Contents

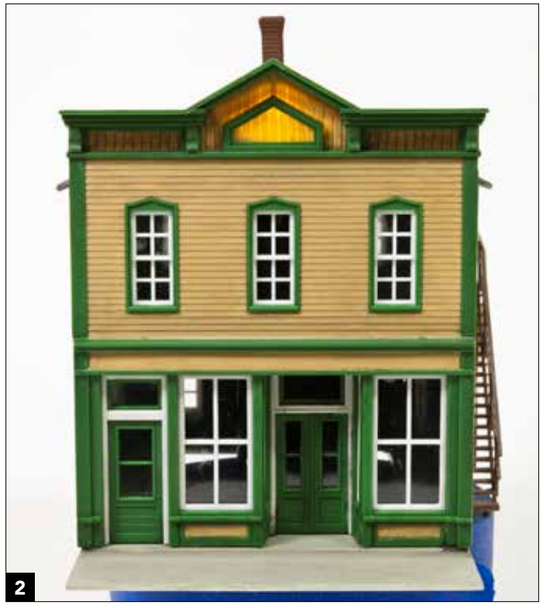
1

CHAPTER TWO

Lighting small structures

Interior lighting, along with a few detail items or a photo print, gives model structures life and makes them appear occupied. Scenery applied up to the structure base prevents light leaks at the bottom.

One of the most difficult aspects of modeling structures is lighting the interiors so they look realistic, **1**. It's easy to end up with too little or too much light, with hot spots where light is visible through the walls of a structure, or with undecorated areas showing through windows. Let's look at some ways to handle these issues.



2

A quick way to check for hot spots and light leaks is to insert a small flashlight or bare bulb into the structure.

3

Woodland Scenics makes a light block kit that contains black paint and caulking putty.

For any structure molded in plastic you need to deal with the potential for hot spots. One quick way to check is to place a small flashlight or bare bulb inside the structure and examine the exterior, **2**. You'll usually see many areas of glowing plastic where the light bleeds through—not the realistic appearance we're looking for. Painting the exterior helps (and will also provide a better appearance than plastic, even the "molded in realistic color" variety), but you can still have trouble areas, especially with light-color buildings.

I usually begin by giving the inside of the structure a coat of dark opaque paint such as black or brown—this will help prevent light bleed through. I usually just spray-paint the inner walls before assembly. It's easier to get a good coat of paint on the inside *before* gluing the walls together. To keep the corner edges clean for gluing, I apply strips of blue painter's tape. If the structure is already built you can carefully brush-paint the inside.

For light leaks at joints, you can run a bead of black caulk where needed. Woodland Scenics makes a light block kit that contains black paint and caulking putty designed specifically for this task, **3**. You also need to check for cracks around windows and doors as light may escape there too. As you assemble kits, keep the roof in mind since light can escape there too. On some buildings I like to make the roof removable in case I ever need to replace a bulb or LED, or if I decide to add more interior details. In most cases, pieces of stripwood or styrene glued to the inner edges of the structure or roof will provide support and help block light from escaping.

Next decide what kind of lights you want to install and where to put them. Keep in mind that it is often better to install several small lights instead of one large one. Several small bulbs or LEDs at lower intensity will light the inside of a structure more evenly than a single bulb burning at full power. Multiple lights are also less likely to result in hot spots. You can use a potentiometer or resistor to reduce the intensity of a light as described in Chapter 1.

Lighting a store

Let's take a look at how I added lighting to a small wooden grocery store and flagstop station. I chose this kit because it's very similar to one near my childhood home in Maxwell, Va., that still sits next to the old N&W Norton Branch line, **4**. This laser-cut wood kit was produced by Kingmill Enterprises. Although it's no longer available, the lighting techniques are the same as with many other small structures. Because the structure is wood I wasn't concerned with hot spots and didn't bother with painting the inside walls.

Whenever you light a structure interior, you need to avoid the "empty" look. One option is to make the windows translucent so viewers can see that lights are on but cannot see the empty room. This can be done by sanding the inside surface of clear plastic glazing with very fine sandpaper or spraying the glazing with clear flat finish (such as Dullcote).

The opaque black paint in the Woodland Scenics light block kit can be used for painting the inside of windows that don't need to be illuminated. The company also offers a translucent window film that is applied behind the windows to give the building the appearance it is occupied without requiring furnishings, **5**.

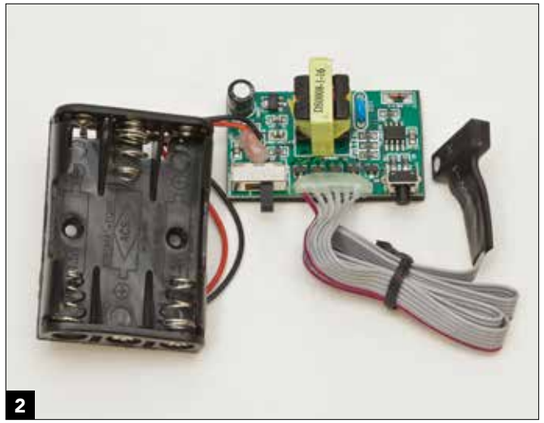
1

CHAPTER FOUR

Animated neon signs

Miller Engineering offers a variety of simulated neon and other illuminated signs. They can be free-standing or mounted to structures or backdrops. Many are based on prototype signs, such as the H&C sign (inset). *Inset photo by Mike Whye/Visit Virginia's Blue Ridge*

Each era has certain features that immediately convey a sense of time and place. Neon signs in particular were extremely popular in the United States from the 1920s through the 1960s. Animated neon signs of the 1950s are especially evocative of the transition era when steam was giving way to streamlined diesels. These brightly colored, nostalgic additions to city skylines help create the mood of that era.



2

Each circuit board is attached to a battery pack that holds three AAA batteries. Boards have on/off and animation-selection switches.

3

Mounting the circuit board on a piece of soft foam practically eliminates the high-frequency sound generated by the circuit.

4

Be aware of unrealistic shadows on the sky if you mount a sign too close to a sky backdrop.

5

Installing the sign in front of another building makes shadows logical and less noticeable.

Miller Engineering produces a variety of animated, illuminated signs that mimic these neon advertising signs of the 1950s. Some, like the Dr. Pepper, H&C Coffee, and Sauer's Vanilla signs are based on actual signs that still exist, **1**. Others are fictional, but based on popular advertising signs from the period. For my layout I have chosen signs which I have either seen or have a personal connection to. For example, the Mr. Peanut sign atop the freight house in Chapter 3 is a reminder of all the trips I made as a child to the Planters Peanuts store on East Broad Street in Richmond, Va. I also remember the Sauer's sign in Richmond as well as the Dr Pepper and H&C Coffee signs in Roanoke.

The Miller signs consist of flexible electroluminescent sheets with the advertising image printed on them. They are designed so that several areas of the sheet light up, illuminating different sections of the sign in a number of sequences creating the animated effect.

A circuit board connected to the sign via a strip of ribbon cable controls the sequence of the lights. The small circuit boards for each are the same. Each circuit board is attached to a battery pack that holds three AAA batteries, **2**, which provide the 4.5VDC to power the signs. Miller also sells a 4.5V transformer as an option.

The circuit boards are programmed with 46 different lighting sequences or chase patterns. There is a small pushbutton on the board that allows you to advance through all of them and see how each pattern will look with your specific sign. Do this before installation, as it can be difficult to do later. Make sure you advance through the patterns slow enough for them to successfully load into memory. There's also an on/off slide switch on the edge of the circuit board.

These boards emit a low-volume, high-pitch tone that some find annoying. I've found that mounting the circuit board on a piece of spongy foam practically eliminates this, **3**.

1

CHAPTER SIX

Crossing gates

As a train rolls through, the gates drop, lights flash, and the bells clang, warning HO motorists to stay off the tracks.

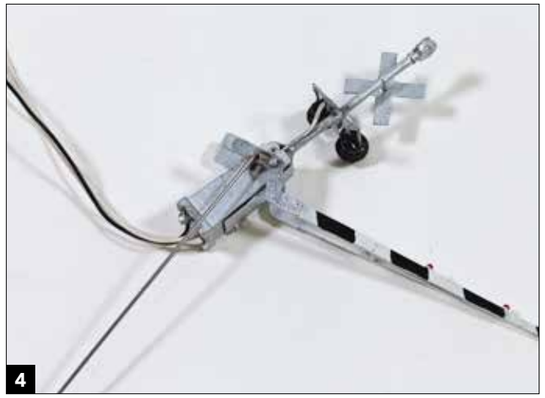
The first U. S. patent for a crossing gate was awarded in 1867 and they came into use by the late 1800s. Through the early 1900s these gates were manually operated by crossing watchmen, with automatic gates becoming common by the mid-1900s. In most cases red flashing lights and bells were also used to warn of oncoming trains, **1**.

2

The NJI kit contains a pair of crossing gates with the relay base and black-and-white striped type A gates. Red-and-white and bar gates are also available, as are N scale gates.

3

A piece of brass tubing epoxied to the relay base provides a firm mounting support.



4

To replace the original actuator rod, I drilled a .028" hole in the gate arm right behind the pivot point and installed a piece of .025" wire.

Crossing gates were located like crossbucks as described in Chapter 1, and the *Manual on Uniform Traffic Control Devices* (MUTCD) specified the height of the closed gate above the pavement at 3 feet. Gates typically had black and white stripes into the early 1970s, but in 1971 the MUTCD mandated a change to red and white stripes. It's a good idea to check photos of crossings in the area and era you model.

For my HO crossing I chose an NJ International model (they make flashers and gates in N scale as well). This gate is offered with either a relay case or pedestal base and a type A or bar type gate. The type A gate is constructed of two pieces of wood whereas the bar type is a single piece of wood. I selected the no. 1161, which contains a pair of crossing gates with the relay base, type A gate, and black and white stripes, **2**.

Mechanisms

The relay base offers no means of mounting the unit—it just sits flat on the layout with the wires and actuating rod dangling down. To remedy this I cut a 1½" piece of ⅜" diameter brass tubing and epoxied it into the relay base after feeding the wires through it, **3**. I then measured the proper scale distances from the tracks and road and drilled a ⅜"-diameter mounting hole. With the brass tube inserted in the hole it provided a stable installation. However, it also pointed out another problem.

With the first gate in place I got under the layout and started making measurements for the Circuitron remote activator. However, the actuating rod on the crossing gate wasn't long enough to reach—apparently my 1"-thick foam and plywood sandwich was more than the manufacturer planned for. My first reaction was to attempt to replace the actuating wire with a longer one, but in the process I broke off the connecting pin inside the unit.

As a replacement I drilled a .028" hole in the gate arm right behind the pivot point and installed a piece of .025" wire to serve as the actuating rod, **4**. This can be on either side of the relay base to keep it out of sight. If you have to do this, it is important to keep