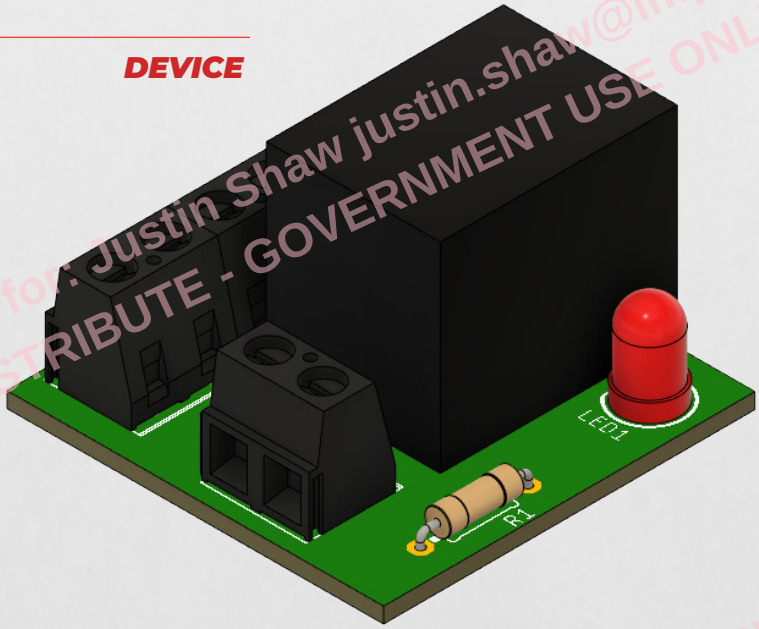
Collapsing Circuit

DEVICE



Description

A collapsing circuit uses the normally closed switch and coil of the relay (RY1) and two batteries as separate circuits (e.g., the coil control circuit and the firing circuit) that are connected to the coil and switch sides of the relay, respectively.

The circuit fires when the battery on the coil control circuit is disconnected.

Arming: S/A1, RY1, LED2, R1

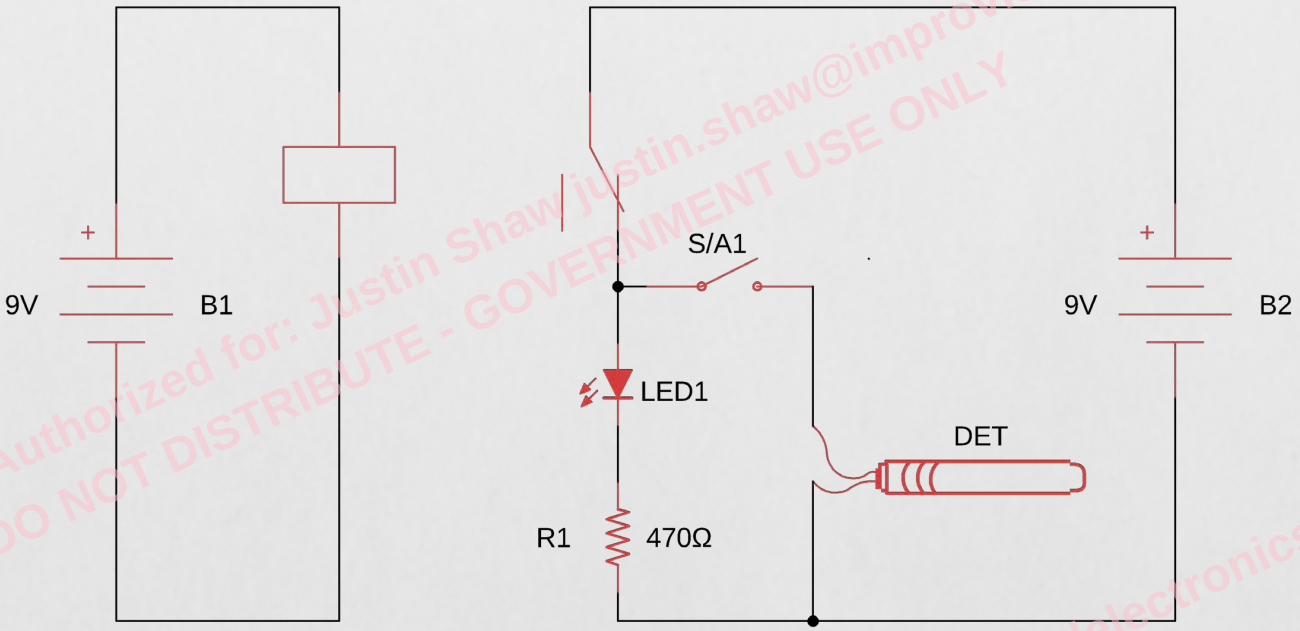
Functional Description of Arming: When power is applied to the coil control circuit, the relay becomes energized, turning it into an electromagnet. Its magnetic field pulls the switch in the firing circuit to the second contact position bypassing one lead of the detonator.

Firing: S/A1, RY1, LED1, R1

Functional Description of Firing: Once armed, the circuit is stable and waiting for battery 1 (B1) to be removed. Removal of the coil voltage from B1 can occur naturally from battery decay or from a manual action. Once the battery is depleted or removed, the relay will become de-energized and the normally closed switch will close, allowing current to flow through LED1, R1, and back to the battery. It also can travel through the safe and arm switch (as long as it is in the closed position) to the detonator.

Note: There is a safe and arm switch which the bomber can leave in the open position to verify the circuit is not powered. If LED1 is lit, then the device will function as designed.

SCHEMATIC



BILL OF MATERIALS (BOM)

Part	Value	Device	Package	Description
B1	9V	9V_BATTERY_	TWOPOSITIONSCREW-TERMINAL	IE-CON-003
B2	9V	9V_BATTERY_	TWOPOSITIONSCREW-TERMINAL	IE-CON-003
DET	DET_	DET_	TWOPOSITIONSCREW-TERMINAL	IE-CON-003
LED1	5MM_RED_LED_	5MM_RED_LED_	LEDRD-254W60D564H860B	IE-LED-004
R1	470Ω	470Ω_RESISTOR_	RESISTOR	IE-RES-003
RY1	5V_SINGLE_RELAY_	5V_SINGLE_RELAY_	SINGLELARGERELAY	IE-RLY-002
S/A1	SAFE_ARM_SWITCH_	SAFE_ARM_SWITCH_	TWOPOSITIONSCREW-TERMINAL	IE-CON-003