IV. MAIDEN

MAIDEN is a presentation with complex mechanical motion, augmented by both visual and sound effects. The machine is driven by 12 pneumatic cylinders, each operating individually under computer control. The basic MAIDEN structure is shown in Fig. IV-1.

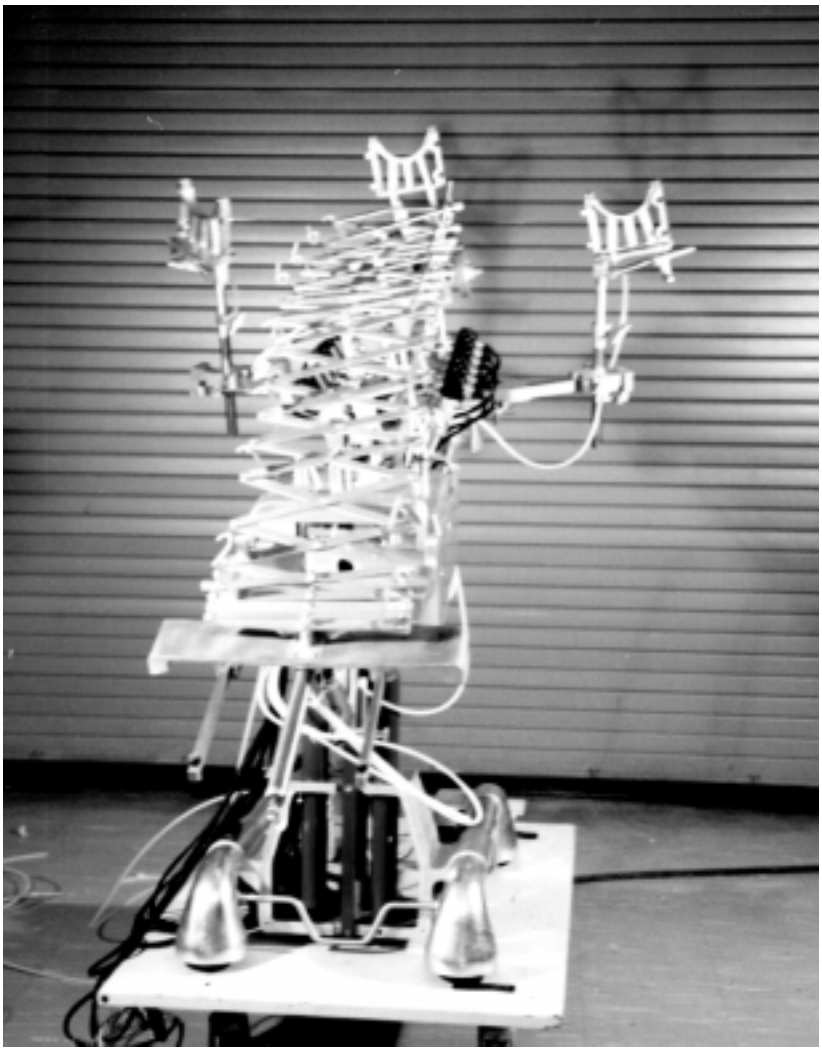

Figure IV-1. Basic MAIDEN Structure

The pneumatic cylinders are each controlled by electric solenoid valves. The valves are arranged in two banks of six each, with one bank located on each side of the machine as shown in Figure IV-2. The valves are numbered sequentially, with Valve 0 located in the lower left of Figure IV-2.

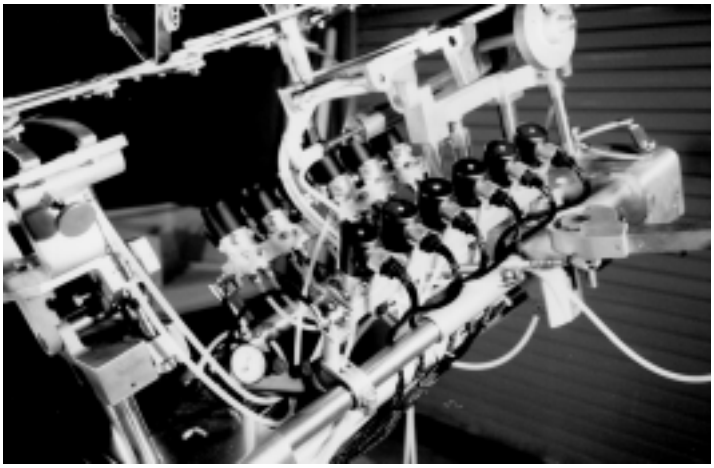

Figure IV-2. Pneumatic Solenoid Valves

A schematic drawing showing the approximate locations of the cylinders and the numbering sequence for the valves and cylinders is given in Figure IV-3. Cylinders shown as circles are mounted vertically, or nearly so. Cylinders shown as rectangles are mounted horizontally, or nearly so. Many are located below the mainframe of the machine.

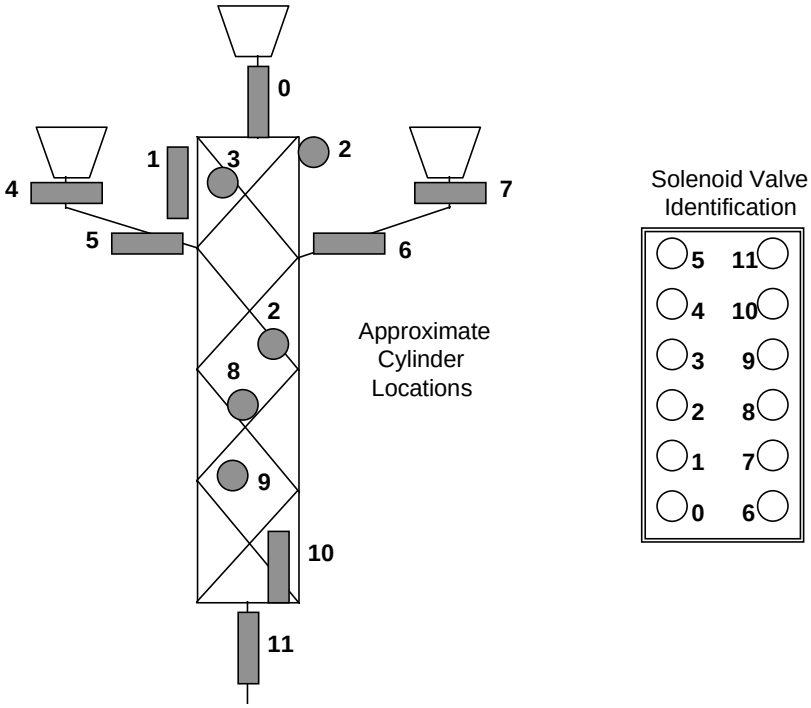

Figure IV-3. Cylinder-Valve Correspondences

The MAIDEN system is depicted schematically in Figure IV-4.

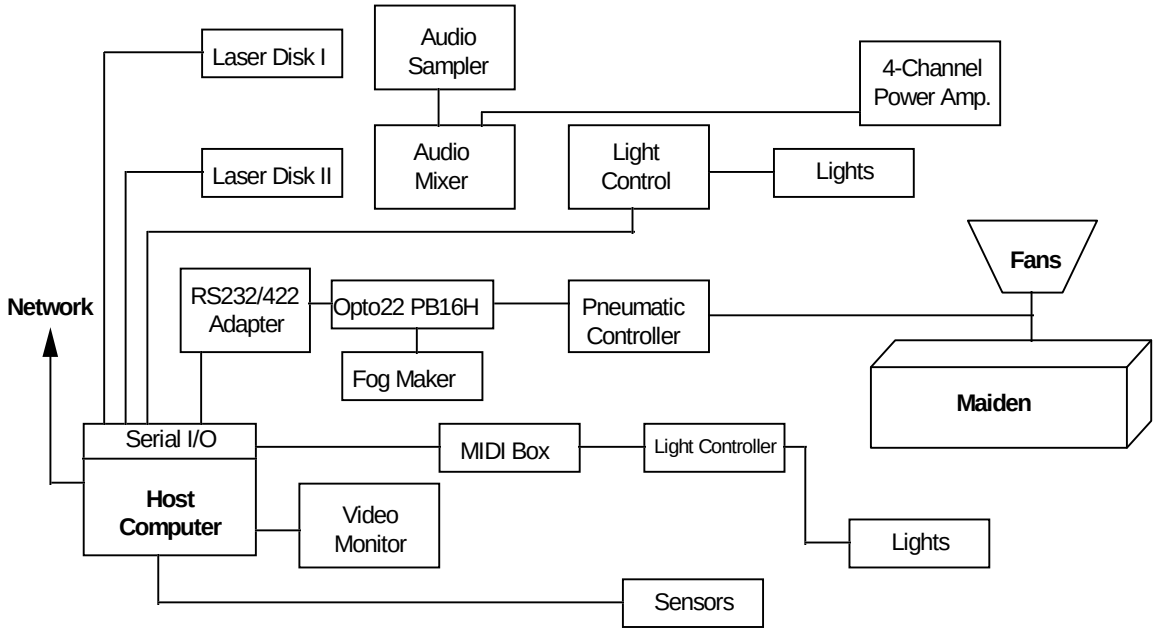

Figure IV-4. MAIDEN System Schematic

Control for MAIDEN is passed from its Host Computer to an Opto22 Brainboard and Opto22 PB16H solid-state relay board. They are shown in the left-hand side of Figure IV-5.

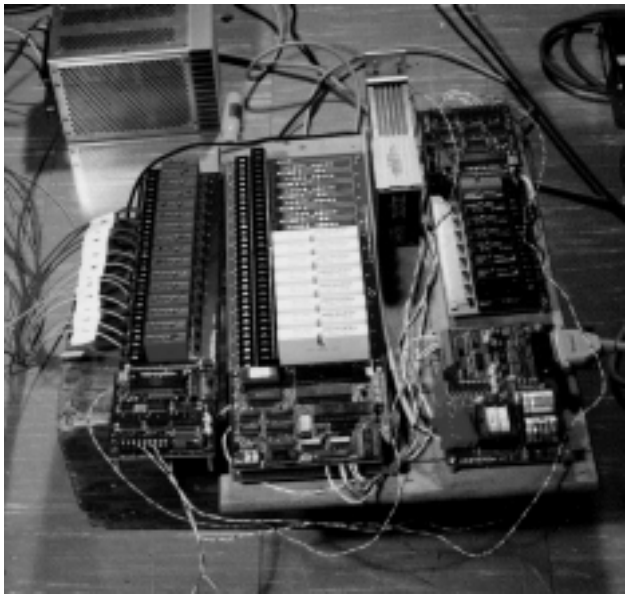

Figure IV-5. MAIDEN Solid-State Relay Board and Brainboard (left)

The brainboard is depicted in Fig. IV-6; and the solid-state relay board, with corresponding connections to the solenoid valves indicated, is shown in Fig. IV-7.

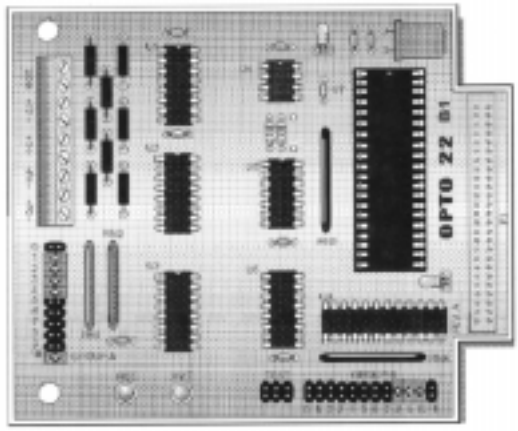

Figure IV-6. Opto22 Brainboard, Model B1

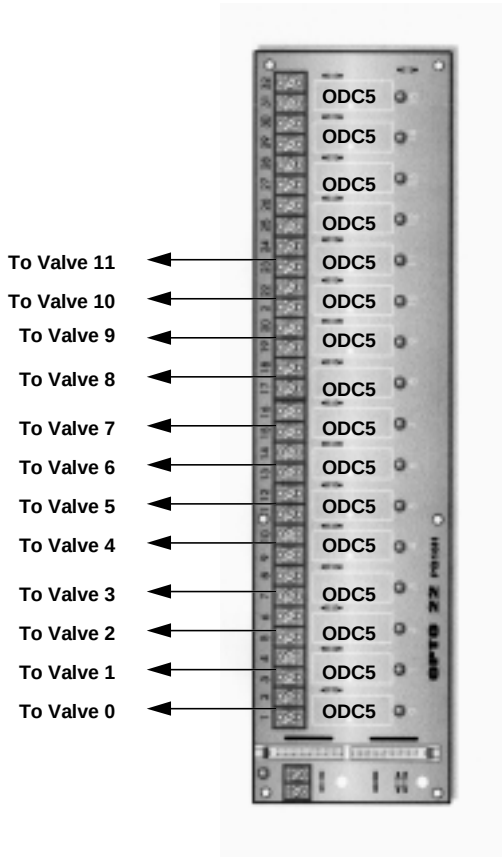

Figure IV-7. MAIDEN Solid-State Relay Board