

ON TARGET

Gottlieb

TECHNICAL NEWSLETTER

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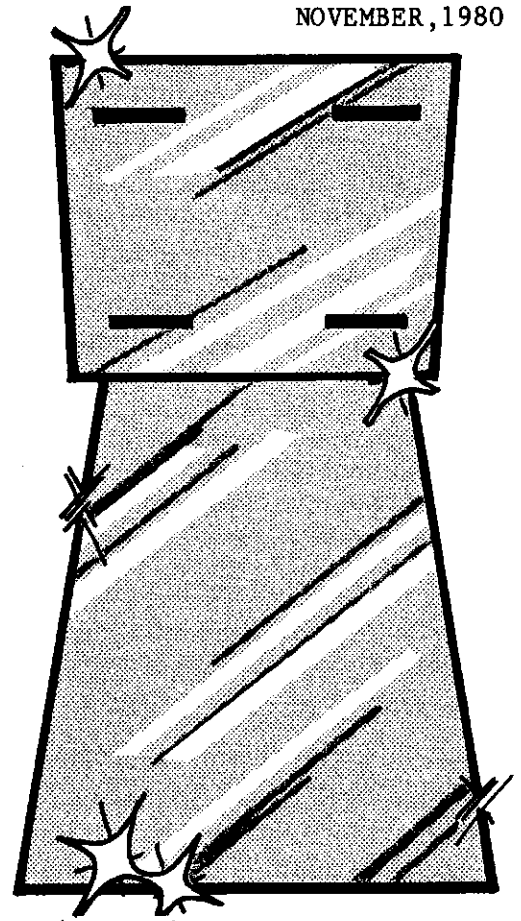
GAME GROOMING

First there's the sound. That unmistakable sound that a flipper game makes when it wants to be played. Then the flashing lights of the attract mode entice the prospective player to the machine. He's ready to drop a coin but he decides against it. Why? Because the machine is dirty. A player has little reason to play a game whose playfield is dark and dirty especially when the game next to it may be just the opposite. And if the outside of the cabinet is filthy or sticky, he won't even touch the game, let alone give it money; he will likely recall the clean games in the arcade down the street. The cleanliness of a game is one of the most important factors in its earning ability. A clean game always out-earns a dirty one.

Today's serviceman endeavouring to maintain

sophisticated mechanical and electronic devices may from want of time or concern overlook the machine's appearance. He may be unaware of appearance as it affects player appeal. The importance of looks, the visual impression, cannot be exaggerated. The customer sees the cabinet (however little of it), the top- and backglass and judges them all before even seeing the playfield. These must be kept clean and the chrome bright to make the game initially inviting to the player.

What makes or breaks a game, however, is the condition of the playfield. In playfield neglect is the twin menace of diminished visual appeal and reduced ball action. While decreased visual appeal means less play, a playboard with weakened action is FATAL to the earning power of that game. A game is played for



its action, and the playboard IS the game. It is essential, therefore, that playfield inspection and cleaning be included in routine service and that its procedure be second nature.

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Welcome!

The initial breakthrough of solid state electronics (especially micro-computer control) into pinball and the coin-operated industry was to say the least, traumatic. Some tried to ignore it, calling it a passing fad (just like rock 'n roll). The majority, however, fell into a state of shock, wondering how to cope with such a gigantic

leap in technology. This microcomputer stuff is magic, witchcraft; our physical senses can't grab hold. No more whirring motors or clattering relays. This new technology runs silent with invisible control operating at speeds which defy comprehension. Surely mystical powers are at work.

Well, things have settled down and people now realize that micro-computer controlled games have created a market knowing no limits, and that the technology is not magic but engineered and made by mere mortals. But even with all this technological evolution and revolution, games still break down.

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First Aid for System 80 games

On location repairs can be quickly accomplished if you have the proper replacement components at hand. Sometimes that's easier said than done. Well, to insure that the service technician does have the necessary replacement parts for a System 80 pinball game, an emergency repair kit is now available through your distributor. Replacement parts selected for the kit are parts that handle and control the higher current circuitry during game operation. The kit case is small measuring 12"x12 1/2"x2". Components are organized into six compartments and the attached handle makes for easy portability. Oh yes, the price is right. Ask your distributor for the "System 80 Operator Maintenance Kit".

Parts contained in the kit are listed below:

Quantity/Description

1	POP BUMPER DRIVER BOARD ASSEMBLY
1	BRIDGE RECTIFIER
1	6800 MFD. CAPACITOR
6	TRANSISTOR, MPS-A13
6	TRANSISTOR, MPS-U45
6	TRANSISTOR, 2N6043
2	TRANSISTOR, 2N3055
4	DIODE, 1N4004
2	DIODE, 1N270
1	9.1 OHM, 1 WATT, RESISTOR
1	TRANSISTOR, PMD10K60
2	1/4 AMP SB. FUSE
1	1 AMP SB. FUSE
2	2 AMP SB. FUSE
2	5 AMP SB. FUSE
2	7 1/2 AMP SB. FUSE
2	8 AMP SB. FUSE
2	10 AMP SB. FUSE
2	12 AMP SB. FUSE

COMMENT CORNER

Welcome

(continued from p.1)

The D.Gottlieb technical service staff realizes that cooperation and communication between us and the technicians in the field is vital to understanding, troubleshooting, and repairing our games. ON TARGET is our way of getting to you. ON TARGET is a monthly technical newsletter devoted to educate and inform service technicians on all technical aspects of our games. Every month, ON TARGET will include service tips, bulletins, and troubleshooting

hints on the electronic and mechanical operation of our games. For the new people in the industry, ON TARGET has reserved space for historical flashbacks and trivia. Finally, ON TARGET will let you "sound off" in the Comment Corner section.

ON TARGET will attempt to answer your questions and solve some of your problems. We hope you enjoy it.

To get on the mailing list, complete and mail the form that is included in this issue.

Next Month:

DROP TARGETS; how they operate, and how to replace and repair them.

SYSTEM 80's UPGRADED CONTROL BOARD; new control board accommodates new game program which doubles game program memory.



Fixin' It By Phone



When you call our toll-free numbers for technical assistance, we usually can solve your problem. At times though, two or more calls are necessary to communicate enough information for us to accurately pinpoint the problem. What

happens is that time is lost, and patience wears thin. You want to be able to troubleshoot that game fast and as accurately as possible. Next time you need our assistance, follow these simple suggestions before you call: write down exactly what the symptoms are and when they occur. Check and record voltage levels at their destination points. Use the self-test routine outlined in the game manual. Remember, a major cause for intermittent problems is switches; poor adjustment and dirty contacts will cause a myriad of problems. Toll free lines are 800-942-1620 and 800-323-9121 and are available from 8a.m. to 4:30p.m. C.S.T.

Something new in animation appeared in February 1951 in a Gottlieb game called KNOCKOUT. In the middle of the playfield was a boxing "ring" formed by two heights of rubber rings. Inside were two miniature boxers and a referee. As the game was

played, the fighters would hit each other and one would be knocked clear down when a "Knockout" target was hit. Then the referee's arm moved as if to count the boxer out. The boxer always recovered in time.

SAME TIME NEXT MONTH?

If you want to receive ON TARGET every month, simply complete the form below and mail it to us.

NAME _____ POSITION _____
COMPANY _____
MAILING ADDRESS:
STREET _____
CITY _____ STATE _____ ZIP _____



GAME GROOMING

(continued from p.1)

Any of the playfield cleaners on the market are satisfactory, although less preferred are those which are sprayed. Spray often gets where it's not wanted, such as on the underside of plastics and on switch points. Apply the liquid with a soft rag and work it well into the surface (don't forget the runway). Re-apply until all dirt is removed. Then with a soft rag, buff the board to a hard shine. Be sure all traces of liquid are removed from corners and around posts and bumpers.

Rubber rings should be inspected frequently. Even with the "hottest" bumpers and flippers, dead rubbers mean a dead game. Any signs of yellowing, crumbling or cracking spell replacement at once. Do not hesitate to replace often or when in doubt; rubbers are so important and the improvement so obvious. Finally, remove

rubber "crumbs" from the playfield.

Another rubber item to check is the shooter tip. Never allow the shooter rod to wear through the tip. The rod will nick the ball and such a ball can severely and permanently damage the playfield. The tip is an excellent indicator of playfield conditions: if it darkens quickly, something is putting dirt on the ball. Check the playfield, the ball return track, and clean the ball.

The ball is rarely considered in playfield service, but it too contributes to action and player appeal. A shiny ball is not only pleasing to see but rolls faster than a dull or scratched ball. A ball which cannot be polished to a shine should be discarded and of course, a dented or scored ball must never be used. Keep

the ball clean; grease or oil on a ball will be spread over the entire playfield and will soil the rubbers.

The lamps are vital to a game as they both illuminate and indicate. Indicating lights should be checked often using the test button inside the front door. Look carefully to see that all illumination lamps are on and are bright. Failure to replace burned-out or dim lamps makes for a dark and depressing game attracting few players.

Reading this article can take more time than doing the procedures it covers. Playboard service need not be time-consuming if done regularly. Periodic maintenance is the key to preserving appearance and performance, all aspects of which point to one end: a desirable game to play. And a game which is played is a game which is profitable.

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