

Get great detail
in your subjects!

Nikon D3100

From Snapshots to Great Shots

Learn the best
ways to compose
your pictures!

Jeff Revell

Nikon D3100: From Snapshots to Great Shots
Jeff Revell

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Introduction

Walk into any bookseller, go to the photography section, and you will see countless books on the subject of photography. Look a little further and you will locate the camera-specific books. It is this divide between the camera-specific and instructional photography books that inspired me to write this book. What I was seeing in the store was a lot of books that were just sort of missing the mark—especially when it came to using a specific brand and model of camera along with actual photographic instruction. So with that, I set about to write this book on the Nikon D3100, not as a rehash of the owner's manual but as a resource to teach photography with the wonderful technology present in the D3100. I have put together a short Q&A to help you get a better understanding of just what it is that you can expect from this book.

Q: IS EVERY CAMERA FEATURE GOING TO BE COVERED?

A: Nope, just the ones I felt you need to know about in order to start taking great photos. Believe it or not, you already own a great resource that covers every feature of your camera: the owner's manual. Writing a book that just repeats this information would have been a waste of my time and your money. What I did want to write about was how to harness certain camera features to the benefit of your photography. As you read through the book, you will also see callouts that point you to specific pages in your owner's manual that are related to the topic being discussed. For example, I discuss the use of the AE-L button but there is more information available on this feature in the manual. I cover the function that applies to our specific needs but also give you the page numbers in the manual to explore this function even further.

Q: SO IF I ALREADY OWN THE MANUAL, WHY DO I NEED THIS BOOK?

A: The manual does a pretty good job of telling you how to use a feature or turn it on in the menu, but it doesn't necessarily tell you *why* and *when* you should use it. If you really want to improve your photography, you need to know the whys and whens to put all of those great camera features to use at the right time. To that extent, the manual just isn't going to cut it. It is, however, a great resource on the camera's features, and it is for that reason that I treat it like a companion to this book. You already own it, so why not get something of value from it?

Q: WHAT CAN I EXPECT TO LEARN FROM THIS BOOK?

A: Hopefully, you will learn how to take great photographs. My goal, and the reason the book is laid out the way it is, is to guide you through the basics of photography as they relate to different situations and scenarios. By using the features of your D3100 and this book, you will learn about aperture, shutter speed, ISO, lens selection, depth of field, and many other photographic concepts. You will also find plenty of large full-page photos that include captions, shooting data, and callouts so you can see how all of the photography fundamentals come together to make great images. All the while, you will be learning how your camera works and how to apply its functions and features to your photography.

Q: WHAT ARE THE ASSIGNMENTS ALL ABOUT?

A: At the end of most of the chapters, you will find shooting assignments, where I give you some suggestions as to how you can apply the lessons of the chapter to help reinforce everything you just learned. Let's face it—using the camera is much more fun than reading about it, so the assignments are a way of taking a little break after each chapter and having some fun.

Q: SHOULD I READ THE BOOK STRAIGHT THROUGH OR CAN I SKIP AROUND FROM CHAPTER TO CHAPTER?

A: Here's the easy answer: yes and no. No, because the first four chapters give you the basic information that you need to know about your camera. These are the building blocks for using the camera. After that, yes, you can move around the book as you see fit because those chapters are written to stand on their own as guides to specific types of photography or shooting situations. So you can bounce from portraits to shooting landscapes and then maybe to a little action photography. It's all about your needs and how you want to address them. Or, you can read it straight through. The choice is up to you.

Q: I DON'T SEE ANY CHAPTERS DEVOTED TO VIDEO.

A: I know that one of the reasons you probably bought the D3100 is its ability to capture video. I have covered some basic video setup information in Chapter 2 but I really wanted the focus of this book to center around the photographic capabilities and possibilities. Don't worry though, read the next Q&A and I think you will be happy.

Q: IS THERE ANYTHING ELSE I SHOULD KNOW BEFORE GETTING STARTED?

A: In order to keep the book short and focused, I had to be pretty selective about what I included in each chapter. The problem is that there is a little more information that might come in handy after you've gone through all the chapters. So as an added value for you, I have written two bonus chapters called "Pimp My Ride" and "D3100 Video: Beyond the Basics." The first chapter is full of information on photo accessories that will assist you in making better photographs. In it, you will find my recommendation for things like filters, tripods, and much more. The second chapter will lead you through some video tips and techniques to make your D3100 videos even better. To access the bonus chapters, just log in or join peachpit.com (it's free), then enter the book's ISBN. After you register the book, a link to the bonus chapters will be listed on your Account page under Registered Products.

Q: IS THAT IT?

A: One last thought before you dive into the first chapter. My goal in writing this book has been to give you a resource that you can turn to for creating great photographs with your Nikon D3100. Take some time to learn the basics and then put them to use. Photography, like most things, takes time to master and requires practice. I have been a photographer for 25 years and I'm still learning. Always remember, it's not the camera but the person using it who makes beautiful photographs. Have fun, make mistakes, and then learn from them. In no time, I'm sure you will transition from a person who takes snapshots to a photographer who makes great shots.

4



ISO 100
1/640 sec.
f/9
55mm lens



The Professional Modes

TAKING YOUR PHOTOGRAPHY TO THE NEXT LEVEL

If you talk to most professional photographers, you will find that the majority of them are using a few selective modes that offer the greatest amount of control over their photography. To anyone who has been involved with photography for any period of time, these modes are known as the backbones of photography. They allow you to influence two of the most important factors in taking great photographs: *aperture* and *shutter speed*. To access these modes, you simply turn the Mode dial to one of the letter-designated modes and begin shooting. But wouldn't it be nice to know exactly what those modes control and how to make them do our bidding? Well, if you really want to take that next step in controlling your photography, it is essential that you understand not only how to control these modes, but why you are controlling them. So let's move that Mode dial to the first of our professional modes: Program mode.

PORING OVER THE PICTURE

A lot of people fear taking their cameras to the beach because they don't want them damaged with sand and sea air. That's a pity because there are some wonderful shots to be had, especially if you go early in the morning or late in the afternoon. Here's a tip, though. Before you head down to the water, pick a single lens and don't take it off. This will keep sand out of the sensor. Also, use a neck strap to prevent dropping the camera and if you must set it down, put it in a camera bag or some other container.

A low ISO of 100 was selected to keep the image fairly free of digital noise.

Water and sand can fool a camera meter into underexposing. Using Manual mode allows you to select the proper exposure and then shoot without fear that the exposure will be changed by a false meter reading.





To get most of the birds in sharp focus, a small aperture was used.

The water line helps guide the eye through the scene.

ISO 100
1/160 sec.
f/11
200mm lens

PORING OVER THE PICTURE

I really love shooting in the zoo. There are no assurances that you will get a good shot of every animal, but if you are patient the chances are that you will always come away with something good. During a visit to the San Diego Zoo, I found this majestic bird posing up in a tree. Luckily, he was focused on something off to his right and held the pose long enough for me to get this great shot.

The bird was in a wire enclosure so I had to use a fairly large aperture to blur the wire.

The narrow depth of field gives a feeling of depth to the image.





● ————— A vertical orientation helped me crop out unwanted trees and branches.

● ————— I was using a 70–300mm zoom lens set to 300mm to really fill the frame.

● —————

ISO 1600
1/500 sec.
f/5.6
300mm lens

P: PROGRAM MODE



There is a reason that Program mode is only one click away from the automatic modes: with respect to apertures and shutter speeds, the camera is doing most of the thinking for you. So, if that is the case, why even bother with Program mode? First, let me say that it is very rare that I will use Program mode because it just doesn't give as much control over the image-making process as the other professional modes. There are occasions, however, when it comes in handy, like when I am shooting in widely changing lighting conditions and I don't have the time to think through all of my options, or I'm not very concerned with having ultimate control of the scene. Think of a picnic outdoors in a partial shade/sun environment. I want great-looking pictures, but I'm not looking for anything to hang in a museum. If that's the scenario, why choose Program over one of the scene modes? Because it gives me choices and control that none of the scene modes can deliver.

Manual Callout

To see a comparison of all of the different modes, check out the table on p. 186 of your owner's manual.

WHEN TO USE PROGRAM (P) MODE INSTEAD OF THE AUTOMATIC SCENE MODES

- When shooting in a casual environment where quick adjustments are needed
- When you want more control over the ISO
- If you want to make corrections to the white balance
- When you want to change shutter speeds or the aperture to achieve a specific result

Let's go back to our picnic scenario. As I said, the light is moving from deep shadow to bright sunlight, which means that the camera is trying to balance our three photo factors (ISO, aperture, and shutter speed) to make a good exposure. From Chapter 1, we know that Auto ISO is just not a consideration, so we have already turned that feature off (you did turn it off, didn't you?). Well, in Program mode, you can choose which ISO you would like the camera to base its exposure on. The lower the ISO number, the better the quality of our photographs, but the less light sensitive the camera becomes. It's a balancing act with the main goal always being to keep the ISO as low as possible—too low an ISO, and we will get camera shake in our images from a long shutter speed; and too high an ISO means we will have an unacceptable amount of digital noise. For our purposes, let's go ahead and select ISO 400 so that

we provide enough sensitivity for those shadows while allowing the camera to use shutter speeds that are fast enough to stop motion.

STARTING POINTS FOR ISO SELECTION

There is a lot of discussion concerning ISO in this and other chapters, but it might be helpful if you know where your starting points should be for your ISO settings. The first thing you should always try to do is use the lowest possible ISO setting. That being said, here are good starting points for your ISO settings:

- 100: Bright sunny day
- 200: Hazy or outdoor shade on a sunny day
- 400: Indoor lighting at night or cloudy conditions outside
- 800: Late night, low-light conditions or sporting arenas at night

These are just suggestions and your ISO selection will depend on a number of factors that will be discussed later in the book. You might have to push your ISO even higher as needed, but at least now you know where to start.

With the ISO selected, we can now make use of the other controls built into Program mode. By rotating the Command dial, we now have the ability to shift the program settings. Remember, your camera is using the internal meter to pick what it believes are suitable exposure values, but sometimes it doesn't know what it's looking at and how you want those values applied (**Figures 4.1 and 4.2**).

With the program shift, you can influence what the shot will look like. Do you need faster shutter speeds in order to stop the action? Just turn the Command dial to the right. Do you want a smaller aperture so that you get a narrow depth of field? Then turn the dial to the left until you get the desired aperture. The camera shifts the shutter speed and aperture accordingly in order to get a proper exposure, and you will get the benefit of your choice as a result.

You will also notice that a small star will appear above the letter P in the viewfinder and the rear display if you rotate the Command dial. This star is an indication that you modified the exposure from the one the camera chose. To go back to the default Program exposure, simply turn the dial until the star goes away or switch to a different mode and then back to Program mode again.

Let's set up the camera for Program mode and see how we can make all of this come together.

FIGURE 4.1

(left) This is my first shot using Program mode. The camera settings are affected by the large amount of blue sky.

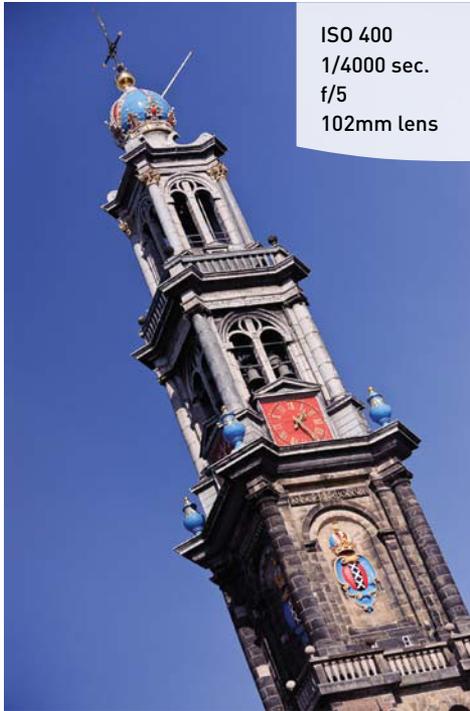
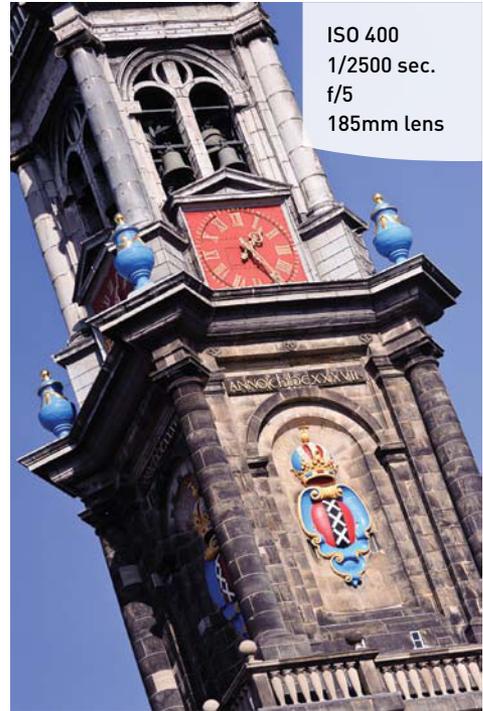


FIGURE 4.2

(right) By zooming in, there was less sky and more tower to influence the light meter, resulting in a change of exposure.

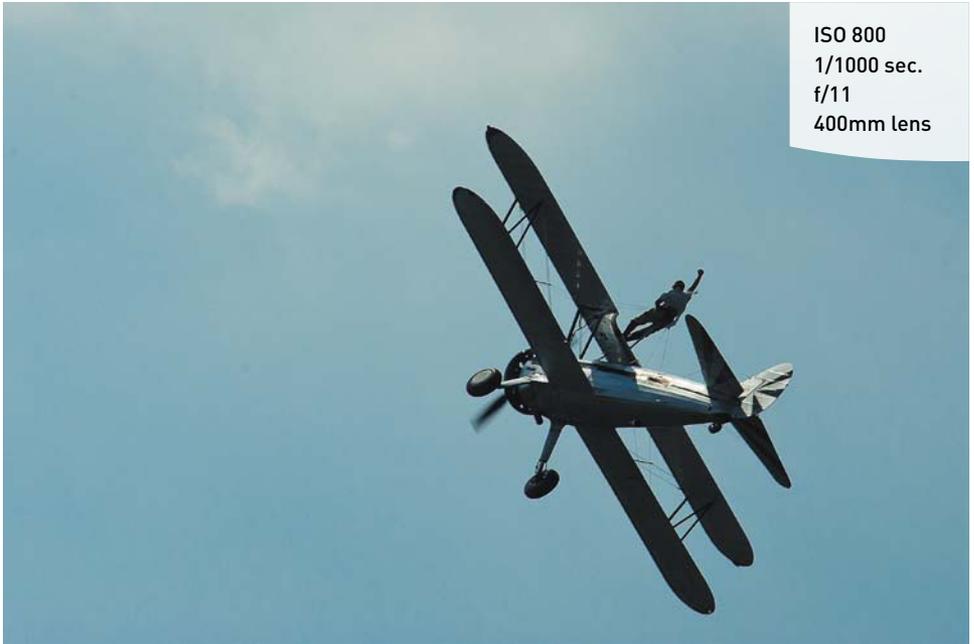


SETTING UP AND SHOOTING IN PROGRAM MODE

1. Turn your camera on and then turn the Mode dial to align the P with the indicator line.
2. Select your ISO by pressing the **i** button on the lower-left portion of the back of the camera (if the camera's info screen is not visible, press the **info** or **i** button).
3. Press up or down on the Multi-selector to highlight the ISO option, then select OK.
4. Press down on the Multi-selector to select a higher ISO setting and then press OK to lock in the change.
5. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
6. View the exposure information in the bottom of the viewfinder or by looking at the display panel on the back of the camera.
7. While the meter is activated, use your thumb to roll the Command dial left and right to see the changed exposure values.
8. Select the exposure that is right for you and start clicking. (Don't worry if you aren't sure what the right exposure is. We will start working on making the right choices for those great shots beginning with the next chapter.)

FIGURE 4.3

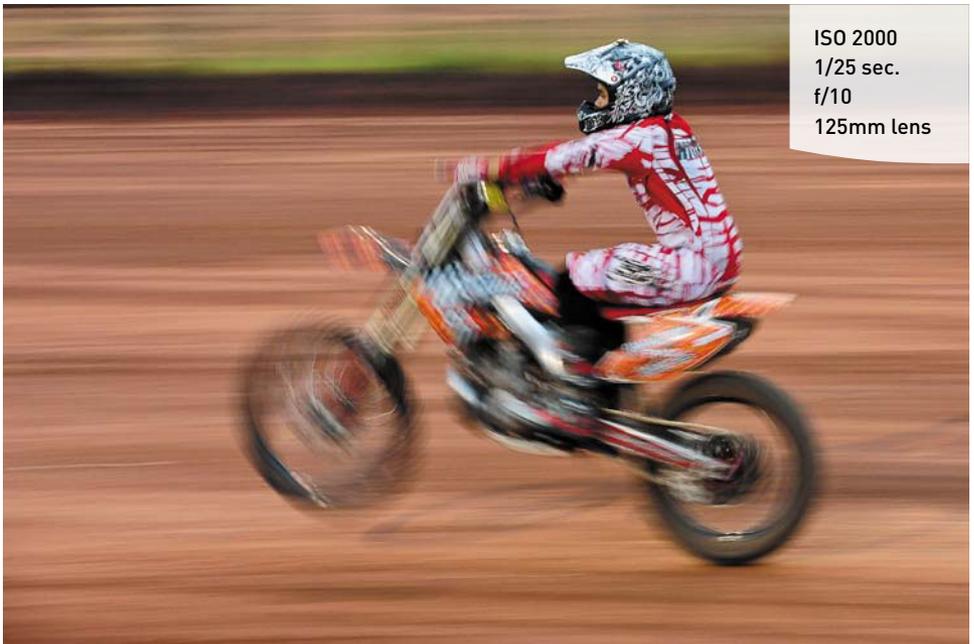
Even the fastest of subjects can be frozen with the right shutter speed.



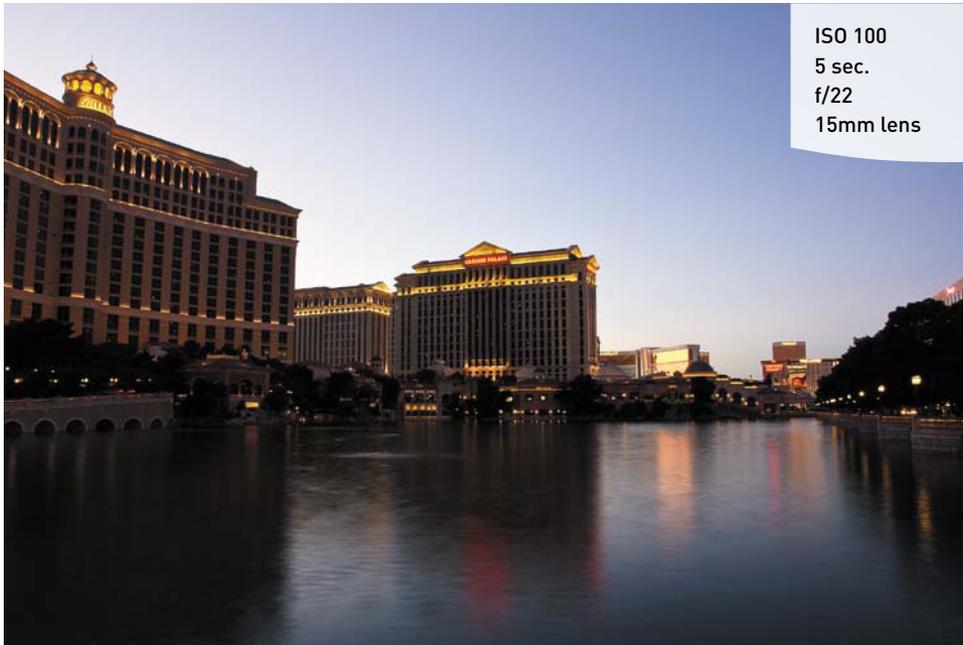
ISO 800
1/1000 sec.
f/11
400mm lens

FIGURE 4.4

Slowing down the shutter speed and following the motion conveys a sense of movement in the shot.

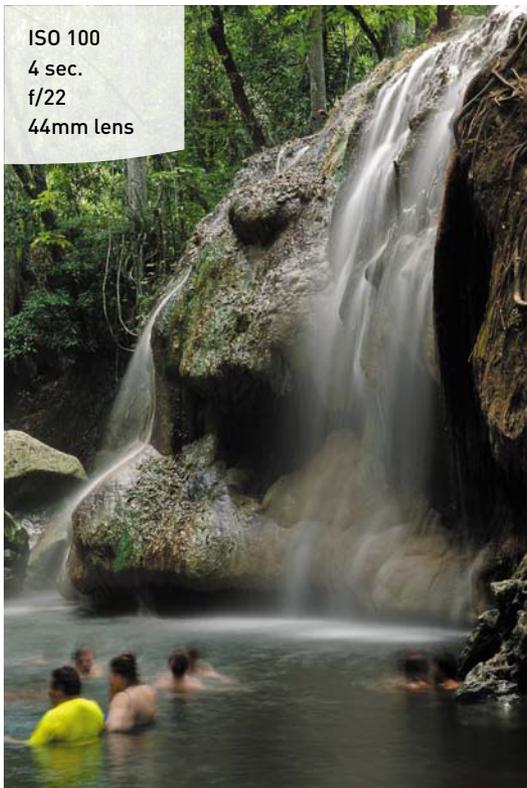


ISO 2000
1/25 sec.
f/10
125mm lens



ISO 100
5 sec.
f/22
15mm lens

FIGURE 4.5
A long exposure helped to smooth out the choppy fountain water, giving the illusion that it was much calmer than it was.



ISO 100
4 sec.
f/22
44mm lens

FIGURE 4.6
Increasing the length of the exposure time gives flowing water a silky look.

As you can see, the subject of your photo usually determines whether or not you will use Shutter Priority mode. It is important that you be able to previsualize the result of using a particular shutter speed. The great thing about shooting with digital cameras is that you get instant feedback by viewing your shot on the LCD screen. But what if your subject won't give you a do-over? Such is often the case when shooting sporting events. It's not like you can go ask the quarterback to throw that touchdown pass again because your last shot was blurry from a slow shutter speed. This is why it's important to know what those speeds represent in terms of their capabilities to stop the action and deliver a blur-free shot.

First, let's examine just how much control you have over the shutter speeds. The D3100 has a shutter speed range from 1/4000 of a second to as long as 30 seconds. With that much latitude, you should have enough control to capture almost any subject. The other thing to think about is that Shutter Priority mode is considered a "semiautomatic" mode. This means that you are taking control over one aspect of the total exposure while the camera handles the other. In this instance, you are controlling the shutter speed and the camera is controlling the aperture. This is important, because there will be times that you want to use a particular shutter speed but your lens won't be able to accommodate your request.

For example, you might encounter this problem when shooting in low-light situations: if you are shooting a fast-moving subject that will blur at a shutter speed slower than 1/125 of a second but your lens's largest aperture is f/3.5, you might find your aperture display in your viewfinder and the rear LCD panel will display the word "Lo." This is your warning that there won't be enough light available for the shot—due to the limitations of the lens—so your picture will be underexposed.

Another case where you might run into a similar situation is when you are shooting moving water. To get that look of silky, flowing water, it's usually necessary to use a shutter speed of at least 1/15 of a second. If your waterfall is in full sunlight, you may get a message that reads "Hi" because the lens you are using only stops down to f/22 at its smallest opening. In this instance, your camera is warning you that you will be overexposing your image. There are workarounds for these problems, which we will discuss later (see Chapter 7), but it is important to know that there can be limitations when using Shutter Priority mode.

WHEN TO USE APERTURE PRIORITY (A) MODE

- When shooting portraits or wildlife (Figure 4.7)
- When shooting most landscape photography (Figure 4.8)
- When shooting macro, or close-up, photography (Figure 4.9)
- When shooting architectural photography, which often benefits from a large depth of field (Figure 4.10)

FIGURE 4.7

A large aperture created a very blurry background so all the emphasis was left on the subject.



ISO 800
1/400 sec.
f/8
24mm lens



FIGURE 4.8
The smaller aperture setting brings sharpness to near and far objects.

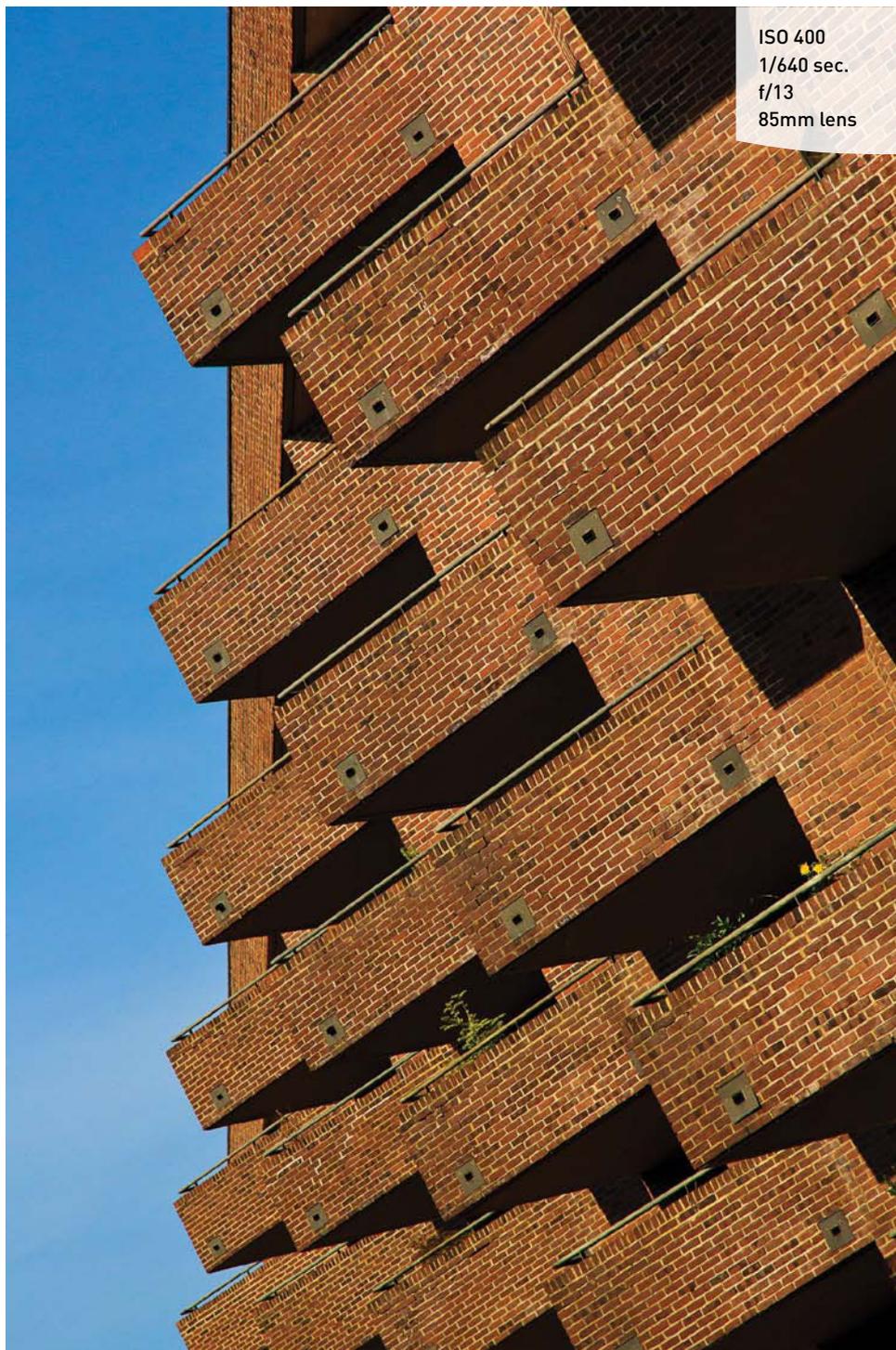
ISO 400
1/160 sec.
f/11
53mm lens



FIGURE 4.9
A small aperture was used to capture all the detail of the small corollas that fell from a sunflower.

FIGURE 4.10

I typically like to use smaller apertures for architectural shots to keep everything in focus.



ISO 400
1/640 sec.
f/13
85mm lens

F-STOPS AND APERTURE

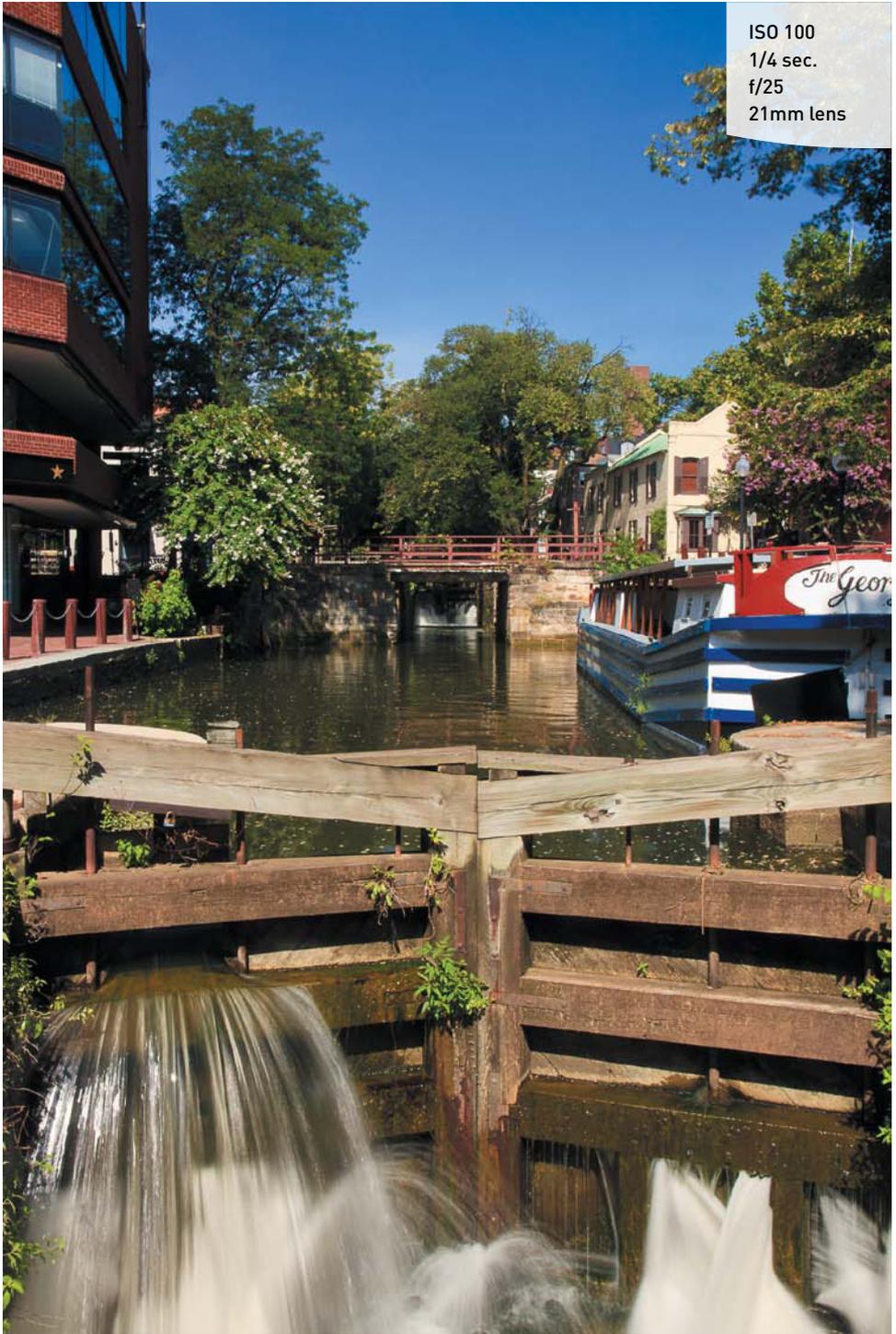
As discussed earlier, when referring to the numeric value of your lens aperture, you will find it described as an *f-stop*. The *f-stop* is one of those old photography terms that, technically speaking, relates to the focal length of the lens (e.g., 200mm) divided by the effective aperture diameter. These measurements are defined as “stops” and work incrementally with your shutter speed to determine proper exposure. Older camera lenses used one-stop increments to assist in exposure adjustments, such as 1.4, 2, 2.8, 4, 5.6, 8, 11, 16, and 22. Each stop represents about half the amount of light entering the lens iris as the larger stop before it. Today, most lenses don’t have *f-stop* markings since all adjustments to this setting are performed via the camera’s electronics. The stops are also now typically divided into 1/3-stop increments to allow much finer adjustments to exposures, as well as to match the incremental values of your camera’s ISO settings, which are also adjusted in 1/3-stop increments.

So we have established that Aperture Priority (A) mode is highly useful in controlling the depth of field in your image. But it’s also pivotal in determining the limits of available light that you can shoot in. Different lenses have different maximum apertures. The larger the maximum aperture, the less light you need in order to achieve an acceptably exposed image. You will recall that, when in Shutter Priority mode, there is a limit at which you can handhold your camera without introducing movement or hand shake, which causes blurriness in the final picture. If your lens has a larger aperture, you can let in more light all at once, which means that you can use faster shutter speeds. This is why lenses with large maximum apertures, such as $f/1.4$, are called “fast” lenses.

On the other hand, bright scenes require the use of a small aperture (such as $f/16$ or $f/22$), especially if you want to use a slower shutter speed (**Figure 4.11**). That small opening reduces the amount of incoming light, and this reduction of light requires that the shutter stay open longer.

FIGURE 4.11

A wide-angle lens combined with a small aperture added to the depth of field. It also created the need for a long shutter speed, which helped add fluidity to the falling water.



ISO 100
1/4 sec.
f/25
21mm lens

SETTING UP AND SHOOTING IN APERTURE PRIORITY MODE

1. Turn your camera on and then turn the Mode dial to align the A with the indicator line.
2. Select your ISO by pressing the **i** button on the lower-left portion of the back of the camera (if the camera's info screen is not visible, press the **info** or **i** button).
3. Press up or down on the Multi-selector to highlight the ISO option, then select OK.
4. Press down on the Multi-selector to select a higher ISO setting, then press OK to lock in the change.
5. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
6. View the exposure information in the bottom area of the viewfinder or by looking at the rear display panel.
7. While the meter is activated, use your thumb to roll the Command dial left and right to see the changed exposure values. Roll the dial to the right for a smaller aperture (higher f-stop number) and to the left for a larger aperture (smaller f-stop number).



ZOOM LENSES AND MAXIMUM APERTURES

Some zoom lenses (like the 18–55mm kit lens) have a variable maximum aperture. This means that the largest opening will change depending on the zoom setting. In the example of the 18–55mm zoom, the lens has a maximum aperture of f/3.5 at 18mm and only f/5.6 when the lens is zoomed out to 55mm.

M: MANUAL MODE



Once upon a time, long before digital cameras and program modes, there was manual mode. In those days it wasn't called "manual mode" because there were no other modes. It was just photography. In fact, many photographers cut their teeth on completely manual cameras. Let's face it—if you want to learn the effects of aperture and shutter speed on your photography, there is no better way to learn than by setting these adjustments yourself. However, today, with the advancement of camera technology, many new photographers never give this mode a second thought. That's truly a shame, as not only is it an excellent way to

learn your photography basics, but it's also an essential tool to have in your photographic bag of tricks.

When you have your camera set to Manual (M) mode, the camera meter will give you a reading of the scene you are photographing. It's your job, though, to set both the f-stop (aperture) and the shutter speed to achieve a correct exposure. If you need a faster shutter speed, you will have to make the reciprocal change to your f-stop. Using any other mode, such as Shutter Priority or Aperture Priority, would mean that you just have to worry about one of these changes, but Manual mode means you have to do it all yourself. This can be a little challenging at first, but after a while you will have a complete understanding of how each change affects your exposure, which will, in turn, improve the way that you use the other modes.

WHEN TO USE MANUAL (M) MODE

- When learning how each exposure element interacts with the others (**Figure 4.12**)
- When your environment is fooling your light meter and you need to maintain a certain exposure setting (**Figure 4.13**)
- When shooting silhouetted subjects, which requires overriding the camera's meter readings (**Figure 4.14**)

FIGURE 4.12

The camera was set to Manual so I could set the amount of desired underexposure to emphasize the storm clouds.





FIGURE 4.13

Beaches and snow are always a challenge for light meters. Add to that the desire to have exact control of depth of field and shutter speed and you have a perfect scenario for Manual mode.



FIGURE 4.14

Although the meter was doing a pretty good job of exposing for the sky, I used Manual mode to push the foreground elements into complete silhouette.

SETTING UP AND SHOOTING IN MANUAL MODE

1. Turn your camera on and then turn the Mode dial to align the M with the indicator line.
2. Select your ISO by pressing the **i** button on the lower-left portion of the back of the camera (if the camera's info screen is not visible, press the **info** or **i** button).
3. Press up or down on the Multi-selector to highlight the ISO option, then select OK.
4. Press down on the Multi-selector to select a higher ISO setting, then press OK to lock in the change.
5. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
6. View the exposure information in the bottom area of the viewfinder or by looking at the display panel on the rear of the camera.
7. While the meter is activated, use your thumb to roll the Command dial left and right to change your shutter speed value until the exposure mark is lined up with the zero mark. The exposure information is displayed by a scale with marks that run from -2 to +2 stops. A "proper" exposure will line up with the arrow mark in the middle. As the indicator moves to the right, it is a sign that you will be underexposing (there is not enough light on the sensor to provide adequate exposure). Move the indicator to the left and you will be providing more exposure than the camera meter calls for. This is overexposure.
8. To set your exposure using the aperture, depress the shutter release button until the meter is activated. Then, while holding down the Exposure Compensation/Aperture button (located behind and to the right of the shutter release button), rotate the Command dial to change the aperture. Rotate right for a smaller aperture (large f-stop number) and left for a larger aperture (small f-stop number).



Remember that when you are using Manual mode, it is up to you to decide what is the most important thing to worry about. Do you need a fast shutter; do you want narrow depth of field? You decide and then you take control. It's really one of the best ways to learn how each change affects your image.

HOW I SHOOT: A CLOSER LOOK AT THE CAMERA SETTINGS I USE

The great thing about working with a dSLR camera is that I can always feel confident that some things will remain unchanged from camera to camera. For me, these are the Aperture Priority (A) and Shutter Priority (S) shooting modes. Although I like to think of myself as a generalist in terms of my photography, I do tend to lean heavily on the landscape and urban photography genres. Working in these areas means that I am almost always going to be concerned with my depth of field. Whether it's isolating my subject with a large aperture or trying to maximize the overall sharpness of a sweeping landscape, I always keep an eye on my aperture setting (**Figure 4.15**). If I do have a need to control the action, I use Shutter Priority, my fallback mode. It's not really a fallback; it's more like the right tool for the right job. If I am trying to create a silky waterfall effect, I can depend on Shutter Priority mode to provide that long shutter speed that will deliver. Maybe I am shooting a motocross jumper. I definitely need the fast shutter speeds that will freeze the fast-moving action.



FIGURE 4.15 Landscapes with subjects that are at differing distances can benefit from a small aperture setting.

While the other camera modes have their place, I think you will find that, like myself and most other working pros, you will use the Aperture Priority and Shutter Priority modes for 90 percent of your shooting.

The other concern that I have when I am setting up my camera is just how low I can keep my ISO. This is always a priority for me because a low ISO will deliver the cleanest image. I raise the ISO only as a last resort because each increase in sensitivity is an opportunity for more digital noise to enter my image. To that end, I always have the Noise Reduction feature turned on (see Chapter 7).

To make quick changes while I shoot, I often use the Exposure Compensation feature (covered in Chapter 7) so that I can make small over- and underexposure changes. This is different than changing the aperture or shutter; it is more like fooling the camera meter into thinking the scene is brighter or darker than it actually is. To get to this function quickly, I simply press the Exposure Compensation/Aperture button, then dial in the desired amount of compensation. Truth be told, I usually have this set to $-1/3$ so that there is just a tiny bit of underexposure in my image. This usually leads to better color saturation. (Note: The exposure compensation feature must be set by using the **i** button while shooting in Manual mode.)

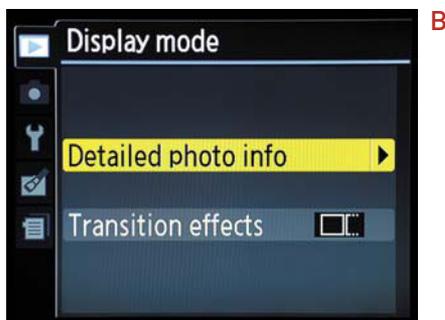
One of the reasons I change my exposure is to make corrections when I see the “blinkies” in my rear LCD. Blinkies are the warning signal that part of my image has been overexposed to the point that I no longer have any detail in the highlights. When the Highlights feature is turned on, the display will flash wherever the potential exists for overexposure. The black and white flashing will only appear in areas of your picture that are in danger of overexposure and might suffer from a loss of detail.

SETTING UP THE HIGHLIGHT ALERT FEATURE

1. Press the Menu button, then use the Multi-selector to access the Playback Menu.
2. Once in the Playback Menu, move the Multi-selector to the Display mode option and press OK (**A**).



3. Select Detailed photo info and press the Multi-selector to the right (**B**).
4. Move the Multi-selector down to select the Highlights option, then press OK to place a checkmark next to the word Highlights (**C**).
5. Now move back up to select Done, and press OK again to lock in your change (**D**).



Once the highlight warning is turned on, I use it to check my images on the back of the LCD after taking a shot. If I see an area that is blinking (**Figure 4.16**), I will usually set the exposure compensation feature to an underexposed setting like $-1/3$ or $-2/3$ stops and take another photo, checking the result on the screen. I repeat this process until the warning is gone.

Sometimes, such as when shooting into the sun, the warning will blink no matter how much you adjust the exposure because there is just no detail in the highlights. Use your best judgment to determine if the warning is alerting you to an area where you want to retain highlight detail.



FIGURE 4.16 The blinking black and white areas (shown in this image as black) are a warning that part of the image is overexposed at the current camera settings.

To see the highlight or “blinkie” warning, you will need to change your display mode. To do this, press the Image Review button on the back of the camera and then press up or down on the Multi-selector button until you see the word “Highlights” at the bottom of the display screen. This will now be your default display mode unless you change it or turn off the highlight warning.

As you work your way through the coming chapters, you will see other tips and tricks I use in my daily photography, but the most important tip I can give is to understand the features of your camera so that you can leverage the technology in a knowledgeable way. This will result in better photographs.

Chapter 4 Assignments

This will be more of a mental challenge than anything else, but you should put a lot of work into these lesson assignments because the information covered in this chapter will define how you work with your camera from this point on. Granted, there may be times that you just want to grab some quick pictures and will resort to the automatic scene modes, but to get serious with your photography, you will want to learn the professional modes inside and out.

Starting off with Program mode

Set your camera on Program mode and start shooting. Become familiar with the adjustments you can make to your exposure by turning the Command dial. Shoot in bright sun, deep shade, indoors, anywhere that you have different types and intensities of light. While you are shooting, make sure that you keep an eye on your ISO and raise or lower it according to your environment.

Learning to control time with the Shutter Priority mode

Find some moving subjects and then set your camera to S mode. Have someone ride their bike back and forth or even just photograph cars as they go by. Start with a slow shutter speed of around 1/30 of a second and then start shooting with faster and faster shutter speeds. Keep shooting until you can freeze the action. Now find something that isn't moving, like a flower, and work your shutter speed from something fast like 1/500 of a second and then work your way down. Don't brace the camera on a steady surface. Just try and shoot as slowly as possible, down to about 1/4 of a second. The point is to see how well you can handhold your camera before you start introducing hand shake into the image, making it appear soft and somewhat unfocused.

Controlling depth of field with the Aperture Priority mode

The name of the game with Aperture Priority mode is depth of field. Set up three items in equal distance from you. I would use chess pieces or something similar. Now focus on the middle item and set your camera to the largest aperture that your lens allows (remember, large aperture means a small number like $f/3.5$). Now, while still focusing on the middle subject, start shooting with ever-smaller apertures until you are at the smallest f-stop for your lens. If you have a zoom lens, try doing this exercise with the lens at the widest and then the most telephoto settings. Now move up to subjects that are farther away, like telephone poles, and shoot them in the same way. The idea is to get a feel for how each aperture setting affects your depth of field.

Giving and taking with Manual mode

Manual mode is not going to require a lot of work, but you should pay close attention to your results. Go outside on a sunny day and, using the camera in Manual mode, set your ISO to 100, your shutter speed to $1/125$ of a second, and your aperture to $f/16$. Now press your shutter release button to get a meter reading. You should be pretty close to that zero mark. If not, make small adjustments to one of your settings until it hits that mark. Now is where the fun begins. Start moving your shutter speed slower, to $1/60$, and then set your aperture to $f/22$. Now go the other way. Set your aperture on $f/8$ and your shutter speed to $1/500$. Now review your images. If all went well, all the exposures should look the same. This is because you balanced the light with reciprocal changes to the aperture and shutter speed. Now go back to our original setting of $1/125$ at $f/16$ and try just moving the shutter speed without changing the aperture. Just make $1/3$ -stop changes ($1/125$ to $1/100$ to $1/80$ to $1/60$), and then review your images to see what a $1/3$ -stop of overexposure looks like. Then do the same thing going in the opposite way. It's hard to know if you want to over- or underexpose a scene until you have actually done it and seen the results.

With each of the assignments, make sure that you keep track of your modes and exposures so that you can compare them with the image. If you are using software to review your images, you should also be able to check the camera settings that are embedded within the image's metadata.

Share your results with the book's Flickr group!

Join the group here: [flickr.com/groups/nikond3100fromsnapshotstogreatshots](https://www.flickr.com/groups/nikond3100fromsnapshotstogreatshots)

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