

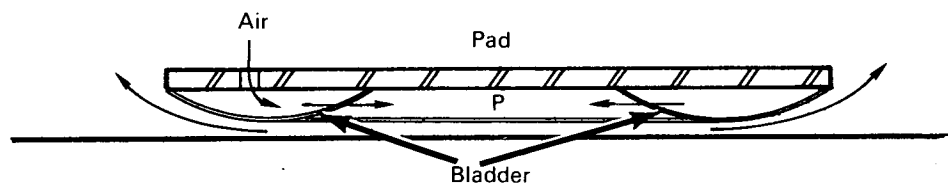
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# NASA TECH BRIEF



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## Air Bearing Lift Pad (ABLP)



Typical air bearings float on air films of only a few thousandths of an inch and so will only operate above very smooth, even surfaces. For the mechanical simulation of space, the small drag of the bladder type air pads is much more than can be coped with, and the practicality of large floor areas being machined for precision air bearings is nonexistent. To enable operation above surfaces that undulate slightly or feature cracks and discontinuities, an ABLP has been developed. It consists of a rigid pad beneath which an inflatable bladder is mounted.

The bladder is inflated with air which then escapes through passages into a cavity in the center of the bladder to produce the lifting energy. As the air escapes about the perimeter of the bladder, a certain degree of balance and equilibrium is imparted to the pad as it is able to move a limited weight across slightly uneven surfaces.

### Notes:

1. The ABLP is a hybrid between the precision air bearings and hover craft vehicles. The ABLP floats above the surface to clear cracks, rough-

ness, and unevenness with the almost nonexistent friction of precision air pads and at a fraction of the huge airflow requirements of air cushions since the airgap is a couple of tenths and not several inches. Vibration which will not allow the air pad to float higher by adding more airflow and the instability of air cushions at low levels is not present in the ABLP.

2. No additional documentation for this invention is available.
3. Technical questions concerning this invention may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: Brief 68-10442

### Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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Category 05