the dasher

Update your Vibroplex bug
by using the Dasher —
a simple circuit
that provides a continuous
series of dashes

Back about 1946, during my days as a commercial CW operator, I used to spend an eight-hour shift sending traffic in strings of 40 or more messages. Many of them were weather messages which had groups of five digits and many, many groups per message. I was getting a glass arm doing this at 40 words per minute or better every working day.

I saw a circuit in an Amateur magazine which used two tubes in a multi-vibrator circuit that could be mounted on top of a regular Vibroplex bug and would automatically make the dashes while you still get the dots from the mechanical side of your bug. I built and used one for years, saving my arm a thousand times over. It had the advantage that you could make the dashes much longer than the traditional 3 to 1 ratio. Therefore, you could retain your original sending style, yet send perfect code without fatigue.

Since then I haven't been too active — until recently when I got back into both MARS and CW work. That's when I remembered that silly thing I once built into a cake pan and mounted on top of my old Vibroplex.

Today, however, with all solid-state devices and small parts, one can be built in a small box, using a 9-volt battery for power. I used the 555 IC as a timer and a small 6-volt, dc-sensitive relay.

circuit description

Fig. 1 shows the circuit I used for the *Dasher*. In some circuits, pin 7 on the 555 was keyed. I tried this configuration but it caused a slight "hangover" on

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the last dash of a train, making it very difficult to handle. I decided to try keying the 9-volt supply to the entire circuit, but this caused the first dash of a series to be stretched. Then, I tried leaving the 9 Vdc connected to all parts of the circuit and keying the lead to pin 8. This got rid of the problems, resulting in perfect dashes.

The two pots permit adjustment of both speed and weight. The only change needed on a Vibroplex bug is to disconnect the lead under the base from the dash contact post. Then, use a two-wire, shielded mike cable to provide three connections from the bug to the input of the *Dasher*. The shield forms one lead from the frame post of the bug, and the other two leads connect to the dot and dash contacts. Inside the *Dasher*, the lead from the dot contact is connected to the output lead, with the dash contact used to control the 555.
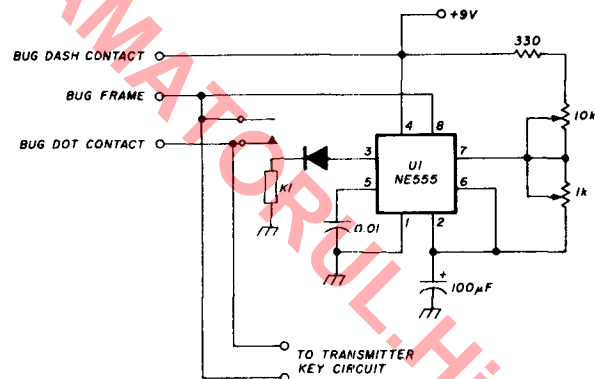

fig. 1. Circuit diagram of the *Dasher*. The relay is a small 6-volt unit available from Radio Shack. The diode can be any small signal switching diode.

Two things I might add for information. I used one of the rechargeable, 9-volt, ni-cad batteries and brought leads from the battery to screw terminals on the side of the box. This way I can connect a charger without opening the box. Also, a note of caution. Do not ground any of the 9-volt points to a ground that is common to the relay output or the bug common lead. When I tried the *Dasher* with my Collins KWM2A barefoot, no problems were encountered. However, when I ran the linear with a full kilowatt, rf was induced into the leads, causing erratic dash length. Putting ferrite beads on the input and output leads cured the problem. So have fun and don't end up with a glass arm; use the *Dasher*.

ham radio