

# NASA TECH BRIEF

## Ames Research Center



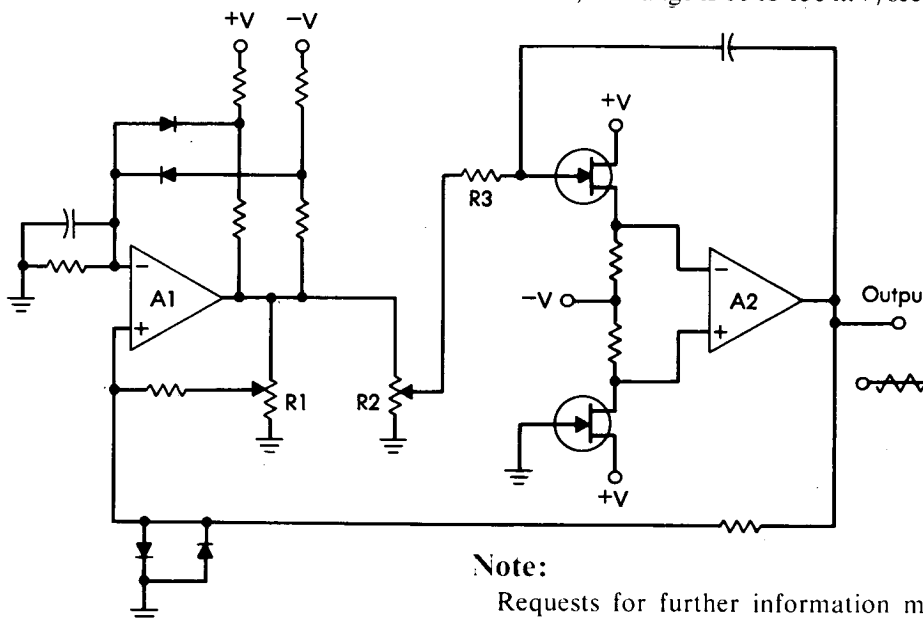
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### Low-Frequency Triangular Wave Generator

**The problem:**

To generate a low-frequency triangular waveform, utilizing a minimum number of discrete circuit components.

the frequency over a range of 10 to 1. With resistor R3 set at 499 kΩ, the output slope can be varied over the range of 150 mV/sec to 2.5 V/sec. With R3 set at 22 MΩ, the range is 10 to 150 mV/sec.



**The solution:**

A combination of two integrated circuit operational amplifiers, one to produce a square wave and the other to integrate the square wave and generate a triangular wave.

**How it's done:**

The circuit (see fig.) uses two integrated circuit operational amplifiers to produce a symmetrical, subaudio triangular wave. The first amplifier, A1, generates a square wave, which is integrated by amplifier A2. The output amplitude may be varied over a range of 3 to 16 V peak-to-peak by adjusting potentiometer R1. Adjusting potentiometer R2 varies

**Note:**

Requests for further information may be directed to:

Technology Utilization Officer  
 Ames Research Center  
 Moffett Field, California 94035  
 Reference: TSP71-10469

**Patent status:**

No patent action is contemplated by NASA.

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