

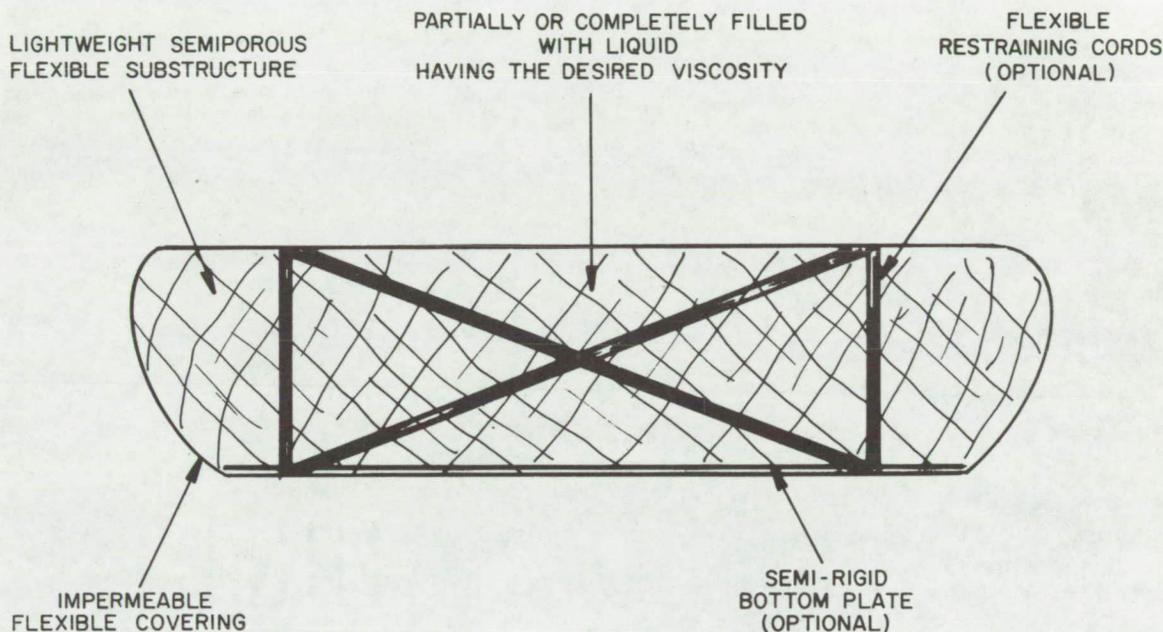
# NASA TECH BRIEF

## *Manned Spacecraft Center*



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### Viscoelastic Cushion for Patient Support



#### The problem:

To develop a suitable patient supportive device which would be low in cost yet evenly conform to the patient's anatomy. A uniform cushion pressure could prevent decubitus ulcers (pressure sores) from forming.

#### The solution:

A flexible container that holds a porous sponge substructure is filled with liquid. This cushion is similar to water pillows, but has the advantage of not allowing the user to be 'dumped' when his weight shifts. An open celled substructure acts to damp fluid movement through the response of the cushion.

#### How it's done:

Both the viscoelasticity and the response time of the cushion can be controlled by several factors. The density and elasticity of the foam substructure can be specified as well as the amount of passages between cells. The viscosity and purity of fluid within the cushion can also modify its characteristics. A wide range of viscosities is available. Covering for the cushion could be a flexible high strength material, synthetic fabrics with flow resistant elastomers being well suited (e.g., flame resistant neoprene). Restraint cords and a bottom plate could be added to the cushion for rigidity. Also, a fill post would facilitate draining this cushion for storage and trans-

(continued overleaf)

portation. All materials comprising this cushion appear to be state-of-the-art and well within modern production techniques.

**Note:**

Requests for further information may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center, Code JM7  
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Reference: TSP71-10316

**Patent status:**

Inquiries about obtaining rights for the commercial use of this invention may be made to:

Patent Counsel  
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Source: Dale G. Sauers  
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