Important Note to Operators:

If the operation, maintenance and service manual was not included in this game when you unpacked it, contact your distributor to get a free copy. (All Atari manuals for coin-operated games also include complete illustrated parts lists.)

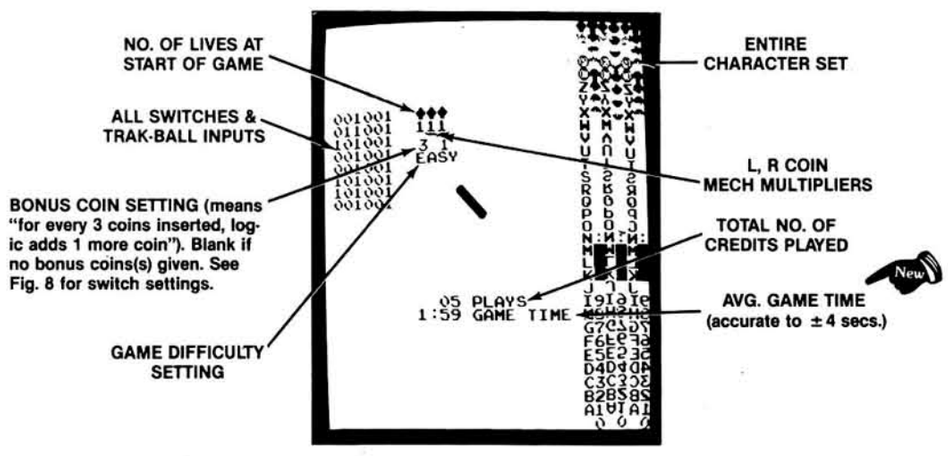
CENTIPEDE™ Cabaret™

ST-189
1st printing

Self-Test Procedure

Instruction	Results if Test Passes (if results are *not* as indicated, see list of failures that follows)
1. Begin: Set self-test switch to **on** position (see Figure 6).	The monitor displays the picture below. The game produces no sound at all. The two LEDs will stay on throughout self-test.
2. Trak Ball Test: Roll the Trak Ball control in all directions.	The centipede head moves around on the screen in directions corresponding to Trak Ball control.
3. Switch Test: One after another, activate and release all 3 control-panel switches, the slam switch, and coin door switches.*	As long as you activate (close) each switch, you'll hear a high beep.
4. Audio I/O Chip Test: One after another, press and hold 2 of the control-panel switches and at least one of the coin-door switches.	Volume increases and pitch decreases with each additional switch that is activated.
5. Audio I/O Channel Test: Press 1-player start button four times.	You'll hear a high beep for each press of the button.
6. Background Color Test: Press 1-player start button at least eight more times.	Background color changes with each press of the 1-player start button.
7. Object Color Test: Press 2-player start button at least 16 times.	Objects on playfield change color.
8. Moving Object Test: Watch the screen, and move the Trak Ball around. Place the moving object in an open area of the screen. Press fire button several times.	Each press of the fire button changes the moving object to another moving object. At certain points in the series, the object will disappear. This is **not** a failure indication.
9. Erasing the High Score Table (optional) The current three highest scores are held in permanent memory, even if the game is unplugged. If you want to erase these scores, simultaneously press the fire and two start buttons. The *4 FF* message in the upper left corner of the screen will then be displayed. The average game time data will also be erased, but still displayed on the screen.	New
10. End: When satisfied with test, set self-test switch to **off** position.	

*Activate coin switches by inserting at least one coin in each coin slot. You will not trip the coin counters as long as you stay in self-test.



Results if Test Fails

1. Begin:
RAM FAILURE is indicated by one to 10 beeps. Note the number of beeps and determine which RAM may be bad. To restart the test, press the reset pushbutton on the game PCB, or set the self-test switch to off, then again to the on position.

Number of Beeps Given	Possible Bad RAM Chip Location
1	H2
2	F2
3	K7
4	K5
5	L7
6	L5
7	M7
8	M5
9	N7
10	N5

Any bad RAM must be replaced before the computer can check the other RAMs, as well as continue with the self-test.

ROM/PROM FAILURE is indicated by two groups of numbers in the upper left corner of the screen. The number at the far left indicates the location of the failing PROM/ROM(s) indentify the bad ROM/PROM with the table below. If the screen displays "garbage," or the logic produces strange audio or randomly activates the coin counters, the chip at location J1 is probably bad.

Ignore the hexadecimal numbers just to the right of the chip-location number.

Displayed Number	Failing ROM/PROM Chip Location
0	D1
1	E1
2	F/H1
3 or "garbage"	J1
4*	E5*
5	B/C/D3

*If you replace or erase this ROM, the number *4 FF* will be displayed throughout the self-test. The next time you enter self-test, the *4* disappears after a game is played. Otherwise the self-test will continue to display the numbers *4 FF*.

2. Trak Ball Test:
The character doesn't move in same direction as ball, jumps rather than moves smoothly, or doesn't move at all. One of the Coupler PCBs or Trak Ball control may be bad, harness wires or connector may be loose, Trak Ball reading circuitry on Game PCB may be bad, or Trak Ball bearings may need oiling.

3. Switch Test:
Sound is constantly on, even though you are not activating any switch. Or, no beep is given for any switch, or LED is dark. Indicates a bad switch, loose harness wires, bad LED-driving circuitry, volume turned all the way down, or loose connector.

4. Audio I/O Chip Test:
No increase in volume or decrease in pitch indicates bad custom audio I/O chip at location B/C/D3.

5. Audio I/O Channel Test:
On one out of the four activations, no audio is produced. Indicates one channel is bad in the custom I/O audio chip at location B/C/D3 (replace entire chip).

6. Background Color Test:
Background doesn't change color, or doesn't display all 16 colors. Indicates bad color RAM chip. (RAM failure would have been indicated earlier with from 3 through 10 beeps.)

7. Object Color Test:
Objects don't change color, or don't display all 16 colors. RAM failure.

8. Moving Object Test:
Object doesn't change to another object. ROM/RAM failure.

Game Price Settings

The white block below contains Atari's suggested settings. All numbers 1 thru 8 are toggle settings on the 8-toggle switch at location N8, on the Centipede™ Game PCB (the **LEFT** switch assembly).

Circled numbers refer to game pricing labels you should use with each situation (labels are below). Use the label no. 6 (indicated with ⑥) only if you set toggle 7 at PCB switch assembly P10 to on.

50¢ PER CREDIT

	No bonus	Bonus $1.00 = 3 credits	Bonus $.75 = 2 credits, $1.00 = 3 credits
Straight 25¢ Door	① 8 Off 7 Off 6 Off 5 Off / 4 Off 3 Off 2 On 1 On	③ 8 Off 7 On 6 On 5 Off / 4 Off 3 Off 2 On 1 On	④ 8 Off 7 Off 6 On 5 Off / 4 Off 3 Off 2 On 1 On
25¢/$1.00 Door or 25¢/25¢/$1.00 Door	① 8 Off 7 Off 6 Off 5 Off / 4 Off 3 On 2 On 1 On	③ 8 Off 7 On 6 On 5 Off / ⑤ 4 Off 3 On 2 On 1 On	④ 8 Off 7 Off 6 On 5 Off / ⑤ 4 Off 3 On 2 On 1 On

25¢ PER CREDIT

	No bonus	Bonus $.50 = 3 credits	Bonus $1.00 = 5 credits
Straight 25¢ Door	② 8 Off 7 Off 6 Off 5 Off / ⑥ 4 Off 3 Off 2 On 1 Off	⑥ 8 Off 7 Off 6 On 5 Off / ⑦ 4 Off 3 Off 2 On 1 Off	⑥ 8 Off 7 On 6 Off 5 Off / ⑦ 4 Off 3 Off 2 On 1 Off
25¢/$1.00 Door or 25¢/25¢/$1.00 Door	② 8 Off 7 Off 6 Off 5 Off / ⑥ 4 Off 3 On 2 On 1 Off	⑥ 8 Off 7 Off 6 On 5 Off / ⑦ 4 Off 3 On 2 On 1 Off	⑥ 8 Off 7 On 6 Off 5 Off / ⑦ 4 Off 3 On 2 On 1 Off

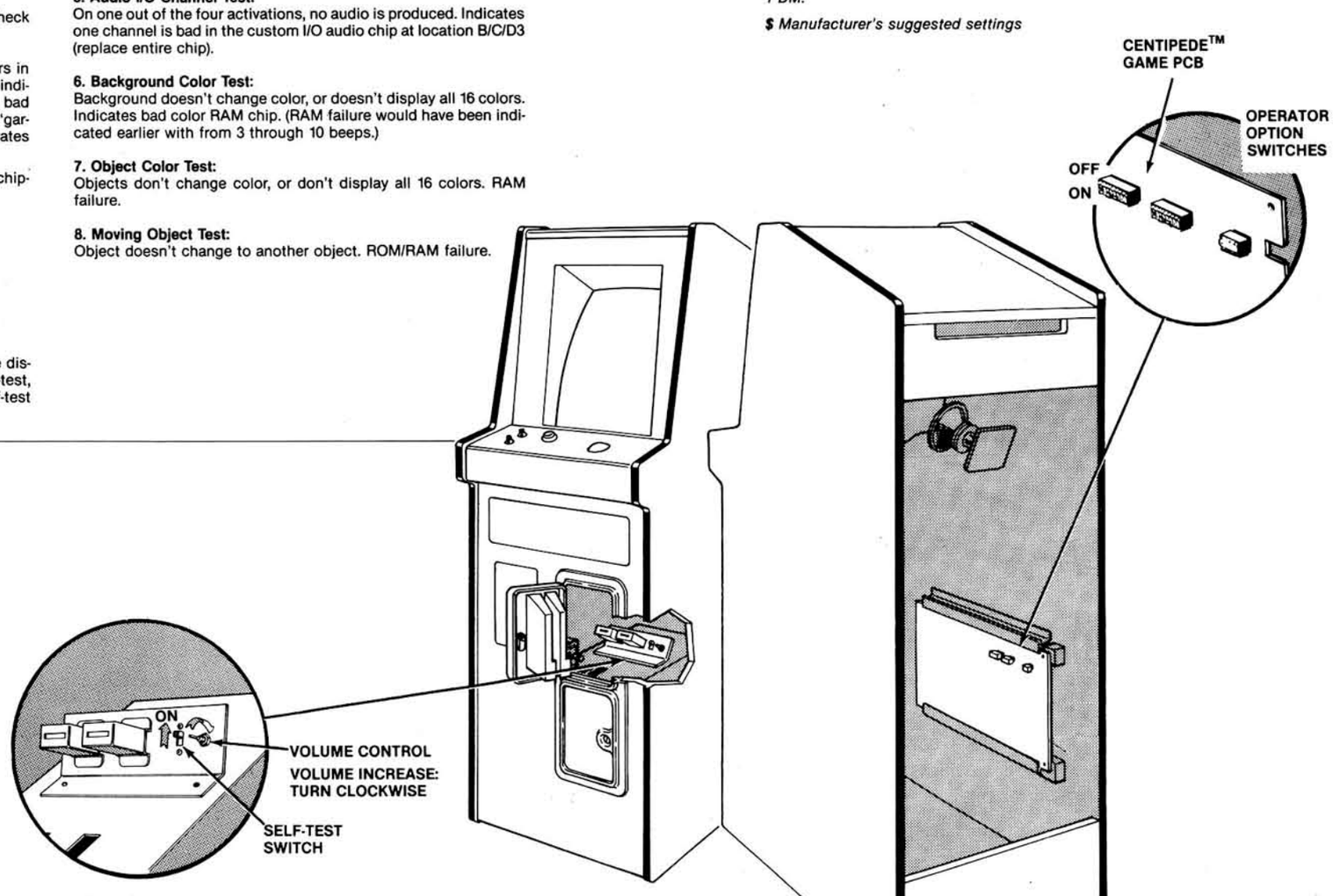
The switch settings below relate to options for game price, coin mechanism multipliers, and bonus play. This information is useful in case you need to temporarily set the Centipede™ game on free play, or if you have German coin mechanisms in your door.

To achieve bonus plays, all coins must be inserted before pressing the start button. The label no. 6 shown below should be used **only** if you set toggle 8 at PCB switch assembly N9 to **off**.

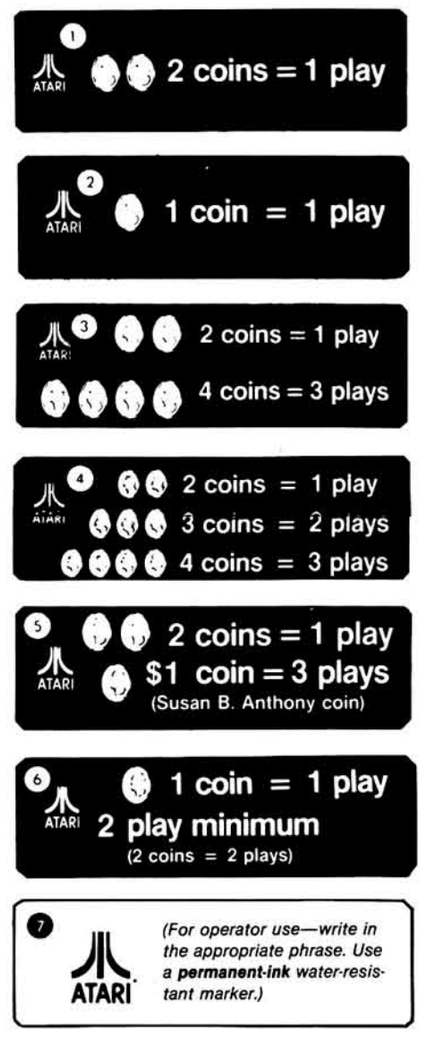
Toggle Settings of 8-Toggle Switch on Centipede PCB *(at N8)*. LEFT switch when PCB is in game								
8	7	6	5	4	3	2	1	Option
						On	On	Free play
						On	Off	1 coin* for 2 credits
						Off	On	1 coin* for 1 credit $
						Off	Off	2 coins* for 1 credit
				On	On			Right coin mech × 1 $
				On	Off			Right coin mech × 4
				Off	On			Right coin mech × 5
				Off	Off			Right coin mech × 6
			On					Left coin mech × 1 $
			Off					Left coin mech × 2
On	On	On						No bonus coins $
On	On	Off						For every 2 coins* inserted, game logic adds 1 more coin*
On	Off	On						For every 4 coins* inserted, game logic adds 2 more coins*
On	Off	Off						For every 4 coins* inserted, game logic adds 1 more coin*
Off	On	On						For every 5 coins* inserted, game logic adds 1 more coin*
Off	On	Off						For every 3 coins* inserted, game logic adds 1 more coin*

In the U.S., a "coin" is defined as 25¢. In Germany a "coin" is 1 DM.

$ Manufacturer's suggested settings



Game Pricing Labels



Game Option Settings

To change toggle positions on the switch assemblies, you need not remove the game PCB. The switches, usually colored blue, are easily accessible when the Centipede Game PCB is mounted in place.

When changing the options, verify proper results on the monitor display **by performing the self-test.** Note that changing an option on any of the following eight toggles will **not** cause an immediate change on the monitor screen during the attract mode.

Toggle Settings of 8-Toggle Switch on Centipede Game PCB (CENTER switch assembly when PCB is in game) *(at N9)*								
8	7	6	5	4	3	2	1	Option
						On	On	English $
						On	Off	German
						Off	On	French
						Off	Off	Spanish
				On	On			2 lives per game
				On	Off			3 lives per game $
				Off	On			4 lives per game
				Off	Off			5 lives per game
								Bonus life granted at every:
		On	On					10,000 points
		On	Off					12,000 points $
		Off	On					15,000 points
		Off	Off					20,000 points
	On							Hard game difficulty* New
	Off							Easy game difficulty* $
On								1-credit minimum $
Off								2-credit minimum

$ Manufacturer's suggested settings

Changing toggles 3-7 erases the high score table.

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Coin Counter Option Settings

[These toggles determine which coin mechanisms activate which counters]

Toggle Settings of 4-Toggle Switch on Game PCB (N11)				Two coin acceptors in the coin door:	Two coin acceptors and a push-button utility coin switch in the game:	Three coin acceptors in the coin door:
4	3	2	1			
Not Used	*Not Used*	On	On	Both acceptors activate all coin counters simultaneously.	*Do not use this setting.*	All 3 are same denomination and they activate all coin counters simultaneously.
		On	Off	Both acceptors activate 2 counters separately.	*Do not use this setting.*	Left and center acceptor activate one coin counter; right acceptor activates another coin counter.
		Off	On	Both acceptors activate all coin counters simultaneously.	Utility coin switch will not activate a coin counter, if you do not hook it up. Both acceptors activate all coin counters simultaneously.	Left acceptor activates one coin counter; center and right acceptor activate another coin counter. *Not for any currently designed 3-mech coin door.*
		Off	Off	Both acceptors activate 2 counters separately. $	Utility coin switch will not activate a coin counter, if you do not hook it up. Left and right acceptors activate 2 coin counters separately.	Left, center and right acceptors activate 3 coin counters separately. $

$ Manufacturer's suggested settings