

Program Description I

Program Title *** PINBALL WIZZARD ***

Contributor's Name Mr. Craig A. Pearce (MEMBER # 311 OF THE
Address 2529 S. Home Avenue HP-65 USERS CLUB)
City Berwyn, State Illinois Zip Code 60402

Program Description, Equations, Variables For those familiar with pinball games, the scoring items in this game will not be unknown to them. However, for the rest of us, a little explanation is in order, especially the way HP-97/67 indicates the scores.

In this game, there are 8 different devices that affect scoring, sometimes producing increased scoring on other items, and will be referred to by name, as on a real machine. Each scoring device is given a code number and will be displayed to the right of the decimal point during a double pause, with the score just made on that device, to the left of the point. Device "1" is actually two star roll-overs (circular buttons at the top of the game board), which alternately set the display from 1 place to 9 places and back again. When set to 9 places (a lot of zeros showing) devices #'s 2, 3, 4, 5 & 6 will score 10 times more than their normal amounts as described below. Also, each time the "ball" rolls over device 1, 10 points are added to the players score. Device "2" is 2 top roll over slots, which either score 10 or 100, depending on whether the SPECIAL (DSP 9) is on. Devices # "3" are two mushroom or 'thumper-bumpers'. When the ball strikes these, it can bounce between them, up to 10 times, thus totaling as much as 1000 or as little a 100 when struck. With the SPECIAL lit, the amount is multiplied by 10. Device "4" is a spinner gate, which can spin from 1 to 25 revolutions, scoring 50 or 500 points per spin, again depending on the SPECIAL being lit or not. Devices number "5" are kick-out holes, where the ball drops in and is then kicked back out, scoring 50 or 500. Devices # "6" are two Out-Hole Bonus Advances, which add 1000 points to the Out Bonus, and add an immediate 10 or 100 to the players score. Device "7" consists of 5 Drop Targets. Each time a ball strikes device 7, a target is "dropped" and 10 points are scored. If device 7 is struck 5 times (all targets down) the player gets 100 or 1000 points to score, an extra ball, and all targets are reset, to try again. Device "8" is merely two sling shot bumpers and scores 10 points each time they are struck. When a zero shows up, the ball has dropped out through the Out-Hole, and all the Bonus points are added, 1000 at a time, --(cont. on next page)

Operating Limits and Warnings This program is ment to be left running during play, utilizing the active keyboard, during the pause mode, to perform the operations. Should, at any time, the user accidentally jam (halt) a running program by inadvertantly pressing a key, or pressing in a responce too late, the results will usually be a loss of points when R/S is pressed to restart the game. All accumulated points are unaffected.

This program has been verified only with respect to the numerical example given in *Program Description II*. User accepts and uses this program material AT HIS OWN RISK, in reliance solely upon his own inspection of the program material and without reliance upon any representation or description concerning the program material.

NEITHER HP NOR THE CONTRIBUTOR MAKES ANY EXPRESS OR IMPLIED WARRANTY OF ANY KIND WITH REGARD TO THIS PROGRAM MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NEITHER HP NOR THE CONTRIBUTOR SHALL BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING OUT OF THE FURNISHING, USE OR PERFORMANCE OF THIS PROGRAM MATERIAL.

to the players score, which is flashed on the screen for each 1000 point Bonus added to it. If the SPECIAL was lit when the ball dropped out, the player receives double the accumulated Out-Bonus. When the display pauses twice, showing the score, with either 1 or all zeros trailing it, the Bonus Scoring is at an end. The next item to be flashed on the display is the balls remaining to play, or the final score (if the game is over) with no trailing zeros.

The real action comes when a negative number appears on the display. This can either be -1, -2, or -3. When the player sees a "-1", it means the ball has reached the left flipper. The player must immediately press the left flipper button (key "1") to put the ball in play, or it drops out through the Out-Hole. Like wise, a "-3" means the ball is at the right flipper, requiring the user to key in number "3" during the 1 second pause.

If a "-2" shows up, it means both flippers will miss, but the player has the option of "tilting" the machine, by keying in a "2" from the keyboard. The problem with tilting is that the user only has a 50-50 chance of putting the ball back in play. If he should succeed, the usual scoring is seen, however, if he fails, the Out-Bonus accumulated is not added onto the score and the ball is lost. If any balls remain in the game, they are displayed immediately, or the final score is displayed, if there were no balls remaining.

START UP:

After initialization (required only once) the display will flash "0". During a pause, the player presses key "A" labeled "25¢" and a quarter is deducted from his cash register (no pun intended), R2. On an HP-67 the display is paused for 5 seconds, showing the number of games remaining. (Each quarter adds 2 more games to the ones remaining). On an HP-97, the number of games is printed. The display then goes back to flashing the last score made. It is during one of these pauses that key "C" can be pressed to view the amount of money spent so far. The display returns to flashing the score.

When key "B" is pressed, a game is deducted from the number remaining, which is again displayed or printed. Now, all trailing zeros (to the right of the point) are blanked out, and the number of balls to be played are shown. (The current standard today is 3 balls per game). This number is continually flashed until the player shoots the ball, which is accomplished by pressing either the "0" or "." key, which ever the user feels more comfortable doing. Now the scoring starts. As long as a "." or a "0" was used during the pause to "shoot" the ball, the program prevents the ball from dropping right out (a zero coming up). It will not prevent a negative number from showing up, however, so the player should be on his guard.

Play continues until the ball is lost and the game is over when all 3 balls have been lost. This is signified by the continual flashing of the final score with the display set to zero places.

Free games are received for each 50,000 points accumulated at the end of the game. A free ball is received each time the 5 Drop-Targets are hit, as described above, on the previous page.

Good luck.

Program Description II

Sketch(es) How some possible scoring looks:

| | |
|-------------|---|
| 900.3 | 900 points made on the thumper-bumpers (device #3) |
| 9000.300000 | 9000 points made on device #3, because SPECIAL was on (extra "0") |
| 10.7 | 10 points made on a Drop Target (device #7) |
| 100.7 | 100 points made on a Drop Target because all 5 targets are down. An extra ball has been added to the player's remaining ones. |

Sample Problem(s) Lets have a game and see how it works: Load program, sides 1 and 2.
Initialize with seed: .1541790869 RTN R/S 0.

Drop in a quarter for 2 games: A 2 ***

(flashed on display) 0.

Ready for game one: B (# of games)-- 1 ***

3 balls are shown: (flashed on display) 3.

Shoot first ball: 50.5

| | |
|--|---------------|
| First score made in kick out hole (50.5) then, | 10.10000000 |
| the next gives 10 points and lights SPECIAL. The | 100.60000000 |
| advance roll over is hit next (100.6) adding an add- | -2.0000000000 |
| itional 1000 to the out bonus. Finally a -2 comes up | 160.00000000 |
| but we let the ball drop, giving us 160 plus double | 1160.00000000 |
| the out bonus of 2000, or 4000+ 160. This is flashed | 2160.00000000 |
| twice more, and the number 2 is now flashed to show | 3160.00000000 |
| ball 2 is ready to be shot. | 4160.00000000 |

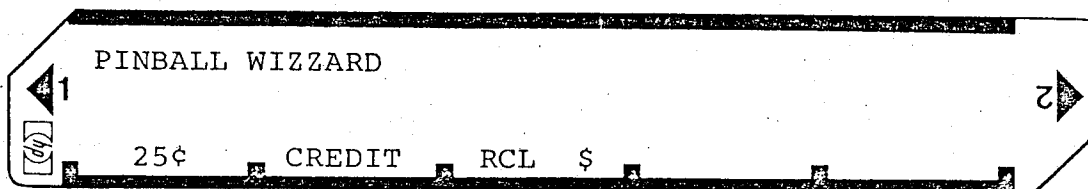
Solution(s) When played out, the second ball will immediately produce a -2, which, if the player should try for, by tilting (inputting a "2"), he would lose the 1000 bonus that starts each ball shot. On the last ball, the player is forced to use the right flipper ("3") because the number -3 shows on the display.

NOTES: After each ball has dropped through the out hole, the Drop-Targets are reset to 5 and the Out-Bonus is set back to 1000, so the player is always assured of at least 1000 points per ball (unless lost through a tilt). Also, the SPECIAL scoring is returned to normal after each ball drops.

***-Indicates a .5 second pause or a printed symbol.

Reference(s) Pamphlets from the following pinball manufacturers:

Williams Electronics, Inc., 3401 N. Calif. Ave. Chicago, Illinois
Bally Manufacturing Corporation, 2640 Belmont Ave. Chicago, Ill.
D. Gottlieb & Co., 165 W. Lake St., Northlake, Ill.



| STEP | INSTRUCTIONS | INPUT DATA/UNITS | KEYS | OUTPUT DATA/UNITS |
|------|---|------------------|---|-------------------|
| 1 | Input program (sides 1 and 2) | | <input type="button" value="RTN"/> <input type="button" value="R/S"/> | |
| 2 | Input seed number (s) such that $0 < (s) < 1$ | (s) | <input type="button" value="A"/> <input type="button" value="B"/> | 0. |
| | Display will now continually flash "0." | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | until player presses "A" during a pause. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 3 | Obtain credit for 2 additional games: | | <input type="button" value="A"/> <input type="button" value="B"/> | last score |
| | Note: press "A" only when display | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | pauses, otherwise, program will be | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | halted. At this point previous score of | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | last game (if any) will be paused. This | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | number will be "0." directly after | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | initialization. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 4 | Start first game: | | <input type="button" value="A"/> <input type="button" value="B"/> | 3. |
| | Displayed will be the number of balls | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | left to play in game. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 5 | Shoot next ball in game: | | <input type="button" value="A"/> <input type="button" value="B"/> | * |
| | Note: press "." or "0" only when the | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | remaining number of balls is paused on | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | display. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| * | Score is shown to left of point, the scoring | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | device is indicated to the right of the point. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | If trailing zeros are shown, the SPECIAL is | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | is on and many items score higher (see Prgm. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | Description I). | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | When "0" is seen, ball has dropped through Out | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | Hole. "-1" indicates left flipper is required, | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | while "-3" indicates right flipper is required. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | A "-2" means ball is dropping out, but player | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | can attempt a tilt to put ball back in play. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 6 | To use left flipper (when "-1" is paused): | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 7 | To use right flipper (when "-3" is paused): | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 8 | Optional--To tilt machine (when "-2" is | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | paused): | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 9 | When current ball is lost through out hole, | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | and Bonus has been collected, next ball is | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | displayed, flashing. To shoot it go to step 5. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 10 | When all balls are used up, final score is | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| | flashed. If any games remain, go to step 4. | | <input type="button" value="A"/> <input type="button" value="B"/> | |
| 11 | If no games remain, go to step 3. | | <input type="button" value="A"/> <input type="button" value="B"/> | |

Program Listing 1

Page 5 of 8

| STEP | KEY ENTRY | KEY CODE | COMMENTS | STEP | KEY ENTRY | KEY CODE | COMMENTS |
|------|-----------|----------|---------------------|------|-----------|----------|----------------------|
| 001 | FRC | 16 44 | | 057 | R4 | -31 | |
| 002 | FI | 16 24 | | 058 | DSF0 | -63 00 | of the games. |
| 003 | XZY | -41 | | 059 | RTN | 24 | ----- |
| 004 | X=0? | 16-43 | store seed | 060 | *LBLB | 21 12 | LBL B: Play |
| 005 | + | -55 | | 061 | RCL1 | 36 01 | -Any games left? |
| 006 | FRC | 16 44 | | 062 | X=0? | 16-43 | |
| 007 | STOE | 35 15 | ----- | 063 | GT0a | 22 16 11 | -No, go to f a |
| 008 | 5 | 05 | | 064 | 1 | 01 | -Else deduct 1 game |
| 009 | 0 | 00 | | 065 | ST-1 | 35-45 01 | |
| 010 | STOB | 35 12 | store constants | 066 | - | -45 | |
| 011 | 1 | 01 | | 067 | PRTX | -14 | -Print remaining |
| 012 | 0 | 00 | | 068 | 0 | 00 | games |
| 013 | STOA | 35 11 | | 069 | STOB | 35 00 | -clear old score |
| 014 | X= | 53 | | 070 | 3 | 03 | |
| 015 | STOC | 35 13 | ----- | 071 | STO3 | 35 03 | -reset # of balls |
| 016 | CLX | -51 | clear registers | 072 | *LBLb | 21 16 12 | ----- |
| 017 | STOB | 35 00 | R0 to R2 | 073 | CF0 | 16 22 00 | LBL f b: |
| 018 | STO1 | 35 01 | | 074 | DSF0 | -63 00 | Clr. SPECIAL flag |
| 019 | STO2 | 35 02 | ----- | 075 | 5 | 05 | |
| 020 | GT0a | 22 16 11 | | 076 | STO7 | 35 07 | -store drop targets |
| 021 | *LBLc | 21 16 15 | | 077 | EEX | -23 | |
| 022 | RCL5 | 36 15 | subroutine used to | 078 | 3 | 03 | -initialize out hole |
| 023 | 9 | 09 | generate random | 079 | STO6 | 35 06 | bonus. |
| 024 | 9 | 09 | numbers. | 080 | *LBLc | 21 16 13 | ----- |
| 025 | 7 | 07 | | 081 | CF3 | 16 22 03 | |
| 026 | X | -35 | | 082 | RCL3 | 36 03 | display remaining |
| 027 | FRC | 16 44 | | 083 | X=0? | 16-43 | balls and loop |
| 028 | STOE | 35 15 | | 084 | GT0a | 22 16 11 | until user re- |
| 029 | RTN | 24 | ----- | 085 | PSE | 16 51 | sponds. |
| 030 | *LELA | 21 11 | LBL A: Add 2 games | 086 | F3? | 16 23 03 | |
| 031 | 2 | 02 | to total. | 087 | F3? | 16 23 03 | |
| 032 | ST+1 | 35-55 01 | | 088 | GT0a | 22 16 13 | ----- |
| 033 | . | -62 | | 089 | 1 | 01 | deduct 1 ball |
| 034 | 2 | 02 | | 090 | ST-3 | 35-45 03 | ----- |
| 035 | 5 | 05 | | 091 | DSF1 | -63 01 | |
| 036 | ST-2 | 35-45 02 | | 092 | XZY | -41 | |
| 037 | RCL1 | 36 01 | | 093 | *LBLa | 21 16 14 | -obtain first.rnd # |
| 038 | PRTX | -14 | -print total games | 094 | GSBe | 23 16 15 | ----- |
| 039 | *LBLc | 21 16 11 | | 095 | 1 | 01 | |
| 040 | 2 | 02 | LBL f a: test for | 096 | 2 | 02 | get number from -3 |
| 041 | CHS | -22 | possible free | 097 | X | -35 | to 8. |
| 042 | STO1 | 35 46 | games. | 098 | INT | 16 34 | |
| 043 | RCL0 | 36 00 | | 099 | 3 | 03 | |
| 044 | 5 | 05 | | 100 | - | -45 | ----- |
| 045 | EEX | -23 | | 101 | X=Y? | 16-33 | |
| 046 | 4 | 04 | | 102 | GT0d | 22 16 14 | if 1st #=0, loop |
| 047 | + | -24 | | 103 | X>0? | 16-44 | back to LBL f d |
| 048 | INT | 16 34 | | 104 | GT0E | 22 15 | ----- |
| 049 | ST+1 | 35-55 01 | ----- | 105 | PSE | 16 51 | if # positive, gotoE |
| 050 | RCL0 | 36 00 | loop to show old | 106 | X=0? | 16-43 | ----- |
| 051 | PSE | 16 51 | score. | 107 | GT00 | 22 00 | else pause to dis- |
| 052 | GT01 | 22 45 | ----- | 108 | F3? | 16 23 03 | play #. If 0 goto0 |
| 053 | *LBLC | 21 13 | LBL C: Recall the | 109 | F3? | 16 23 03 | ----- |
| 054 | DSF2 | -63 02 | total amount of | 110 | GT00 | 22 00 | if no user response |
| 055 | RCL2 | 36 02 | money spent in play | 111 | CHS | -22 | go to 0 |
| 056 | PSE | 16 51 | | 112 | X*Y? | 16-32 | |

REGISTERS

| | | | | | | | | | | | | | | | | | | | |
|----|-------|----|-------|----|--------|----|-------|----|------|----|------|----|-----------|----|--------------|----|--|----|--|
| 0 | SCORE | 1 | GAMES | 2 | \$\$\$ | 3 | BALLS | 4 | | 5 | | 6 | OUT BONUS | 7 | DROP TARGETS | 8 | | 9 | |
| S0 | | S1 | | S2 | | S3 | | S4 | | S5 | | S6 | | S7 | | S8 | | S9 | |
| A | 10 | B | 50 | C | 100 | D | | E | SEED | I | USED | | | | | | | | |

| STEP | KEY ENTRY | KEY CODE | COMMENTS | STEP | KEY ENTRY | KEY CODE | COMMENTS |
|------|-----------|----------|----------------------|------|-----------|----------|--------------------|
| 113 | GT00 | 22 00 | | 169 | PSE | 16 51 | |
| 114 | 2 | 02 | | 170 | PSE | 16 51 | |
| 115 | CHS | -22 | test if tilt option | 171 | GT0d | 22 16 14 | |
| 116 | X#Y? | 16-32 | is up. If not, | 172 | *LBL1 | 21 01 | |
| 117 | GT0d | 22 16 14 | put ball back in | 173 | F0? | 16 23 00 | |
| 118 | GSBe | 23 16 15 | play. | 174 | GT01 | 22 01 | SPECIAL star roll- |
| 119 | 2 | 02 | | 175 | SF0 | 16 21 00 | overs. |
| 120 | X | -35 | if player has gone | 176 | DSP9 | -63 05 | |
| 121 | INT | 16 34 | for tilt, see if | 177 | RCLA | 36 11 | |
| 122 | X=0? | 16-43 | ball is lost or | 178 | GT0D | 22 14 | |
| 123 | GT0b | 22 16 12 | not. Yes-gto f b | 179 | *LBL1 | 21 01 | |
| 124 | GT0d | 22 16 14 | No-gto f d | 180 | DSP1 | -63 01 | |
| 125 | *LBL1 | 21 15 | | 181 | CF0 | 16 22 00 | |
| 126 | STOI | 35 46 | Store dsp. in I and | 182 | *LBL2 | 21 02 | top roll-overs |
| 127 | GT0i | 22 45 | jump indirectly. | 183 | RCLA | 36 11 | |
| 128 | *LBL0 | 21 00 | | 184 | GT09 | 22 09 | |
| 129 | 8 | 08 | LBL 0: Out hole | 185 | *LBL3 | 21 03 | thumper (mushroom) |
| 130 | CHS | -22 | bonus scoring | 186 | RCLC | 36 13 | bumpers. |
| 131 | STOI | 35 46 | | 187 | RCLA | 36 11 | |
| 132 | RCL0 | 36 00 | | 188 | GT03 | 22 03 | |
| 133 | X#0? | 16-42 | | 189 | *LBL4 | 21 04 | |
| 134 | GT00 | 22 00 | | 190 | RCLB | 36 12 | |
| 135 | 1 | 01 | if no score yet made | 191 | 2 | 02 | |
| 136 | ST+3 | 35-55 03 | give ball back to | 192 | 5 | 05 | spinner gate |
| 137 | DSP0 | -63 00 | user. | 193 | *LBL3 | 21 03 | |
| 138 | GT0c | 22 16 13 | | 194 | GSBe | 23 16 15 | |
| 139 | *LBL0 | 21 00 | Else, check if | 195 | X | -35 | |
| 140 | 1 | 01 | double bonus is to | 196 | 1 | 01 | |
| 141 | F0? | 16 23 00 | be scored then | 197 | + | -55 | |
| 142 | 2 | 02 | give out bonus. | 198 | INT | 16 34 | |
| 143 | ST+6 | 35-55 06 | | 199 | X | -35 | |
| 144 | RCL0 | 36 00 | | 200 | GT09 | 22 09 | |
| 145 | PSE | 16 51 | | 201 | *LBL5 | 21 05 | |
| 146 | EEX | -23 | | 202 | RCL6 | 36 12 | kick out hole |
| 147 | 3 | 03 | | 203 | GT09 | 22 09 | |
| 148 | ST-6 | 35-45 06 | | 204 | *LBL6 | 21 06 | |
| 149 | ST+0 | 35-55 00 | | 205 | EEX | -23 | |
| 150 | RCL0 | 36 00 | | 206 | 3 | 03 | Bonus Advance star |
| 151 | PSE | 16 51 | | 207 | ST+6 | 35-55 06 | roll-overs. |
| 152 | RCL6 | 36 06 | | 208 | RCLA | 36 11 | |
| 153 | X#0? | 16-42 | | 209 | GT09 | 22 09 | |
| 154 | GT0i | 22 45 | | 210 | *LBL7 | 21 07 | |
| 155 | R4 | -31 | | 211 | RCLA | 36 11 | |
| 156 | PSE | 16 51 | | 212 | DSZ1 | 16 25 45 | |
| 157 | GT06 | 22 16 12 | | 213 | GT0D | 22 14 | drop targets |
| 158 | *LBL9 | 21 09 | | 214 | 5 | 05 | |
| 159 | F0? | 16 23 00 | score points just | 215 | ST07 | 35 07 | |
| 160 | RCLA | 36 11 | made on device | 216 | 1 | 01 | |
| 161 | F0? | 16 23 00 | checking to see | 217 | ST+3 | 35-55 03 | |
| 162 | X | -35 | if SPECIAL was | 218 | RCLC | 36 13 | |
| 163 | *LBLD | 21 14 | on. | 219 | GT09 | 22 09 | |
| 164 | ST+6 | 35-55 06 | | 220 | *LBL6 | 21 08 | |
| 165 | RCL1 | 36 46 | | 221 | RCLA | 36 11 | slingshot kickers |
| 166 | RCLA | 36 11 | | 222 | GT0D | 22 14 | |
| 167 | + | -55 | -set dsp to show | | | | |
| 168 | + | -55 | both score & device | | | | |

| LABELS | | | | | FLAGS | SET STATUS | | |
|-------------|--------------|--------------|--------------|--------------|-----------|--|---|---|
| 25c | CREDIT | C RCL \$ | D USED | E USED | 0 SPECIAL | FLAGS | TRIG | DISP |
| used | used | ball disp. | used | rnd. # gen. | 1 | ON OFF | | |
| 0 out hole | SPECIAL | roll overs | 3 mushrooms | 4 spin. gate | 2 | 0 <input type="checkbox"/> <input checked="" type="checkbox"/> | DEG <input checked="" type="checkbox"/> | FIX <input checked="" type="checkbox"/> |
| 5 kick outs | 6 bonus adv. | 7 drop targ. | 8 sling shot | 9 used | 3 used | 1 <input type="checkbox"/> <input checked="" type="checkbox"/> | GRAD <input type="checkbox"/> | SCI <input type="checkbox"/> |
| | | | | | | 2 <input type="checkbox"/> <input checked="" type="checkbox"/> | RAD <input type="checkbox"/> | ENG <input type="checkbox"/> |
| | | | | | | 3 <input type="checkbox"/> <input checked="" type="checkbox"/> | | n-g |

00321D

SCORING ITEMS AT A GLANCE

DEVICE #1: (Two circles at top of board, labeled "SPECIAL")
Roll-Over Stars; switches SPECIAL scoring on and off and
scores 10 points for each one hit.

DEVICE #2: (Two slots at top, marked with arrows)
Top Roll-Overs; scores 10 points or 100 points when
SPECIAL is lit.

DEVICE #3: (Two large circles about 1/3 down from top of board,
Mushroom or Thumper-Bumpers; scores 100 points each time
they are hit, or 1000 points when SPECIAL
is lit. Ball can bounce between them for
up to 10 times at one instance.

DEVICE #4: (Slot along left side of machine)
Spinner Gate; scores 50 points for each spin, or 500 points
when SPECIAL is lit. Gat can spin as
much as 25 times when struck.

DEVICE #5: (Two circles, one by Spinner Gate, the other by
drop targets, device #7)
Kick Out Holes; scores 50 or 500 when SPECIAL is lit.

DEVICE #6: (Two circles near bottom marked "Advance Bonus")
Bonus Advance Roll-Overs; scores 10 or 100 if SPECIAL is
lit. Also adds 1000 more points to Out-
Hole Bonus.

DEVICE #7: (Area to the right of board)
Drop-Targets; scores 10 points for the first 4 hit. Scores
100 or 1000 (if SPECIAL is lit) on fifth
hit. This fifth shot resets flags and adds
an additional ball to game.

DEVICE #8: (Areas above the words "Flippers")
Sling Shot Bumpers; scores 10 points when struck.

DEVICE #-1: Left Flipper is called for.

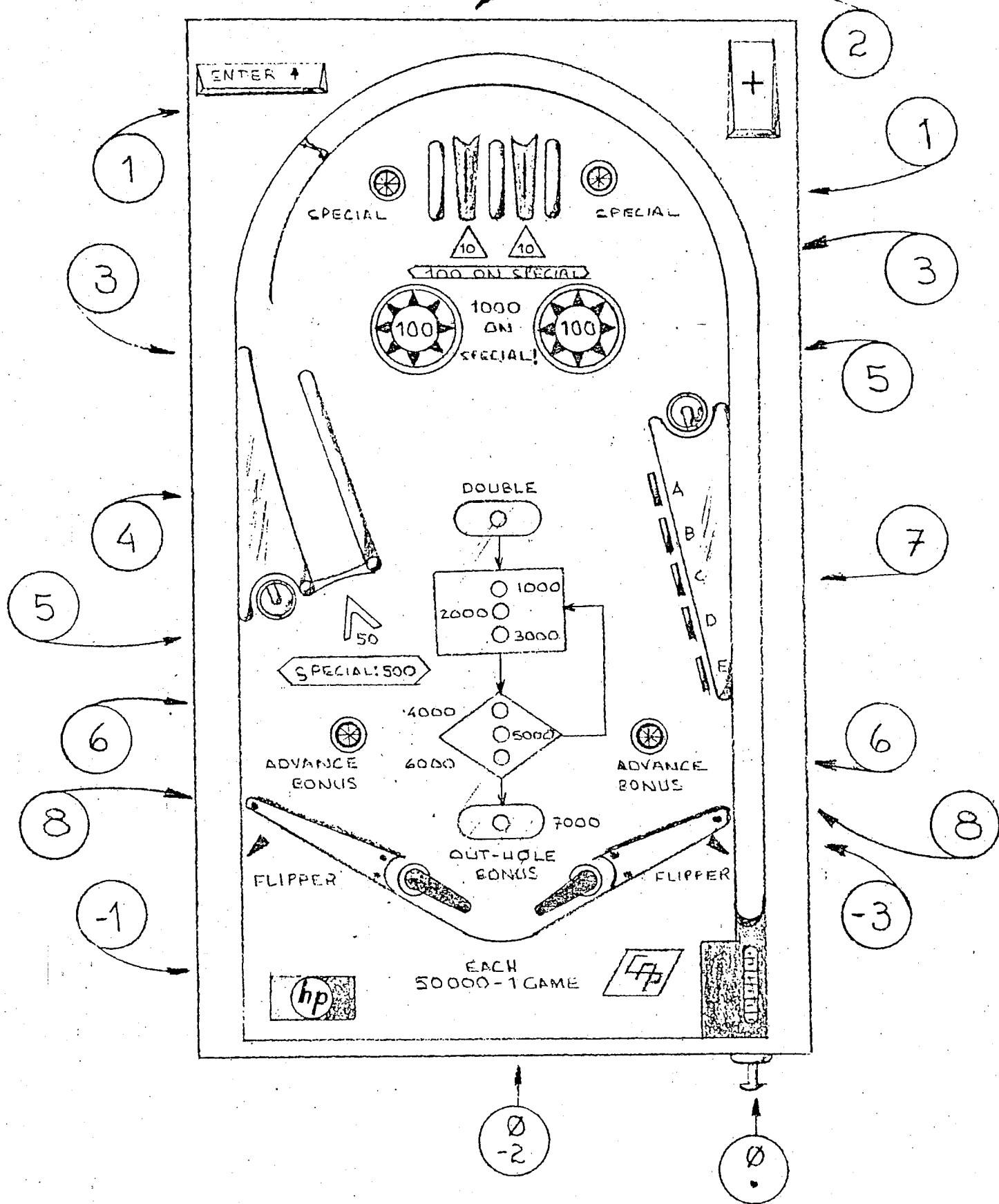
DEVICE #-3: Right Flipper is called for.

ZERO (0): Ball falls through Out Hole and collects Bonus points.

-2 : Ball falls through Out Hole and collects Bonus points,
but gives player the option of tilting to
put ball in play once more.

"." : Ball launcher.

00321D



00321 D

SPECIAL NOTE CONCERNING EITHER PROGRAM:

Steps have been added so that on the first ball, should the "ball" drop directly to a flipper or come a -2 (the tilt option) and no score was made, the ball will be returned to the player to shoot again, as it does on many regular pinball machines. Note that if the player chooses to attempt a tilt and fails, the ball will not return. Also, any accumulated score prior to a ball dropping through the out hole will prevent the ball from returning.

*** ADJUSTMENTS FOR LIBERAL SCORING ***

In the previously listed program, the scoring set up is referred to as "conservative"; that is, it is more difficult to score any free balls or free games. To make the game easier, the following changes can be made to adjust your "pinball" machine for easier scoring:

| STEP NUMBER: | CHANGE FROM: | TO: | |
|----------------------------|-----------------------------|-------|------------------------------|
| # 070 | 3 | 5 | (increase # of balls) |
| # 075 | 5 | 3 | (decrease drop targets) |
| # 119 | 2 | 3 | (less chance to tilt) |
| # 182 | DELETE THIS STEP COMPLETELY | | |
| # 183 (was # 184) | GTO 9 | GTO D | |
| GTO STEP # 202 and key in: | | LBL 2 | (this now becomes step #203) |
| # 208 | RCL A | RCL C | |
| # 213 | GTO D | GTO 9 | |
| # 214 | 5 | 3 | |

By making the following changes listed above, the following now occurs:

1. Five (5) balls are provided for each game
2. The number of drop targets needed for a free ball is reduced to 3.
3. First two drop targets down either score 10, or 100 if SPECIAL is lit.
4. Third drop target down either scores 100 or 1000 if SPECIAL is lit.
5. Both devices 2 and 6 (top roll-overs and Bonus advance roll-overs) advance Out Hole Bonus by 1000.
6. Both top roll-overs and Bonus advance roll-overs score 100, or 1000 if SPECIAL is lit.
7. Instead of a 50/50 chance of tilting the machine, the player has a 2 out of 3 chance of putting the ball back in play.

EXCEPT FOR THE CHANGES LISTED ABOVE, ALL OTHER DEVICES WORK THE SAME, AND NO FURTHER PROGRAM CHANGES SHOULD BE MADE.