PREVENT LOSS OF INITIAL ADJUSTMENT.
3. SIGHT RIFLE ON CENTER SPOT OF RIGHT FIXED TARGET. ADJUST RIFLE CONTACT PLATE SO THAT FRONT WIPER IS ON HORIZONTAL CONTACT SEGMENT WHICH IS CONNECTED TO RED-YELLOW WIRE, AND REAR WIPER ON VERTICAL CONTACT SEGMENT WHICH IS CONNECTED TO BLU-WHITE WIRE.
4. SIGHT RIFLE ON CENTER SPOT OF SPINNING TARGET. ADJUST RIFLE CONTACT PLATE SO THAT FRONT WIPER IS ON HORIZONTAL SEGMENT WHICH IS CONNECTED TO RED-WHITE, AND REAR WIPER IS ON VERTICAL SEGMENT WHICH IS CONNECTED TO YELLOW-BLU WIRE.
5. A REPEAT OF SIGHTINGS ON ALIGNMENT OF LEFT AND RIGHT FIXED TARGETS IS SUGGESTED, AS A SLIGHT TOUCH UP MAY BE REQUIRED.
6. ROTATE SPOOK TARGET VERTICAL MOTOR MANUALLY UNTIL WIPER FINGER ON SMALL CONTACT PLATE (AT EXTREME RIGHT SIDE OF TARGET BOARD) IS EXACTLY IN CENTER OF CONTACT SEGMENT WHICH IS CONNECTED TO ORANGE-BLACK WIRE. SIGHT RIFLE ON SPOOK TARGET. FRONT WIPER ON RIFLE ARM SHOULD BE EXACTLY IN CENTER OF WIDTH OF HORIZONTAL CONTACT SEGMENT ON RIFLE CONTACT PLATE WHICH IS CONNECTED TO ORANGE-BLACK WIRE.

7. LEAVING SPOOK TARGET IN VERTICAL POSITION JUST CHECKED, ROTATE SPOOK TARGET HORIZONTAL MOTOR UNTIL SPOOK TARGET SWITCH IS IN CENTER OF SEGMENT WHICH IS CONNECTED TO ORANGE-BLU WIRE -- ALMOST AT EXTREME LEFT SIDE. SIGHT RIFLE ON SPOOK TARGET. FRONT WIPER ON RIFLE ARM SHOULD STILL BE IN CENTER OF WIDTH OF HORIZONTAL SEGMENT OF RIFLE CONTACT PLATE WHICH IS CONNECTED TO ORANGE-BLACK WIRE. REAR WIPER ON RIFLE ARM SHOULD BE IN CENTER OF VERTICAL CONTACT SEGMENT WHICH IS CONNECTED TO ORANGE-BLU WIRE.
8. ROTATE SPOOK TARGET HORIZONTAL MOTOR UNTIL SPOOK TARGET SWITCH IS IN CENTER OF SEGMENT WHICH IS CONNECTED TO YELLOW-BLACK WIRE -- ALMOST AT EXTREME RIGHT SIDE. SIGHT RIFLE ON SPOOK TARGET. FRONT WIPER ON RIFLE ARM SHOULD STILL BE IN CENTER OF WIDTH OF HORIZONTAL CONTACT SEGMENT OF RIFLE CONTACT PLATE WHICH IS CONNECTED TO ORANGE-BLACK WIRE. REAR WIPER ON RIFLE ARM SHOULD BE IN CENTER OF VERTICAL CONTACT SEGMENT WHICH IS CONNECTED TO YELLOW-BLACK WIRE.
9. A REPEAT OF SIGHTING ON ALIGNMENT IS SUGGESTED AS A SLIGHT TOUCH UP ON THE ADJUSTMENT OF THE RIFLE CONTACT PLATE MAY BE REQUIRED. TIGHTEN CONTACT PLATE SECURELY AND LUBRICATE CONTACT PLATE SPARINGLY WITH COIN MACHINE GREASE SUPPLIED AND OPERATE MACHINE ELECTRICALLY FOR ACCURACY.
10. NOTE! PRIOR TO MAKING ANY ADJUSTMENTS IN ALIGNMENT OF RIFLE, A CHECK SHOULD BE MADE OF RIFLE WIPER STYLUS FOR EXTREME WEAR, SPRING TENSION, ETC. A PERIODIC CLEANSING OF RIFLE CONTACT PLATE OF ANY RESIDUE IS REQUESTED, FOLLOWED BY RELUBRICATING.

#### NOTE

RIFLE SWITCH IS LOCATED ON UNDERSIDE OF TOP PANEL. THIS IS THE PANEL ON WHICH THE RIFLE IS MOUNTED. RIFLE SWITCH SHOULD BE ACTUATED WHEN FRONT WIPER (STYLUS) IS BETWEEN THE TWO HORIZONTAL CONTACT SEGMENTS WHICH ARE CONNECTED TO ORANGE-RED AND RED-GREEN WIRES.

#### VOLUME CONTROL

VOLUME CONTROL FOR SOUND IS LOCATED IN CASH BOX COMPARTMENT. SPEAKER IS LOCATED BEHIND PANEL AT BOTTOM FRONT OF GAME. THIS PANEL IS LOCKED IN PLACE BY TWO WOOD SCREWS LOCATED TO THE LEFT AND RIGHT SIDES OF CASH BOX. TO REMOVE THESE SCREWS, IT IS ADVISABLE TO OPEN THE TOP PANEL (ON WHICH THE RIFLE IS MOUNTED).

---

## PHANTOM GUN

Player can shoot at Spinner Target, Spook Target or Phantom Target at any time.

Hitting the Spinner Target will lite the Left and Right Fixed Targets and the "300" lite for Spook Target.

Spinner Target scores 10 points.

Left and Right Fixed Targets score 100, when lit.

Spook Target scores 50 points except when "300" is lit.

Phantom (Center Target) scores 100 points except on the 15th shot if "1000" is lit. The "1000" lite is lit by hitting the Spinner Target on 14th shot.

## SEQUENCE OF OPERATION

### RESET CYCLE

Coin Switch pulses Coin Relay.

Coin Relay energizes Start Relay.

Start Relay runs Control Motor.

Start Relay energizes Shots Unit Reset Coil at Control Motor Cam 2.

Start Relay holds in until zero switches on Score Drum Units open.

## SEQUENCE OF OPERATION

### DURING PLAY

Trigger Switch energizes Trigger Relay. Switch 1B on Trigger Relay is in circuit to all "Hit" Relays, thru Rifle Scan Disc.

Hitting Spinner Target energizes Spinner Hit Relay. Switches on Spinner Hit Relay do the following:

1. Energize Left and Right Fixed Target Relay Reset Coils, which lite the Fixed Targets for 100 scoring.

2. Energize 10 Point Relay.

3. Energize Vertical Run Relay.

Vertical Run Relay will:

1. Lite "Spook Scores 300".

2. Run the Spook Vertical Motor.

3. Run the Spinner Motor.

4. Close in circuits to Left and Right Fixed Target Hit Relays. (For 100 Score if Player decides to shoot at Fixed Target).

5. Close in circuit to Vertical Lock Relay. (For 300 score if Player decides to shoot at Spook Target).

6. Close in circuit to Score Transfer Relay. (For 1000 score when hitting Phantom Target on 15th shot).

From beginning of play, until the 20th shot, the Vertical Run Relay, once energized, will hold in thru Index Cam Switch on Vertical Motor. From 20th shot to end of game, Vertical Run Relay remains energized thru Shot Unit Disc.



## **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.

## **4. RELAY and SWITCH ADJUSTMENT**

Where relay adjustments are called for, before bending blades, in all cases, on any machine, make certain that the screws holding the switch stacks are down very tightly. This is suggested because the plastic spacers in the switch stacks have occasionally shrunk by drying out, causing a poor adjustment.

# **SERVICEMAN**

## **TO REMOVE BACKGLASS:**

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

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

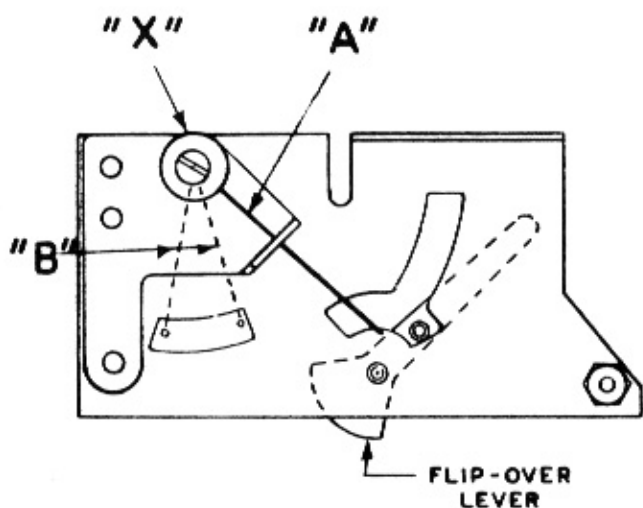
# INSTRUCTIONS FOR ALTERING COIN CHUTES EQUIPPED WITH A FLIP-OVER DEVICE.

FOR 1 COIN - FOR 1 PLAY

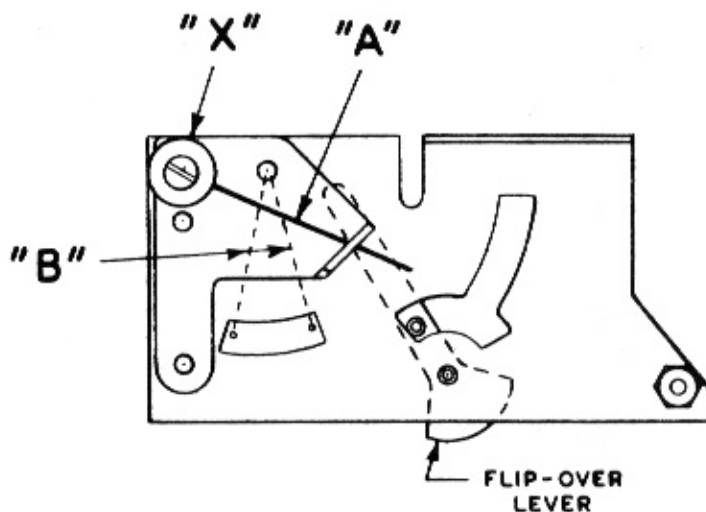
OR

2 COINS - FOR 1 PLAY

**FIGURE 1**



**FIGURE 2**



## **1 COIN - FOR 1 PLAY (FIGURE 1):**

Wire form "A" should be in position as shown in Figure 1. Flip-over lever should rebound from wire form "A" and return to position shown in Figure 1 everytime a coin is inserted. All coins pass over the coin trip switch wire "B".

## **2 COINS - FOR 1 PLAY (FIGURE 2):**

Wire form "A" should be in position as shown in Figure 2 (see note). Flip-over lever should alternate from side to side. 1st coin should go to cash box without actuating coin trip switch wire "B", 2nd coin should pass the coin trip switch wire "B" and returns flip-over to position as shown in Figure 2.

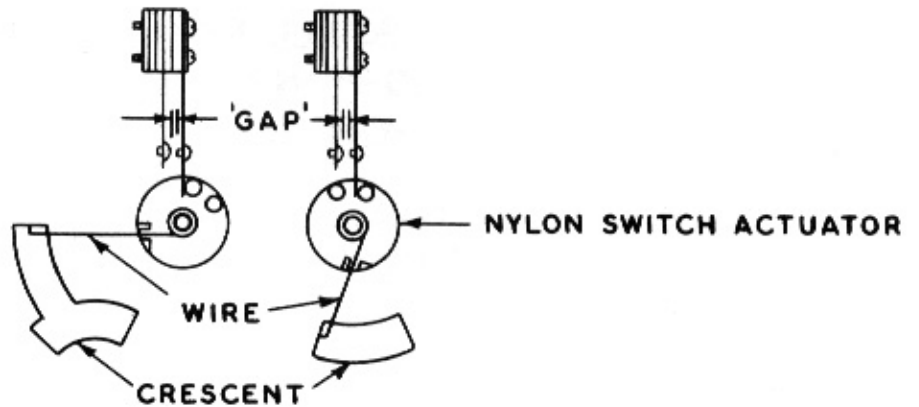
## **NOTE:**

To change from 1 coin play to 2 coin play or vice versa - loosen screw "X" and move screw, bushing & wire form "A" to position as required - shown in Figure 1 or Figure 2.

When using 1 coin for 1 play, wire form "A" should not under any circumstances be allowed to enter the "Banana" slot and cause binding of flip-over lever.

# 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.

# 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
CREDIT	- - -	- - -	A-6400	(SPOOK TARGET VERTICAL) 14B-7851 (60 CY.)
SHOTS	C-6417	C-6520	A-6402-35	14B-7855 (50 CY.)
TENS	- - -	- - -	3C-7272	(SPOOK TARGET LEFT AND RIGHT) 14A-7848 (60 CY.)
HUNDREDS	- - -	- - -	3C-7272	14A-7854 (50 CY.)
THOUSANDS	A-7195	A-6294	3C-7272	(PHANTOM TARGET) 14A-7825 (60 CY.)
ALTERNATOR	- - -	- - -	3C-7272	14A-7831 (50 CY.) (SPINNER) 14A-7828 (60 CY.) 14A-7834 (50 CY.) (CONTROL) 14A-7829 (60 CY.) 14A-7835 (50 CY.)

"PHANTOM GUN" COIL AND MOTOR CHART

NOTICE:

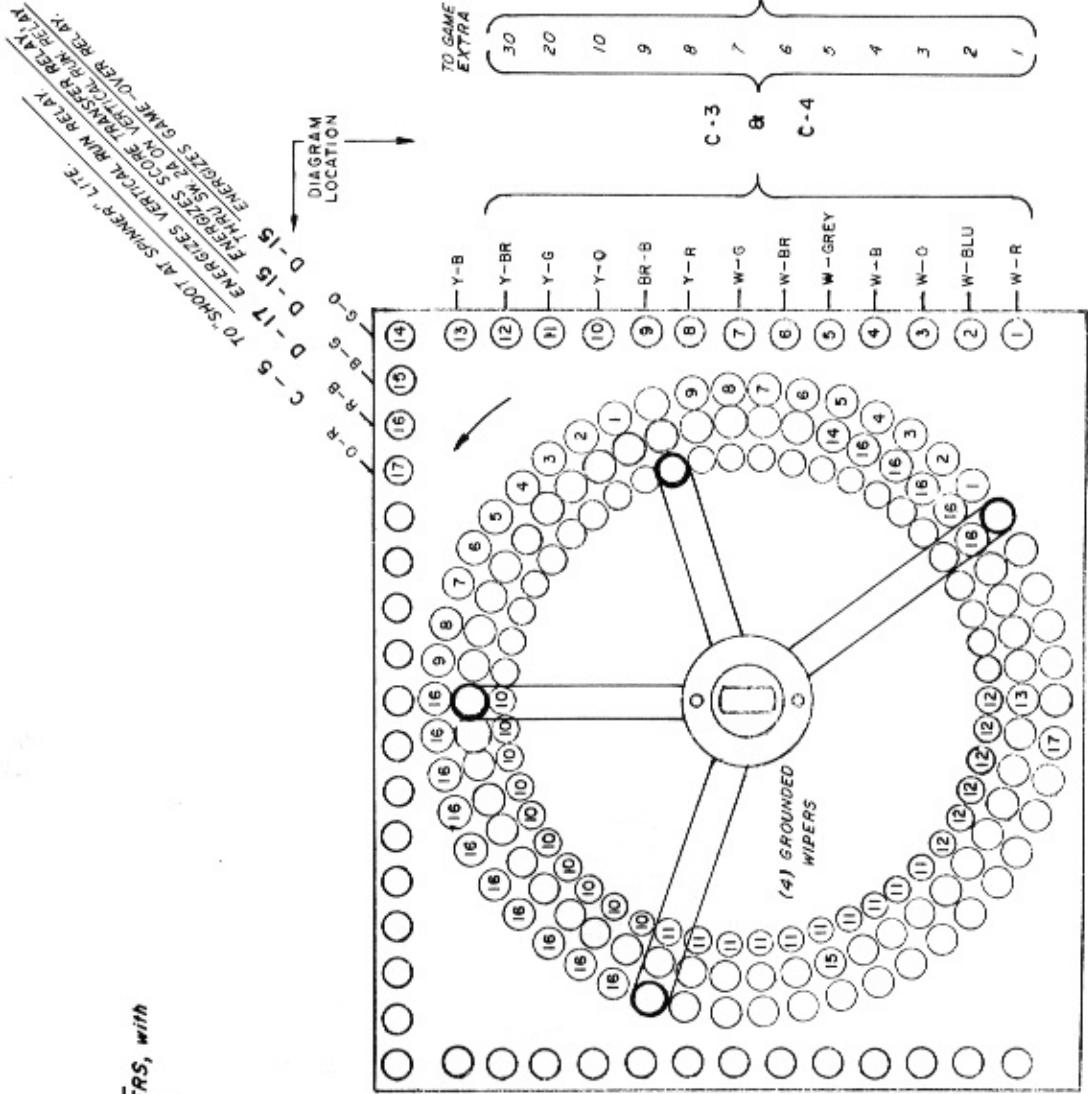
THIS GAME OPERATES ON 50 VOLTS. WHEN ORDERING REPLACEMENT TRANSFORMERS, MOTORS, COILS OR METERS ... MAKE SURE TO SPECIFY CORRECT PART NUMBER.

NUMBER	DESCRIPTION	LOCATION
14A-7825	PHANTOM TARGET MOTOR - 60 CYCLE	TARGET PANEL
14A-7829	CONTROL MOTOR - 60 CYCLE	BACK DOOR
14A-7831	PHANTOM TARGET MOTOR - 50 CYCLE	TARGET PANEL
14A-7835	CONTROL MOTOR - 50 CYCLE	BACK DOOR
14A-7848	SPOOK TARGET MOTOR (L&R) -60 CYCLE	TARGET PANEL
14B-7851	SPOOK TARGET VERTICAL MOTOR - 60 CYCLE	TARGET PANEL
14A-7854	SPOOK TARGET MOTOR (L&R) - 50 CYCLE	TARGET PANEL
14B-7855	SPOOK TARGET VERTICAL MOTOR - 50 CYCLE	TARGET PANEL
14A-7828	SPINNER MOTOR - 60 CYCLE	TARGET PANEL
14A-7834	SPINNER MOTOR - 50 CYCLE	TARGET PANEL
15A-6775	TRANSFORMER - 60 CYCLE	BACK DOOR
15A-6776	TRANSFORMER - 50 CYCLE	BACK DOOR
<u>SOLENOID COILS</u>		
A-25-1000	CREDIT UNIT STEP-UP	INSERT
A-25-1000	SHOT UNIT STEP-UP	INSERT
A-2-26-1100	KICKER	CABINET
B-27-1100	CREDIT UNIT RESET	INSERT
B-27-1100	SHOT UNIT RESET	INSERT
B-28-1450	SCORE DRUM UNITS ( 3 RQD. )	INSERT
B-28-1450	ALTERNATOR UNIT	INSERT
D-24-1400	RIFLE RECOIL SOLENOID	CABINET
<u>RELAY COILS</u>		
M-31-1600	SCORE RESET	INSERT
M-31-1500	10 POINT	INSERT
	100 POINT	INSERT
	1000 POINT	INSERT
M-31-1600	10¢	BACK DOOR
	25¢	BACKDOOR
	COIN	BACKDOOR
	CONTROL MOTOR	BACKDOOR
	SPOOK HIT	BACKDOOR
	GAMEOVER	BACKDOOR
	PHANTOM HIT	BACKDOOR
	LEFT FIXED TARGET HIT	BACKDOOR
	RIGHT FIXED TARGET HIT	BACKDOOR
	SPINNER HIT	BACKDOOR
	START	BACKDOOR
	TRIGGER	BACKDOOR
	SCORE TRANSFER	BACKDOOR
	VERTICAL LOCK	BACKDOOR
M-31-1600	LEFT FIXED TARGET (RESET)	BACKDOOR
	RIGHT FIXED TARGET (RESET)	BACKDOOR
	LEFT FIXED TARGET (TRIP)	BACKDOOR
	RIGHT FIXED TARGET (TRIP)	BACKDOOR
M-32-2400	LOCK	BACKDOOR
	EXTRA SHOT	BACKDOOR
	CUTOFF	BACKDOOR
	DIRECTION	TARGET PANEL
	VERTICAL RUN	TARGET PANEL
M-34-3000	TONE DELAY	CABINET
XM-32P-2400	LOCKOUT COIL	COIN CHUTE
XM-29-1100	METER COIL	CABINET

## SHOTS UNIT DISC

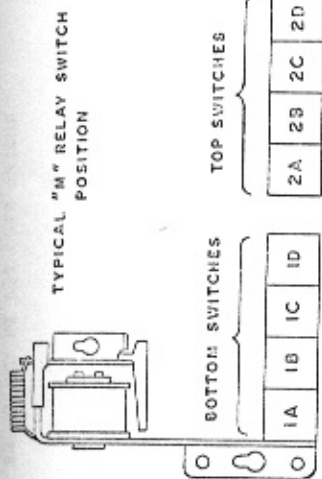
THIS UNIT RESETS TO ZERO WHEN COIN RELAY IS ENERGIZED, AT CONTROL MOTOR CAM-2.  
IT ADVANCES ONE STEP EACH TIME THE TRIGGER RELAY IS ENERGIZED.

View looking at WIPER FINGERS, with WIPER in ZERO position



# A.C. RELAYS & SWITCHES

LOCATED ON BACK-DOOR



## CONTROL MOTOR RELAY

IS ENERGIZED BY ANY OF THE FOLLOWING RELAYS---10%, 25%, COIN, START OR SPOOK HIT. THE CONTROL MOTOR RELAY IS WIRED IN PARALLEL WITH THE CONTROL MOTOR, SO THIS RELAY IS ENERGIZED WHENEVER THE CONTROL MOTOR IS RUNNING.

## EXTRA SHOTS RELAY

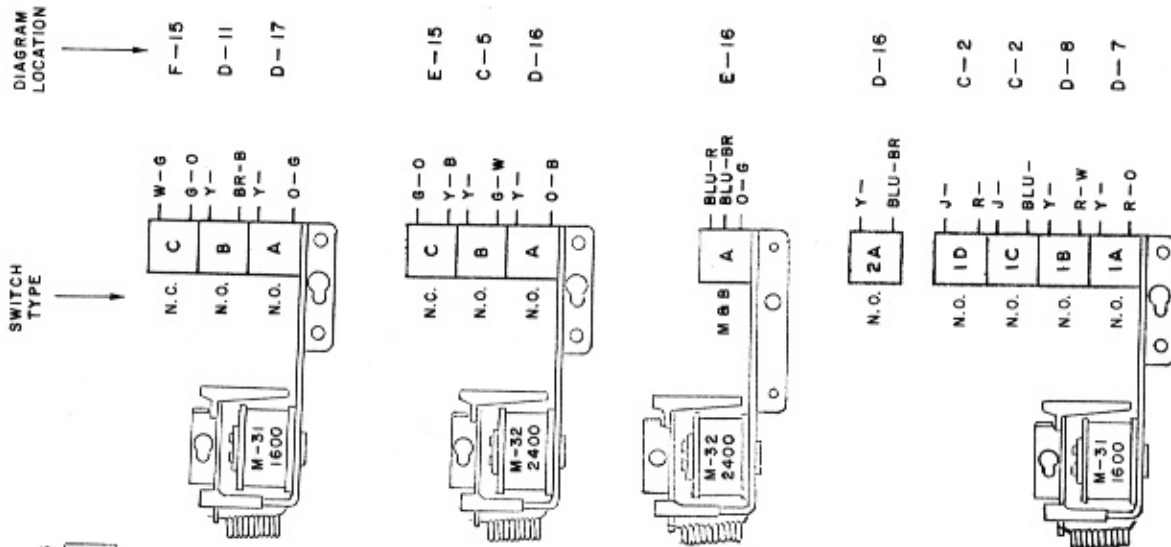
IS ENERGIZED BY SWITCH B ON 1000 POINT RELAY, THRU THE EXTRA SHOTS ADJUSTMENT JACK AND THE 1000 POINT DRUM UNIT DISC.

## CUT-OFF RELAY

IS ENERGIZED BY SWITCH A ON CONTROL MOTOR RELAY OR BY SHOT UNIT E.O.S. SWITCH.

## TRIGGER RELAY

IS ENERGIZED BY TRIGGER SWITCH, THRU SWITCH A OF CUT-OFF RELAY.



TO GAME-OVER RELAY COIL.

IN SERIES WITH SWITCH A ON VERTICAL LOCK RELAY. ENERGIZES CUT-OFF RELAY.

IN SERIES WITH SWITCH C ON CONTROL MOTOR RELAY. TO "EXTRA SHOTS" LITR. HOLD CIRCUIT TO THIS RELAY.

OPENS CIRCUIT TO TRIGGER RELAY AND MAKES TO CUT-OFF RELAY.

IN SERIES WITH SWITCH A ON CUT-OFF RELAY.

TO GUN RECOIL SOLENOID, THRU 2 AMP SLO-BLO FUSE.

IN SERIES WITH SWITCH 1D ON TRIGGER RELAY.

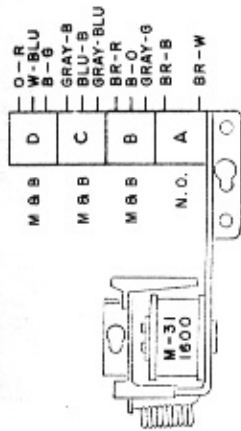
IN CIRCUIT TO ALL "HIT" RELAYS (PHANTOM-SPOOK, ETC.), THRU RIFLE-SCAN DISC.

ENERGIZES S.U. COIL ON SHOT UNIT.



## VERTICAL LOCK RELAY

IS ENERGIZED BY SWITCH 1C ON SPOOK HIT RELAY.



CIRCUIT IN SOUND SYSTEM.

OPENS IN CIRCUIT TO 10 POINT RELAY AND CLOSES TO 100 POINT RELAY.

HOLD CIRCUIT TO SPOOK HIT RELAY, THRU CONTROL MOTOR CAM 3 OR 5.

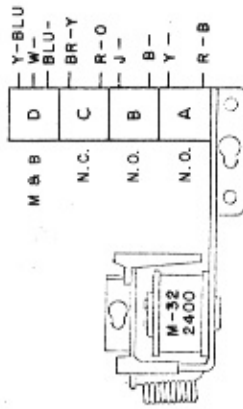
IN HOLD CIRCUIT TO THIS RELAY.

LOCATION

F-14  
E-8  
E-11

## LOCK RELAY

IS ENERGIZED BY SWITCH 1C ON COIN RELAY, AT CONTROL MOTOR CAM 4.



OPENS CIRCUIT TO GAME OVER LITE AND CLOSES TO TARGET INSTRUCTION LITES.

IN CIRCUIT TO COIN RELAY, THRU CREDIT UNIT "0" POSITION SWITCH.

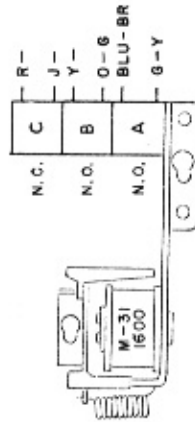
IN SERIES WITH SWITCH C ON START RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

B-5  
E-4  
G-12  
D-3

## START RELAY

IS ENERGIZED BY SWITCH 1B ON COIN RELAY.



OPENS CIRCUIT TO TRIGGER RELAY.

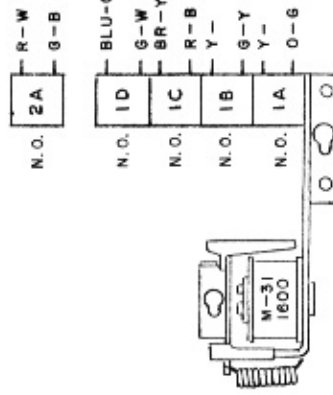
RUNS CONTROL MOTOR AND ENERGIZES CONTROL MOTOR RELAY.

HOLD CIRCUIT TO THIS RELAY.

G-12  
D-5  
E-6

## COIN RELAY

IS ENERGIZED BY COIN SWITCH. ALSO BY CREDIT BUTTON SWITCH, THRU CREDIT UNIT ZERO POSITION SWITCH.



IN HOLD CIRCUIT TO THIS RELAY.

ENERGIZES RESET COIL ON CREDIT UNIT, THRU CONTROL MOTOR CAM 1.

IN SERIES WITH SWITCH A ON GAME OVER RELAY.

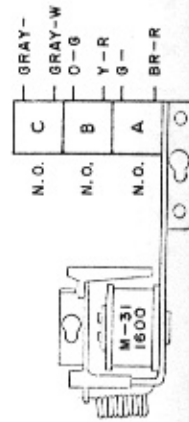
ENERGIZES START RELAY.

RUNS CONTROL MOTOR AND ENERGIZES CONTROL MOTOR RELAY.

D-4  
E-5  
E-3  
D-6  
D-5

## 25¢ RELAY

IS ENERGIZED BY 25¢ COIN SWITCH.



TO CREDIT UNIT S.U. COIL, THRU LAST POSITION SWITCH ON THAT UNIT.

RUNS CONTROL MOTOR AND ENERGIZES CONTROL MOTOR RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

E-7  
E-5  
F-4

### 10¢ RELAY

IS ENERGIZED BY 10¢ COIN SWITCH,  
IF 10¢ ADJUSTMENT JACK IS PLUGGED  
INTO "2 PLAYS" POSITION.

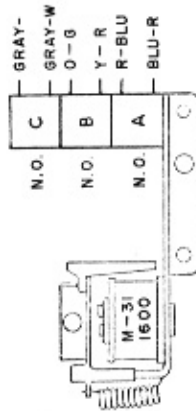


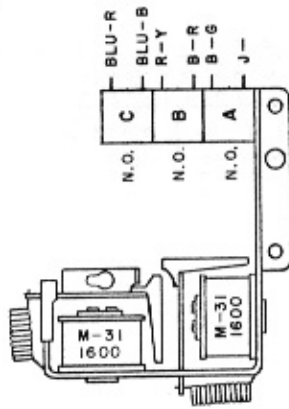
DIAGRAM  
LOCATION

E-7  
E-5  
E-3

TO CREDIT UNIT S.U. COIL, THRU LAST POSITION SWITCH  
ON THAT UNIT.  
RUNS CONTROL MOTOR AND ENERGIZES CONTROL MOTOR RELAY.  
IN HOLD CIRCUIT TO THIS RELAY.

### RIGHT FIXED TARGET RELAY

RESET COIL IS ENERGIZED BY SWITCH  
1A ON SPINNER HIT RELAY.  
TRIP COIL IS ENERGIZED BY SWITCH  
C ON RIGHT FIXED TARGET HIT RELAY.

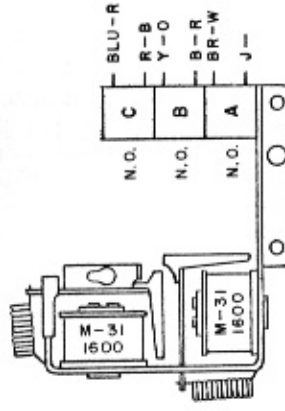


C-5  
E-11  
E-8

TO RIGHT FIXED TARGET LITE.  
IN CIRCUIT TO RIGHT FIXED TARGET HIT RELAY, THRU  
RIFLE SCAN DISC.  
IN CIRCUIT TO TRIP COIL ON THIS RELAY.

### LEFT FIXED TARGET RELAY

RESET COIL IS ENERGIZED BY SWITCH  
1A ON SPINNER HIT RELAY.  
TRIP COIL IS ENERGIZED BY SWITCH  
C ON LEFT FIXED TARGET HIT RELAY.

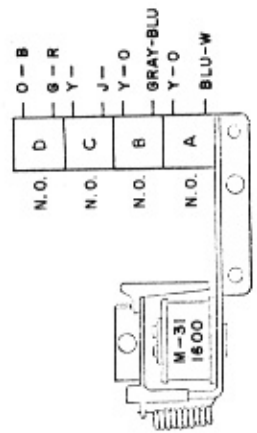


C-5  
E-11  
E-7

TO LEFT FIXED TARGET LITE.  
IN CIRCUIT TO LEFT FIXED TARGET HIT RELAY, THRU  
RIFLE SCAN DISC.  
IN CIRCUIT TO TRIP COIL ON THIS RELAY.

### RIGHT FIXED TARGET HIT RELAY

IS ENERGIZED THRU RIFLE SCAN  
DISC. BY SWITCH 1B ON TRIGGER  
RELAY WHEN RIGHT TARGET IS HIT.

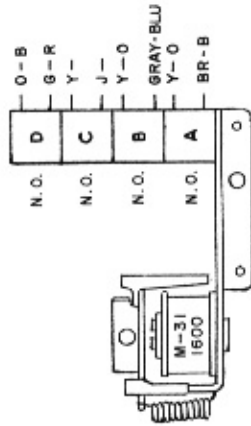


—  
D-8  
F-14  
E-11

CIRCUIT IN SOUND SYSTEM.  
IN SERIES WITH SWITCH A ON RIGHT FIXED TARGET RELAY.  
ENERGIZES 100 POINT RELAY.  
IN HOLD CIRCUIT TO THIS RELAY.

## LEFT FIXED TARGET HIT RELAY

IS ENERGIZED, THRU RIFLE SCAN DISC, BY SWITCH 1B ON TRIGGER RELAY WHEN LEFT TARGET IS HIT.

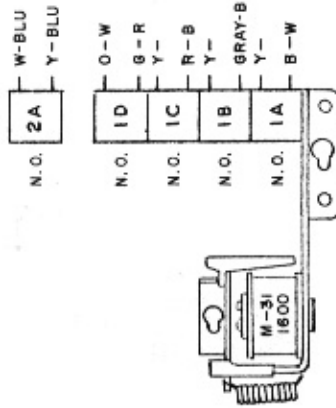


CIRCUIT IN SOUND SYSTEM.  
IN SERIES WITH SWITCH A ON LEFT FIXED TARGET RELAY.  
ENERGIZES 100 POINT RELAY.  
IN HOLD CIRCUIT TO THIS RELAY.

LOCATION

## SPINNER HIT RELAY

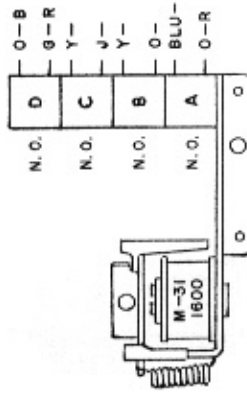
IS ENERGIZED, THRU RIFLE SCAN DISC, BY SWITCH 1B ON TRIGGER RELAY.



CIRCUIT IN SOUND SYSTEM.  
ENERGIZES VERTICAL RUN RELAY.  
ENERGIZES 10 POINT RELAY.  
ENERGIZES RESET COILS ON LEFT AND RIGHT FIXED TARGET RELAYS, THRU INDEX CAM SWITCH ON VERTICAL MOTOR.

## PHANTOM HIT RELAY

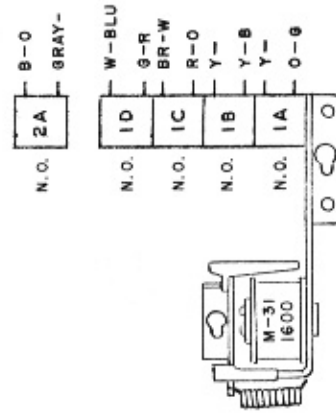
IS ENERGIZED, THRU RIFLE SCAN DISC, BY SWITCH 1B ON TRIGGER RELAY. INCLUDED IN THIS CIRCUIT IS THE MAKE-BREAK SWITCH ACTUATED BY MOVING RIFLE UP AND DOWN.



CIRCUIT IN SOUND SYSTEM.  
IN SERIES WITH SWITCH B ON SCORE TRANSFER RELAY.  
ENERGIZES ALTERNATOR S.U. COIL.  
HOLD CIRCUIT TO THIS RELAY.

## SPOOK HIT RELAY

IS ENERGIZED, THRU RIFLE SCAN DISC AND SPOOK ELEVATION DISC, BY SWITCH 1B ON TRIGGER RELAY. INCLUDED IN THIS CIRCUIT IS THE MAKE-BREAK SWITCH ACTUATED BY MOVING RIFLE UP AND DOWN.



CIRCUIT IN SOUND SYSTEM.  
ENERGIZES VERTICAL LOCK RELAY, THRU SWITCH 1A ON VERTICAL RUN RELAY.  
IN SERIES WITH SWITCH C ON VERTICAL LOCK RELAY.  
RUNS CONTROL MOTOR AND ENERGIZES CONTROL MOTOR RELAY.

### GAME-OVER RELAY

IS ENERGIZED BY 25TH POSITION ON SHOTS UNIT DISC. HOWEVER, IF EXTRA SHOTS RELAY IS ENERGIZED, GAME-OVER RELAY WILL BE PULSED AT 35TH POSITION ON SHOTS UNIT DISC.

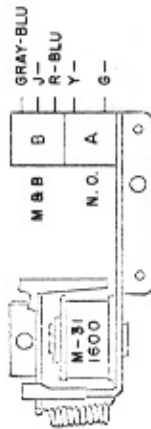


TO LOCK RELAY COIL.

DIAGRAM LOCATION  
F-3

### SCORE TRANSFER RELAY

IS ENERGIZED BY SWITCH 2A ON VERTICAL RUN RELAY, THRU 15TH POSITION ON SHOTS UNIT DISC.



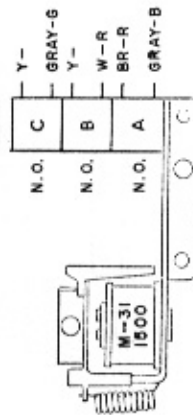
OPENS IN CIRCUIT TO 100 POINT RELAY AND CLOSES TO 1000 POINT RELAY.  
TO "PHANTOM SCORES 1000" LITE.

E-14  
C-5

### LOCATED ON INSERT

### 10 POINT RELAY

IS PULSED BY SWITCH 1B ON SPINNER HIT RELAY OR SWITCH 1B ON SPOOK HIT RELAY.

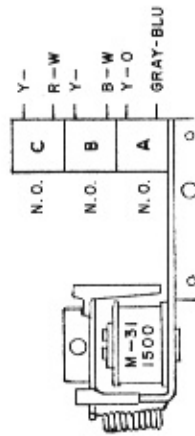


ENERGIZES 10 POINT DRUM UNIT.  
PULSES 100 POINT RELAY, THRU 9TH POSITION SWITCH ON 10 POINT DRUM UNIT.  
IN HOLD CIRCUIT TO THIS RELAY.

D-6  
D-14  
E-14

### 100 POINT RELAY

IS PULSED BY SWITCH B ON LEFT OR RIGHT FIXED TARGET HIT RELAY, BY SWITCH 1B ON SPOOK HIT RELAY, OR BY SWITCH C ON PHANTOM HIT RELAY.

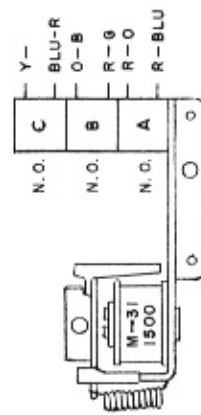


PULSES 1000 POINT RELAY, THRU 9TH POSITION SWITCH ON 100 POINT DRUM UNIT.  
ENERGIZES 100 POINT DRUM UNIT.  
IN HOLD CIRCUIT TO THIS RELAY.

D-15  
D-6  
F-14

### 1000 POINT RELAY

IS PULSED BY SWITCH C ON PHANTOM HIT RELAY, THRU SWITCH B ON SCORE TRANSFER RELAY.



ENERGIZES 1000 POINT DRUM UNIT.  
ENERGIZES EXTRA SHOTS RELAY, THRU EXTRA SHOTS ADJUSTMENT JACK.  
IN HOLD CIRCUIT TO THIS RELAY.

D-7  
F-16  
E-15

### SCORE RESET RELAY

IS OPERATED BY CONTROL MOTOR IMPULSE CAM, THRU SWITCH A ON START RELAY.

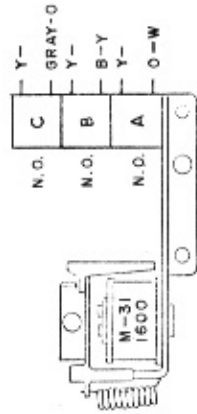


DIAGRAM LOCATION

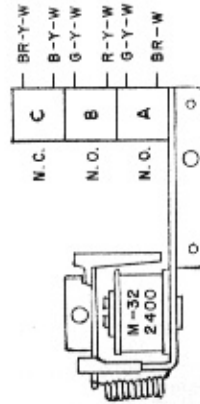
D-6  
D-6  
D-6

PULSES 1000 POINT DRUM UNIT, THRU "O" POSITION SWITCH ON THAT UNIT.  
PULSES 100 POINT DRUM UNIT, THRU "O" POSITION SWITCH ON THAT UNIT.  
PULSES 10 POINT DRUM UNIT, THRU "O" POSITION SWITCH ON THAT UNIT.

### LOCATED ON TARGET PANEL

### DIRECTION RELAY

IS ENERGIZED BY SPOOK TARGET LEFT DRIVE SWITCH AND REMAINS ENERGIZED UNTIL RIGHT DRIVE SWITCH IS OPENED.

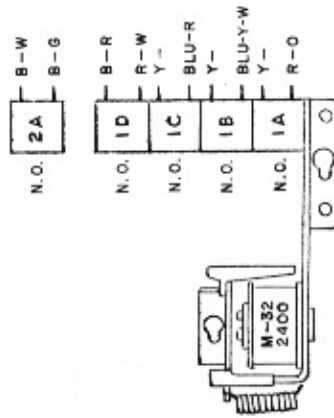


E-12  
E-13  
E-12

OPENS CIRCUIT TO LEFT SPOOK MOTOR.  
IN CIRCUIT TO RIGHT SPOOK MOTOR.  
IN HOLD CIRCUIT TO THIS RELAY.

### VERTICAL RUN RELAY

IS ENERGIZED BY SWITCH 1C ON SPINNER HIT RELAY; ALSO BY SHOT UNIT DISC FROM 20TH TO 35TH POSITIONS.



E-15  
D-11  
C-5  
D-5  
D-12

ENERGIZES SCORE TRANSFER RELAY, THRU SHOT UNIT DISC.  
IN SERIES WITH SWITCH B ON LEFT OR RIGHT FIXED TARGET RELAY.  
TO "SPOOK SCORES 300" LITES; ALSO IN CIRCUIT TO LEFT AND RIGHT FIXED TARGET LITES.  
RUNS VERTICAL MOTOR.  
RUNS SPINNER MOTOR; ALSO IN SERIES WITH SWITCH 1C ON SPOOK HIT RELAY.

### LOCATED IN CASH BOX COMPARTMENT

### STONE DELAY RELAY

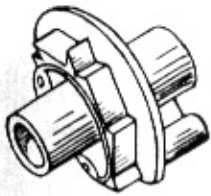
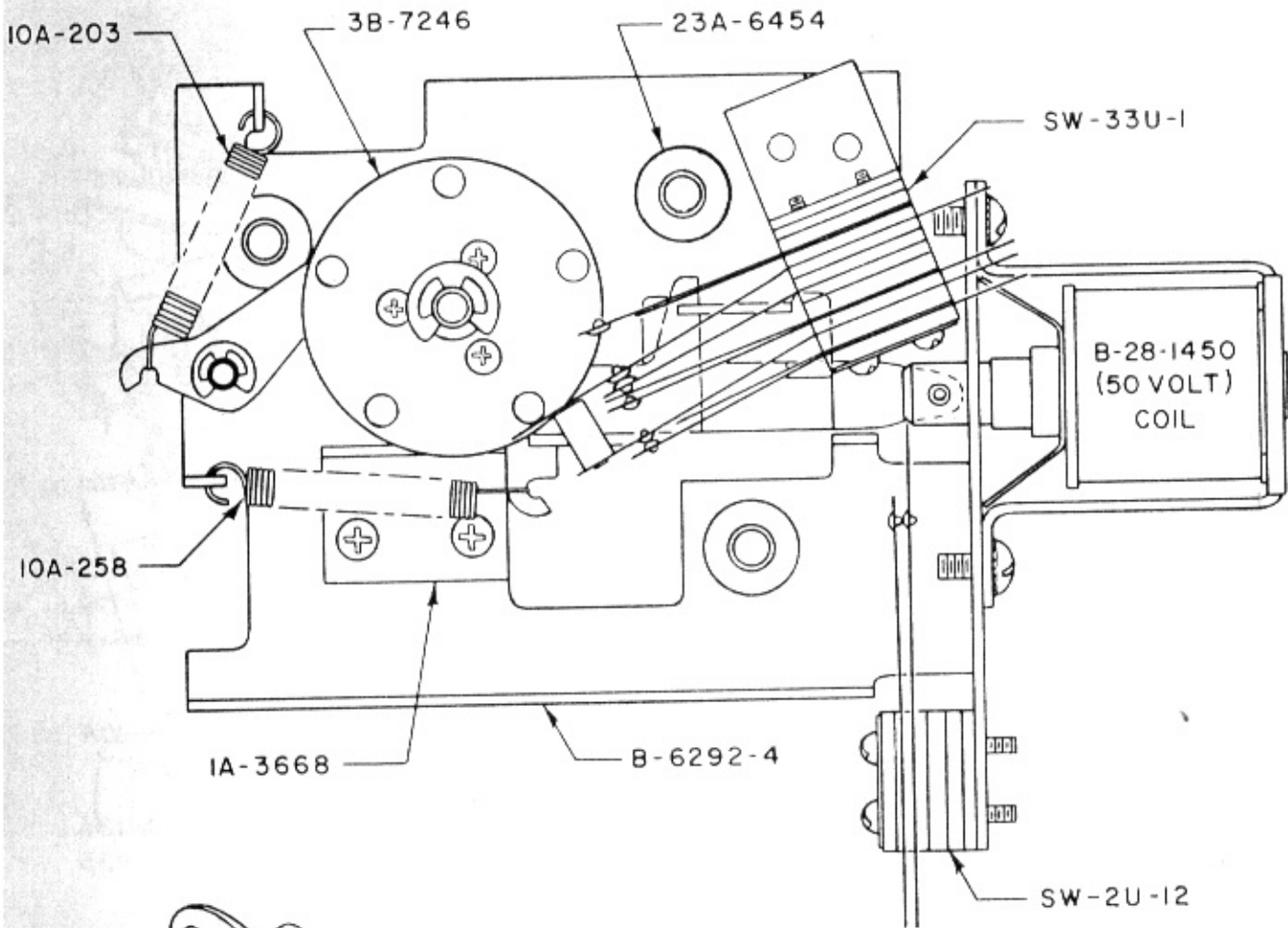
IS ENERGIZED BY SWITCH D ON PHANTOM HIT RELAY, LEFT FIXED TARGET HIT RELAY OR RIGHT FIXED TARGET HIT RELAY.



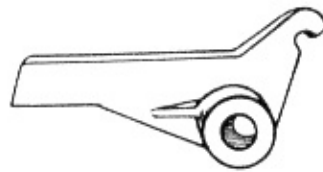
CIRCUIT IN SOUND SYSTEM.

# C-6903 ALTERNATOR UNIT

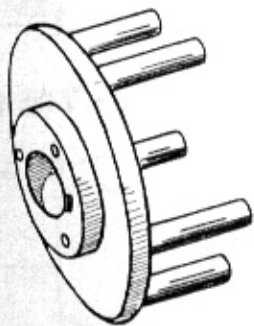
FOR "SPOOKS" AND "PHANTOM" GUN



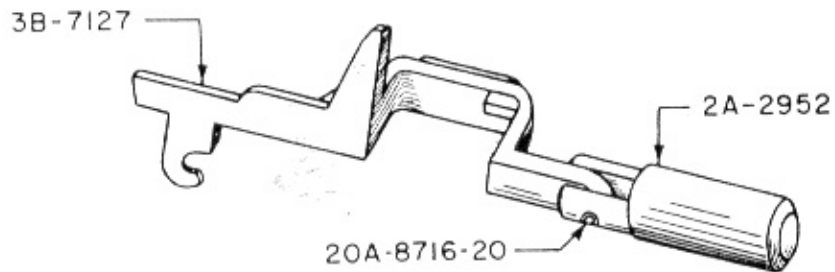
3C-7272  
RATCHET & CAM



3A-7125  
RATCHET STOP PAWL



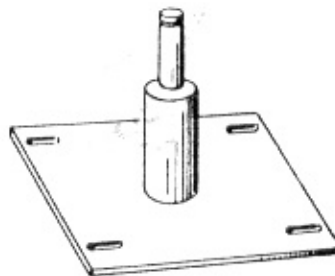
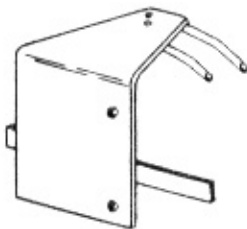
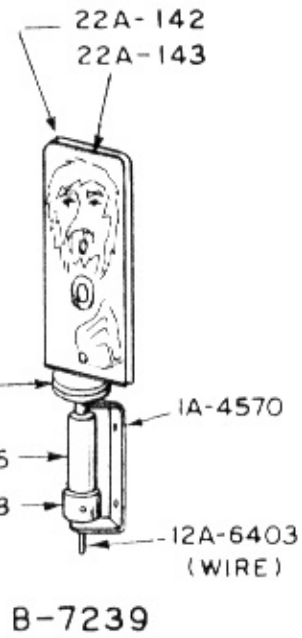
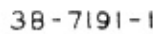
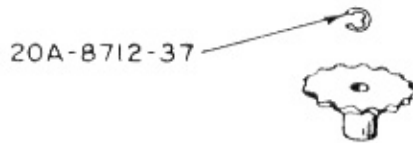
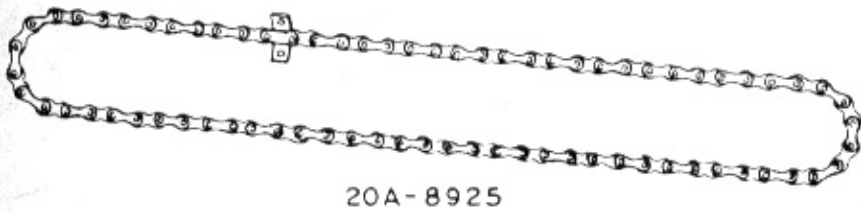
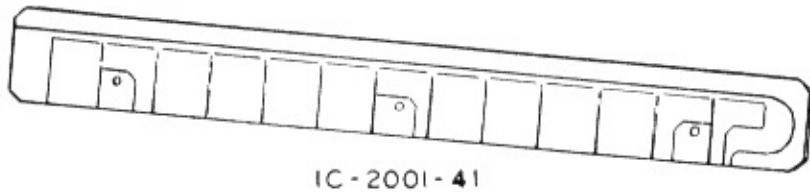
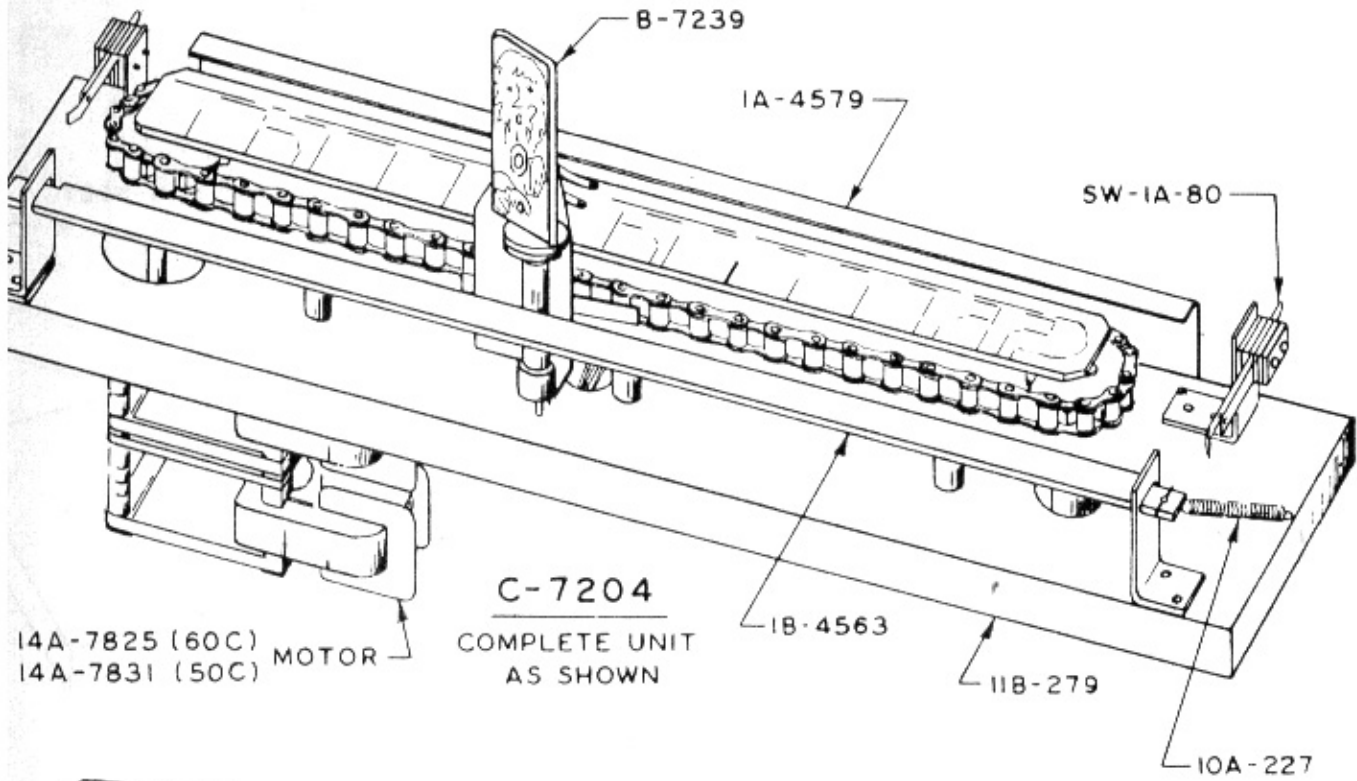
3B-7246  
ALTERNATOR DISC



A-6295  
DRIVE PAWL & ARMATURE

# "PHANTOM" GUN

## COMPLETE "PHANTOM" TARGET UNIT



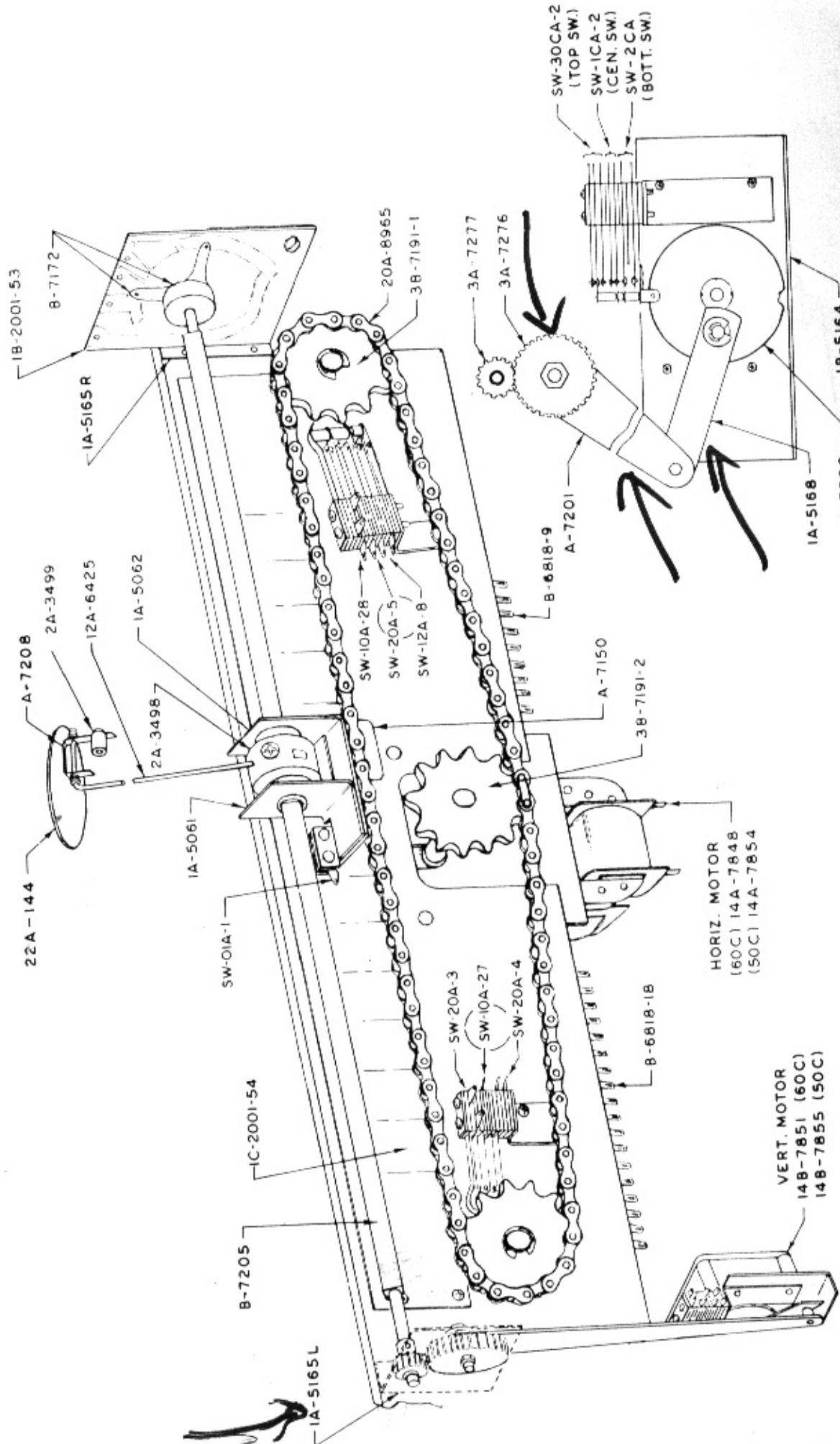
HORSE RACE  
GAMES

SHUFFLE ALLEYS

ARCADE GAMES

PRICE LIST

# "SPOOK" TARGET UNIT PARTS FOR "PHANTOM" GUN



END VIEW OF LEFT SIDE - CAM & LINKAGE