

# NASA TECH BRIEF



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## Tandem Wheel Drop-Legs for Standard Truck Trailer

### The problem:

To provide a semitrailer with fore and aft mobility that allows it to be easily moved without a prime mover. The trailer should roll over small objects on the ground without imposing excessive vertical deflections on either side.

### The solution:

A tandem wheel drop-leg device. Commercial trailer drop-legs were adapted to a tandem wheel arrangement allowing a semitrailer to carry a heavier load and to have forward and aft movement over small obstacles. The drop-legs were modified by adding trunnion dual wheels and an adjustable brace. A similar but less effective device, the trunnion dual axle, is now commercially available.

### How it's done:

A tandem-axled trunnion pivoted device is attached to commercial drop-legs. This modification equally distributes the vertical loads to both wheels as well as reducing the vertical travel of the semitrailer when rolling over uneven terrain.

An adjustable drag brace is added to the semitrailer for better mobility without a prime mover. This brace,

which is attached to the drop-legs, allows multiple positioning of them in a vertical position as well as providing a fixed strut support.

The use of special tires, which have a 70-in. o.d. when inflated to 15 psi, eliminates the need for costly springs on the semitrailer.

### Notes:

1. The tandem wheel drop-leg device is especially applicable to large, heavy duty trailers.
2. No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: B70-10088

### Patent status:

No patent action is contemplated by NASA.

Source: William Cantwell and Richard Selstad of  
McDonnell Douglas Corporation  
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