Note that Sony has programmed the RX10 not to use apertures more narrow than f/11 in this shooting mode; if you aim the camera at a bright subject in Shutter Priority mode, you may see the f/11 aperture setting blink, indicating that the exposure cannot be made properly under current conditions. This is apparently because Sony has determined that an aperture of f/16 is too likely to cause lens diffraction that has a negative impact on image sharpness. If you want to use an aperture setting of f/16, you will have to use Aperture Priority Mode, Manual exposure mode, or Program mode, possibly using Program Shift.

Manual Exposure Mode

One of the many features of the RX10 that distinguish it from more ordinary compact cameras is that it has a fully manual exposure mode, a useful tool for photographers who want to exert full creative control over exposure decisions.

The technique for using this mode is not too different from what I discussed for the Aperture Priority and Shutter Priority modes. To control exposure manually, set the mode dial to the M indicator, as shown in Figure 3-20.

Figure 3-20. Mode Dial Set to Manual Exposure Mode

You now have to control both shutter speed and aperture by setting them yourself. To set the aperture, turn the aperture ring; to set the shutter speed, turn the Control dial at the upper right of the back of the camera. The values you set will appear at the bottom of the display, as shown in Figure 3-21.

As you adjust shutter speed and aperture, a third value, to the right of the aperture value, will also change. That value is shown

by a positive, negative, or zero number next to a box with the letters "M.M." (for "metered manual").

Figure 3-21. Settings on Screen in Manual Exposure Mode

That figure represents any deviation from what the camera's metering system considers to be a normal exposure. So, even though you are setting the exposure manually, the camera will still let you know whether the selected aperture and shutter speed will produce a standard exposure.

If the settings you chose will result in a dark exposure, the M.M. value will be negative; for a bright exposure, it will be positive. The value can go up or down only to +2.0 or -2.0 EV (exposure value) units; after that point, the value will flash, indicating that the camera considers the exposure excessively abnormal. The ISO indicator will also blink if Auto ISO is in effect. In that case, the M.M. indicator will be replaced by an exposure compensation icon, because exposure compensation is available in Manual mode when Auto ISO is in effect.

You can then change the shutter speed, aperture, and/or ISO setting to stop the blinking, or you can just leave the settings as they are; you may want to have the overall exposure unusually dark or light for creative purposes.

Of course, you can ignore the M.M. indicator; it is there only to give you an idea of how the camera would meter the scene. You very well may want part or all of the scene to be darker or lighter than the metering would indicate to be "correct."

As with Shutter Priority mode, depending on the setting for the Live View Display menu option, the camera's display may reflect the effect of the current settings on the brightness of the exposure. If you want the camera to show how dark or light the image would be with the current settings in Manual exposure mode, you need to go to screen 2 of the Custom menu and set the Live View Display item to the Setting Effect On option. If you set this menu item to Setting Effect Off, then the display screen or viewfinder will show a normally exposed view, even if an image taken with the current settings would be unusually dark or bright.

With Manual exposure mode, the settings for aperture and shutter speed are independent of each other. When you change one, the other one stays unchanged until you adjust it manually. The camera is leaving the creative decisions about exposure entirely up to you, even if the resulting photograph would be washed out by excessive exposure or underexposed to the point of near-blackness.

The range of apertures you can set in this mode is the same as for Aperture Priority: f/2.8 to f/16. As noted earlier, in Manual mode you can set the aperture to f/16, even though the camera will not choose that setting in Shutter Priority mode.

The overall range of shutter speeds in this mode is the same as for Shutter Priority mode—1/3200 second to 30 seconds. However, as with Aperture Priority and Shutter Priority modes, you can set the speed to 1/2000 second only when the aperture is set to f/4.0 or higher, and you can set speeds of 1/2500 and 1/3200 only when the aperture is f/8.0 or higher.

With Manual exposure mode there is one important addition to the available range of shutter speeds: In Manual mode, you can set

the shutter speed to the BULB setting, just beyond the 30-second mark, as shown in Figure 3-22.

Figure 3-22. BULB Setting on Screen

With this setting, you have to press and hold the shutter button; as long as it is held down, the shutter will stay open. You can use BULB to take photos in almost–complete darkness by holding the shutter open for a minute or longer. One problem with doing so is that it is very difficult to avoid jiggling the camera and thereby causing blur to the image. As discussed in Appendix A, you can use Sony's wired remote control, model RM-VPR1, to trigger the camera without touching it. In addition, Sony has provided the RX10 with a threaded shutter button, so you can screw in a standard, mechanical cable release, and trigger the shutter by pressing the plunger on that device.

Another excellent feature of Manual mode on the RX10 is that you can set ISO to Auto. With many other cameras, when the camera is set to Manual mode you have to set ISO to a numerical value, such as 200. (I'll discuss ISO, a measure of the camera's sensitivity to light, in Chapter 4.) With the RX10, you can set ISO to Auto and let the camera adjust the ISO value to achieve a good exposure using your chosen shutter speed and aperture, if possible.

This feature can be very useful. For example, suppose you are photographing a craftsman at work on a project on his workbench.

You may want to use a fairly fast shutter speed to stop the action, and a narrow aperture to achieve a broad depth of field to keep as much of the scene in focus as possible. You can make the settings, such as 1/250 second and f/11, and then let the camera adjust the ISO level as necessary in order to expose the image normally.

Another feature available in this mode is Manual Shift, which is similar to Program Shift, discussed earlier. To use Manual Shift, after making your settings rotate the aperture ring while pressing the AEL button. When you do this, as the aperture changes, the camera will reset the shutter speed to a value that maintains the original exposure value. For example, if the original settings were f/5.6 at 1/125 second, when you select Manual Shift and rotate the aperture ring to the f/8.0 position, the camera will set the shutter speed to 1/60 second, maintaining the original exposure. In this way, you can tweak your settings to favor a particular shutter speed or aperture without affecting the overall exposure. An asterisk will appear in the lower right corner of the display while you hold down the AEL button, as shown in FIGURE 3-23.

Figure 3-23. Manual Shift Indicator on Screen

I use Manual exposure mode often, for various purposes. One use is for taking a series of images at different exposures to be combined with software into a composite HDR (high dynamic range) image. I will discuss that technique in CHAPTER 4. I also use Manual mode when using a third-party external flash unit

with the RX10, as discussed in Appendix A. In that situation, the flash does not interact with the camera's autoexposure system, so it's necessary to set the exposure manually.

Manual mode also is useful for special applications, such as making silhouettes, when you underexpose the subject heavily in order to emphasize its shape, as shown in Figure 3-24. For this shot, I placed a knight figure in front of a flash with a softbox, and set the RX10 to Manual mode, using f/8.0 for 1/50 second at ISO 200.

Figure 3-24. Manual Mode, f/8.0, 1/50 Second, ISO 200

Scene Mode

Scene mode, represented by the SCN setting on the mode dial, as shown in Figure 3-25, is quite different from the other shooting modes I have discussed.

This mode does not have a single defining feature, such as permitting control over one or more aspects of exposure. Instead, when you select Scene mode and then choose a particular scene type within that mode, you are telling the camera what sort of environment the picture is being taken in and what type of image you are looking for, and you are letting the camera make the decision as to what settings to use to produce that result.