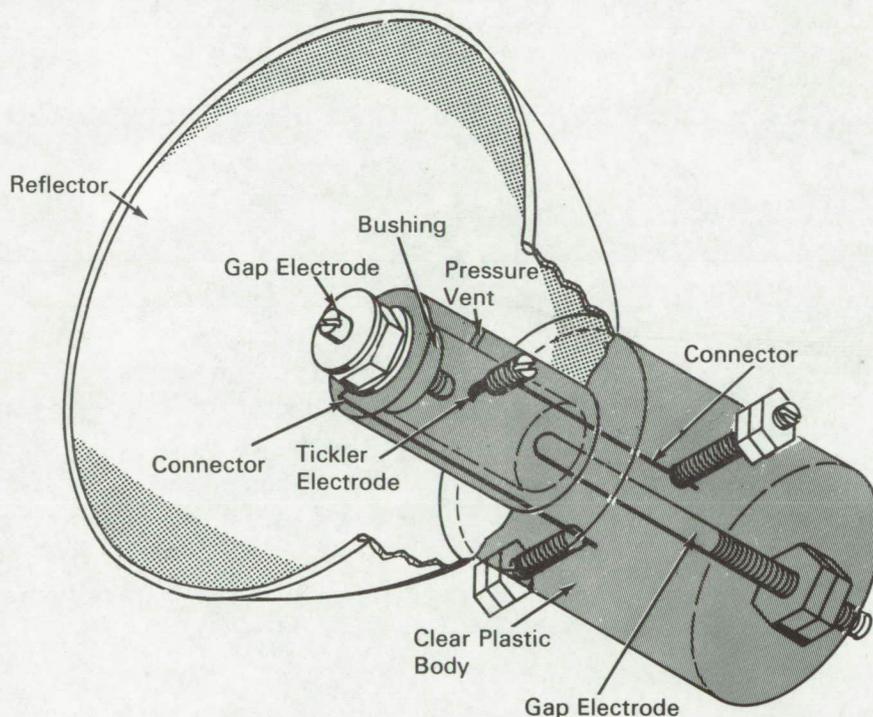


NASA TECH BRIEF



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Small, High-Intensity Flasher Permits Continuous Close-In Photography



The problem:

To design a compact, high-intensity spark-flash unit that can be used as a light source for continuous rapid photography. Commercially available flashers are bulky, require collimation, and deliver more light energy than may be required. In some commercial designs the units are subject to rupture or explosion.

The solution:

A spark-breakdown flash source, enclosed in polymethylmethacrylate, and incorporating a parabolic

reflector. The assembly is 3 inches long by 3.5 inches in diameter.

How it's done:

The body of the flasher is machined in one piece from polymethylmethacrylate plastic. This material is highly transparent and has high rupture strength. All electrodes are made of stainless steel. The flasher operates at 8 to 10 kilovolts, which is discharged across the gap electrodes through an R-C network. The discharge is triggered by a tickler electrode ex-

(continued overleaf)

tending through the body into the gap. This electrode is powered by a standard 6-volt ignition coil. A conventional parabolic reflector is used for beam collimation. The light pulses delivered by this unit have a duration of 1 to 5 microseconds.

Notes:

1. Using 35-mm film having an ASA exposure index of 32, acceptable exposures are obtained at stand-off distances from 3 to 5 feet in a range of f stops from 2.8 through 5.6.
2. One unit of this design, which is still in operation, has been flashed more than 400 times without a failure. Gap-area fogging was removed with solvent after each 100 flashes.
3. Use of molded rather than machined bodies would effect a considerable savings in unit cost.

4. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
AEC-NASA Space Nuclear Propulsion
Office

U.S. Atomic Energy Commission
Washington, D.C., 20545

Reference: B66-10119

Patent status:

No patent action is contemplated by NASA.

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