

## Tips and Techniques

# A Simple Electro-Mechanical Car Brake

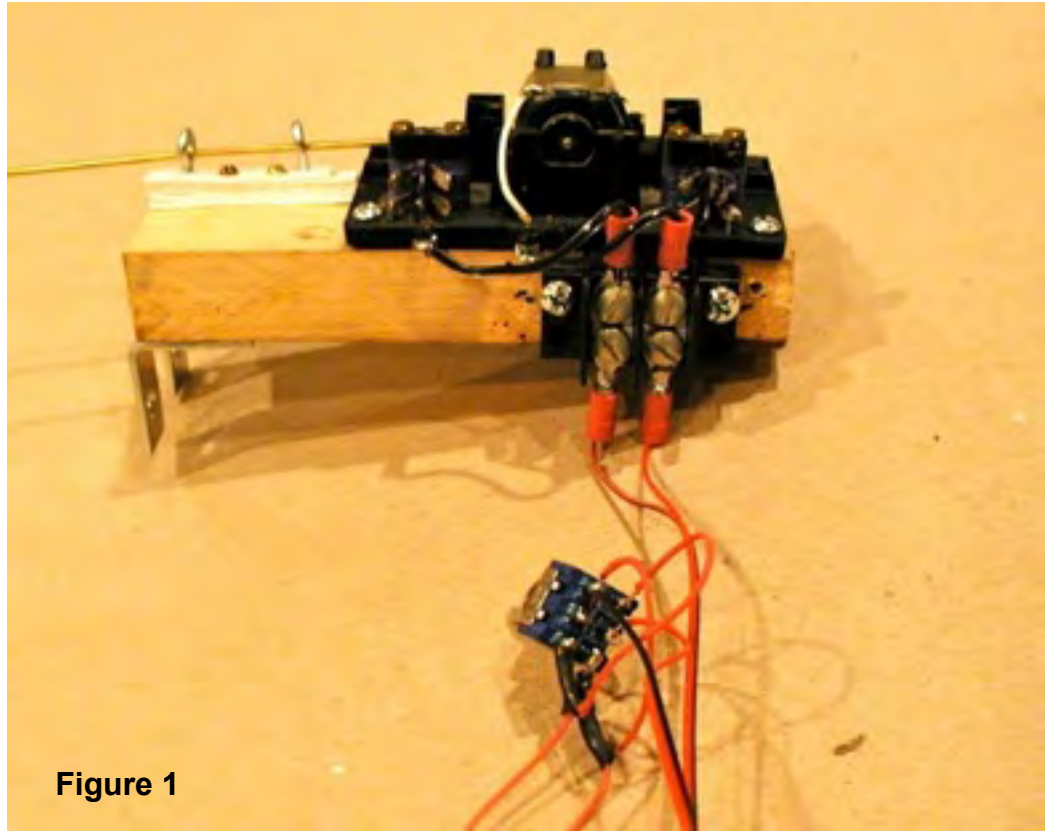
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### Photos by the author

I have two sidings on my layout that are on a slight incline. During operating sessions, it can be a challenge to switch cars at these sidings if the car won't stay in the right position. I had kept thumbtacks nearby, so that when the operations crew was switching in those locations, they could hold the cars in place by sticking the thumbtack in front of them. The problems with this were that the operators complained that the glued ballast was too hard to easily push a thumbtack into, and at the end of an operating session, there was a high likelihood the thumbtack was anywhere in the layout room but by the siding.

I had seen articles describing mechanical brake mechanisms that were actuated from a handle or other dial-like mechanism from the front of the layout's fascia board and had a direct mechanical linkage to a brake mechanism (usually a rod) that would pop up between the rails. My problem was that I did not have straight, unblocked access between the fascia board and the locations of the brakes. Moreover, many times these brakes required fabricating strangely-shaped linkages that would translate a push/pull or twisting motion on the fascia board to a vertical up/down motion of the brake pin.

Hence, I decided to skip the mechanical linkages between the fascia board and the brake pin and use a common switch machine to move the brake pin up and down between the rails. The best switch machine for this is the type that uses an electric motor to turn a worm gear that will



**Figure 1**

then turn a gear on a threaded rod that in turn moves a slider in a line back and forth. I had some extra Fulgerex switch machines that were ideally suited for the job. I simply mounted the machine on a piece of wood. I used a 3/64" diameter brass rod as the brake rod, and bent one end at a 90 degree angle so it fit into the hole on the switch machine slider mechanism. I used two small eye screws as guides for the brass rod, and these also served to hold the rod in place. I left the rod purposely longer than necessary, as I would trim it to the required length once the brake was mounted. Drill a hole slightly larger than the diameter of the brass brake rod in the center of the track at the location where you want the cars to stop. Remember that the cars will stop where the axle hits the rod when it is in the "up" position. Two small L-brackets are attached to

the end of the wooden block and these will mount the mechanism under the table (see figure 1).

The electrical leads on the motor are connected to a double pole double throw toggle switch that mounts on the front of the layout fascia board and actuates the switch machine motor that moves the brake up and down. Hook up the power leads to a 12 VDC power supply and when the brake is in the "down" position, cut the brass rod flush with the top of the ties. Figure 2 shows the brake installed and in the "up" position.



Figure 2



This HO scale frame house was scratchbuilt by Mat Thompson from an article in the February 1992 issue of Mainline Modeler. Walls, windows, doors, vents and the chimney were built from styrene. Scale 1"x2" stripwood was used to make the rear porch lattice. The Merit Award score was 93 points. *Mat Thompson Photo*

### **WANTED: Layout Hosts!**

The Potomac Division sponsors layout tours approximately every other month.

Layouts don't have to be complete, as layouts in various stages of construction are often just as interesting and informative to members. If you would like to host an open house on a Saturday afternoon and let other members and friends of the Potomac Division see your layout and enjoy your handiwork and modeling talents, please contact the Division's Layout Tour Coordinator, Brian Sheron ([BWSheron@mac.com](mailto:BWSheron@mac.com)), and let him know you are interested in hosting an open house.