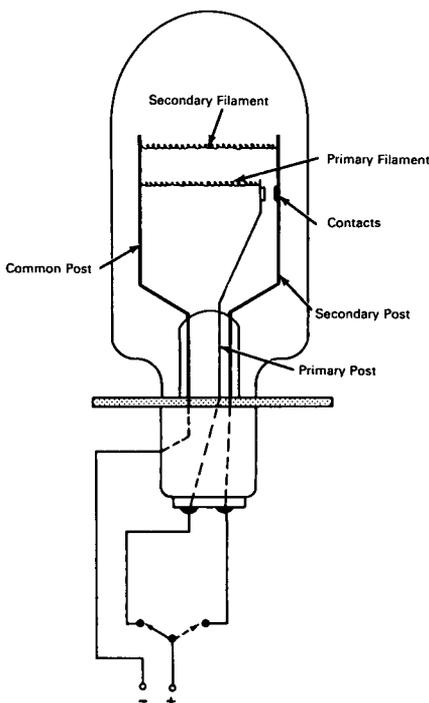


# NASA TECH BRIEF



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## Lamp Automatically Switches to New Filament on Burnout



### The problem:

In many test programs, an oscillograph printout of test performance is required for analysis. Because the service life of oscillograph lamps is unpredictable, many tests are interrupted or nullified by lamp failures. The expense of such failures can be appreciable where sophisticated and complex procedures are involved.

### The solution:

A lamp with a primary and a secondary filament with means for automatic switching to the secondary filament at primary filament burnout.

### How it's done:

The lamp is made with two filaments supported between three posts. The primary filament connects the common post with a spring-loaded primary post. The secondary filament is mounted between the common post and fixed secondary post. An override is provided externally to permit manual switching from primary to secondary element.

With the external switch as shown, current flows through the common post, the primary filament, the spring-loaded primary post, and the switch. The primary

(continued overleaf)

filament is on and the secondary filament is off. If the primary filament burns out, the spring-loaded primary post automatically makes contact with the secondary post and current flows through the common post, the secondary filament, the secondary post to its contact, the primary post, and the switch. The primary filament is off and the secondary filament is on.

Should automatic switching fail, the override is switched to its opposite position and current flows through the common post, the secondary filament, the secondary post, and the switch. The primary filament is off and the secondary filament is on.

**Notes:**

1. This development is in the conceptual stage only

- and as of the date of this publication neither a model nor a prototype has been constructed.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama, 35812  
Reference: B66-10046

**Patent status**

No patent action is contemplated by NASA.

Source: Walter B. Ingle  
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