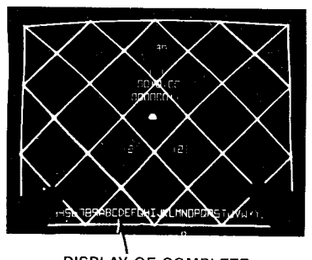
Red Baron™

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.)

Self-Test Procedure

Instruction	Results if Test Passes	Results if Test Fails
1. Set self-test switch to **on** position.	After about 10-12 seconds, the monitor displays the picture below. No sounds are produced.	**RAM FAILURE** is indicated by a sequence of 1 to 10 tones. You will hear a short low tone and a short flash on the LED start pushbutton for each good RAM chip, and a long high tone accompanied by a long pulse on the start pushbutton for a failing RAM chip. The test stops with the first failing RAM-chip pair (example: J2 and H2 are a pair). To restart the sequence, press the reset pushbutton on the Red Baron™ Analog Vector-Generator PCB, or set the self-test switch to **off**, then again to the **on** position. Identify the bad RAM chip with the table below. Example: four short low tones followed by a long high tone indicates failure of RAM at location B2.



DISPLAY OF COMPLETE CHARACTER SET

Long High Tone:	Bad RAM Chip Location on Analog Vector-Generator PCB:
1st	J2
2nd	H2
3rd	A2
4th	A1
5th	B2
6th	B1
7th	C2
8th	C1
9th	D2
10th	D1

ROM/PROM FAILURE is indicated by two columns of numbers on the left side of the screen. The number in the left column indicates the location of the failing ROM/PROM(s). Identify the bad ROM/PROM with the table immediately below.

Ignore the hexadecimal numbers in the right column on the screen.

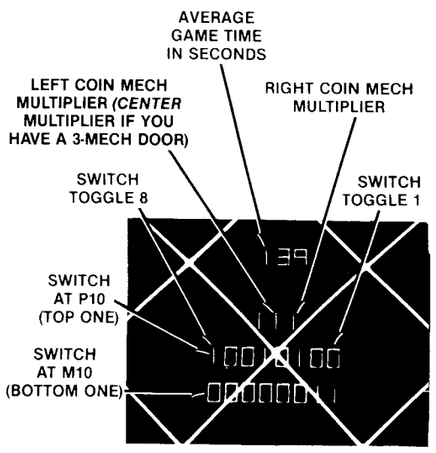


PHOTO ABOVE SHOWS AN EXAMPLE ONLY

Displayed No.:	Bad PROM Chip Location:	Printed-Circuit Board:
0	B/C3 or F/H3*	Analog Vector-Generator PCB
1	A3 or E3	
2	E1	
3	F/H1	
4	J1	
5	K1	
6	L/M1	
7	N1	
8	P1**	
9	C0***	Auxiliary PCB

*If this PROM is bad, you will hear a continuous low tone, and the program may be unable to display a screen image.

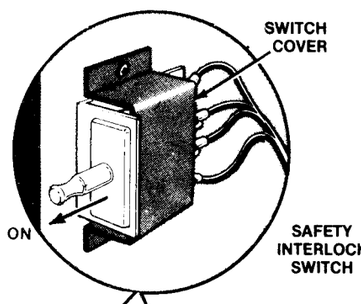
**If this PROM is bad, self-test will not work (screen may be blank or may display "garbage").

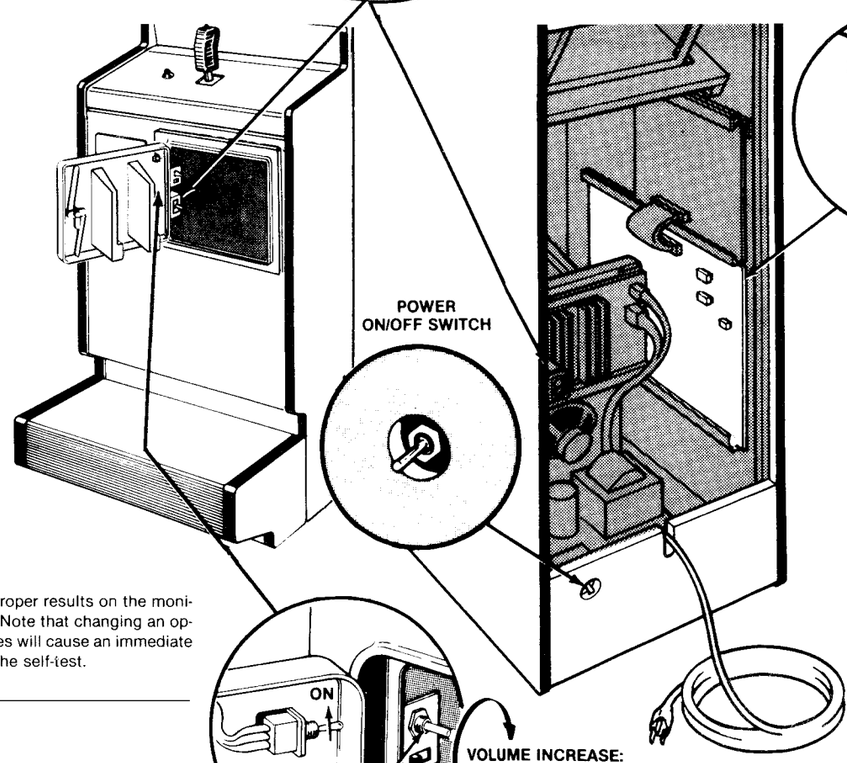
***If you replace this part, **you must erase** this ROM before locking up the game (see instruction 5 in this self-test procedure). Otherwise the self-test will continue to display *9*.

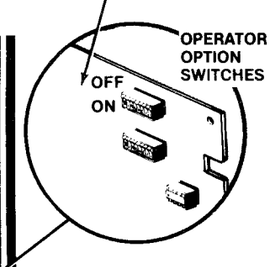
MATH BOX FAILURE is indicated by a single letter displayed in the upper right corner of the display. Math-box failure is explained in the Signature Analysis Procedure, on the Red Baron™ schematic Sheet 1, Side B. Identify the failure with the table below.

Displayed Letter	Failure
T	Time out error
H	Data error—high byte
L	Data error—low byte

Instruction	Results if Test Passes	Results if Test Fails
2. Activate start switch, fire switch, slam switch, and coin switches.*	As switch activates, you'll hear a beep. As switch deactivates, you'll hear another beep.	You will not hear a beep for the defective switch.
3. Move joystick forward and backward.	The lower left number on the screen will increase with backward motion, and decrease with forward motion. (Ignore any flickering of numbers.)	Incorrect progression of numbers indicates potentiometer harness wires were connected incorrectly. No number change indicates potentiometer is bad or harness wires are loose.
4. Move joystick to the right and left.	The lower right number on the screen will increase with rightward motion, and decrease with leftward motion.	







5. 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 start and fire buttons. The *ERASING* message at the center right of the screen will then be displayed for several seconds, until the entire table is erased. The average game time data will also be erased.

6. 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 are in self-test.

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 Red Baron Analog Vector-Generator 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 cause an immediate change on the monitor screen during the self-test.

Toggle Settings of 8-Toggle Switch on Red Baron PCB *(at P10)* (TOP switch when PCB is in game)

8	7	6	5	4	3	2	1	Option
						Off	Off	English $
						Off	On	Spanish
						On	Off	French
						On	On	German
				Off	Off			Bonus airplane granted at: 2,000, 10,000 and 30,000 points $
				Off	On			4,000, 15,000 and 40,000 points
				On	Off			6,000, 20,000 and 50,000 points
				On	On			No bonus airplanes
		Off	Off					2 airplanes per game
		Off	On					3 airplanes per game $
		On	Off					4 airplanes per game
		On	On					5 airplanes per game
	Off							1-play minimum $
	On							2-play minimum
Off								Self-adjusting game difficulty feature turned off
On								Self-adjusting game difficulty feature turned on $

If self-adjusting game difficulty feature is turned on, the program strives to maintain the following average game lengths (in seconds):

Bonus airplane granted at:	Airplanes per game: 2	3	4	5
2,000, 10,000 and 30,000 points	90	105$	120	135
4,000, 15,000 and 40,000 points	75	90	105	120
6,000, 20,000 and 50,000 points	60	75	90	105
No bonus airplanes	45	60	75	90

$ Manufacturer's suggested settings

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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 M10, on the Red Baron™ Analog Vector-Generator PCB (the **CENTER** 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 PLAY

	No bonus	Bonus $1.00 = 3 plays	Bonus $.75 = 2 plays $1.00 = 3 plays
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 PLAY

	No bonus	Bonus $.50 = 3 plays	Bonus $1.00 = 5 plays
Straight 25¢ Door	② ⑥ 8 Off 7 Off 6 Off 5 Off; 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 ⑥ 8 Off 7 Off 6 Off 5 Off; 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 Red Baron™ 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 7 at PCB switch assembly P10 to **on**.

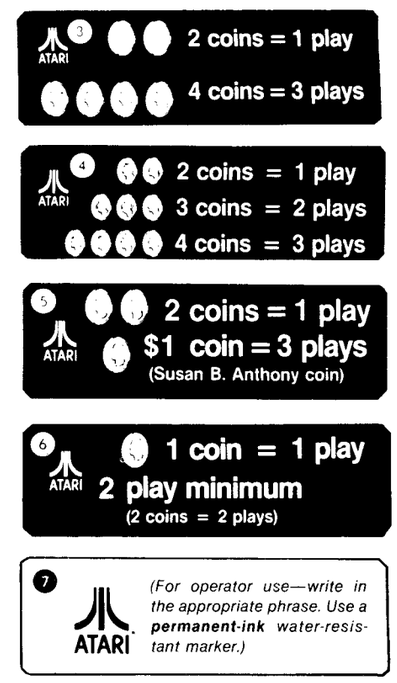
Toggle Settings of 8-Toggle Switch on Red Baron PCB *(at M10)*. CENTER switch when PCB is in game

8	7	6	5	4	3	2	1	Option
						Off	Off	Free play
						Off	On	1 coin* for 2 plays
						On	Off	1 coin* for 1 play $
						On	On	2 coins* for 1 play
				Off	Off			Right coin mech × 1 $
				Off	On			Right coin mech × 4
				On	Off			Right coin mech × 5
				On	On			Right coin mech × 6
			Off					Left coin mech × 1 $
			On					Left coin mech × 2
Off	Off	Off						No bonus coins $
Off	Off	On						For every 2 coins* inserted, game logic adds 1 more coin*
Off	On	Off						For every 4 coins* inserted, game logic adds 1 more coin*
Off	On	On						For every 4 coins* inserted, game logic adds 2 more coins*
On	Off	Off						For every 5 coins* inserted, game logic adds 1 more coin*
On	Off	On						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



Coin Counter Option Settings

[These toggles determine which coin mechanisms activate which counters]

Toggle Settings of 4-Toggle Switch on Game PCB (L11) 4	3	2	1	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:
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.
		Off	On	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.
		On	Off	Both acceptors activate all coin counters simultaneously.	Utility coin switch will not activate a coin counter, if you do not hook up 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 setting