DICKEY FLASHER

Cut through the party's gloom with flashing studs

by John E. Portune, WB6ZCT

DICKEY FLASHER is a real party stopper that will literally get you switched on—sequentially flashing neon shirt buttons or tuxedo studs. Dickey Flasher is inexpensive, easy to build and a real conversation starter for light social situations. Slip your hand into your pocket, turn on the switch and your shirt front begins flashing like a neon sign.

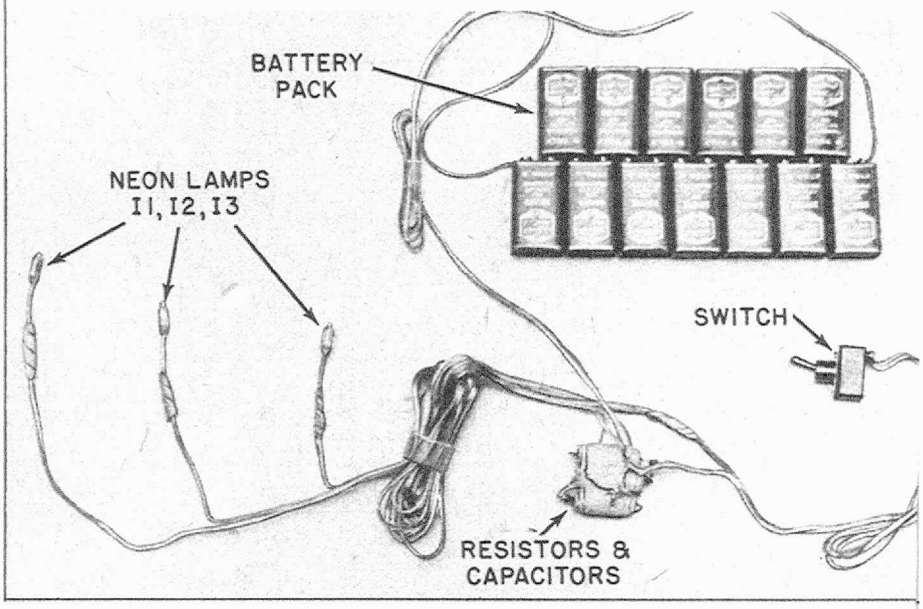
The circuit is a multi-neon-bulb version of the well-known simple neon relaxation oscillator. Less battery, the parts cost about two dollars. More commonly, one sees the circuit built as an amusing display novelty. The current drain is so low (about 200 microamps) that a small B battery will keep Dickey Flasher going continuously for months.

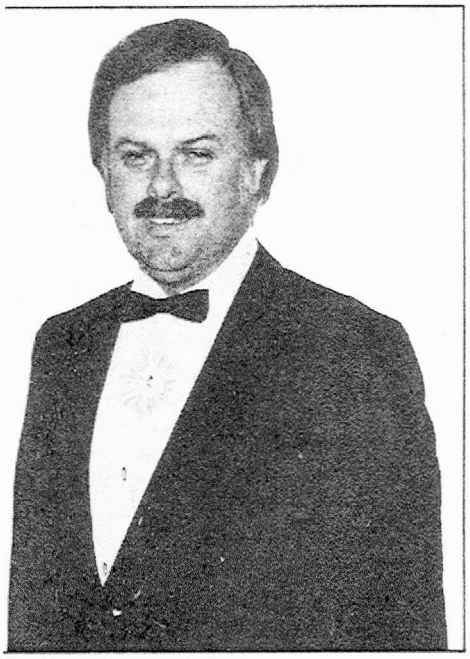
How It Works. Let's begin with the one bulb flasher as shown in the diagram. When switch S1 is closed, current flows through resistor R1 and begins to charge capacitor C1. The value of the resistor and capacitor determines the flash rate—0.5 megohms and 0.5 microfarads will give a flash rate of about 1 second. A lower value of either will make the unit flash faster.

But at the moment current begins to flow, the neon gas is effectively not in the circuit. A non-conducting neon is virtually an open circuit. When, however, the charge on the capacitor reaches the firing voltage of the neon (typically 60-70 volts) the neon fires, producing light, and becomes a short circuit. This quickly discharges capacitor C1 and extinguishes the neon lamp. The process then begins all over again with the charging of C1.

In the schematic drawing of the multi-bulb version of Dickey Flasher, the

Assembling Dickey Flasher is like wiring up a rat's nest. Actually, it is more a wiring harness than a boxed project simply because it is made to fit under clothing without the integral parts, except neon bulbs, exposed. Insulate all electrical connections against body perspiration. And make the cables long enough only to reach where they must go without too much extra length which may annoy the wearer.





action is basically the same. The only difference is that now there are several resistor-bulb legs connected in parallel across the battery, and the capacitors are connected in a ring between the legs. This succeeds in causing the charge-discharge process to transfer from leg to leg sequentially. More than three may be used; the number was chosen to replace the number of studs on a formal evening shirt or dickey for other occasions and situations it is possible to make five or more neon lamps fire in sequence.

Putting It All On. In making Dickey Flasher portable and concealable in one's clothing, the battery presents the biggest problem. NE-2 neon lamps require a minimum of about 80 volts DC to fire. A small 90-volt B battery, or two 45-volt units will work fine. But they are usually too thick and bulky to carry easily in one's pocket. To overcome this, a battery pack of ten or more common small 9-volt transistor radio batteries are snapped together in series using their own terminals back-to-back as connectors. (Incidentally this is not a bad way to replace hard-to-get B batteries in older tube-type portable electronic equipment.)

Taped together, the battery pack retains considerable flexibility and is slim; both are handy features if you have to sit down for a couple of hours during an evening. The cheapest 9-volt batteries you can find are quite satisfactory, the current drain is so low.

Group the capacitors and resistors together, soldering the leads directly and using tape to insulate everything. Connect the neon bulbs, the battery pack and the switch to this RC unit by appropriate length pieces of light, two-conductor speaker wire. In wearing Dickey Flasher, the batteries go in the right rear pocket, the capacitors and resistors in the left rear, the switch in the left front and the neons are pushed through the button holes. Another version of the flasher the author enjoyed had five bulbs built into a hat along with the resistors and capacitors. The battery and switch remained in pockets. Everything should be covered with tape; masking tape is the least expensive. Try to keep wires away from parts of the body where you perspire.

Getting the Most Laughs. Experience has shown that it is best from the point of view of entertainment not to let the bulbs flash all the time. Rather, arrive at the party with Dickey Flasher switched off. Then during conversation, quietly slip your hand into your pocket and turn on the lights without any outward show. You'll find that the reactions will be spectacular. Some will instantly dissolve in laughter, others will go blank not believing their eyes, and a few will try to ignore you. (The last group is the funniest!)

But no matter how and when you use Dickey Flasher you'll find this little group of lights well worth the small investment in sheer entertainment. ■

PARTS LIST FOR DICKEY FLASHER

B1—90 VDC battery made from 10 9-volt transistor batteries (Radio Shack 23-464 or equiv.)

C1, C2, C3—0.47 uF, 200-WVDC capacitor—printed circuit types are flattest (Radio Shack 272-1071 or equiv.)

I1, I2, I3— NE-2 neon lamp (Radio Shack 272-1101 or equiv.) NE-2H (Radio Shack 272-1102 or equiv.) may be substituted for higher brightness provided B1 uses 13 9-volt batteries because of higher bulb firing voltage.

R1, R2, R3—470,000-ohm, ½ or ¼-watt resistor (Radio Shack 271-000 series or equiv.)

S1—On-off toggle, slide, or rocker switch, miniature types preferred (Radio Shack 275-603, 275-401 or 275-611 or equiv.)

Misc.—Wire, solder, masking tape, etc.

Below is a photo of the author's son wired and ready for fun with Dickey Flasher. You'll find building the project comparatively simple, and if it is your first project, you can be sure that Dickey Flasher will work first time.