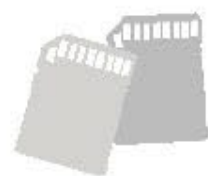## 2.8 Output Formats

Output formats are the formats that we give to our images according to their final destination.

If we use a captured photo and post-process it in RAW format (for example to upload and view it on the Internet or media devices), we convert it into a format more compatible with these media. Although there are several, the most common type is JPEG, as this format was designed specifically for this purpose.

If we wish to use the photographs in RAW format (for example, editing images that will go into a print magazine) and ensure that they do not lose information that graphic designers can use to make some final adjustments, we must choose a format such as TIFF (Tagged Image File Format). TIFF files are not compressed and retain all the information resulting from post-processing the RAW file, and it will also be compatible with all computers and image editing software.

The capture format known as JPEG (Joint Photographic Experts Group) is also an output format. As we know, this format fully supports photos published on the Internet. If you want to use a JPEG for a printed publication, you must consider the post-processing constraints that limit possible final adjustments, although JPEG is a format that is used in print.

It is useful to know the different output resolutions that we give our photographs according to their end use and which need to be adjusted regardless of the type of format, according to the established standard and measured in dots per inch or dpi.

The resolution that we will use to display the pictures on the screen, or to upload pictures and display them on the Internet is 72 dpi. When a photograph is to be printed, 300 dpi is the resolution that we select. The conversion of some other formats and settings for the final resolution are functions that are available in most image editing software programs.

Computer monitors and multimedia devices use a resolution of 72 dpi.

In print publications, the resolution is 300 dpi.

2.9 Using Different Parameters and Settings when Photographing Scale Models

Knowing the equipment and adjusting the different parameters to get amazing photos of our scale models.

On a technical level, we believe that a good photo of a scale model or thumbnail must be: crisp, with definition in the details, with a balanced depth of field, properly illuminated, and with reliable colors.

Thus, provided that our resources permit, we shall proceed as follows: setting the white balance to the light source to illuminate the scene so that the colors are accurate and resemble reality. We will select the ISO sensitivity to the value closest to 100, to avoid electronic noise subtracting from the image definition.

We will use accurate autofocus systems or manuals to get the images sharp and properly focused. We will use the aperture priority mode which will allow us to choose the adequate depth of field, so we can see all the details with clarity and definition in front of and behind the point upon which we have focused. In subsequent chapters, we will discuss concepts like composition, so that our photographs are not only technically good, but also creative.
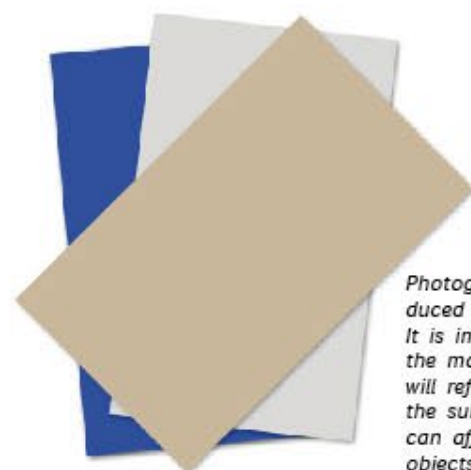
4.1

We completed the set with the addition of two spotlight supports, two lights, two halogen bulbs of equivalent power (100 W each), and two diffuser filters (each made with two sheets of tracing paper).

4.2 BACKGROUNDS FOR THE PHOTOGRAPHY SET_

Photography backgrounds are the surfaces against which we place the objects to be photographed.

This is an accessory that adds aesthetic value to our photographs of scale models and any surface can be used. While a simple printed photo or postcard can serve this purpose, it is important to know the advantages of using professional photography backgrounds; they are made with a high quality paper that makes the texture of the paper invisible, and they have matte surfaces to reduce reflections produced by the items that we set against them.

In gradient backgrounds, the base color is diluted. This type of background can be used to create different effects in the aesthetic photos.

Photography backgrounds are produced in different colors and sizes. It is important to bear in mind that the more intense background colors will reflect some of this color onto the subject of the photograph, and can affect the actual colors of the objects that we are photographing.
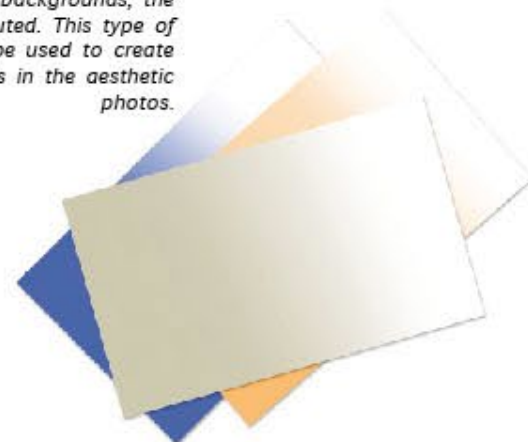
4.3 SPOTLIGHT SUPPORT AND TRIPODS_

In previous chapters of this book we have seen that when photographing scale models, the aperture priority is the parameter that gives us our depth of field, and how in this mode the camera will adjust the exposure time.

In the photography of scale models, exposure times are usually so slow that this can result in pictures with motion effects. To avoid this possibility, we use tripods.

Advanced tripod heads have three-axis motion and a bubble level to level the camera.

To choose a tripod, take into account the weight of the camera being used. A heavy camera will require a sturdy tripod to avoid any possible vibration during shooting.

Stands for bulbs are an accessory that allow us to fix or adjust the height of the lighting and can also be used to change the angle of light that strikes the object.

To take pictures of small scale models with light compact cameras, can use a mini tripod and place the camera directly on the photography set.

5.3

Electronic flashes (strobes) are very advanced lighting systems that require a lot of experience to use properly. In the photo, we see an electronic flash equipped with a light diffusion box.

Rear control panel of an electronic flash with controls to adjust the type, intensity, and duration of the flash. This type of lighting is recommended for advanced photographers.

Photograph taken with a DSLR camera and an external flash on a tripod with a shutter time of 1/4 and ISO 100 f 8, an 17-40 lens with a 40 mm focal length, and direct light without any filter. We see in the image that the model colors are off and that many of the nuances and details of the painting are lost due to the harshness of the light.

The same picture taken with the same settings, but using the flash with a filter made from two sheets of vellum. In this picture, the colors are more vivid and the shadows are more tempered by the diffusion of light that is achieved with the filter.

6. Shooting Scale Models
6.1 Focus, Lighting and Angle of View

After adjusting the camera parameters discussed in the previous chapters, begin photographing scale models. The focus, the lighting, and the angle from which you take the photograph will change depending on the type of model that is being photographed.

The following sequence of photographs was taken using the basic set, a white background, and one grey gradient. Here, we have two points of light (each equipped with two 250W Photolita bulbs); the light of the two spotlights is shown with two blue arrows where No. 1 is the main light and No. 2 is the secondary or fill light. To achieve the different schemes, we moved the light sources to different positions and distances.

The focal point of the camera is represented by a red square.

We used a tripod and an 8 megapixel DSLR camera with a wide-angle 17-40 lens, and we used 28 mm because the camera has a crop factor of 1.6.

Different angles to position the camera with respect to the scale model.

The 1-position is a lower position in which the horizontal axis of the camera is parallel to the surface upon which the subject is placed. This angle is good for shooting models such as planes because it allows you to see details of the figure's underside.

In position 2, the camera also has its axis parallel to the surface but in a higher position, so that the center of the lens coincides with the center of the model. This position is very suitable for photographing figures since it does not produce any distortions; it is similar to the angle used to photograph people because it produces a reliable reproduction of the entire form.

Positions 3 and 4 and all intermediate positions are angles that allow the camera to capture the entire scene (models such as aircraft, vehicles, or dioramas).

Position 5 is a suitable overhead position for photographing vehicles or aircraft. Shooting from this position, with a view of the ground, gives a true picture of the proportions of the model.