

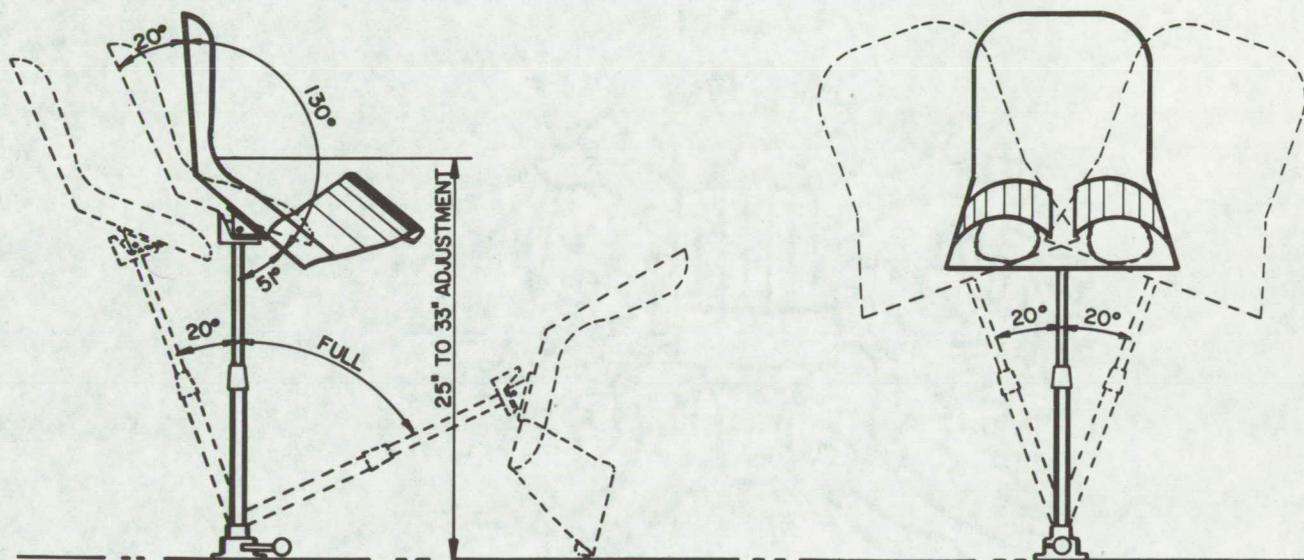
# NASA TECH BRIEF

## *Manned Spacecraft Center*



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### High Mobility Work Station Restraint Support



Restraint Support

A device has been developed which enables an astronaut to work comfortably and with the minimum of restrictions in a weightless environment. In essence, it is a novel form of chair which holds the man in a semi-standing posture. The seat is angled at  $130^\circ$  to the back support, and has two curved flexible clips which fit over the thighs to prevent its occupant from sliding off.

Seats in which the occupant adopts the conventional sitting posture during space flight have been criticized by astronauts for two main reasons. First, because of the overall physical strain caused by maintaining this position while operating controls and mechanisms in the spacecraft; and secondly because of the particular

fatigue imposed by the restrictions of ankle or lap straps. In weightless conditions the most relaxed posture for the human body is a supine attitude, and the new device permits the maximum of comfort possible in the confines of a spaceship. In his seat the astronaut can swivel and tilt his position up to  $20^\circ$  in every direction except forward. Additionally, the whole unit can be tilted back at floor level through another  $20^\circ$ , and the height is adjustable from 25 to 33 inches. The whole device is locked in any position by a kick knob at the base.

To secure the occupant in his seat, a novel pair of "thigh grabbers" has been used instead of the usual lap

(continued overleaf)

belt. If the device is to be used in more conventional circumstances, however, the use of a broad, soft, elastic strap might be preferable.

The device allows a man to work from what is virtually an erect position; this enables him to react quickly. Yet the occupant is as relaxed as if he were sitting in a chair; over a period of time this reflects in a reduction of fatigue.

The design is also such as to provide for almost any movement. Where fatigue is a limiting factor in sedentary operations, as on an accessory production line, output should benefit from the adoption of a commercial version of this innovation.

**Note:**

Requests for further information may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center, Code JM7  
Houston, Texas 77058  
Reference: TSP71-10301

**Patent status:**

No patent action is contemplated by NASA.

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