

# MISSILE COMMAND™

## SELF-TEST PROCEDURE

### IMPORTANT NOTE TO OPERATORS:

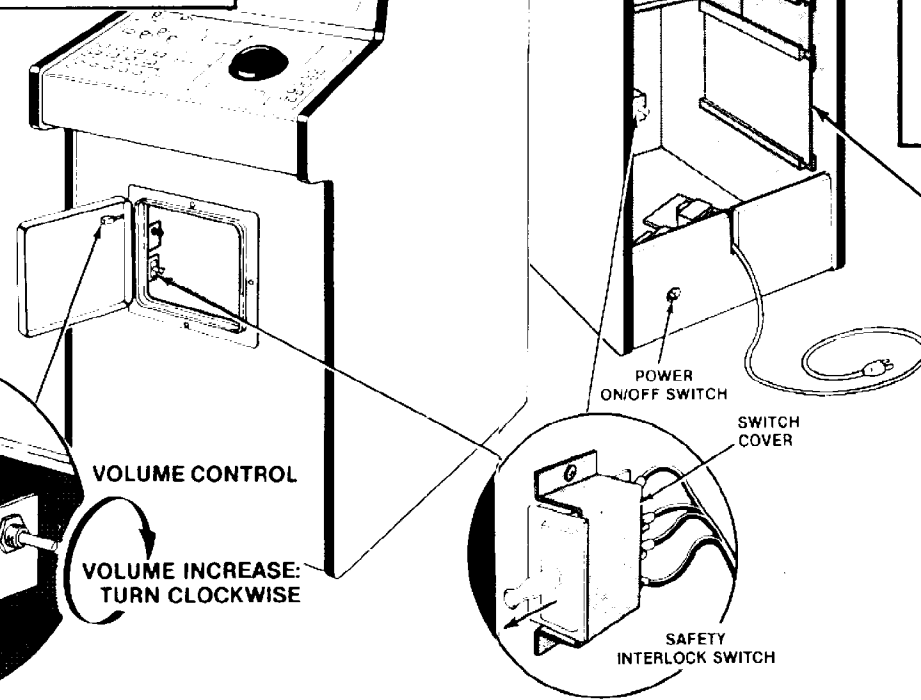
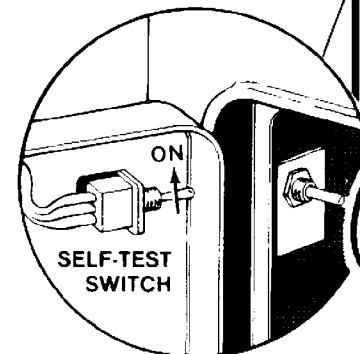
If the operation, maintenance and service manual was not included in this game when you unpacked it, contact your distributor to get a free copy. (All Atari and Kee Games manuals for coin-operated games also include a complete illustrated parts catalog.)

Instruction	Result if Test Passes	Result if Test Fails
1. Set self-test switch to <b>on</b> position. Note: entering self-test will set the HIGH SCORE TODAY display to 7500.	After about 5 seconds of frozen attract mode, a low raspy tone is followed by a low beep, then high beep. TV monitor screen displays picture as shown below: <b>ROM OK</b> <b>MAP OK</b> <b>RAM OK</b> + ...plus the options display—see far lower right for explanation. Both LED start buttons will also be lighted.	A continuous raspy tone means V BLANK is malfunctioning. Self-test will not continue. A RAM failure is indicated by a blank or "garbage"-filled screen and a repeated series of 8 beeps, separated by a low raspy tone. See note 1 below. Self-test will not restart. ROM failure is indicated by <b>BAD ROM</b> ; see note 2 below. <b>BAD MAP</b> means bit-mapping hardware has failed. <b>BAD CHIP</b> means custom audio I/O chip at location P8/9 has failed.
2. Roll the Trak Ball control in all directions.	The + moves around on the screen in directions corresponding to Trak Ball control—up to an invisible border along the screen's edges.	The + doesn't move in same direction as ball, or not at all. One of the Steering PCBs on 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. Press the following switches: ● Coin switch trip wires ● Coin door slam switch ● All three fire switches ● Player start buttons	A sound is heard as each switch is pressed. The background color also changes.	No sound or color changes are produced when pressing one of these switches: indicates a bad switch, loose harness wires, or loose connector.
4. Set self-test switch to <b>off</b> position.		

**Note 1:** In test no. 1, a low beep means a good chip; a high beep is a bad RAM, as follows:

High beep in series of 8 tones:	Bad chip at location:
1st	P4
2nd	N4
3rd	M4
4th	L4
5th	K4
6th	J4
7th	H4
8th	F4

**Note 2:** **BAD ROM** plus some or all of the digits 1 thru 6 are displayed. These numbers show which 2K of memory are bad. For example, 1 means the first 2K are bad. The + may not appear.



## Option Switch 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 game PCB is mounted in place.

When changing the options, verify proper results on the TV monitor display by performing the self-test. Note that changing an option on any toggle will cause an immediate change on the TV monitor screen during the self-test.

Toggle Settings of 8-Toggle Switch on Game PCB (at R10)								Option		
8	7	6	5	4	3	2	1			
* Note: In the U.S., a "coin" is defined as 25¢. If your game also has a \$1 mechanism, you must set the right coin mechanism multiplier as per your choice.							On	On	(Center mech is a left mech in a 2-mech door)	
							Off	On		1 coin* for 1 play
							On	Off		Free play
							On	Off		2 coins* for 1 play \$
							Off	Off		1 coin* for 2 plays
							On	Off		Right coin mech × 1 \$
							On	Off		Right coin mech × 4
							Off	On		Right coin mech × 5
							Off	Off		Right coin mech × 6
							On	Off		Center Coin Mech × 1 \$
							Off	Off	Center Coin Mech × 2	
Used			On					English language		
Not	On	On	Off					French language		
	Off	Off	On					German language		
	Off	Off	Off					Spanish language		
Toggle Settings of 8-Toggle Switch on Game PCB (at R8)								Option		
8	7	6	5	4	3	2	1			
							Off	Off	Game starts with 7 cities	
							On	On	Game starts with 6 cities \$	
							Off	On	Game starts with 5 cities	
							On	Off	Game starts with 4 cities	
							On	Off	No bonus credit	
							Off	Off	1 bonus credit for 4 successive coins \$	
							On	Off	Large Trak Ball input \$	
							Off	Off	Mini-Trak Ball input (Switch must be on for proper operation of large Missile Command game)	
Used	Off	Off	On					Bonus city every 8,000 points		
Not	On	On	On					Bonus city every 10,000 points \$		
	On	On	Off					Bonus city every 12,000 points		
	On	Off	On					Bonus city every 14,000 points		
	Off	Off	Off					Bonus city every 15,000 points		
	Off	On	On					Bonus city every 18,000 points		
	Off	On	Off					Bonus city every 20,000 points		
	Off	Off	Off					No bonus city		

The format of the self-test display is as follows:

Bonus city every \_\_\_\_\_ points (line disappears if no bonus city is chosen)

Coinage setting  
4, 5, 6, or 7 cities (always in English)  
A B C D

A is the center mech multiplier for 3-mech doors, left mech multiplier if a 2-mech door. This number is either 1 or 2.  
B is the right coin mech multiplier and is 1, 4, 5, or 6.  
C is an "F" if switch 4 (of R8) is off.  
D is an "X" if switch 3 (of R8) is off.

An example of an actual option switch display is as follows:

BONUS CITY EVERY 10,000 POINTS  
+  
2 COINS 1 PLAY  
6 CITIES  
1 1 X