

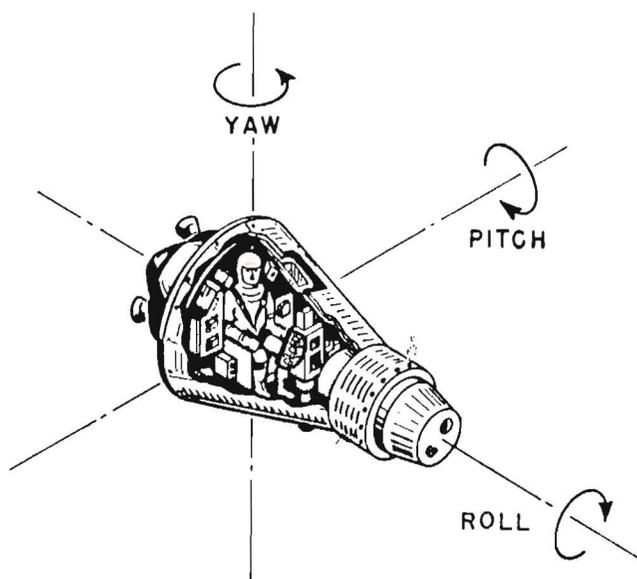
MASTIF  
(Multiple Axis Space Test Inertia Facility)

MASTIF, built by the NASA Lewis Research Center, is a three-axis gimbal rig which simulates tumble-type maneuvers that could be encountered in space flight. Three tubular aluminum cages revolve separately or in combination to give roll, pitch, and yaw motions at speeds which can exceed those expected in actual space flight. Nitrogen-gas jets attached to the three cages control the motion.

At the center of the innermost cage, the pilot is strapped into a plastic "couch," similar to those in the Mercury capsule. His head, body, and legs are held in place - only his arms are free. The pilot actuates the jets by means of a right-hand control column. Communication is by radio, which is operated by a button atop the left-hand column.

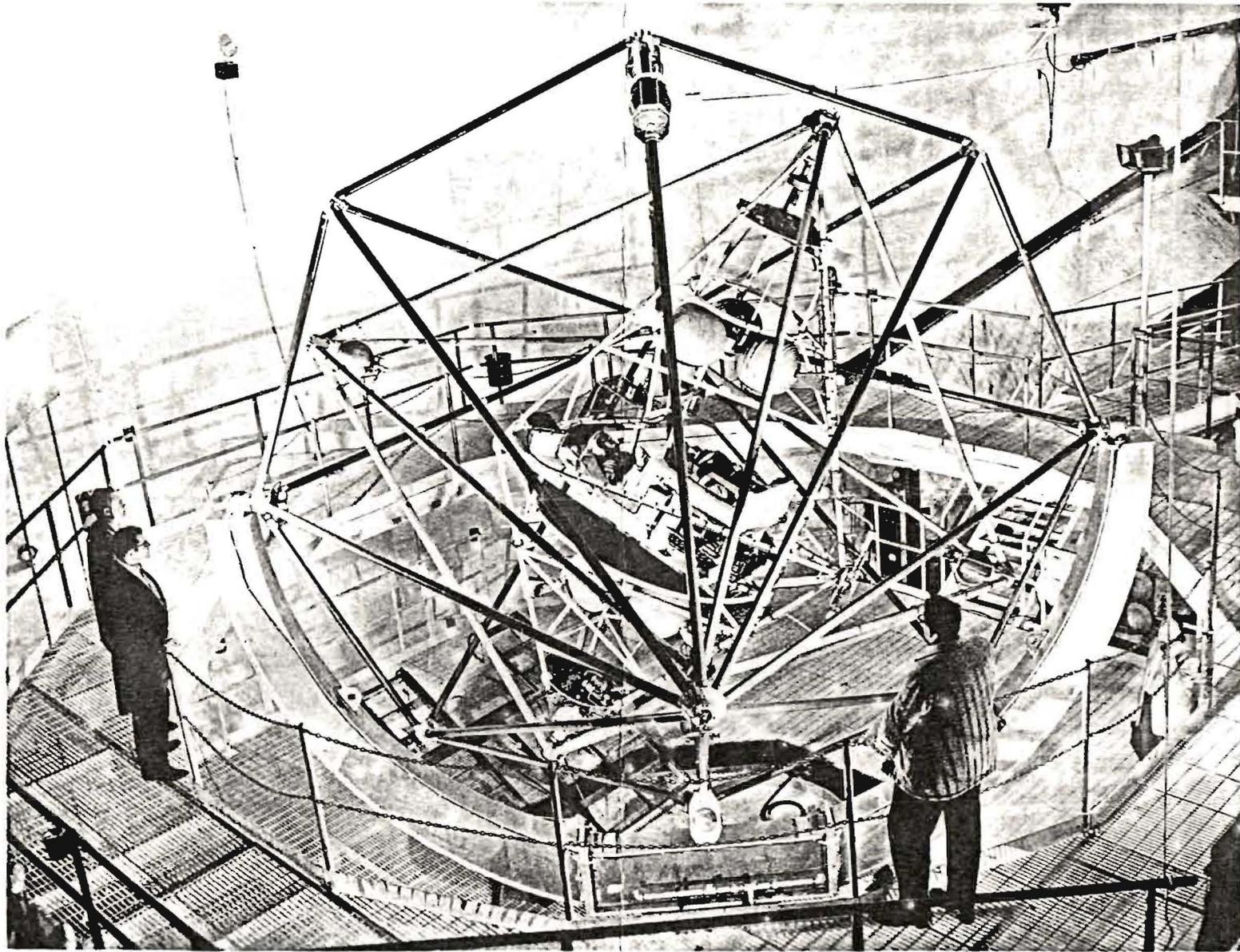
Complex tumbling motions are started by the operator at the control station. Control is then switched to the pilot. By reading instruments mounted at eye level before him, the pilot interprets his motions and makes corrections accordingly. A movement of the column to the right or the left fires the nitrogen-gas jets on the roll cage. In a similar manner, movement of the column forward or back fires the jets on the pitch cage, and movements in a twisting direction actuate jets on the yaw cage.

MASTIF has provided valuable training for all seven Project Mercury astronauts. Each experienced about 5 hours "flight time." The rig has, in addition, been used to evaluate instrument control systems for space flight, plus the physiological effects of spinning, such as eye oscillation and motion sickness.



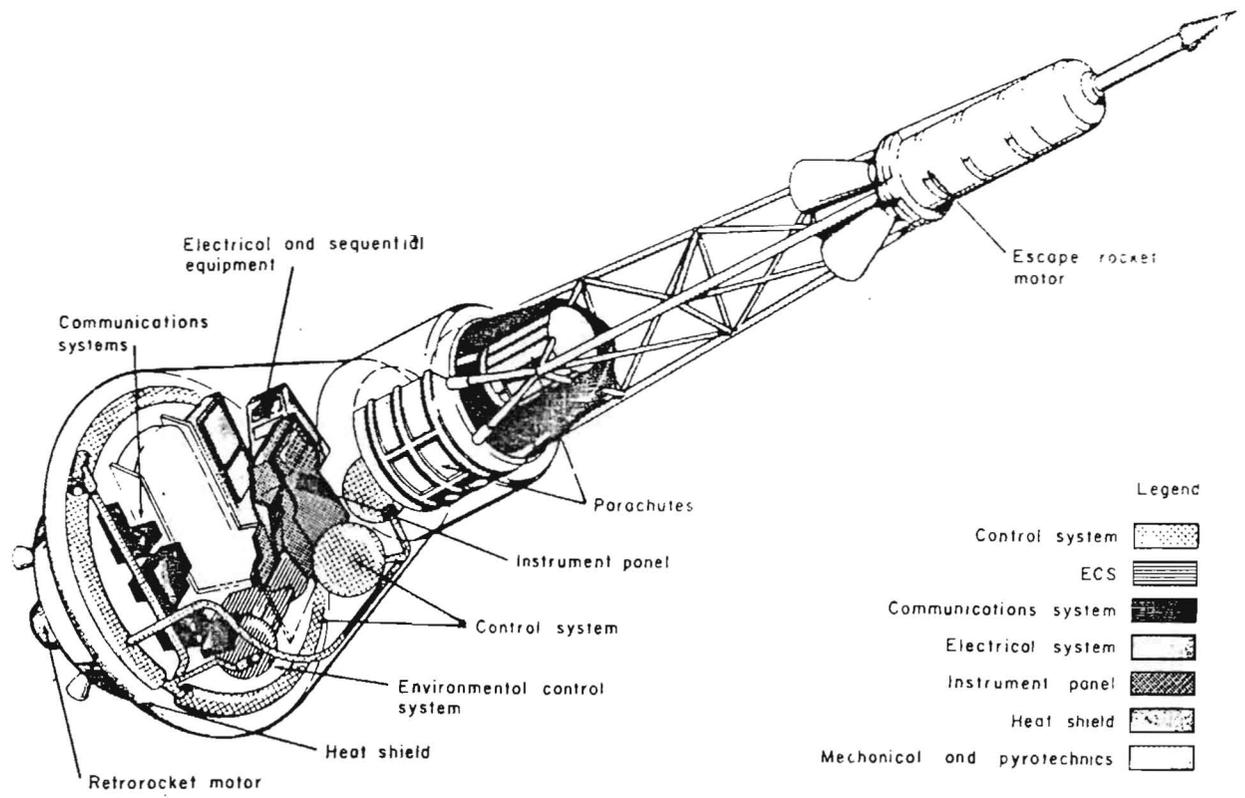
Lewis Research Center  
National Aeronautics and Space Administration  
Cleveland, Ohio

November 1962

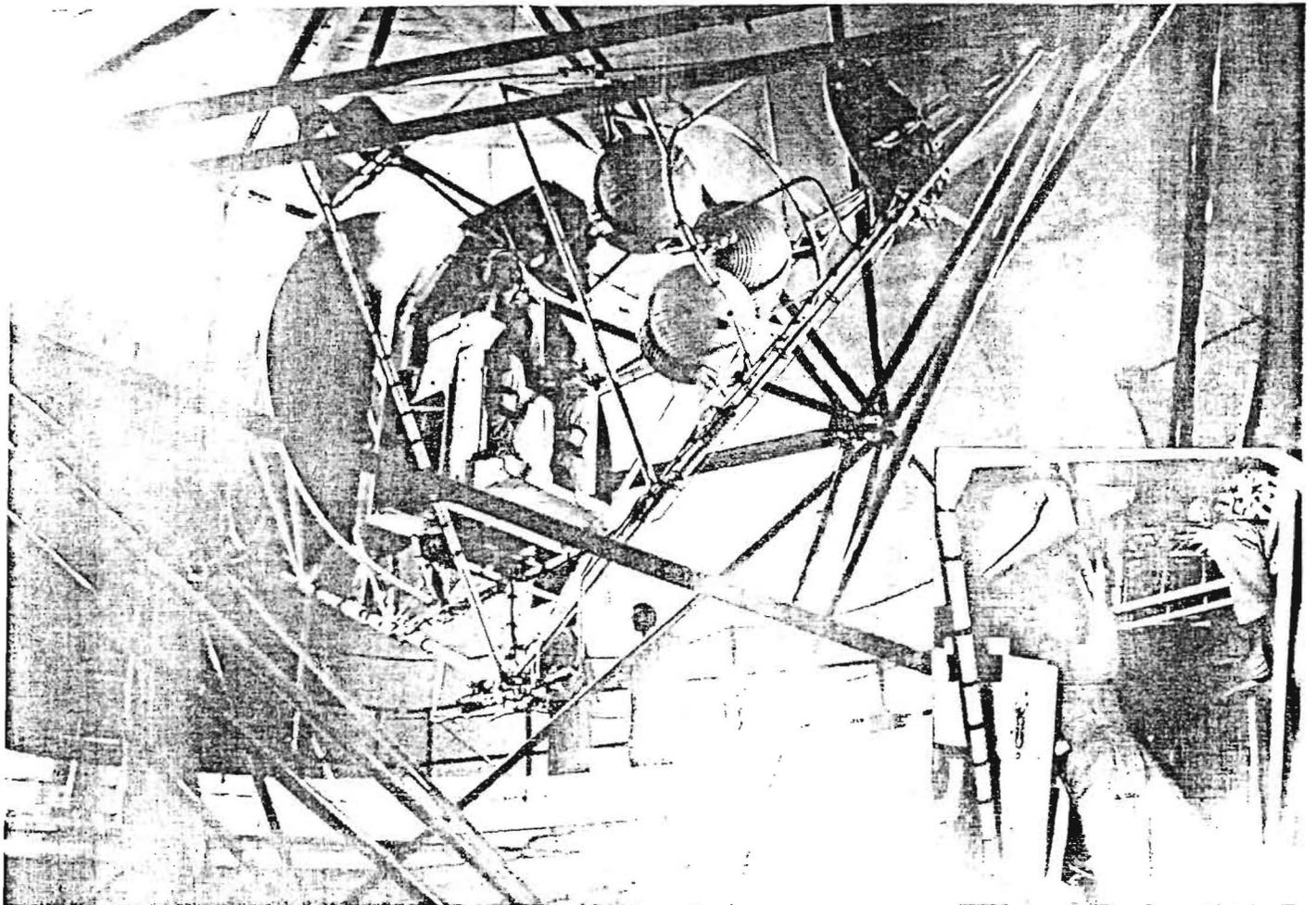


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MASTIF (Multiple Axis Space Test Inertia Facility) Lewis Research Center, Cleveland, Ohio, trained Project Mercury Astronauts.



### MERCURY SPACECRAFT



MULTIAXIS TEST FACILITY located at Lewis Research Center, Cleveland, Ohio. Inset shows Ohio Astronaut John Glenn (now Senator Glenn) entering the test facility.