TRAFFIC BATON

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In small towns, there are no traffic lights and the police regulates the traffic with hand signals. Since their hand signals may not be visible at night, it is necessary to have some illuminated direction indicator.

Here we present two circuits for the same. One uses 6V bulbs and the other uses bright LEDs. Both the circuits operate off a 6V, 4.5Ah rechargeable battery, which is clipped to the policeman's waistband.

Fig. 1 shows the circuit of the LED flasher. It is wired as an astable multivibrator. The 'on' time of the LED cluster is about 108 milliseconds and 'off' time is around 105 milliseconds. The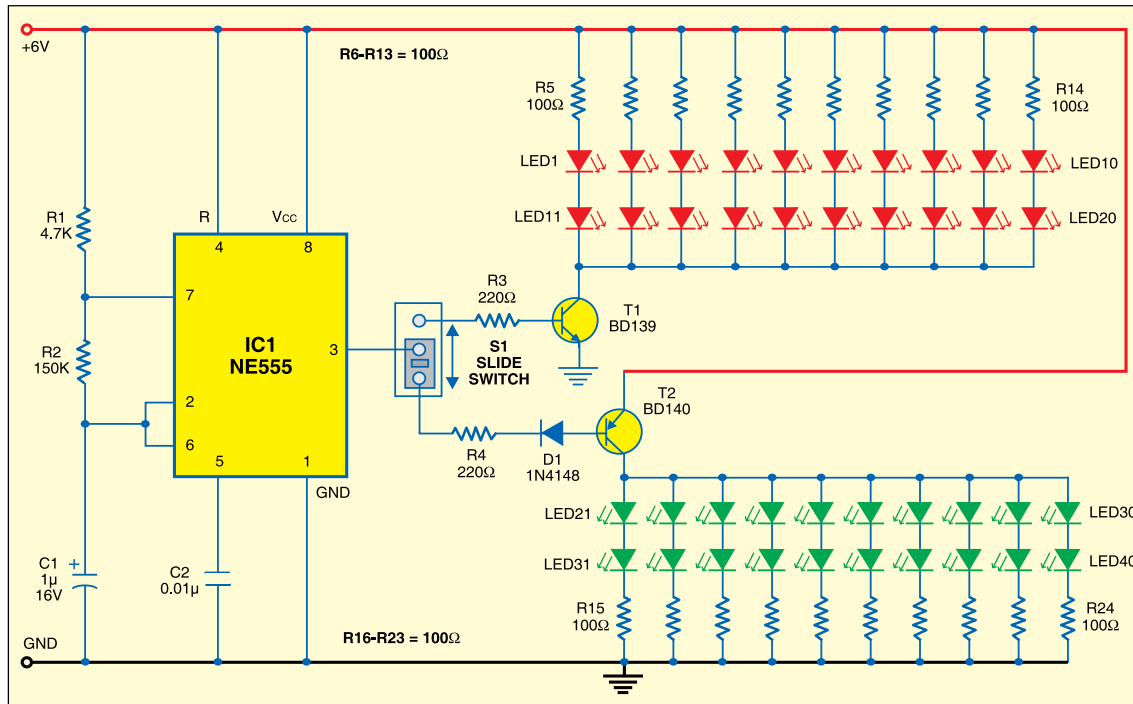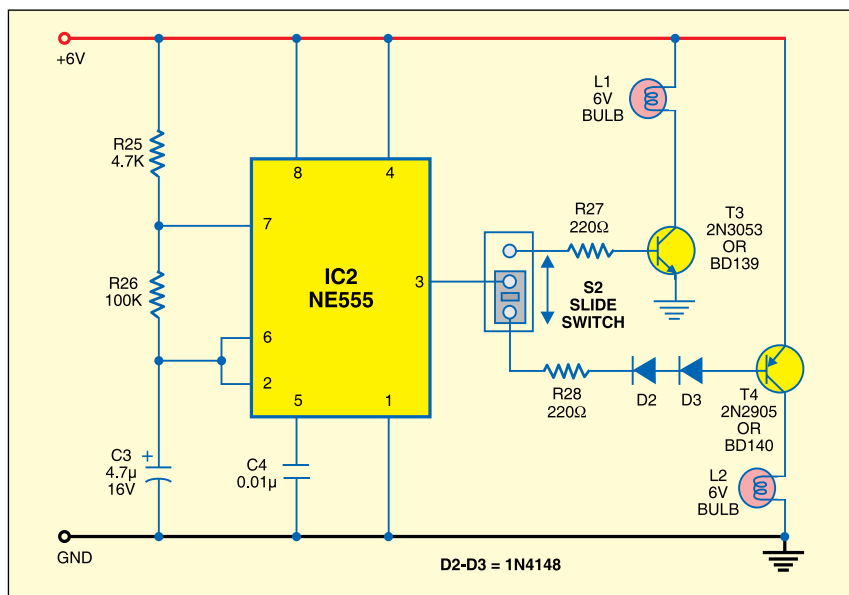 frequency is around 5 Hz. A diode is used in series with the base of BD140 to increase the forward voltage in order to ensure that when BD139 conducts, BD140 is cut-off. Select the LED which consumes low current (20 mA or so) but flashes bright.

Fig. 2 shows the circuit of the bulb flasher. Timer NE555 is wired as an astable multivibrator. The 'on' period of flashing bulb is around 344 milliseconds and 'off' period is around 329 milliseconds. The frequency is around 1.5 Hz. Bulb-driver transistors 2N3053/BD139 and 2N2905/BD140 are used to light up the lamp. Two diodes are used in series with the base of 2N2905 to increase the forward voltage in order to ensure that when BD139 is conducting, BD140 is cut-off. Slide switch S2 is used to change the colour status of the

Fig. 1: Circuit of LED flasher
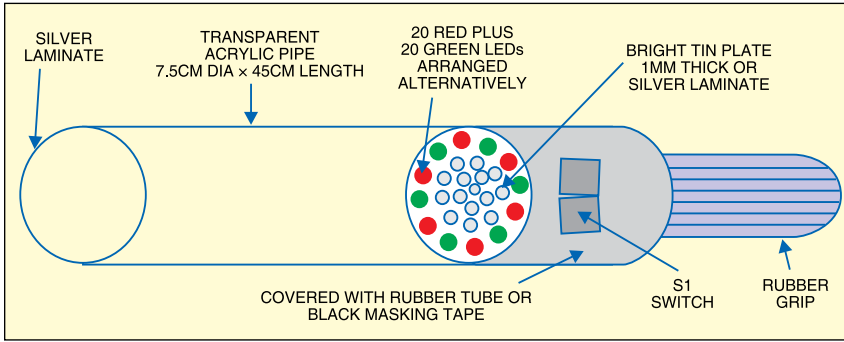

Fig. 2: Circuit of bulb flasher

Fig. 3: Traffic baton for LED flasher

flashing bulb.

Assemble the LED flasher and bulb flasher circuits on separate general-purpose PCBs. Enclose the LED flasher in a transparent acrylic pipe as shown in Fig. 3. The bulb flasher can be enclosed in another transparent acrylic pipe as shown in Fig. 4. Slide switches and red and green acrylic sheets are used for appropriate colour emissions. Now your traffic baton is ready to use. ●
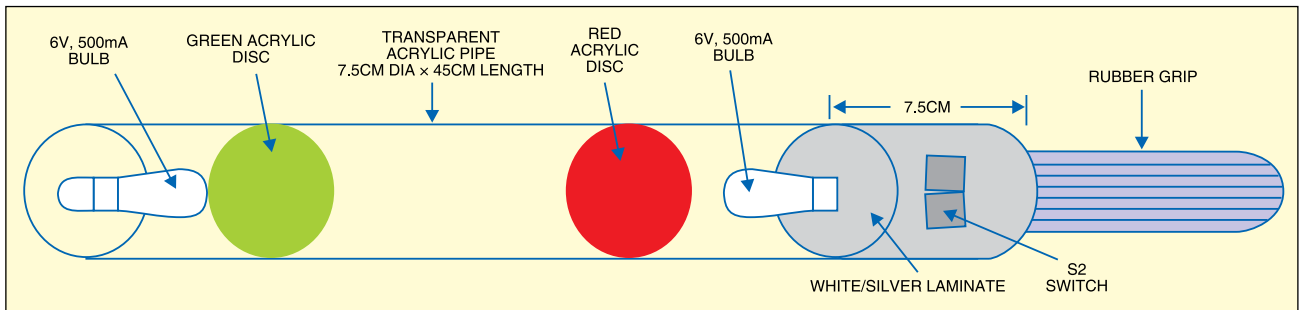

Fig. 4: Traffic baton for bulb flasher