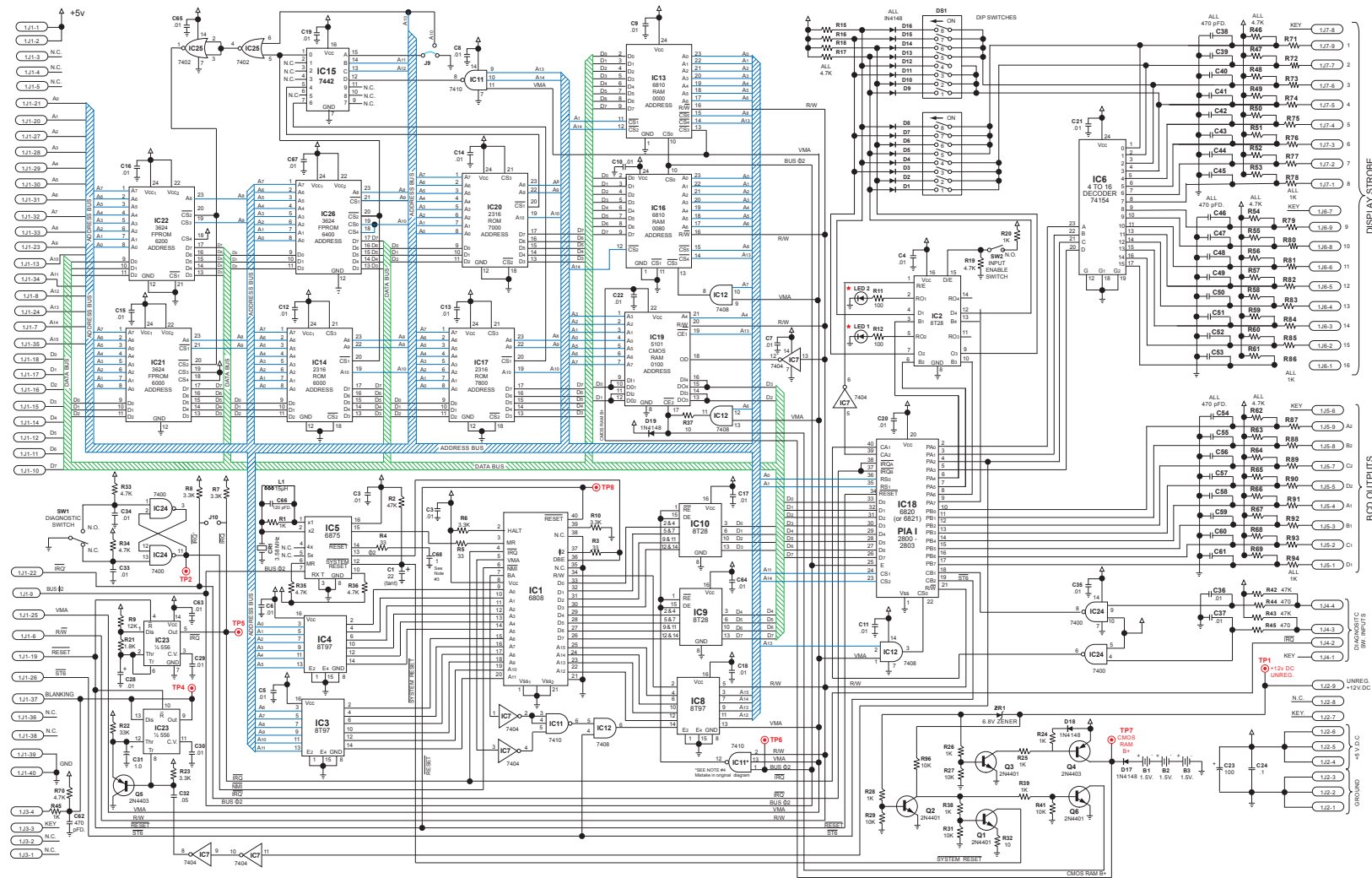
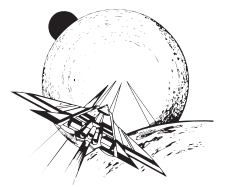
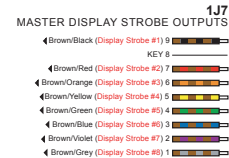
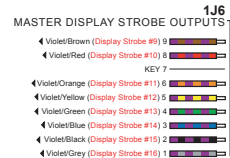
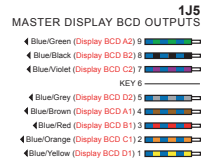
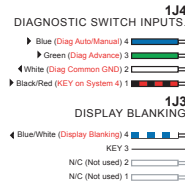
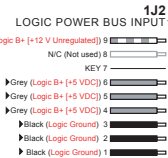


CPU Board Logic Diagram (System 4)

- For the following indicators of the LEDs, proceed as follows:
- OFF **0** Indicates ROM PROM failure; one or more of IC17, IC20, IC21, IC22, and IC26 are faulty.
 - ON **0** Indicates RAM failure (IC13 or IC16).
 - ON **0** Indicates CMOS RAM (IC19) failure.
 - ON **0** Indicates CMOS RAM (IC19) failure.
- LEDs REMAIN ON AFTER POWER TURN-ON**
- Check +5 VDC and Unregulated Logic B+ on CPU and Power Supply boards.
 - If low:
 - Check AC input from transformer.
 - Check wiring from transformer to SP1 (Power Bus Inputs) -10, -11 and -12.
 - Check 3D6 and 3D7.
 - Replace Power Supply Board.

- Turn game OFF and completely remove Driver Board from the backbox. Readily power and depress the DIAGNOSTIC pushbutton on the CPU board. If the LEDs blink twice and then remain OFF, replace the Driver Board. Otherwise, replace the CPU board.
- LEDs DO NOT FLASH AND REMAIN OFF WHEN DIAGNOSTIC SWITCH DEPRESSED**
- Turn game OFF and back ON.
 - If problems persist, check +5 VDC from power supply. If ok, replace the CPU board.
- INTERMITTENT OPERATION**
- Make checks described above for LEDs remaining on after power turn-on.
 - Replace CPU board.
- GAME COMES UP IN TEST 04 WHEN TURNED ON**
- Check battery voltage from the Anode of 1D17 to ground, if less than 3.9 VDC, replace batteries.
 - Check battery voltage from Cathode of 1D17 to ground, if less than 3.2 VDC, replace diode.



- NOTES:**
- ALL RESISTORS 1/4W UNLESS OTHERWISE INDICATED.
 - ALL CAPACITORS ARE MFD UNLESS OTHERWISE INDICATED.
 - C88 NOT USED ON ALL GAMES.
 - IC11 pins 1, 2, 12 & 13 SHOWN ON ORIGINAL WMS DIAGRAM AS IC12, R30 AND R40.
 - RESET CIRCUIT MODIFICATION FROM SYSTEM 3: REMOVE C27, R30 AND R40.
 - ADD 10K RESISTOR R96 FROM THE COLLECTOR OF Q2 TO THE CATHODE OF ZR1.

VALUES & TEST LOCATIONS A few suggested test point locations	TP1 +12V UNREGULATED IC1 pin 9, IC24 pin 2 & 11 0V TP2 IC1 pin 6, IC24 pins 2 & 11 0V TP3 Blanking IC23 pins 9 & 13, J1-37 0V TP4 Blanking IC23 pins 9 & 13, J1-37 0V TP5 Blanking IC1 pin 4, IC23 pin 5 0V TP6 BUS #2 IC11 pin 1, IC5 pin 7, IC13&16 pin 10, J1-19 0V TP7 CMOS RAM B+ Cathode of D17 POWER ON +5V POWER OFF +5V TP8 RESET IC1 pin 40, IC18 pin 34, J1-1 0V TP9 +5V IC1 pin 8, IC18 pin 20, J1-2, J1-2 & J1-2 & J1-2 0V TP10 GND IC1 pin 1, IC18 pin 1, J1-2, J1-2 & J1-2 & J1-2 0V
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