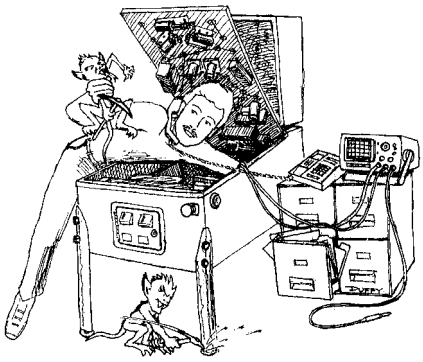
Service Bulletin Nº 88



Joe Blackwell	Eric Winston	Ted Kilpin	Jay Alfer
Technical Support Manager	Technical Support Engineer	Technical Support Engineer	Tech. Doc. Administrator

TO: Parts & Service Managers

DATE: October 14, 1996

SUBJ: ***Excerpt from Customer Fax...***

Dear Dr. Pinball,

Whenever I customize my adjustments (e.g. pricing, # of balls or game difficulty) and remove power from the game, I lose my settings. When changing the settings I follow the instructions in the manual step by step and the display reads **"REQUEST INSTALLED"** after each adjustment. **HELP!**

Dear *Tech In Need Of Help,*

It sounds as if you are doing everything correctly. It could be that you have a problem with the **CMOS RAM BATTERY BACK-UP CIRCUIT**. Another symptom indicating that this is the problem would be the display reading **"OPEN THE COIN DOOR"** upon power-up (this is the CPU's way of asking you to release the memory protect switch so that it can initiate a factory restore clearing RAM and removing what it feels is corrupt data).

A: OLD STYLE BOARD SYSTEM (Laser War through Batman Forever):

With the power off:

1) Check that **the batteries** are new and are **installed correctly and securely.**

2) Using a volt meter check the wire loop test points **from "B+" to "GND"** this is the output voltage of the battery pack (it should be approx. 4.1v DC - 4.7v DC).

3) Check the battery voltage at the **CMOS RAM at location D5.** This is the socketed I.C. (6264) located directly below the **EPROM**. Place your meter leads across Pins 14 & 28 (upper left pin and lower right pin) you should read approx 4.1v DC - 4.7v DC. If the voltages check good all the way to the **RAM** then *swap* the **RAM** with a known good one.

B: NEW STYLE WHITE STAR BOARD SYSTEM (Apollo 13 through Current):

With the power off:

1) Check that **the batteries** are new and are **installed correctly and securely.**

2) Using a volt meter check the wire loop test points **from "VBatt" to "GND"** this is the output voltage of the battery pack (it should be approx. 4.1v DC - 4.7v DC).

3) Check the battery voltage at the **CMOS RAM at location U212.** This is the socketed I.C. (6264) located directly below the battery pack to the right of the game **EPROM U210**. Place your meter leads across Pins 14 & 28 (upper right pin and lower left pin) you should read approx 4.1v DC - 4.7v DC. If the voltages check good all the way to the **RAM** then *swap* the **RAM** with a known good one.

Note: If swapping the **RAM** does not solve the problem check your Memory Protect Switch at the coin door (white plastic switch mounted to the coin door frame). Check the integrity of the connections at the switch and connectors CN14 Pins 1 & 2 on the *old style* CPU Board and CN6 Pin 12 on the *New White Star* CPU/Sound Board. When the door is closed and the switch is closed, the memory protect input will be grounded making it impossible to write to the operator adjustment area of the **CMOS RAM**.

Please call or fax with more questions or voice your concerns at the below phone numbers.

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