



From Concept to Publication

Part 1: Ideas and Camera Basics

article and photos by M.R. Snell

So I've got this great idea for a how-to article....where do I begin?

In the digital age, sharing with our fellow modelers is easier than ever, with new avenues open to display our work both conventionally and via the internet.

While many modelers have considered writing about a special project or even just documenting progress on our layouts, we often have difficulty making the journey from idea to finished product. Having authored several instructional pieces, I'd like to share some guidelines, tips, and tricks



I've learned, all of which have improved my own hobby "journalism" and may help you eliminate potential roadblocks.

While every instructional piece begins with enthusiasm and an idea, let's pause to address two important questions that can be used to provide direction during the writing process.

1. Who is the target audience for our work? As an example, a boxcar kitbash of a small class that is suitable for only one road will likely have a limited appeal. While this



Left & Previous Page: While an article on kitbashing this one-of-a-kind fire car would appeal to Central of New Jersey and Conrail fans, the rest of the modeling community would likely have little use for it. They might, however, have an interest in how the scratchbuilt side sills were constructed, enabling those techniques to be used on projects such as building a flatcar.

Both Above: These two identical photos illustrate the relation between aperture and depth of field. The top photo was taken at f5 while the photo and the lower image was captured at f32, showing the deeper depth of field. The trade off is longer exposure needed to properly expose the image. It is almost impossible to hand hold an image captured at f32.

subject may be ideally suited to a historical society, a broad audience may find its scope too narrow, leading us to the next question:

2. Can or should the audience be expanded by demonstrating different techniques within the context of the project, enabling the reader to apply these in their own pursuits? For example, while one may not have any interest in that particular boxcar, learning how two cars were spliced together to create it may provide something that can be used in other endeavors.

These two basic questions should dictate the direction to proceed while assembling the various elements that will comprise a potential article, the first being photography. Photography — likely the most important part of any instructional piece — can either make or break the project, yet model photography often remains a misunderstood subject by many hobbyists. While some folks see the need for expensive equipment and others feel the need to run to Adobe Photoshop, the truth is that neither is truly necessary. Manipulating photos is generally frowned upon by most publications, so let's look at how to create good photographs.

The first step in creating a quality photo is understanding how to use your camera. Some cameras may seem complex with lots of bells and whistles, while others are bare-bones basic. All are simply a tool, no different than a knife or hammer. Getting good results from your hobby tools requires both practice and proper use. In a recent discussion, I asked a modeler what settings or options his camera had, and he was unaware of anything other than the name on the front. So let's briefly review camera basics using simple terms as they relate to model photography.

Model photography is quite different from other types of photography we



are familiar with such as family, sports, or even railfan photos. Unlike everyday photographs, model photography creates an image of something that is substantially smaller than everyday objects and occurs often in less than ideal lighting conditions.

Since photography is really nothing more than the capture of light and shadows, the two components that comprise the "mechanical" aspect of every photo are:

1. Aperture: Commonly known as f-stop, this is the amount of light allowed



All Above: These three identical photos taken at 1/8 sec, 1/5 sec, and 3 seconds illustrate the difference exposure time has on a photograph. More shutter open time (longer exposure) equates to a lighter image; less time (shorter exposure) equates to a darker image.

Below: Most modern cameras, both “point and shoot” and DSLR alike, have a thumbwheel allowing you to set the camera to different operating modes, including Manual, to control the camera’s functions. I shoot primarily in Manual to allow me to control the depth of field and the exposure. Digital cameras with their viewing windows allow us to perfect the image on the spot.



2. Exposure: Also referred to as shutter speed, this is the time the camera’s shutter is open, capturing available light. The exposure time of a photo determines two things, the first being whether action is frozen. Simply put, a fast shutter speed is required to “stop motion.” A great example familiar to many of us is a photo of a crossing gate taken at night. You will recall the gate appears to be in motion from its vertical to horizontal position, and this is because of the slow shutter speed required by the nighttime photo. Take the exact same photo in bright daylight, and the gate will be “frozen” without motion because of a much higher shutter speed.

The second function of shutter speed is determining whether a photo is underexposed (too dark), correctly exposed, or overexposed (too light). Finding the correct exposure time can usually be done using the camera’s built-in light meter, generally a line subdivided with small hash marks. The center or zero mark is the camera’s determination of the correct exposure and moving to the + or – settings will make the photo lighter or darker. One concept to remember, especially in the context of model photography, is that exposure has a direct relation to aperture, because the higher the f-stop number, the longer the exposure time required.

into the camera. In simple terms, for model photography, the larger the number, the better — this defines the “depth of field” or how far the camera will see in focus. Good model photography generally requires the largest f-stop number possible, often f32. It seems counterintuitive, but the larger the f-stop number, the smaller the aperture and the less light is admitted.



Above: One thing to look for in a multipurpose tripod is a “fluid head” with the ability to tilt both forward and back while also panning side to side, enabling it to be used for both still and video photography.



Above: While outdoors on a windy day or out railfanning, it’s a good idea to anchor down a lightweight consumer-grade tripod. This can be done rather easily by filling an old pillowcase with rocks or sand, then placing it into a sturdy bag, and tying the tripod down with a bungee cord.



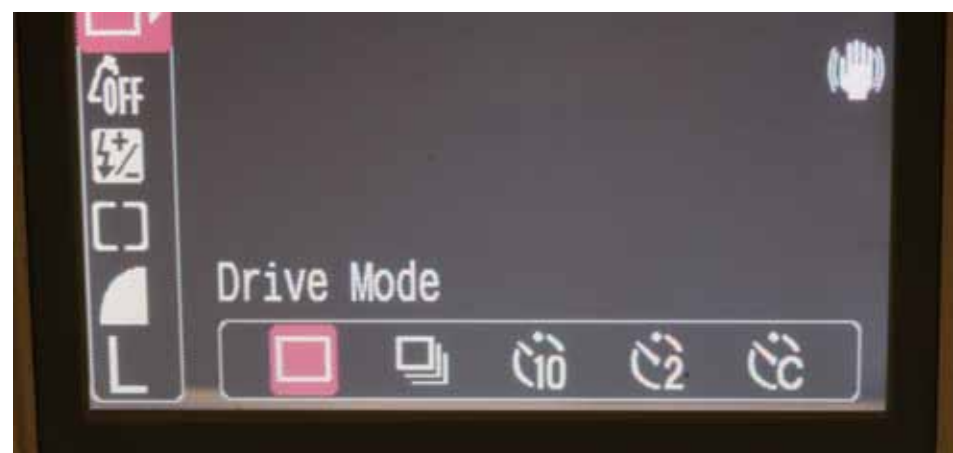
shake and blurry photos. To create a good photo, we must use a tripod or rest the camera on a solid, stable surface that will not allow movement. Then, use a cable release or the camera’s timer to activate the shutter.

One absolute necessity of model photography is a tripod. Tripods are available in varying styles and grades from consumer to high-end professional equipment. The

Top Left: One component of a tripod is a quick-release plate that attaches to the bottom of the camera. To make a tripod multi-functional, additional QR plates can be purchased then left on each camera, making switching equipment faster and easier.

Left: In addition to a tripod, beanbags can be a useful tool when setting up shots on the layout, enabling us to place a camera where a conventional tripod will not fit.

Below: All modern cameras are equipped with a built-in timer or even a remote. Using the timer will trigger the shutter after you have removed your shaky hand from the camera body creating a still capture of the subject.



So let’s review. When you press the button on the camera, the shutter opens for the predetermined time of the exposure, allowing the camera to capture light allowed in by the aperture setting. So far, this sounds pretty simple, right? Let’s practice by placing a boxcar onto a table, then picking up your camera and finding the MANUAL or M setting. This is generally located on a thumbwheel on top of the camera or a settings/mode button on the back of the camera. (Also turn off the flash if it will activate.) Next, set the aperture and exposure time. Now, try taking a few photos, adjusting both until you can see how the aperture and exposure interact with each other.

Uh oh! Some of the pictures are blurry! This leads us to the next concept we must understand about model photography — whether to hold the camera. Simply put, we usually won’t be able to hold the camera because the long exposure times required for most model photos will lead to camera

Below: Most DSLR styles will accept an electronic cable release. The cable release allows the camera shutter to be triggered without touching and jostling the camera body.



parameters for choosing a tripod should be dictated by how you plan to use it. When selecting a tripod for model photography, it need not be limited to that one role. A video tripod can do double duty since it will support either still or video cameras, making it useful while out railfanning or taping family events. The bottom line is that the tripod must be sturdy enough to support the camera it will be holding without

shaking or bending. One consideration for a light-duty tripod also used while railfanning is the ability to weigh it down to prevent it from blowing over. Just envision stepping away from the tripod and watching it fall over due to the wind generated by a train passing at high speed. (Ask me how I know this....)

The tripod solves half the blurry picture problem; the ability to operate the camera’s shutter without touching it solves the second half. Almost every camera has a built-in self-timer. D-SLR models generally also have a port for a cable release, an optional shutter button on a cord. Both will provide a way to keep from touching the camera. Let’s practice taking photos again, this time using a tripod and the timer or a cable release.

Much better, right? Now that we understand the basic foundation for taking good photographs, let’s look a little more in-depth into how several digital camera settings relate to model photography.

- **ISO:** In the conventional film world, this is known as “film speed.” Ranging from 100 to several thousands, a general rule is the lower the ISO, the clearer the picture, other factors being equal. As the ISO increases, the picture becomes increasingly grainier (often called “noise”). This is especially noticeable in pictures with dark backgrounds.

- **White Balance:** If you’ve ever viewed a photo that had an unnatural bluish or reddish tint, this was likely the result of an incorrect white balance. The type of light a subject is photographed in is known as temperature, which is measured in Kelvin units or simply “K.” For example, temperatures exceeding 5000K, such as fluorescent bulbs, are considered cool or bluish-white, while lower temperatures, such as incandescent bulbs, are considered warm colors (yellowish-red). Film photographers had to change the film type to match the color temperature of the light. Digital cameras can compensate for any range of light temperature automatically or with the touch of a button, generally marked “WB.” Your camera’s user manual should include instructions on how to set your camera’s white balance.

- **Digital File Size:** Digital photograph size is measured in the number of pixels that make up the photograph, and most publications prefer file sizes in excess of 8 to 10 megabytes per photo. Found within each camera is the option to record the photo in various file sizes. The larger the file size, the better. This determines how



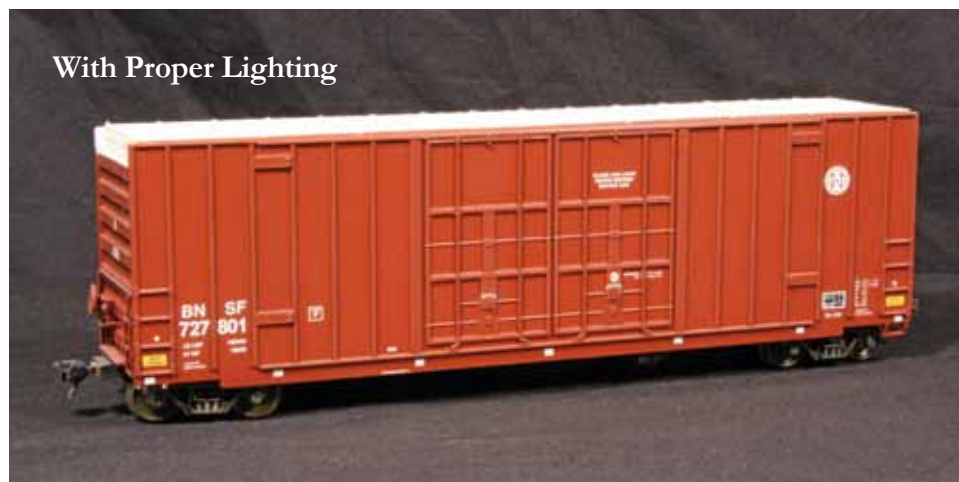
Poor White Balance



Good White Balance



With Flash



With Proper Lighting

Both Left: These two photos illustrate the relationship white balance has on a photograph. In the photo on the left, the incorrect white balance has left a yellowish tone throughout the entire photo.

large a photograph can be reproduced or how well it can be manipulated. Generally measured in the settings of RAW, L, M, or S (listed from largest to smallest), all publications prefer the RAW setting, which is an enormous file size that may quickly use up the available space on your memory card or your personal computer hard drive. The next best setting is the LARGE FINE jpeg option, which is generally sufficient for hobby publications.



Above: The settings for file size can generally be found in the Menu screen of a camera and are measured in Large, Medium, and Small jpeg.

- **Flash:** Just one rule applies to flash photography in the context of model photography — turn it off. The unnatural high and lowlights of an electronic flash will almost automatically be cause for the rejection of a photograph. In the event a flash cannot be turned off, covering it with a piece of black construction paper will prevent it from destroying a photograph. However, you may need to lengthen the exposure time if the camera has calculated the flash into the exposure recommendation of the light meter.

- **Manual and Macro Focus:** Almost anyone who has tried model photography can tell a tale of fighting with the camera's auto focus. Either it wouldn't focus at all, wouldn't focus on what you wanted, or had issues staying in focus. This is because most consumer-grade cameras are designed with family activities in mind, thus the lens and software are tailored to activities photographed at a distance rather than close up.

The first method to overcome this issue is to use manual focus, enabling you to focus on exactly what you want rather than what the camera chooses. A second method is to use macro-focus, which can yield excel-

Both Left: One of the basic rules in model photography is not to use a flash. Looking at these photos, one taken with a flash (upper) and the other with proper lighting, we can see the detrimental effect of flash photography because the upper photo has unnatural color and uneven highlights.

lent results with close-up photos. Generally indicated with a flower icon, macro focus is a built-in option of most "point and shoot" cameras. Specialty macro filters and lenses can be purchased separately for D-SLRs. You may also wish to research "Helicon Focus" a program that allows you to stitch several different images together to increase depth of field infinitely.

Now that we've reviewed the basic mechanics of model photography, let's pause, enabling everyone to get to know their camera, and take some time to practice the basics. In our next installment, we'll look at creating an inexpensive portable "studio," along with tips for better photography.

Right and Below: One issue we encounter in model photography is that our cameras often do not want to focus properly. Using manual focus or the built-in Macro option can help alleviate this issue. After studying these two photos, one taken in normal mode and the other in Macro mode, you will quickly find the one in Macro mode is much clearer. Manual focussing with good depth of field is achieved by focussing 1/3 the way back on the model. Depth of field manifests itself 1/3 in front of the focus point and 2/3 behind the focus point.



Focus Here
1/3 the way back on
the model.