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.

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.

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 through the lens and is measured in f-stops. A low f-stop (e.g., f5) will allow more light in but will result in a shallower depth of field, making it difficult to focus on the subject. A high f-stop (e.g., f32) will allow less light in but will result in a deeper depth of field, making it easier to focus on the subject.

2. Shutter Speed: This is the length of time the camera’s shutter is open, allowing light to enter the lens and hit the sensor. A fast shutter speed (e.g., 1/1000 second) will freeze motion but may result in a dark image if there isn’t enough light. A slow shutter speed (e.g., 1 second) will capture motion but may result in a blurry image if there is too much light.

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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 for 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 under-exposed (too dark), correctly exposed, or over-exposed (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 may seem counterintuitive, but the larger the f-number, the less light is admitted.

Adequate exposure time for most model photos will lead to camera 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 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. DSLR 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 great 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; the higher, the ISO, the sharper 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 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 taking 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 weight 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….)

Above: 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.
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.

- 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 excellent 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.