

# BUILD LIL' WINKER

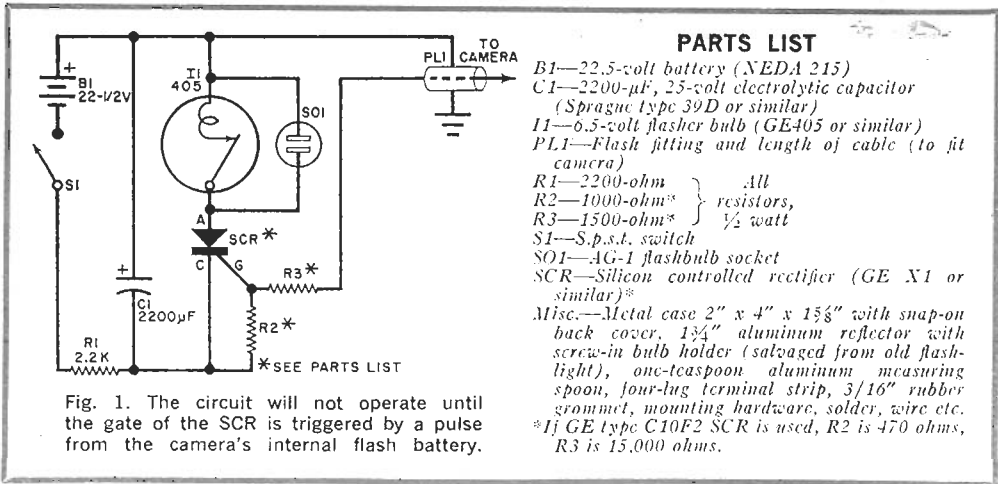
FILL-IN  
LIGHT  
DOUBLES AS  
BC FLASH

BY LYMAN E. GREENLEE

**A** MAJOR PROBLEM faced by the amateur photographer is getting the proper lighting for taking pictures. Flashbulbs are good, of course, for taking pictures of subjects that are a sufficient distance from the camera. When it comes to close-ups, however, flashbulbs create harsh shadows and highlights and the problem is to get more even lighting.

In most cases, such light is not conveniently available. This is where the "Li'l Winker" comes in. This useful, low-cost gadget is ideal for preventing that washed-out look in close-ups by providing a brief flash of incandescent light. However, standard flashbulbs can also be used in the Li'l Winker.

**How It Works.** A 22.5-volt battery, *B1* in Fig. 1, charges a large-valued capacitor, *C1*, through current-limiting resistor *R1*. Charging time with a fresh battery is about 15 seconds—30 seconds with an older battery that has lost some of its "punch". When the SCR is not conducting, it represents an open circuit and no current flows through *I1* (or through *SO1* if a flashbulb is being used). However, when a low-level positive pulse is applied to the gate of the SCR, it starts to conduct immediately and allows the charge on *C1* to flow through the lamp, producing a flash. Because the gate circuit of the SCR represents a very small load, there is little chance of the



camera's shutter contacts becoming pitted or burned.

Since the flasher bulb is rated for 6.5 volts, its use in a 22.5-volt circuit might be questioned. Actually, the bulb has a built-in heater-type contact that opens and cuts off the current when it reaches a certain critical value. Thus the bulb produces a very brilliant flash due to the high voltage each time the SCR is fired, but it does not burn out.

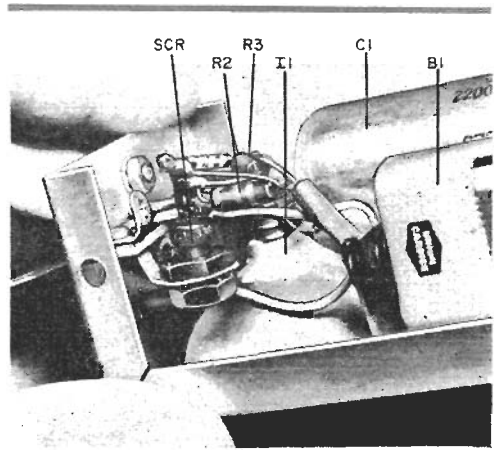
**Construction.** The Li'l Winker is assembled in a 2" x 4" x 1 5/8" metal case as shown in the photos. A circular hole, just large enough to accommodate a screw-type reflector salvaged from an old flashlight, is cut at one end of the front of the case. Two smaller holes are cut at the other end: one 1/2" x 1/4" for the switch and the other a circular hole for a 3/16" rubber grommet. Mount the battery holder and switch *S1* as shown in the photos. Mount the reflector using epoxy cement.

The flashbulb reflector, mounted on the top of the case, is made from a circular teaspoon-size aluminum spoon, bent so that an AG-1 flashbulb holder can be mounted directly in front of it. The reflector and the flashbulb holder must be positioned so that, when the flashbulb is in the holder, it is properly positioned in front of and on the center line of the reflector. The rear surface of this reflector can be coated with a dull black paint.

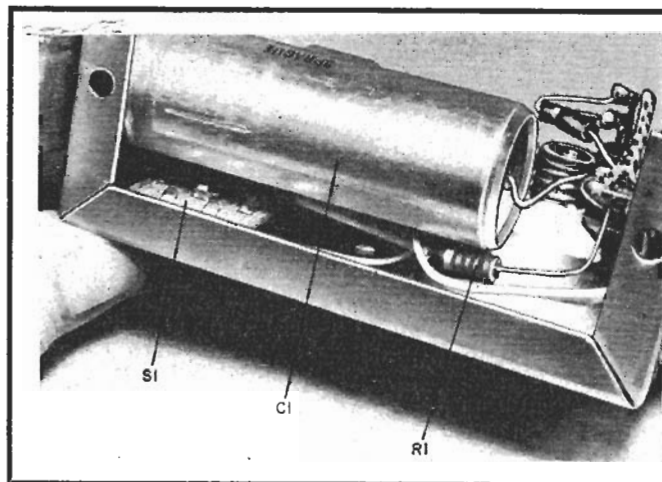
A four-lug terminal strip is mounted

inside the case (under the reflector). Capacitor *C1* lies lengthwise in the case with its positive terminal soldered to a lug opposite the terminal strip. The SCR is secured by a large soldering lug which is held by the nut on the anode side and attached to the end lug on the terminal strip.

The connection between Li'l Winker and the camera is made with a flash fitting and a length of cable. These can be obtained from a camera supply store, making sure that the fitting mates with the outlet on your camera. Pass the loose end of the cable through the rubber grommet, then wire the Li'l Winker



The bulk of the components are wired point-to-point on the terminal strip. The coaxial cable to the camera enters the chassis via a small rubber grommet.



Storage capacitor C1 extends the length of the small chassis. One end is tied to the terminal strip; the other end is connected to the common ground (chassis) via a small soldering lug. Resistor R1 is connected between the terminal strip and power switch S1.

as shown in Fig. 1. Make sure that all components clear the back cover.

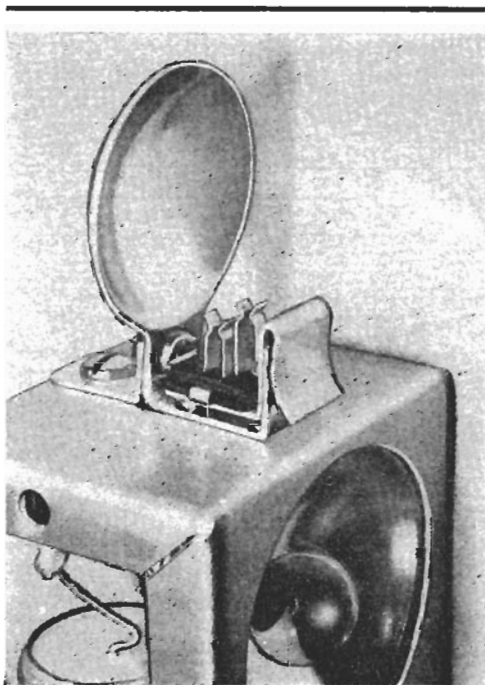
A length of  $\frac{1}{8}$ " aluminum strip can be used to mount the Li'l Winker to your camera. Obtain a thumbscrew fitting, either at a camera shop or from a discarded camera, and mount it at the far

end of the aluminum strip so that the flash unit can be attached to the camera. The Li'l Winker is then secured to the other end. The author used a six-inch length of aluminum.

**Operation.** Photographic results depend on so many variables that you will need to take several trial shots to determine the best exposure time and distances for use with the wink light. Generally, the camera should be set for conventional flash, not for "speedlight." The duration of the wink-light flash approaches that of conventional flashes, but it does not produce as much light so don't expect to make good pictures at great distances or with slow film. Remember that you can always use a standard flashbulb, if necessary.

You will find that the wink-light feature eliminates that "washed-out" look on facial close-ups. When you use the wink light and a flashbulb simultaneously, put the shutter down an extra stop. Best results are obtained with a fairly slow shutter speed. Using a slow shutter speed also eliminates synchronization problems between the shutter and the light.

There may be occasions when C1 does not completely discharge, in which case, the SCR may continue to conduct after the flash. This prevents the capacitor from recharging. The circuit will return to normal, however, if the switch is turned off momentarily and then on again.



The "hot" lead to the AG-1 flashbulb socket is passed through a hole in the top of the chassis. The other connection is made through the spring clip.