

ON TARGET

Gottlieb

TECHNICAL NEWSLETTER

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VOLCANO FEATURES

Volcano, Gottlieb's latest pinball game, is the ultimate in player control. In addition to the flipper buttons, two extra buttons allow the player to control three individual features: the ball-save feature, the ball shooter guide feature, and the "crater-freeze" feature.

The ball-save feature gives the player the chance of saving his ball after it has entered the left outlane. The ball-save is controlled by the left green button (flipper buttons are red). When a lit drop target is hit, Q14 on the A3 driver board is pulsed "on" momentarily. Q14 provides a ground for the ball-save

relay, thus energizing it and closing the relay (B) contacts. See Figure 1. Since Q14 is pulsed once, another ground path is provided by the closed ball-save contact in series with the closed end-of-stroke switch. Now the ball-save relay is locked in the energized position. When the ball-save button is pressed by the player, the ball-save coil is energized, and if timed correctly, the ball is kicked back to the playfield. When the ball-save coil is actuated, the plunger, upon reaching full stroke, will open the end-of-stroke switch. The ball-save relay loses its ground, and the relay contacts open. Now, the

player must hit another lit drop target to enable the ball save-feature.

The ball-save coil assembly and end-of-stroke switch are located under the cardholder. The end-of-stroke switch should be adjusted to open 1/32" as the plunger reaches full stroke.

The right green button serves a dual purpose for the player: the shooter ball guide feature and the "crater-freeze" feature. When a ball is served to the shooter, the shooter ball guide begins to move back and forth while the drop target lights are sequentially lit. The strategy here is for the player to align the shooter guide with a lit drop target. By pressing the green

(continued on page 2)

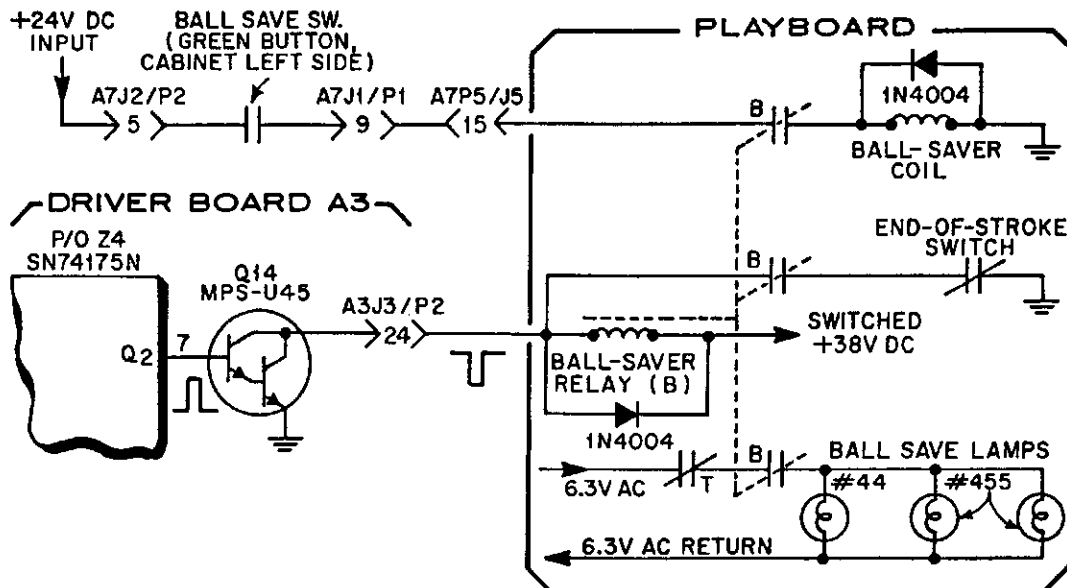


FIGURE 1

VOLCANO FEATURES

(continued from page 1)

button, the shooter guide and the drop target light sequencing stop. If done correctly, the guide will be positioned to allow the ball to hit the lit drop target. Hitting a lit drop target scores 5,000 points, advances the bonus multiplier, and activates the ball-save feature -- a nice way to start a ball. The shooter guide feature is activated anytime a ball is at the shooter. If a ball is shot to the playfield and the shooter guide button was not pressed, the first scoring switch will turn off the shooter guide feature.

The "crater-freeze" feature is also activated by the right green button. Dropping a ball into a lit crater will capture that ball. When three balls

are captured, they will be kicked to the playfield from the subway, and multi-ball play commences. This feature requires good timing by the player because the light freezes only for approximately one second and he gets only one chance. If he misses, a scoring switch must be hit on the playfield before the crater-freeze feature is re-activated.

Referring to Figure 2, as a ball is served to the shooter, the base of Q13 goes high, turning on Q13, subsequently providing a ground for the motor relay (M). The motor relay is activated and the relay contacts (M) close. The ball shooter guide motor and the shooter guide lamp turn on. The motor relay (M) remains energized until the shooter guide switch is closed (depres-

sing the right green button). This switch is No. 56 in the switch matrix. When closed, the matrix "strobe" signal will "return" to the control board. Consequently, the base of Q13 is brought low, and the motor relay is deactivated. Not only is the shooter guide stopped, but the volcano lights stop sequencing until a scoring switch other than a 10-point switch is closed.

Volcano's subway assembly is probably its most unique feature. This feature alone gives the player the opportunity to achieve multi-ball play, earn extra high score by initiating playfield multipliers, and earn game specials.

A ball enters the subway through the four crater holes at the upper right playfield. A pan below the crater holes directs

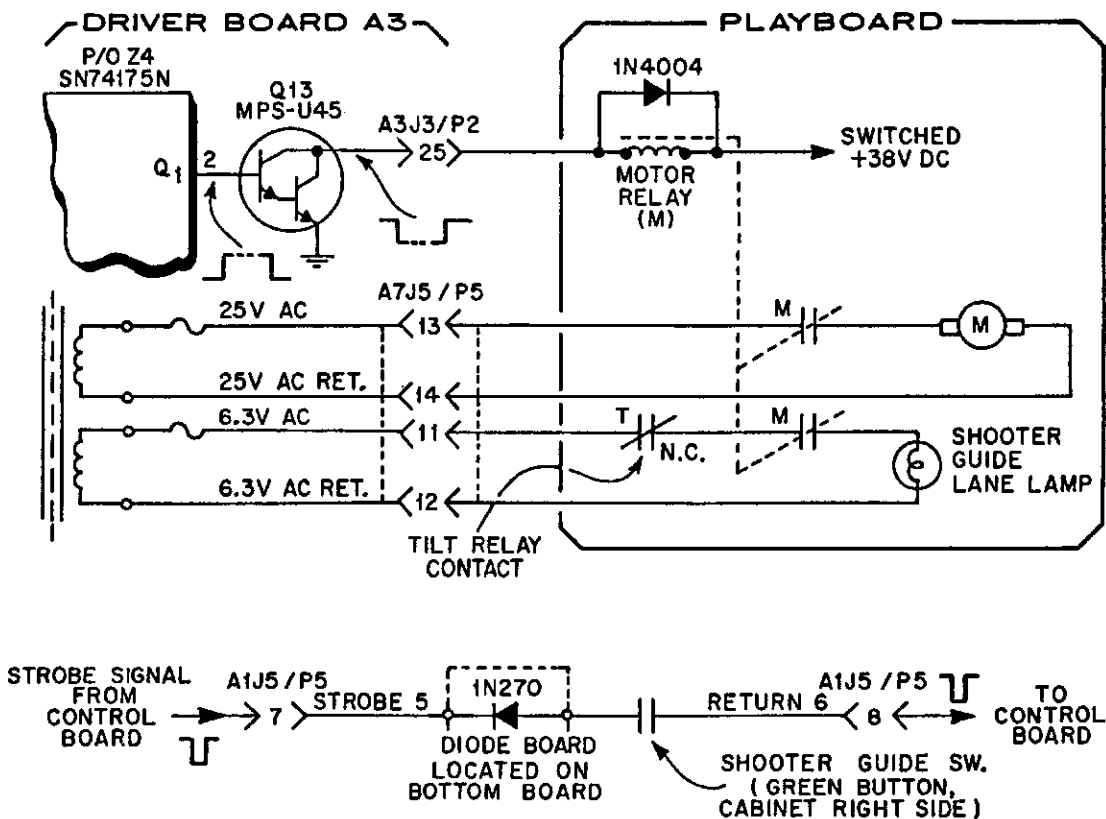


FIGURE 2

the ball(s) to the subway trough which guides the ball(s) to the subway kicker track. The kicker ejects the ball(s) onto the playfield through the "volcano shaft". A stainless steel flap covers the volcano shaft hole, allowing balls on the playfield to pass over the hole.

The program recognizes that a ball has entered the subway when a crater switch closes. If a crater switch closes during game play due to vibration, the game will lock up. So adjust the crater switches for a 1/16" gap between contact points.

Subway Adjustments. With the playfield in its normal position, carefully lift the "volcano shaft" flap.

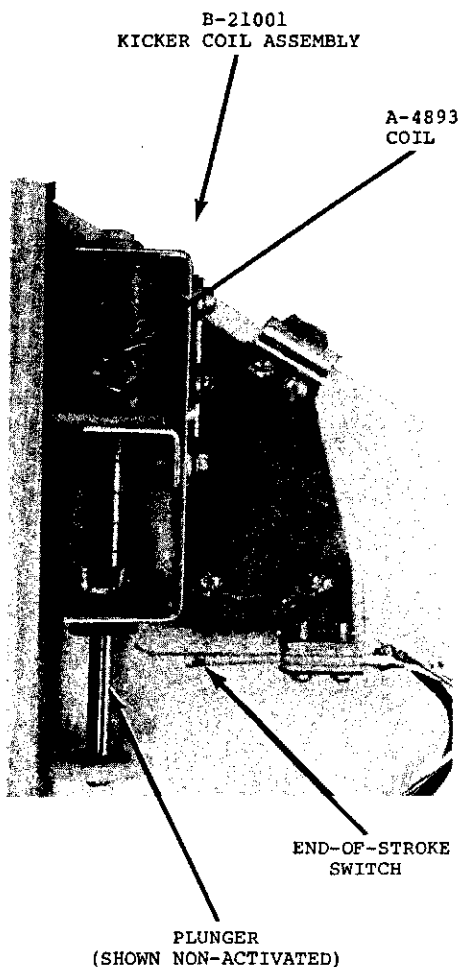


FIGURE 3A



LEADING EDGE OF BALL TROUGH SHOULD BE OVER KICKER TRACK (AS VIEWED FROM A TOP PLAYFIELD VIEW)

SLOTTED HOLE AND ADJUSTMENT SCREW (4)

FIGURE 3B

Notice the two side guides along the kicker track. The right guide must be moved to the right as far as possible. (NOTE: This adjustment must be made from underneath the playfield.)

Also notice if the subway ball trough is over the edge of the kicker track.

1. Lift the playfield and secure with the support bracket.
2. Pull the right guide away from the subway kicker track as far as possible. Make sure it now does not interfere with adjacent mechanical components.
3. Loosen the four screws holding the ball trough to the playboard. (The trough screw holes are slotted.) Move the ball trough over the subway kicker track (as seen from a top play-

field view) as far as possible; tighten the screws.

4. Set the playfield in its normal position. Turn on power and start a game. Take a ball and drop it into an unlit crater. Carefully lift the volcano shaft flap and watch that the ball is dropped onto the center of the kicker track and atop the rollover switch. The ball will then be kicked out onto the playfield. Insure that the ball does not hit the side guides.
5. Lower the volcano shaft and drop another ball into an unlit crater. The ball should be kicked to the right flipper. If the ball drains between the flippers, pull the left ball guide slightly toward the kicker track.

SYSTEM 80 PROM LIST

THE FOLLOWING LISTS ALL SYSTEM 80 GAMES WITH THEIR RESPECTIVE GAME AND SOUND PROM NUMBERS. (DOMESTIC)

GAME	GAME PROM	SOUND PROM
SPIDERMAN	653/1	653
	653/2	
PANTHERA	652/1X	652
	652/2X	
CIRCUS	654/1	654
	654/2	
COUNTERFORCE	656/1	656
	656/2	
STAR RACE	657/1	657
	657/2	
JAMES BOND	658 (TIME)	658F
	658 X (3 BALL - 5 BALL)	
TIME LINE	659	659E
FORCE II	661/1	661E
PINK PANTHER	664/1	664E
MARS	666	666/S1
		666/S2
VOLCANO	667/1B	667/S1
	667A/X (FOREIGN)	667/S2
		667 (FOREIGN)

Notice

The Pinball/Video Service Hotlines are now the same. Call 800-323-9121, in Illinois 800-942-1620 from 8:00 a.m. to 4:30 p.m. CST for any Gottlieb pinball or video game assistance.

FLASHBACK

Gottlieb made the first four-player flipper game in October 1954. It was called SUPER JUMBO and was also the first such game with drum scoring. The first two-player game, DUETTE, came along in March 1955.

MAILING LIST: Get ON TARGET every month by sending your name and mailing address to:

ON TARGET
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