Chapter 3: Shooting Modes for Still Images

Until now, I have discussed the basics of setting up the camera for quick shots, using Intelligent Auto mode to take pictures with settings controlled mostly by the camera's automation. As with other advanced cameras, though, with the Sony RX100 VII there is a large range of other options available. To explain this broad range of features, I need to discuss shooting modes and the Camera Settings1 and Camera Settings2 menu options. In this chapter, I'll discuss the shooting modes; in Chapters 4 and 5, I'll discuss the Camera Settings1 and Camera Settings2 menus.

Whenever you set out to capture still images, you need to select one of the shooting modes available on the mode dial: Intelligent Auto, Program Auto, Aperture Priority, Shutter Priority, Manual exposure, Memory Recall, Sweep Panorama, or Scene Selection. (The other two modes on the dial are for movies, which I will discuss in Chapter 9.) So far, I have discussed primarily the Intelligent Auto mode. Now I will discuss the others, after some review of the first one.

Intelligent Auto Mode

I've already discussed this shooting mode in some detail. This is a good choice if you need to take a quick shot and don't have much time to fuss with settings such as ISO, White Balance, aperture, shutter speed, or focus. It's also a good mode to select when you hand the camera to someone else to take a photo of you and your companions. For example, I used the Superior Auto sub-setting of Intelligent Auto mode to get an image of a popsicle vendor waiting for customers at the local botanical garden, as seen in Figure 3-1.

To make this setting, turn the mode dial to the green AUTO label, as shown in Figure 3-2. When you select this mode, the camera makes several decisions for you and limits your options in some ways. The camera will select the shutter speed, aperture, and ISO setting, along with several other settings over which you will have no control.

Figure 3-1. Intelligent Auto Example

Figure 3-2. Mode Dial at Auto

For example, you can't set White Balance to any value other than Auto, and you can't choose a metering method or use exposure bracketing. You can, however, use quite a few features, as discussed in Chapter 2, including Flash Mode, some settings of Drive Mode, Focus Mode, and others. You also can use sophisticated options such as the Raw file format for images, which I will discuss in Chapter 4 when I discuss the Camera Settings1 menu.

One interesting aspect of this mode is that the camera tries to figure out what sort of subject or scene you are shooting. Some of the subjects the camera will attempt to detect are infant, portrait, night portrait, night scene, landscape, backlight, low light, spotlight, and macro. It also will try to detect certain conditions, such as whether a tripod is in use or whether the subject is

walking, and it will display appropriate icons for those situations. So, if you see different icons when you aim at various subjects in this shooting mode, that means the camera is evaluating the scene for factors such as brightness, backlighting, the presence of human subjects, and the like, so it can use the best possible settings for the situation.

For Figure 3-3, the camera evaluated a scene with one human face and appropriately used its portrait setting. A portrait icon is in the upper left corner of the screen.

Figure 3-3. Scene Recognition - Portrait

Figure 3-4. Scene Recognition - Macro and Tripod

Figure 3-4 shows the use of automatic scene recognition for a small subject closer to the lens. The camera interpreted the scene as a macro, or closeup shot, and switched automatically into macro mode, indicated by the flower icon. In addition, the camera correctly detected that it was attached to a tripod, as indicated by the tripod icon to the lower right of the macro symbol.

Of course, scene recognition depends on the camera's programming, which may not interpret every scene the same way that you would. If that becomes a problem, you may want to make individual settings using one of the more advanced shooting modes, such as Program, Aperture Priority, Shutter Priority, or Manual. Or, you can use the SCN setting on the mode dial and select a scene setting that better fits the current situation.

In this shooting mode, the RX100 VII will not use a shutter speed slower than 1/4 second.

Superior Auto Mode

With some Sony cameras, such as the RX100, RX100 II, and RX100 III, there are two Auto settings on the mode dial—one for Intelligent Auto and one for a slightly different mode called Superior Auto. With the RX100 VII, Sony has included this second automatic mode, but has not given it a separate position on the mode dial. Instead, you have to go to screen 3 of the Camera Settings1 menu and select the Auto Mode menu option, as seen in Figure 3-5.

Figure 3-5. Auto Mode Option Highlighted on Menu

When you select that item, you will see a screen for choosing Intelligent Auto or Superior Auto. If you select the lower icon for Superior Auto, as shown in Figure 3-6, the RX100 VII will be set to that mode, and the camera will place a brownish camera icon, with a plus sign at its right, in the upper left corner of the display. (That icon may change to an icon showing the current scene recognition, such as a flower for macro, etc.)

Figure 3-6. Superior Auto Highlighted for Auto Mode

Superior Auto mode includes all features of Intelligent Auto mode, but adds an extra function. In Superior Auto mode, as with Intelligent Auto mode, the camera uses its scene recognition capability to try to determine what subject matter or conditions are present, such as a portrait, a dimly lit scene, and the like.

For many of these scenes, the camera will function just as it does in Intelligent Auto mode. However, in a few specific situations, when lighting is dim, the camera takes a different approach: It captures a rapid burst of shots and combines them internally into a single composite image.

The camera is likely to raise the ISO setting to a fairly high level in order to permit the use of a fast enough shutter speed to capture the scene clearly. The use of this high ISO setting introduces visual "noise" into the image. By taking multiple shots and combining them, the camera averages out and cancels some of the noise, thereby increasing the quality of the final image.

One problem with this system is that you have no control over when the camera uses this burst shooting technique. When the camera believes this special feature is needed because of dim lighting or backlighting, it fires a burst of shots; you will hear the rapid firing. Then, it will take longer than usual for the camera to process the multiple shots into a single composite image; you may see a message saying "Processing" on a black screen for a second or two.

When the camera is using this feature, which Sony calls "Overlay," you will see a small white icon in the upper left corner of the display that looks like a stack of frames with a plus sign at its upper right corner, as shown in Figure 3-7. The camera will not use this multiple-shot process when File Format (Still Images) is set to Raw or Raw & JPEG on screen 1 of the Camera Settings1 menu.

Figure 3-7. Overlay Icon on Shooting Screen

I have not found much advantage in using the Superior Auto setting. However, there may be cases when the burst-shooting feature will improve image quality, so it is not a bad idea to use Superior Auto mode when shooting in low light or backlit conditions. As a general rule, though, I prefer to use a mode such as Program, discussed below, and set my own values for items such as DRO, HDR, ISO, and Metering Mode.

If you want to use Superior Auto mode, there is an easier way to get access to it than selecting Auto Mode from screen 3 of the Camera Settings1 menu. Instead, use the Function Menu Settings option on screen 9 of the Camera Settings2 menu, and set one of the 12 settings for the Function menu for shooting stills to Shoot Mode.

Then, when the mode dial is at the AUTO setting, just press the Function button from the shooting screen, and you will see on the Function menu the icon for the current setting for Auto Mode, either Intelligent Auto or Superior Auto. At this point, move the highlight block to that icon using the direction buttons, and, when the icon is highlighted, turn the control wheel or the control ring to cycle through the choices. When your new selection (either Intelligent Auto or Superior Auto) is highlighted, press the Function button to exit to shooting mode.

Program Mode

Choose this mode by turning the mode dial to the P setting, as shown in Figure 3-8.

Figure 3-8. Mode Dial at Program

Program mode (sometimes called Program Auto mode) lets you control many of the settings available with the RX100 VII, apart from shutter speed and aperture, which the camera chooses on its own. You still can adjust the camera's automatic exposure to a fair extent by using exposure compensation, as discussed in Chapter 6, as well as exposure bracketing, discussed in Chapter 4, and Program Shift, discussed later in this section. You don't have to make a lot of decisions if you don't want to, because the camera will make reasonable choices for you as defaults.

The camera can choose a shutter speed as long as 30 seconds or as short as 1/32000 second. However, the fastest shutter speed available is 1/2000 second when Shutter Type is set to Mechanical on screen 5 of the Camera Settings2 menu.

In this shooting mode, the camera can choose any aperture in its full range from f/2.8 to f/11.0.

The Program Shift function, which is available only in Program mode, works as follows: When you aim the camera at your subject, the camera will display its chosen settings for shutter speed and aperture in the lower left corner of the display. At that point, turn the control wheel on the back of the camera. The values for shutter speed and aperture will change, if possible under current conditions, to different values for both settings while keeping the same overall exposure of the scene.

You also can use the control ring (the large ring around the lens) to make this setting, if the Control Ring option is set to the Standard setting through the Custom Key (Still Images) item on screen 9 of the Camera Settings2 menu, as discussed in Chapter 5. If you use the control ring for Program Shift, you will see two circular scales on the display, with shutter speed and aperture values that shift as you turn the ring, as shown in Figure 3-9. (A similar display is visible at the bottom of the screen if you use the control wheel, but only if the Exposure Settings Guide menu option is turned on through screen 7 of the Camera Settings2 menu.)

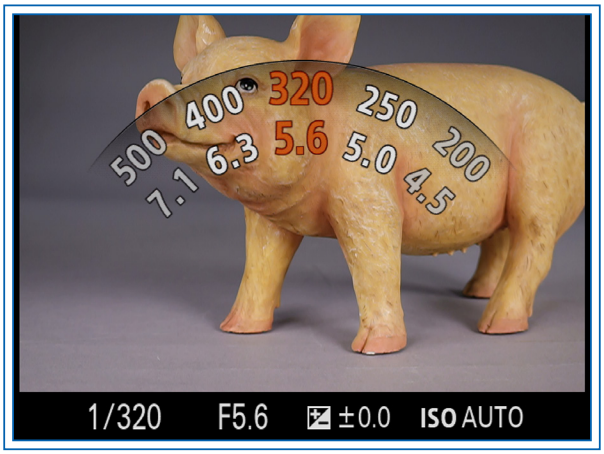

Figure 3-9. Program Shift Display from Using Control Ring

With this option, the camera "shifts" the original exposure to your choice of any of the matched pairs that appear as you turn the control wheel or ring. For example, if the original exposure was f/2.8 at 1/30 second, you may see equivalent pairs of f/3.2 at 1/25, f/3.5 at 1/20, and f/4.0 at 1/15, among others. When Program Shift is in effect, the P icon in the upper left corner of the screen will have an asterisk to its right, as shown in Figure 3-10.

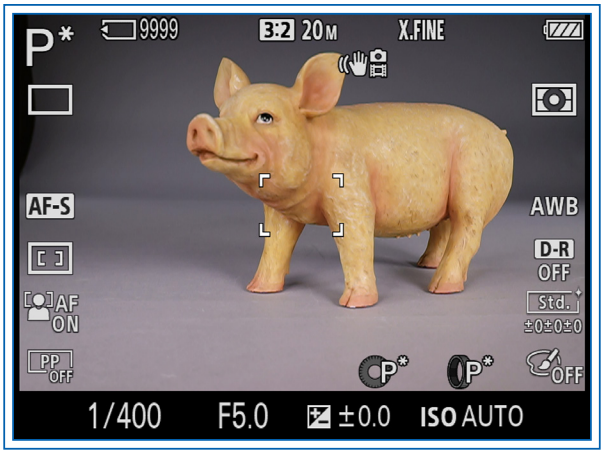

Figure 3-10. Program Shift Icon on Shooting Screen

To cancel Program Shift, turn the control wheel (or control ring) until the original settings are in effect or move the mode dial to another mode, then back to Program. You also can cancel by pressing the flash

pop-up button to raise the flash; Program Shift cannot function with flash in use.

Program Shift is useful if you want to use a slightly faster shutter speed to stop action better or a wider aperture to blur the background more, or you might have some other creative reason. This option lets the camera quickly evaluate the exposure, but gives you the option to tweak the shutter speed and aperture to suit your current needs.

Of course, if you need to use a specific shutter speed or aperture, you probably are better off using Aperture Priority, Shutter Priority, or Manual exposure mode. However, having Program Shift available is useful when you're taking pictures quickly using Program mode, and you want a fast way to tweak the settings somewhat.

Another important aspect of Program mode is that it expands the choices available through the Camera Settings1 menu, which controls many of the camera's settings that directly affect your images. You will be able to make choices involving ISO sensitivity, Metering Mode, DRO/HDR, Creative Style, Picture Effect, and others that are not available in the Auto modes. I won't discuss those settings here; see the discussion of the Camera Settings1 menu in Chapter 4 for information about all of the different selections that are available.

Aperture Priority Mode

You select Aperture Priority shooting mode by turning the mode dial to the A setting, as shown in Figure 3-11.

Figure 3-11. Mode Dial at Aperture Priority

In this mode, you select the aperture and the camera chooses a shutter speed for proper exposure. With this mode, you can exercise some control over depth of field of your shots. When you select a narrow aperture, such as f/11.0, the depth of field will be broad, with the result that more items will appear to be in sharp focus at varying distances from the lens. On the other hand, with a wider aperture, such as f/2.8, the depth of field will be relatively shallow, and you may be able to keep only one subject in sharp focus.

Figure 3-12. Aperture Set to f/2.8

Figure 3-13. Aperture Set to f/11.0

In Figures 3-12 and 3-13, I photographed a scene with a wooden fence in the immediate foreground and trees and sky in the background. The settings were the same except for aperture values. I focused on the fence in the foreground in each case. For Figure 3-12, I set the aperture of the RX100 VII to f/2.8, the widest possible. With this setting, because the depth of field at this aperture was quite shallow, the trees and clouds in the background are fairly blurry. I took Figure 3-13 with the camera's aperture set to f/11.0, the narrowest possible setting, resulting in a greater depth of field, making the background appear noticeably sharper.

These photos illustrate the effects of varying aperture by setting it wide (low numbers) to blur the background or narrow (high numbers) to enjoy a broad depth of field and keep subjects at varying distances in sharp focus. A need for shallow depth of field arises often in the case of outdoor portraits or photographs of subjects such as flowers. If you can achieve a shallow depth of field by using a wide aperture, you can keep the subject

in sharp focus but leave the background blurry, as in Figure 3-12.

This effect is sometimes called "bokeh," a Japanese term for a pleasing blurriness of the background. In this situation, the fuzzy background can be an asset, minimizing distraction from unwanted objects and highlighting the sharply focused portrait of the subject.

You should note that, in order to achieve the long optical zoom range of 200mm, Sony found it necessary to set the widest aperture of the lens for this camera at f/2.8, which is not as wide as with some other models, and it increases as the lens is zoomed in, as discussed below. Therefore, this camera does not readily achieve a heavily blurred background by varying the aperture alone. If you want to blur the background as much as possible, it is advisable to use a long focal length by zooming in the lens to 100mm or more, and move fairly close to the subject, while keeping the subject fairly far in front of the background. An example of this approach is shown in Figure 3-14.

Figure 3-14. Blurred Background from Long Focal Length

Here are the steps to set the aperture. After moving the mode dial to the A setting, use either the control ring or the control wheel to change the aperture. If the control ring does not change the aperture, check the setting for the Control Ring option of the Custom Key (Still Images) item on screen 9 of the Camera Settings2 menu, as discussed in Chapter 5; that menu option has to be set to Standard or Aperture for the ring to carry out this function.

If you use the control ring to set the aperture, the camera will display a circular scale showing the changing aperture values, as seen in Figure 3-15, and the selected value will also appear in the bottom center of the screen.

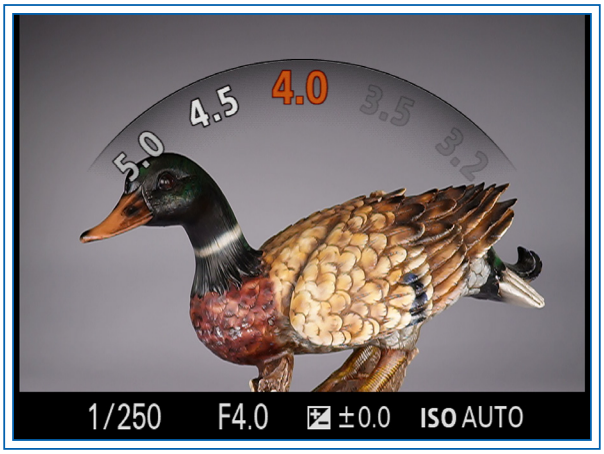

Figure 3-15. Aperture Setting from Using Control Ring

If you use the control wheel instead, the camera will display a sliding scale at the bottom of the screen, if the Exposure Settings Guide option on screen 7 of the Camera Settings2 menu is turned on.

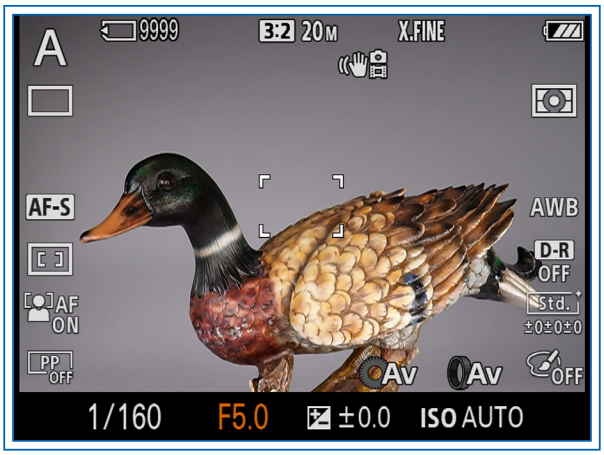

Figure 3-16. Aperture Setting from Using Control Wheel

When you set the aperture, as seen in Figure 3-16, the f-stop (f/5.0 in this case) will appear at the bottom of the screen next to the shutter speed. The camera will select a shutter speed that will result in a normal exposure given the aperture you have set. When the Shutter Type option on screen 5 of the Camera Settings2 menu is set to Auto or Electronic, the camera can choose shutter speeds from 30 seconds to 1/32000 second.

When Shutter Type is set to Mechanical, the range of available shutter speeds is from 30 seconds to 1/2000 second.

Although in most cases the camera will be able to select a corresponding shutter speed that results in a normal exposure, there may be times when this is not possible. For example, if you are taking pictures in a very bright location with the aperture set to f/2.8, the camera

may not be able to set a shutter speed fast enough to yield a normal exposure, especially if you are using the mechanical shutter instead of the electronic shutter. In that case, the fastest possible shutter speed (1/2000 second) will flash on the display to show that a normal exposure cannot be made using the chosen aperture. The camera will let you take the picture, but it may be too bright to be usable.

Similarly, if conditions are too dark for a good exposure at the aperture you have selected, the slowest possible shutter speed (30", meaning 30 seconds) will flash.

In situations where conditions are too bright or dark for a good exposure, the camera's display may become bright or dark, giving you notice of the problem. This will happen if the Live View Display item on screen 7 of the Camera Settings2 menu is set to Setting Effect On. If that option is set to Setting Effect Off, the display will remain at normal brightness, even if the exposure settings would result in an excessively bright or dark image. I will discuss that menu option in Chapter 5.

One more note on Aperture Priority mode: Not all apertures are available at all times. In particular, the widest aperture, f/2.8, is available only when the lens is zoomed out to its wide-angle setting (zoom lever moved toward the W). At the highest zoom levels, the widest aperture available is f/4.5.

To see an illustration of this point, here is a quick test. Zoom the lens out by moving the zoom lever all the way to the left, toward the W label. Then select Aperture Priority mode and set the aperture to f/2.8. Now zoom the lens in by moving the zoom lever to the right. After the zoom is finished, the aperture will have changed to f/4.5, because that is the limit for the aperture at the full-telephoto zoom level. (The aperture will change back to f/2.8 if you zoom back to the wide-angle setting.)

Also, when you set an aperture as narrow as f/11 with this camera, lens diffraction comes into play and limits the sharpness of your images. So, unless you have a fairly strong reason to use f/11, such as a need to maximize depth of field in a brightly lighted area, you should try to use apertures no narrower than f/8.0 if possible.

Shutter Priority Mode

In Shutter Priority mode, you choose the shutter speed and the camera will set the corresponding aperture to achieve a proper exposure of the image.

Figure 3-17. Mode Dial at Shutter Priority

In this mode, designated by the S position on the mode dial, as shown in Figure 3-17, you can set the shutter to be open for a time ranging from 30 seconds to 1/32000 of a second, if the Shutter Type menu option is set to Auto or Electronic. If that option is set to Mechanical, the fastest setting available is 1/2000 second.

If the built-in flash is in use, the fastest setting available is 1/100 second with the electronic shutter and 1/2000 second with the mechanical shutter.

If you are photographing fast action, such as a bird in flight, a baseball swing, or a hurdles event at a track meet, and you want to stop the motion with a minimum of blur, you should select a fast shutter speed, such as 1/2000 of a second. For Figure 3-18 and Figure 3-19, I used different shutter speeds in photographing a group of colored beads as I poured them into a clear pitcher.

Figure 3-18. Shutter Speed Set to 1/2000 Second

In Figure 3-18, I used a shutter speed setting of 1/2000 second. In this image, you can see the individual beads clearly. In Figure 3-19, with the shutter speed set to 1/25 second, the beads blur together into what looks almost like a continuous stream.

Figure 3-19. Shutter Speed Set to 1/25 Second

Choose this mode by turning the mode dial to the S position, as seen in Figure 3-17. Select the shutter speed by turning the control wheel or the control ring. The Control Ring function must be set to Standard or Shutter Speed using the Custom Key (Still Images) option on screen 9 of the Camera Settings2 menu for the ring to control shutter speed.

As with Aperture Priority mode, the camera will display a sliding scale of shutter speeds as you turn the control wheel if you have the Exposure Settings Guide option turned on in the Camera Settings2 menu. It will always display a circular scale of shutter speeds when you use the control ring to make the setting.

Figure 3-20. Shooting Screen in Shutter Priority Mode

Although the mode dial uses the letter "S" to stand for Shutter Priority, on the detailed display screen, as shown in Figure 3-20, the camera uses the notation Tv (for time value) in the lower right corner, next to the icons showing that the control ring or control wheel can be used to make this setting.

As you cycle through various shutter speeds, the camera will select the appropriate aperture to achieve a normal exposure, if possible. As I discussed in connection with Aperture Priority mode, if you set a shutter speed for which the camera cannot select an aperture that will yield a good exposure, the aperture reading at the bottom of the display will flash. The flashing aperture means that proper exposure at the selected shutter speed is not possible at any available aperture, according to the camera's calculations.

For example, if you set the shutter speed to 1/320 second in a fairly dark indoor environment, the aperture number (which will be f/2.8, the widest setting, if the lens is at its wide-angle setting) may flash, indicating that proper exposure is not possible. As I discussed for Aperture Priority mode, you can still take the picture if you want to, though it may not be usable. A similar situation may take place if you select a slow shutter speed (such as four seconds) in a relatively bright location. (This situation is less likely to happen in Aperture Priority mode, because of the wide range of shutter speeds the camera can use to achieve a good exposure.)

If the current settings in this mode would result in an image that is excessively dark or bright, the camera's display will grow dark or bright to show that effect, but only if the Live View Display option on screen 7 of the Camera Settings2 menu is set to Setting Effect On. If that option is set to Setting Effect Off, the display will show a normal image (if possible, given the ambient light) even in unusually bright or dark conditions.

Manual Exposure Mode

One of the many features of the RX100 VII 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 have full creative control over exposure decisions.

To control exposure manually, set the mode dial to the M indicator, as shown in Figure 3-21. You now have to control both shutter speed and aperture by setting them yourself. To set the aperture, turn the control ring around the lens (assuming the control ring is set for this function through the Camera Settings2 menu, as discussed in Chapter 5); to set the shutter speed, turn the control wheel on the back of the camera.

Figure 3-21. Mode Dial at Manual Exposure

If the control ring is not set to control aperture, or if you prefer not to use the ring for that purpose, you can use the control wheel to adjust both aperture and shutter speed. To do that, press the Down button to switch between the two selections.

When you press that button, either the shutter speed number or the aperture number on the display will turn orange for about 10 seconds to show that that value is currently being controlled by the control wheel. Also, the label beside the gray icon for the control wheel in the lower right corner of the display will change between Av (for aperture value) and Tv (for time value) when you press the Down button to switch the wheel's function. Figure 3-22 shows the display when the control wheel is controlling shutter speed.

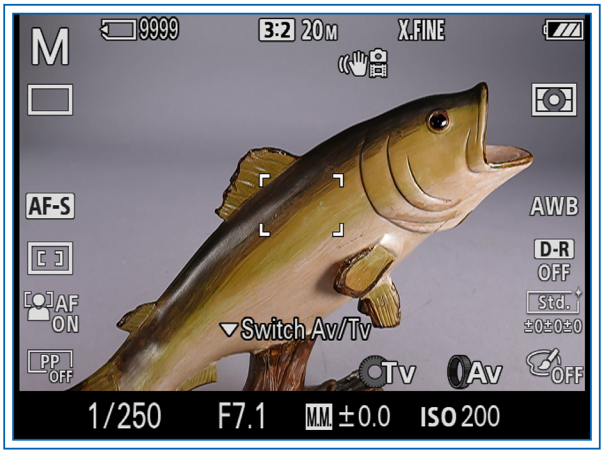

Figure 3-22. Display When Control Wheel Adjusts Shutter Speed

As you adjust shutter speed and aperture, a third value, to the right of the aperture, also may change. That value is a positive, negative, or zero number. The meaning of the number is different depending on the current ISO setting.

In Chapter 4, I'll provide more details about the ISO setting, which controls how sensitive the camera's sensor is to light. With a higher ISO value, the sensor is more sensitive and the image is exposed more quickly, so the shutter speed can be faster or the aperture more narrow, or both.

To set the ISO value, press the Menu button to access the menu system, go to screen 8 of the Camera Settings1 menu, and select the ISO Setting item. On the next screen, highlight ISO and press the Center button to bring up the ISO menu, as shown in Figure 3-23. Then scroll through the selections by pressing the Up and Down buttons or by turning the control wheel.

Choose a low number like 125 to maximize image quality when there is plenty of light; use a higher number in dim light. Higher ISO settings are likely to cause visual "noise," or graininess, in your images. Generally speaking, you should try to set ISO no higher than 800 to ensure the highest image quality.

If the ISO value is set to a specific number, such as 100, 125, 200, or 1000, then, in Manual exposure mode, the icon at the bottom center of the display is a box containing the letters "M.M.," which stand for "metered manual," as shown in Figure 3-22.

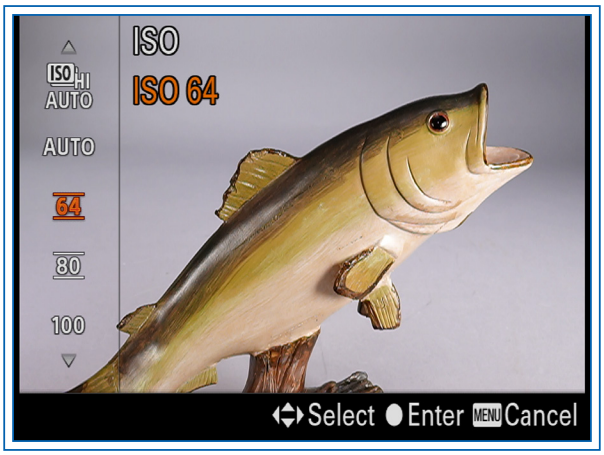

Figure 3-23. ISO Menu

In this situation, the number next to the M.M. icon 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 aperture, shutter speed, and ISO values you have selected will result in a darker exposure than normal, the M.M. value will be negative, and vice-versa. This value can vary only by +2.0 or -2.0 EV (exposure value)