ROTO UNIT

The roto unit has fifteen targets radially mounted on a rotating disc, with up to three targets projecting above the playfield. When the solenoid is energized, the drive lever arm engages the drive pawl with the drive gear of the ratchet which spins the target disc. When the solenoid is de-energized, the falling action of the drive lever arm engages the stop pawl with the stop gear, locking the rotating disc and targets into position. A switch behind each target above the playfield closes when the targets are struck by a ball. These switches are wired to the rivet disc. The electrical contact made between these rivets and the wiper fingers on the target disc determines which target has been

struck. The wiper fingers must rest directly on the wiper rivets when the unit is at rest. To adjust for this, loosen the three screws near the center of the target wiper disc. Rotate the target disc to effect alignment and carefully tighten the screws. The targets above the playfield should stop directly in front of the switches.

ROTO UNIT ADJUSTMENT

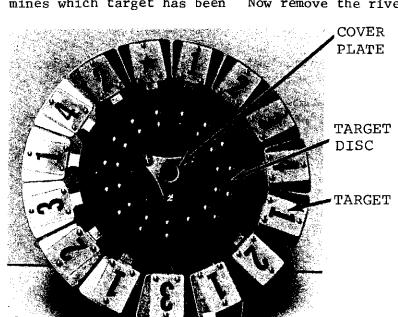
Figure 2 explains the adjustment procedure for the drive and stop pawl lifts. Before these adjustments can be made, the solenoid plunger stroke should be approximately 7/8 inch. If the stroke is not 7/8 inch, the coil housing must be moved. To do this, remove the target disc by unscrewing the three cover plate screws. Use a 1/8" allen wrench to remove the mounting spider from the gear shaft. Now remove the rivet disc by

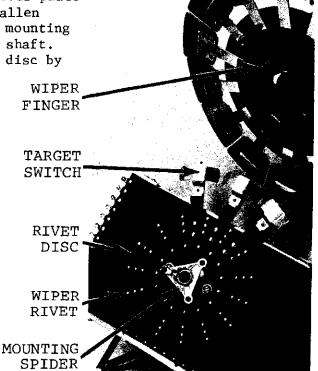
unscrewing the two mounting screws. The four coil housing screws can now be loosened and the housing can be moved to attain a 7/8 inch plunger stroke. Now adjust the pawl lifts as described in Figure 2.

While the disc mounting spider is off, add two drops of #10 or sewing machine oil to the shaft at the bearing. Do not use "all purpose household" type oils, as they tend to turn gummy. Also apply oil to the pawl pivots and driver lever arm pivots.

The rotary positioning of the mounting spider on the shaft is not important since the target disc can be adjusted later by its elongated holes. When tightening the spider, leave a little axial clearance between it and the

(continued on p. 2)





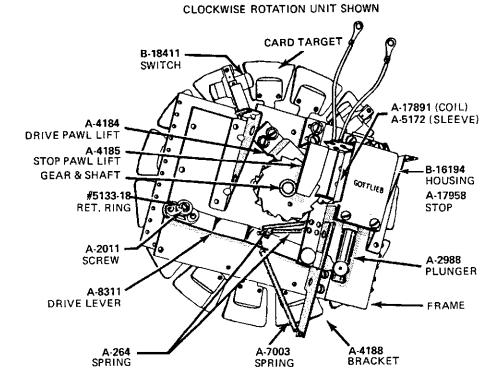
(continued from p. 1)

shaft bushing so the shaft will rotate smoothly. Refit the target disc and adjust according to the directions given above.

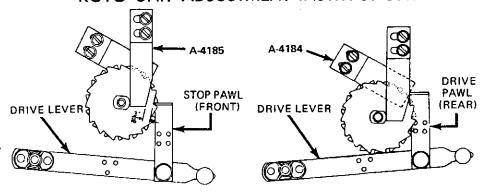
To change the solenoid coil, remove the target disc and the rivet disc as described above. Disconnect the coil wires, unscrew the coil housing screws and remove the housing with its coil and plunger. Remove the four allen-head screws and open the case. If the coil has burned out. check the coil sleeve for cracks or signs of melting. When reassembling, insure that the coil wires are properly connected with respect to the diode. Refer to the instructions on setting the plunger stroke.

In the unlikely event of a wiper finger breaking or wearing out, it can be removed by taking off the target disc and unsoldering the wire on the finger. The finger can then be pushed out. The finger is part A-7291, and the spring is A-307. When soldering the wire onto the finger, be careful not to allow solder or flux to flow into the bushing. Make sure the finger moves freely before replacing the target disc.

Maintain a thin coating of White Lube on the rivet disc and Black Lube on the gear



ROTO UNIT ADJUSTMENT INSTRUCTIONS



Adjust stop pawl lift A-4185 with drive lever in at rest position. The space between the stop pawl and A-4185 is 3/16 inch. Note relation of teeth on ratchet to A-4185 for visual check.

Adjust drive pawl lift A-4184 with drive lever in energized position. Drive Pawl should clear spinning ratchet by 1/32-in. Both pawls should be clear of ratchet at this position.

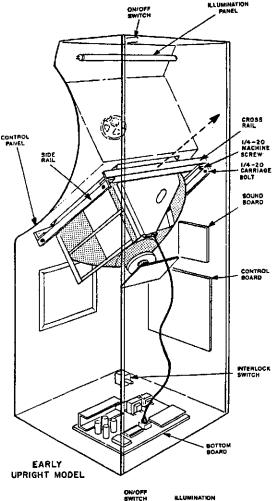
teeth. This should be checked at three-month intervals. The action at both places is fast and frequent and lubrication must be present if the unit is not to wear prematurely.

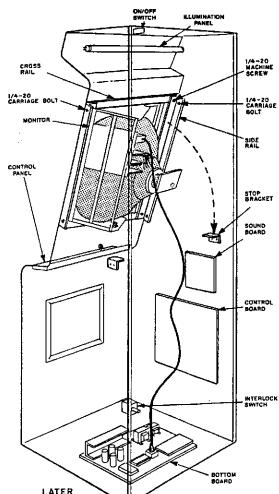
FLASHBACH

The manual ball lift was eliminated in November 1966 when the four-player DANCING LADY appeared with Gottlieb's first "automatic ball return." The first single-player so equipped was KING OF DIAMONDS in February 1967.

VIDEO SERVICING NEW YORK, NEW YORK

New York, New York, Gottlieb's second entry into the video game market, is designed for high reliability and easy servicing. In addition, many of the mechanical components are interchangeable with Gottlieb Pinball Games. The earlier and later upright cabinet versions of New York, New York can be easily distinguished by the slope of the monitors and the player's control panel. The earlier model's monitor and control panel slope at a 30 degree angle with re-





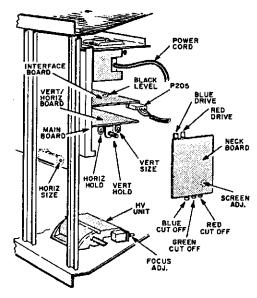
UPRIGHT MODEL

spect to the floor. The later version has a near vertical (80 degrees) monitor with a player control panel at a 10 degree angle.

Monitor removal is quite simple for both uprights. Turn off the game power, unplug the game line cord from the wall, and remove the rear panel door. With the early upright version (30° sloped monitor), unplug the CRT power line cord from the bottom board. Disconnect the mid-cable six-pin Molex plug of the monitor signal cable. Four 1/4-20 machine screws bolt the monitor cross rails to the cabinet side rails. Unscrew and remove the two front screws (screws closest to the cabinet front). Now remove the rear screws while firmly gripping the monitor. Finally, pull the monitor through the rear opening.

For the later upright cabinet model (80° monitor slope), unplug the CRT line cord from the bottom board and disconnect the monitor signal cable from the CRT interface board. Now remove the two top 1/4-20carriage bolts that mount the side rails to the cabinet. Slowly rotate the monitor down to the stop brackets. The monitor will pivot on the two bottom carriage bolts. Removal is now identical to the earlier version.

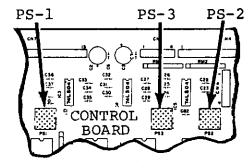
Horizontal and vertical hold controls, along with the vertical size control, are located on the VERT/HORIZ board of the monitor circuit. Horizontal size is adjusted by a tuning coil mounted on the metal monitor chassis just below the printed circuit boards. Background black level is controlled by the screen adjust pot (VR406) located on the CRT neck board. If the screen adjust reaches



a limit and the desired level has not been attained, set the pot to its midpoint and adjust VR201 on the interface board.

On both upright models, two pushbuttons are mounted on the inside of the front door. Pressing the red pushbutton allows credits to be added to the game without disturbing the bookkeeping coin count. Pressing the white pushbutton will display the coin count on the monitor screen. (The cocktail table model displays the coin count when the cashbox is removed.) The white pushbutton only operates if the game has credits.

The control board in all New York, New York games has three square pushbuttons; PS-2 functions identically to the red pushbutton on the inside front door of



the upright while PS-3 functions identically to the white pushbutton. When pres-

(continued on p. 4)

(continued from p. 3)

sed, PS-1 displays a white cross-hatch pattern on the screen to aid in monitor adjustment. The pattern will remain until the game is turned off, then on. PS-1 will function only if no credits are on the game.

In all New York, New York games, a coin switch remaining closed will freeze game action on the screen or not allow a game to start. When power is applied to the game, a 00-0 will appear in the upper left-hand corner of the screen if a coin switch is closed.

Joystick tension on the upright models is adjustable by changing the pressure applied on the rubber grommet. Loosen the set screw

on the shaft collar and move the collar to obtain the desired joystick tension. For especially tight joystick movement, it may be necessary to squeeze the retaining ring and collar with pliers.

The electronics boards (the control board and sound board) are identical in all New York, New York games. Both upright versions are electronically identical. However, the wires to and from the sound board of the early version are soldered directly to the board, while the later model uses a sound board with connectors. This difference changes wire routing and cabling in the uprights, and it becomes necessary to specify the version when ordering boards.

The tension or "feel" of the Joy Stick is adjustable by moving the Collar (9) up

or down the Shaft to change pressure on the Grommet (8).

A unique feature, unlike most video games, is that New York, New York can be operated in the replay mode instead of awarding an extra base. Field reports show significant revenue increases when operation was changed to the replay mode.

Correction

The March, 1981 Newsletter has a text error in the "FLIPPERS" article. On page 1, left column, 1st paragraph, 25th line, the word "increasing" should read decreasing. The current will decrease due to the increased resistance of the full winding. Thank you, Mr. Barry Boggs, owner of Coin Chute Enterprises, Lexington, Ky., for personally calling up and pointing out the mistake.

Notice

THE VIDEO ASSISTANCE TOLL FREE HOT LINE HAS BEEN CHANGED TO 800-323-3899





CONTROL STICK A-V2030 JOY STICK STEEL WASHER 8 25 REID PLASTIC CONTROL BALL HANDLE 15 A-V2025 JOY STICK MYLON WASHER 14 - 1 D-V2073 FRONT PANEL Iι D-V2068 FRONT PANEL FILLER 11 4 "8x1/2LG.HEX WSHR.HD. TYPE AB SHT. MTL, SCR. Ю 1 PIO-32 x 3/8 LG. S.H.C.S 1 A-V2066 JOY STICK COLLAR 8 П G-598 SALISBURY RUBBER GROMMET 5/6 N TYPE A FLAT WASHER 6 A-V2065 JOY STICK SHAFT 5144-31 TRU-ARC RETAINING RING 8-V2064 JOY STICK FRAME #3-48 x 1/8 LG. FILLISTER HD. MACH, SCR. 3 4 SWITCH COVER PLATE A 498 2 B·V2Q67 SWITCH ASSEMBLY IA ITEMOTY PART NO DESCRIPTION NOTE: The Stick may be assembled in an extended position by placing Retaining (0)Ring (5) above the Frame Assm., and the Collar (9) below the Frame.

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