

Canon EOS Rebel T6s / T6i (760D / 750D)

From Snapshots to Great Shots

Get great detail
in your subjects!

Jeff Revell



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Peachpit
Press

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Indexer: Valerie Haynes Perry

Cover Image: Jeff Revell

Cover Design: Aren Straiger

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Dedication

For my family—I love you

Acknowledgments

Getting a camera book off my computer and into a store is not an easy task. There are tons of people behind the scenes who do so much work with very little recognition. From copy edits, to layout, proofing, indexing, advertising, selling...the list just goes on and on. Thankfully I work with a fantastic publisher, Peachpit Press, who employs some super-talented folks who make me and my books look so good. I'm just the words-on-the-paper guy but the Peachpit staff turns it all into something worth reading.

And while the publisher and author have a big part in bringing you this book, none of it would have happened without the assistance of my friends at B&H Photo. They worked with me to ensure that I had a brand-new camera in hand as soon as they started arriving on our shores. Of course, this doesn't surprise me at all because I have been purchasing photography equipment from them for years. I can say without a doubt that they are outstanding at what they do. They are always courteous and helpful, their knowledge is second to none, and they always give me a great deal. They are my number one go-to resource for anything photographic, so check them out on the web when you get the chance: www.bhphotovideo.com.

The camera used while writing this *From Snapshots to Great Shots* book was purchased through B&H Photo.



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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 *Snapshots to Great Shots* book, not as a rehash of the owner’s manual but as a resource to teach photography with the wonderful technology present in the Canon EOS Rebel T6s / T6i. 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: No, 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, in Chapter 6 I discuss the use of the Live View mode for shooting portraits, but more information is 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 menus, 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 T6s / T6i 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 quick 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 the later chapters are written to stand on their own as guides to specific types of photography or shooting situations. 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 why you might have bought the T6s / T6i was 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 put 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 "T6s / T6i 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 T6s / T6i movies even better. To access the bonus chapters, just log in or join peachpit.com (it's free), and 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 Canon T6s / T6i. 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 30 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.

ISO 200 • 1/100 sec. •
f/5.6 • 110mm lens



4

The Creative Zone

Taking Your Photography to the Next Level

The Creative zone is the name given by Canon to the shooting modes that offer you the greatest amount of control over your photography. For anyone who has been taking photographs for any period of time, these modes are the backbones of photography. They allow you to influence two of the most important factors for taking great photographs: *aperture* and *shutter speed*. To access these modes, you simply turn the Mode dial to the Creative mode of your choice 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 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 and when to adjust them so that you get the results you want. So let's move that Mode dial to the first of our Creative modes: Program mode.

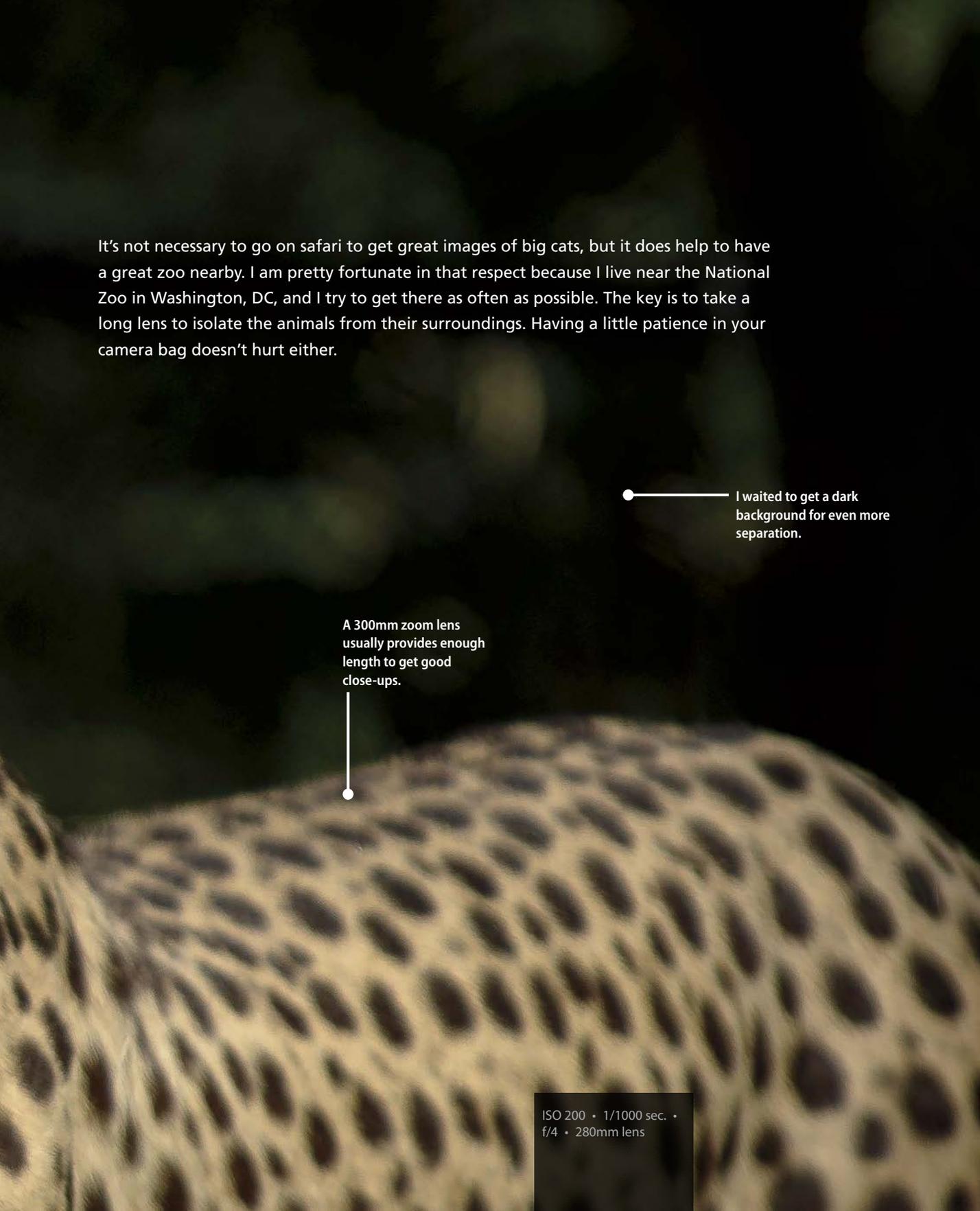
Poring Over the Picture



I placed my focus point on the eyes so they would be the sharpest point of the image.



A large aperture setting helped to provide separation from the background.



It's not necessary to go on safari to get great images of big cats, but it does help to have a great zoo nearby. I am pretty fortunate in that respect because I live near the National Zoo in Washington, DC, and I try to get there as often as possible. The key is to take a long lens to isolate the animals from their surroundings. Having a little patience in your camera bag doesn't hurt either.

I waited to get a dark background for even more separation.

A 300mm zoom lens usually provides enough length to get good close-ups.

ISO 200 • 1/1000 sec. •
f/4 • 280mm lens

Poring Over the Picture

I enjoy leading photowalks because I usually come away with some great images. On this particular evening, I was leading a walk through the monuments in Washington, DC, when we came upon the Martin Luther King, Jr. Memorial. It is one of the newer attractions on the National Mall and has quickly become one of my favorites, not only for what it represents but also for the numerous photographic possibilities that surround it.

The tungsten white balance added warmth to the statue while making the skies dark blue.

The blurry people add a nice visual contrast to the towering statue of Dr. King.

ISO 400 • 5 sec. •
f/22 • 18mm lens

I used a tripod to keep the camera steady during the long exposure.



I used a simple rule-of-thirds composition for the image.



P: Program Mode

There is a reason that Program mode is only one click away from the Basic modes: with respect to apertures and shutter speeds, the camera is doing most of the thinking for you. So, if that's the case, why even bother with Program mode? First, let me say that I rarely use Program mode,

because it just doesn't give me as much control over the image-making process as the other Creative modes. There are occasions, however, when it comes in handy, like when I'm shooting in widely changing lighting conditions and I don't have the time to think through all of my options, or I'm not concerned with having ultimate control of the scene. Think of a picnic scene outdoors in a partial shade/sun environment. You want great-looking pictures, but you're not looking for anything to hang in a gallery. If that's the scenario, why choose Program over one of the Basic modes? Because it gives you choices and control that none of the Basic modes, including Creative Auto, can deliver.

Manual Callout

To see a comparison of all of the different modes in the Basic and Creative zones, check out the tables on pages 370–373 of the T6s manual or pages 354–357 of the T6i manual.

When to use Program (P) mode instead of the Basic zone modes

Use Program mode in these situations:

- When shooting in a casual environment where quick adjustments are needed
- When you want control over the ISO
- If you want to use exposure compensation
- If you want or need to shoot in the Adobe RGB color space
- If you want to make corrections to the white balance

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 three photo factors (ISO, aperture, and shutter speed) to make a good exposure. From Chapter 1, "The T6s / T6i Top Ten List," you know that Auto ISO is not a good choice, so you've already turned off that feature (you did change it, 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 your 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 this example, let's 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.

With the ISO selected, you can now make use of the other controls built into Program mode. By rotating the Main dial, we now have the ability to shift the program settings. Remember, your camera is using the internal light 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 (**Figure 4.1** and **Figure 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 Main dial clockwise. Do you want a smaller aperture so that you get a narrow depth of field? Then turn the dial counterclockwise 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.



Figure 4.1
This is my first shot using Program mode. Because I was pointing the camera at the dog lying inside the temple, the exposure was longer.

ISO 200 • 1/20 sec. • f/22 • 120mm lens

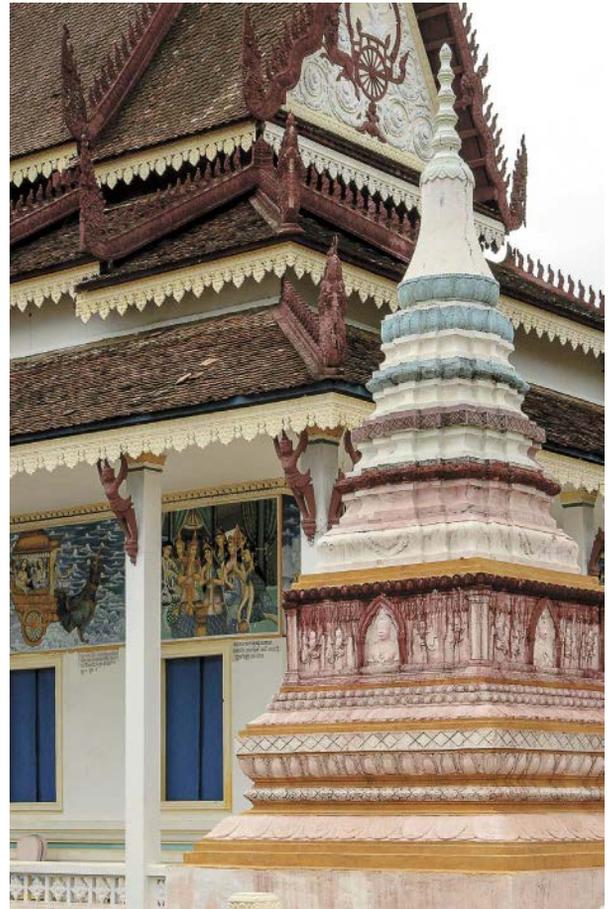


Figure 4.2
This zoomed-out view shows more of the temple and bright sky, which made the exposure shorter.

ISO 200 • 1/60 sec. • f/22 • 48mm lens

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 some 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.

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

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 ISO button on the top of the camera, and then turning the Main dial to the desired setting and pressing the ISO button again (the ISO selection will appear in the rear LCD panel).
3. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
4. View the exposure information in the bottom of the viewfinder or by looking at the display panel on the back of the camera.
5. While the meter is activated, use your index finger to roll the Main dial left and right to see the changed exposure values.
6. Select the exposure that is right for you and start shooting. (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.)



Tv: Shutter Priority Mode

Tv mode is what a lot of photographers refer to as Shutter Priority mode. If you dig deep in your manual, you will see that Tv stands for “Time Value.” I’m not sure who came up with this term, but I can tell you that it wasn’t a photographer. In all my years of shooting, I don’t ever recall thinking, “Hey, this would be a great situation to use the Time Value mode.” However, you don’t need to know why it is called Tv mode; the important thing is to know why and when to use it.

Just as with Program mode, Tv mode gives us more freedom to control certain aspects of our photography. In this case, we are talking about shutter speed. The selected shutter speed determines just how long you expose your camera’s sensor to light. The longer it remains open, the more time your sensor has to gather light. The shutter speed also, to a large degree, determines how sharp your photographs are. This is different from the image being sharply in focus. One of the major influences on the sharpness of an image is camera shake as well as the subject’s movement. Because a slower shutter speed means that light from your subject is hitting the sensor for a longer period of time, any movement by you or your subject will show up in your photos as blur.

Shutter speeds

A *slow* shutter speed refers to leaving the shutter open for a long period of time—like 1/30 of a second or longer. A *fast* shutter speed means that the shutter is open for a very short period of time—like 1/250 of a second or less.

When to use Shutter Priority (Tv) mode

Use Tv mode in these situations:

- When working with fast-moving subjects where you want to freeze the action (**Figure 4.3**); much more on this is in Chapter 5, “Moving Target”
- When you want to emphasize movement in your subject with motion blur (**Figure 4.4**)
- When you want to use a long exposure to gather light over a long period of time (**Figure 4.5**); more on this is in Chapter 8, “Mood Lighting”
- When you want to create that silky-looking water in a waterfall or fountain (**Figure 4.6**)



Figure 4.3

The horse and rider were frozen in place with a fast shutter speed.

ISO 800 • 1/2500 sec. • f/4.5 • 400mm lens



Figure 4.4
Slowing down the shutter speed allows your photographs to convey a sense of movement.

ISO 400 • 1/25 sec. • f/32 • 130mm lens

Figure 4.5
A long exposure coupled with a small aperture and a steady tripod helped capture this late evening image of the Martin Luther King, Jr. Memorial.

ISO 400 • 5 sec. • f/22 • 18mm lens





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

ISO 100 • 5 sec. •
f/11 • 24mm lens

As you can see, the subject of your photo usually determines whether you will use Tv mode. It is important that you're able to visualize the result of using a particular shutter speed. The great thing about shooting with digital cameras is that you get instant feedback by checking 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 abilities 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 T6s / T6i has a shutter speed range from 1/4000 of a second all the way down to 30 seconds. With that much latitude, you should have enough control to capture almost any subject. The other thing to think about is that Tv 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 to know because there will be times that you want to use a particular shutter speed but your lens aperture 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 the largest aperture of your lens is f/3.5, you might see that your aperture display in your viewfinder and the rear LCD panel will begin to blink. 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 (too dark).

Another case where you might run into this 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 or longer. If your waterfall is in full sunlight, you may get that blinking aperture display once again because the lens you are using only closes down to f/22 at its smallest opening. In this instance, your camera is warning you that you will be overexposing your image (too light). There are workarounds for these problems, which we will discuss later (see Chapter 7, "Landscape Photography"), but it is important to know that there can be limitations when using Tv mode.

Setting up and shooting in Tv mode

1. Turn on your camera and then turn the Mode dial to align the Tv with the indicator line.
2. Select your ISO by pressing the ISO button on the top of the camera and then turning the Main dial (the ISO selection will appear in the rear LCD panel).
3. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
4. View the exposure information in the bottom area of the viewfinder or by looking at the rear LCD panel.
5. While the meter is activated, use your index finger to roll the Main dial left and right to see the changed exposure values. Roll the dial to the right for faster shutter speeds and to the left for slower speeds.



Av: Aperture Priority Mode

You wouldn't know it from its name, but Av mode is one of the most useful and popular modes in the Creative zone. Av stands for Aperture Value and, like Time Value, it's another term that you'll seldom hear a photographer toss around. The mode, however, is one of my personal favorites, and I believe that it will quickly become one of yours as well. Av, more commonly referred to as Aperture Priority mode, is also deemed a semiautomatic mode because it allows you to once again control one factor of exposure while the camera adjusts for the other.

Why, you may ask, is this one of my favorite modes? It's because the aperture of your lens dictates depth of field. Depth of field, along with composition, is a major factor in how you direct attention to what is important in your image. It is the controlling factor of how much area in your image is in focus. If you want to isolate a subject from the background, such as when shooting a portrait, you can use a large aperture to keep the focus on your subject and make both the foreground and background blurry. If you want to keep the entire scene sharply focused, such as with a landscape scene, then using a small aperture will render the greatest amount of depth of field possible.

When to use Aperture Priority (Av) mode

Use Av mode in these situations:

- 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 fairly large aperture combined with a long focal length created a very blurry background, so all the emphasis was left on the subject.

ISO 200 • 1/1000 sec. •
f/4 • 280mm lens

Figure 4.8

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

ISO 400 • 1/100 sec. •
f/9 • 18mm lens



Figure 4.9

Small apertures give more sharpness in macro images.

ISO 1250 • 1/320 sec. •
f/16 • 62mm lens



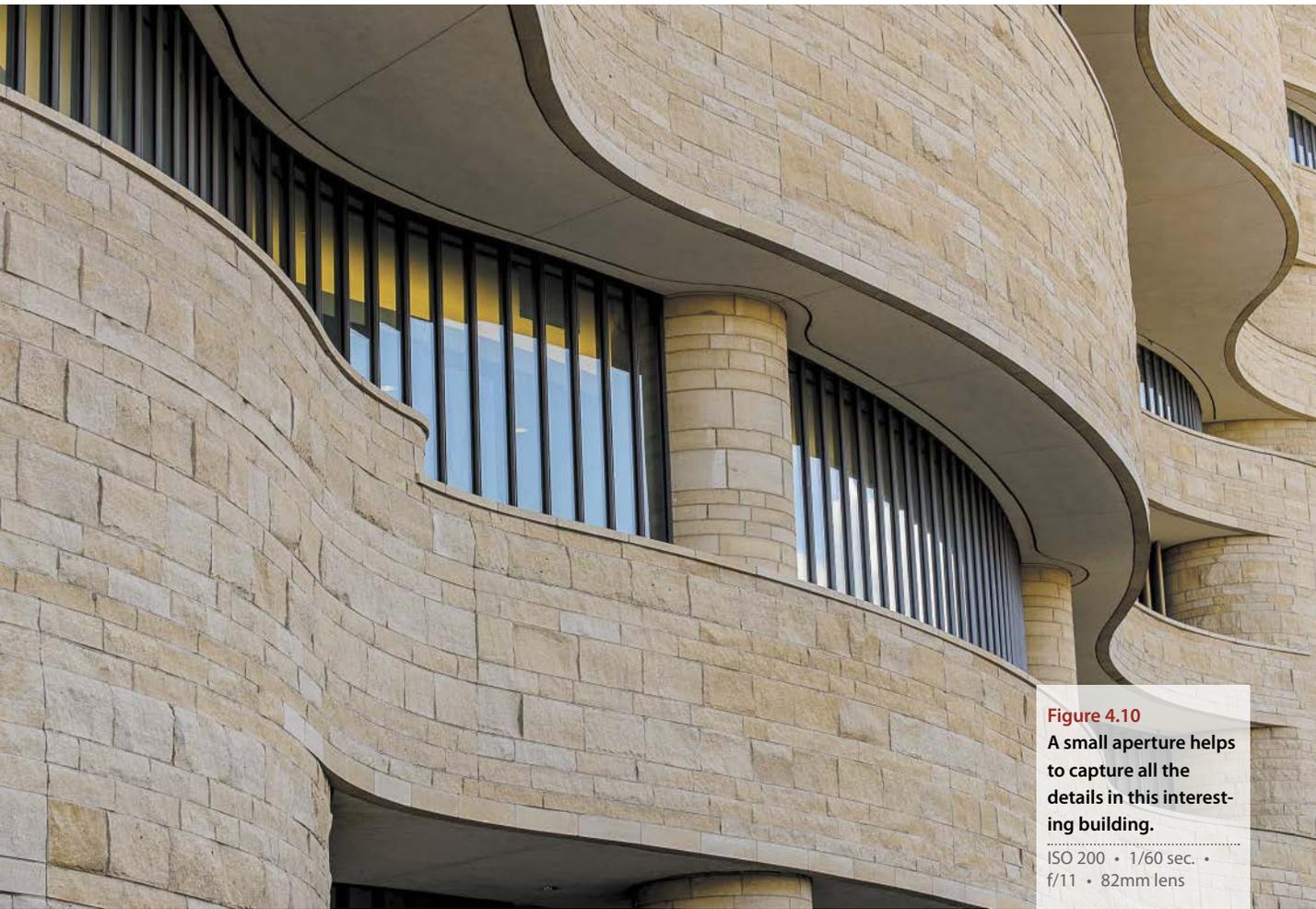


Figure 4.10
A small aperture helps to capture all the details in this interesting building.

ISO 200 • 1/60 sec. •
f/11 • 82mm 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, relates to the focal length of the lens (for example, 200mm) divided by the effective aperture diameter. These measurements are defined as “stops” and work incrementally with your shutter speed to create 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.

We have established that Aperture Priority (Av) 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 a properly exposed image. You will recall that, when in Tv 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. That small opening reduces the amount of incoming light, and this reduction of light requires that the shutter stay open longer.

Setting up and shooting in Av mode

1. Turn on your camera and then turn the Mode dial to align the Av with the indicator line.
2. Select your ISO by pressing the ISO button on the top of the camera and then turning the Main dial.
3. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
4. View the exposure information in the bottom area of the viewfinder or by looking at the rear display panel.
5. While the meter is activated, use your index finger to roll the Main 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 18–135mm 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 18–135mm 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 135mm. Fixed aperture zoom lenses maintain the same maximum aperture throughout the zoom range. They are typically much more expensive than their variable maximum aperture counterparts.

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, myself included, 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. Not only is it an excellent way to learn your photography basics, 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 Tv or Av, 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

Use Manual mode in these situations:

- When you need to maintain exposures between different frames for a panorama (**Figure 4.11**)
- When your environment is fooling your light meter and you need to maintain a certain exposure setting (**Figure 4.12**)
- When shooting silhouetted subjects, which requires overriding the camera's meter readings (**Figure 4.13**)

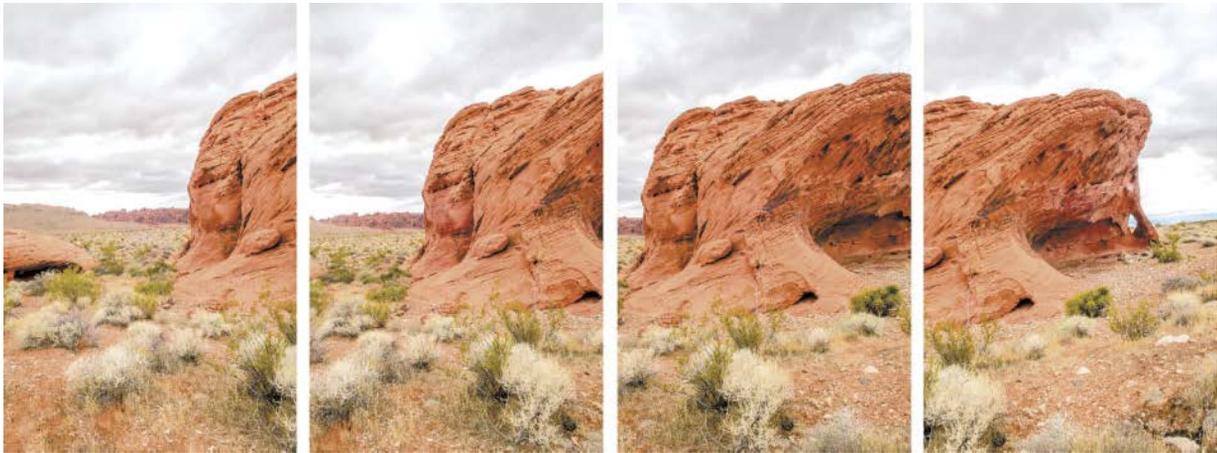


Figure 4.11

Setting the camera on Manual for panorama shots helps to keep the exposure consistent.

ISO 200 • 10 sec. • f/22 • 24mm lens

Figure 4.12

This much blue sky would definitely cause under-exposure, so a manual setting kept things bright.

ISO 800 • 1/20 sec. • f/16 • 400mm lens





Figure 4.13

I really wanted a silhouette of the person on the ridge, so I placed my camera into Manual mode and underexposed the shot.

ISO 800 • 1/1600 sec. • f/18 • 18mm lens

Setting up and shooting in Manual mode

1. Turn the Mode dial to align the M with the indicator line.
2. Select your ISO by pressing the ISO button on the top of the camera and then turning the Main dial.
3. Point the camera at your subject and then activate the camera meter by depressing the shutter button halfway.
4. View the exposure information in the bottom area of the viewfinder or by looking at the rear display panel.
5. While the meter is activated, use your index finger to roll the Main 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 left, it is a sign that you will be underexposing (there is not enough light hitting the sensor to provide adequate exposure). Move the indicator to the right and you will be providing more exposure than the camera meter calls for. This is overexposure.
6. To set your exposure using the aperture, depress the shutter release button until the meter is activated. If you are using a T6s, simply rotate the Quick Control dial to change the aperture setting. If you are using a T6i, hold the Av button on the back of the camera with your thumb and then use your index finger to turn the Main dial right for a smaller aperture (large f-stop number) or left for a larger aperture (small f-stop number).



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 (Av) and Shutter Priority (Tv) 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.

If I do have a need to control the action, I use Shutter Priority. If I am trying to create a silky waterfall effect, I can depend on Tv to provide that long shutter speed that it will deliver. Maybe I'm shooting a motocross jumper. I definitely need the fast shutter speeds that will freeze the fast-moving action. Although the other camera modes have their place, I think you will find that, like myself and most other working pros, you will use the Av and Tv modes for 90 percent of your shooting.

The other concern that I have when I'm setting up my camera is just how low I can keep my ISO. 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 High ISO Speed Noise Reduction feature turned on Standard (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.

One of the reasons I change my exposure is to make corrections when I see the "blinkies" while looking at my images on the 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. The highlight alert will flash wherever the potential exists for overexposure. The only unfortunate thing about this feature is that it doesn't work with the full-screen preview mode. You have to set your camera display to one of the Histogram modes

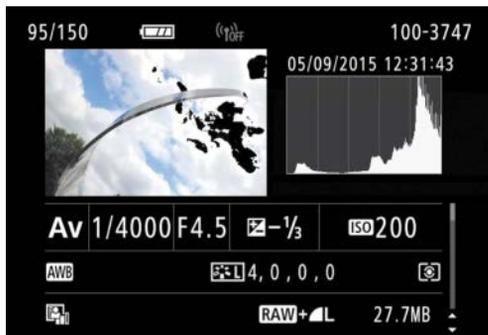


Figure 4.14
The T6s / T6i highlight alert screen blinks black for areas, like these clouds, that are overexposed.

and then you will see the highlight alert (Figure 4.14). If you see any area of the thumbnail blinking black, you are probably overexposing that part of the image.

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 that you take the time 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

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 Basic zone, but to get serious with your photography, you should learn the modes in the Creative zone.

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 Main dial. While shooting, make sure that you keep an eye on your ISO.

Learning to control time with the Tv mode

Find some moving subjects and then set your camera to Tv 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 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.

Controlling depth of field with the Av mode

The name of the game with Av 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

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 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.

Share your results with the book's Flickr group!

Join the group here: [flickr.com/groups/t6s_t6ifromsnapshotstogreatshots](https://www.flickr.com/groups/t6s_t6ifromsnapshotstogreatshots)

ISO 200 • 8 sec. •
f/8 • 27mm lens



8

Mood Lighting

Shooting When the Lights Get Low

There is no reason to put your camera away when the sun goes down. Your T6s / T6i has some great features that let you work with available light as well as the built-in flash. In this chapter, we will explore ways to push your camera's technology to the limit in order to capture great photos in difficult lighting situations. We will also explore the use of flash and how best to use your built-in flash features to improve your photography. But let's first look at working with low-level available light.

Raising the ISO: The Simple Solution

Let's begin with the obvious way to keep shooting when the lights get low: raising the ISO (Figure 8.1). By now you know how to change the ISO: just press the ISO button on the top of the camera and turn the Main dial to adjust. In typical shooting situations, you should keep the ISO in the 100–800 range. This will keep your pictures nice and clean by keeping the digital noise to a minimum. But as the available light gets low, you might find yourself working in the higher ranges of the ISO scale, which could lead to more noise in your image.

You could use the flash, but that has a limited range (15–20 feet) that might not work for you. Also, you could be in a situation where flash is prohibited, or at least frowned upon, like at a wedding or in a museum.

And what about a tripod in combination with a long shutter speed? That is also an option, and we'll cover it a little further into the chapter. The problem with using a tripod and a slow shutter speed in low-light photography, though, is that it performs best when



Figure 8.1
The light inside this orchid house was fairly dim and forced me to raise the ISO to get the shot without having to use flash.

ISO 5000 • 1/80 sec. •
f/8 • 80mm lens

subjects aren't moving. Besides, try to set up a tripod in a subway station and see how quickly you grab the attention of the security guards.

So if the only choice to get the shot is to raise the ISO to 800 or higher, make sure that you turn on the High ISO Speed Noise Reduction feature. This menu function is set to Standard by default, but as you start using higher ISO values you should consider changing it to the Strong setting. (See Chapter 7, "Landscape Photography," for setting the noise reduction features.)

To see the effect of High ISO Speed Noise Reduction, you need to zoom in and take a closer look (**Figure 8.2** and **Figure 8.3**).

Raising the noise reduction to the Strong setting slightly increases the processing time for your images, so if you are shooting in the Continuous drive mode you might see a little reduction in the speed of your frames per second.

Noise reduction saves space

When shooting at very high ISO settings, running High ISO Speed NR at the Standard or Strong setting can save you space on your memory card. If you are saving your photos as JPEGs, the camera will compress the information in the image to take up less space. When you have excessive noise, you can literally add megabytes to the file size. This is because the camera has to deal with more information: it views the noise in the image as photo information and, therefore, tries not to lose that information during the compression process. That means more noise equals bigger files. So not only will turning on the High ISO Speed NR feature improve the look of your image, it will also save you some space so you can take a few more shots.



Figure 8.2
Here is an enlargement of a flower shot without any ISO noise reduction.

ISO 6400 • 1/200 sec. • f/5.6 • 55mm lens



Figure 8.3
Here is the same flower with noise reduction set to Strong.

ISO 6400 • 1/200 sec. • f/5.6 • 55mm lens

Using Very High ISOs

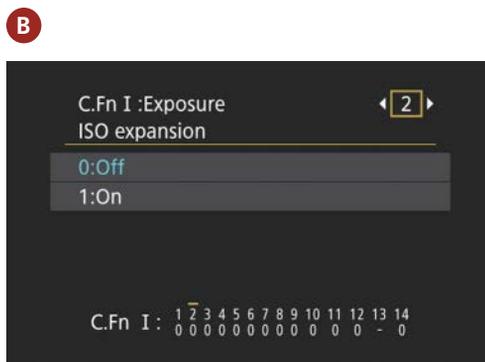
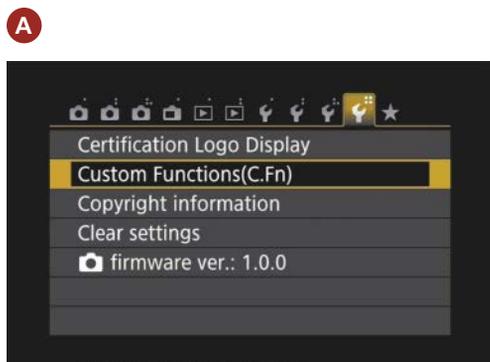
Is ISO 12800 just not enough for you? Well, in that case, you will need to turn on the ISO Expansion setting. This setting opens up another stop of ISO, raising the new limit to an incredible 25600. The highest setting will not appear in your ISO scale as a number, but as H for 12800.

Manual Callout

For a complete listing of all the programmable custom functions, including the ISO Expansion feature, turn to page 351 in the T6s or page 337 in the T6i owner's manual.

Setting up the ISO Expansion feature

1. Press the Menu button, navigate to the Custom Functions option, and press Set (A).
2. Use the Quick Control dial (or Cross keys) to get to the ISO Expansion setting, located in the C. Fn I: Exposure section, and press Set (B).



3. Set the option to On and press Set (C).
4. Press the Menu button twice to exit; then press the ISO button to find the additional ISO setting of H (25600).





Figure 8.4
The only way to get a fast-enough shutter speed during this high school football game was to raise the ISO to 8000.

ISO 8000 • 1/800 sec. •
f/2.8 • 200mm lens

A word of warning about the expanded ISO settings: although it is great to have high ISO settings available during low-light shooting, they should always be your last resort. Even with the High ISO Speed NR turned on, the amount of visible noise will be extremely high. I can't think of a situation where I ever needed to use the 25600 (H) setting, but you might find yourself at a nighttime sporting event under the lights, which would require ISOs of 3200 or 6400 to improve your shutter speeds and capture the action (**Figure 8.4**).

Using the Multi Shot Noise Reduction

Using high ISO settings is sometimes unavoidable and using the highest setting on the High ISO Speed Noise Reduction can lead to a softer look to your images. If you are photographing a nonmoving subject, you might want to try out the Multi Shot Noise Reduction. This is similar to the Handheld Night Scene mode that we discussed in Chapter 3, "The Basic Zone," because it works by combining four exposures into a single image (**Figure 8.5**). This works by taking the four different exposures, aligning them, and then averaging out the random noise in each image to create one high-quality shot that has much less noise than you would get from just using the standard noise reduction (**Figure 8.6**).

Figure 8.5
You can get high-quality images with high ISO settings using the Multi Shot option.



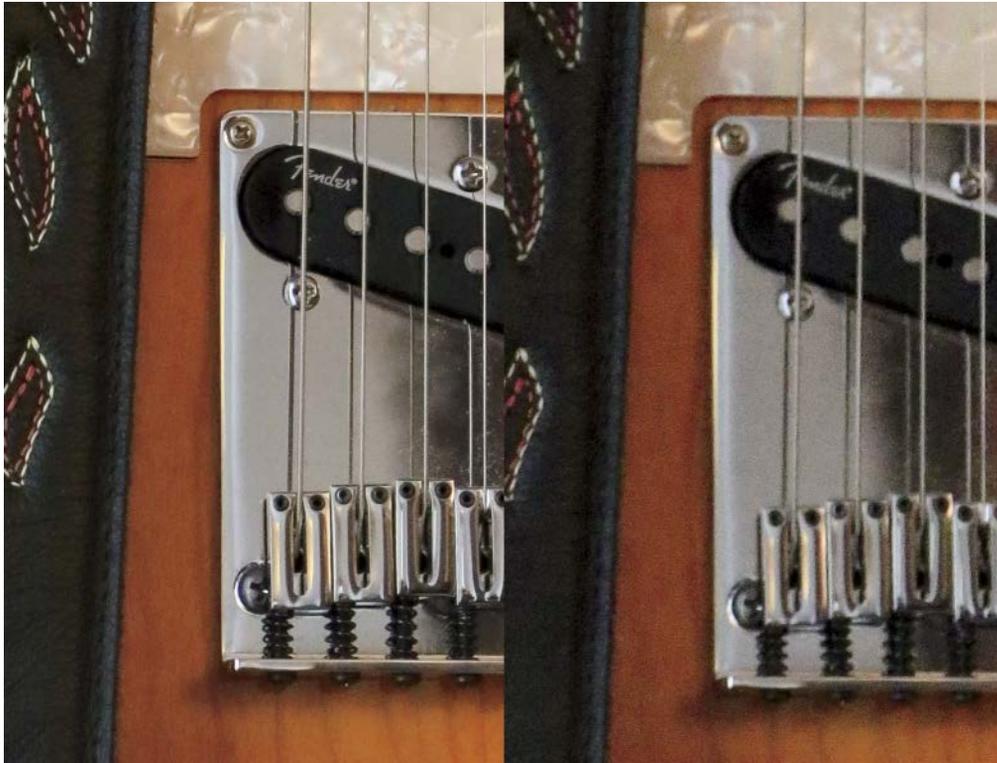
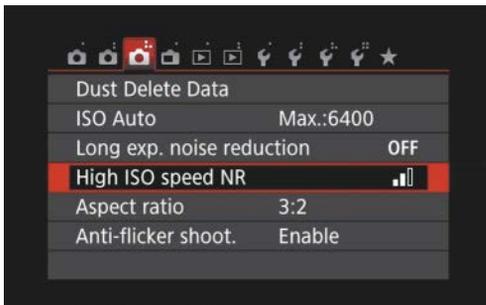


Figure 8.6
The image on the left was created with the Multi Shot option. The noisier image on the right was created with standard noise reduction settings.

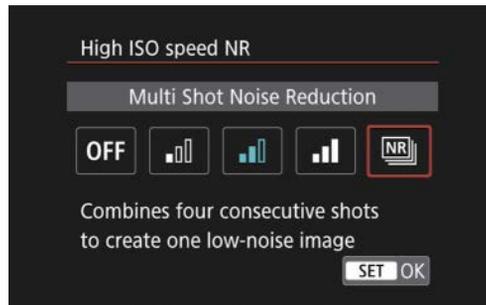
Setting up the Multi Shot option

1. Press the Menu button, navigate to the third shooting menu, select High ISO Speed NR, and press set (A).
2. Select the Multi Shot Noise Reduction option and press Set (B).

A



B



3. Adjust the camera to your desired exposure settings.
4. Press and hold the shutter release button once, and the camera will take the four exposures and then display the resulting JPEG image.

The Multi Shot option will stay active until you change the High ISO Speed NR setting or turn off your camera. It will reset once you turn the camera back on.

Stabilizing the Situation

If you purchased your camera with one of the new image stabilization (IS) lenses, you already own a great tool to squeeze two stops of exposure out of your camera when shooting without a tripod (**Figure 8.7**). Typically, the average person can handhold their camera down to about 1/60 of a second before blurriness results due to hand shake. As the length of the lens is increased (or zoomed), the ability to handhold at slow shutter speeds (1/60 and slower) and still get sharp images is further reduced.

The Canon IS lenses contain small gyro sensors and servo-actuated optical elements, which correct for camera shake and stabilize the image. The IS function is so good that it is possible to improve your handheld photography by two or three stops, meaning that if you are pretty solid at a shutter speed of 1/60, the IS feature lets you shoot at 1/15, and possibly even 1/8 of a second (**Figure 8.8** and **Figure 8.9**).



Figure 8.7
Set the Stabilizer to the On position when using longer shutter speeds while handholding your camera.

Self-timer

Whether you are shooting with a tripod or even resting your camera on a wall, you can increase the sharpness of your pictures by taking your hands out of the equation. Whenever you use your finger to depress the shutter release button, you are increasing the chance that there will be a little bit of shake in your image. To eliminate this possibility, try setting your camera up to use the self-timer. To turn on the self-timer, just press the Q button to activate the Quick Control screen, highlight the drive mode icon, and then turn the Main dial until the self-timer icon appears. There are three self-timer modes to choose from. I generally use the two-second mode to cut down on time between exposures.



Figure 8.8
This image was
handheld with the IS
turned off.

ISO 400 • 1/4 sec. •
f/5.6 • 135mm lens



Figure 8.9
Here is the same
subject shot with
the same settings,
but this time with IS
turned on.

Focusing in Low Light

The T6s / T6i has a great focusing system, but occasionally the light levels might be too low for the camera to achieve an accurate focus. There are a few things that you can do to overcome this obstacle.

First, you should know that the camera uses contrast in the viewfinder to establish a point of focus. This is why your camera will not be able to focus when you point it at a white wall or a cloudless sky. It simply can't find any contrast in the scene to work with. Knowing this, you might be able to use a single focus point in One Shot mode to find an area of contrast that is of the same distance as your subject. You can then hold that focus by holding down the shutter button halfway and recomposing your image.

Then there are those times when there just isn't anything there for you to focus on. A perfect example of this would be a fireworks display. If you point your lens to the night sky in any automatic focus (AF) mode, it will just keep searching for—and not finding—a focus point. On these occasions, you can simply turn off the autofocus feature and manually focus the lens (**Figure 8.10**). Look for the AF/MF switch on the side of the lens and slide it to the MF position.

Don't forget to put it back in AF mode at the end of your shoot.

Focus Assist

Another way to ensure good focus is to enable the T6s / T6i's Focus Assist mode. Focus Assist uses a short burst from your pop-up flash to shine some light on the scene, which assists the autofocus system in locating more detail. This feature is automatically activated when shooting in the Basic zone (except in Landscape, Sports, and Flash Off modes for the following reasons: in Landscape mode, the subject is usually too far away; in Sports mode, the subject is probably moving; and in Flash Off mode, you've disabled the flash entirely). Focus Assist should be enabled by default, but you can check the menu just to make sure.



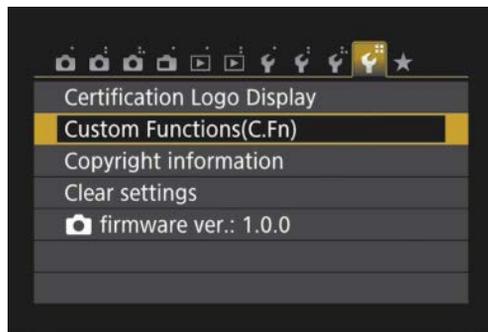
Figure 8.10
Focusing on the
night sky is best
done in Manual
focus mode.

ISO 100 • 2 sec. •
f/13 • 110mm lens

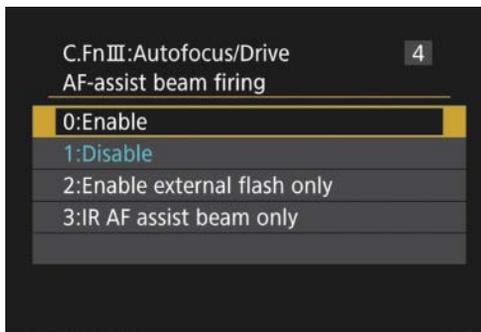
Turning on the Focus Assist feature

1. Press the Menu button and then use the Main dial to get to the Custom Functions menu tab, highlight Custom Functions, and press the Set button (A).
2. Use the Quick Control dial (or Cross keys) to get to the C. Fn III: Autofocus/Drive AF-Assist Beam Firing feature to see what the current setting is for this function (B).

A



B



3. If it is not enabled, press the Set button, highlight Enable, and press the Set button.
4. To use it when working in the Creative zone, simply press the flash button to raise the pop-up flash.
5. With the flash in the “up” position, press the shutter button to focus and Focus Assist will activate if necessary.

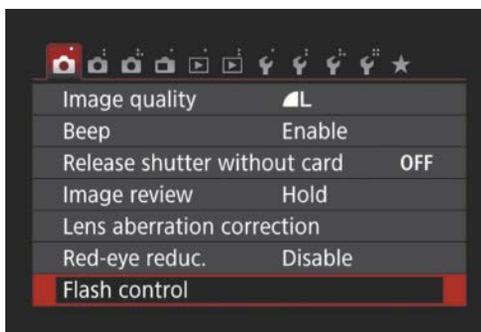


If you don't want the flash to fire during the actual exposure, you must first disable the flash.

Disabling the flash

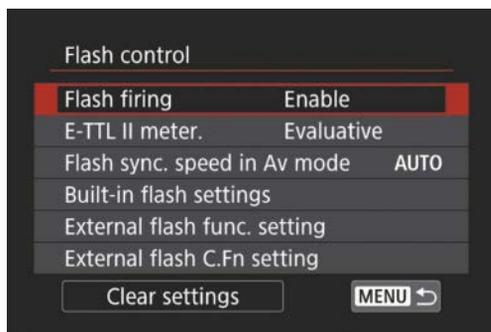
1. Press the Menu button and then scroll the Main dial to highlight the first shooting menu (far left).
2. Scroll down to Flash Control and press the Set button (A).

A

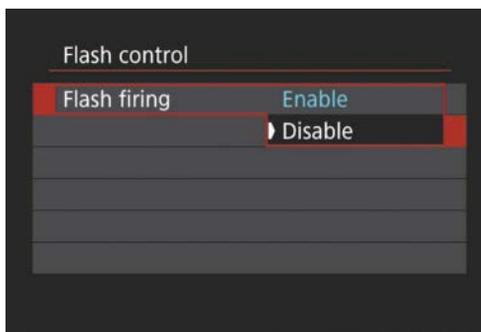


3. Select Flash Firing and press the Set button (B).

B



C



4. Set the Flash Firing option to Disable (C).



Shooting Long Exposures

We have covered some of the techniques for shooting in low light, so let's go through the process of capturing a night or low-light scene for maximum image quality (**Figure 8.11**). The first thing to consider is that in order to shoot in low light with a low ISO, you will need to use shutter speeds that are longer than you could possibly handhold (longer than 1/15 of a second). This will require the use of a tripod or stable surface for you to place your camera on. For maximum quality, the ISO should be low—somewhere at or below 400. The long exposure noise reduction should be turned on to minimize the effects of exposing for longer durations. (To set this up, see Chapter 7.)

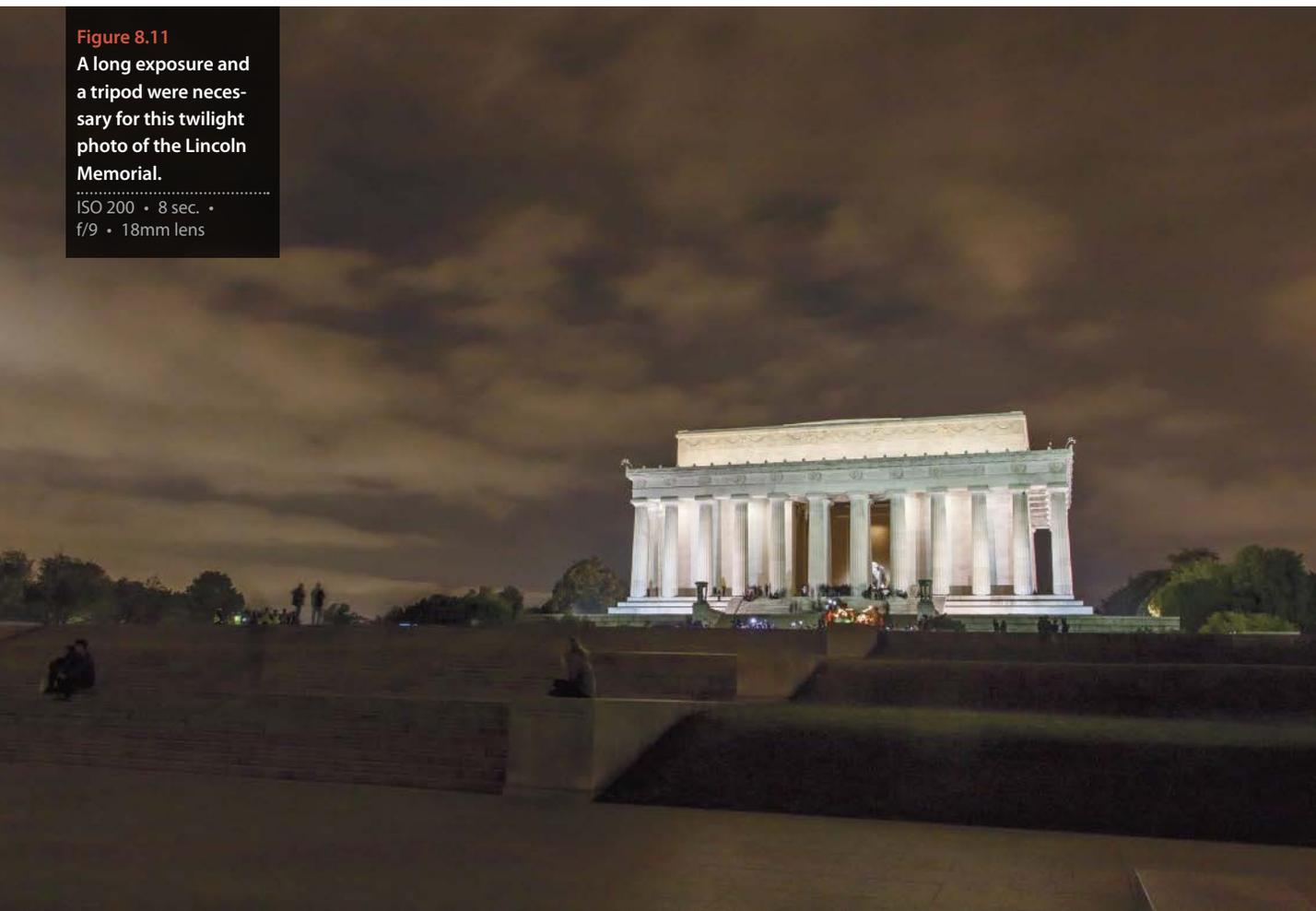
Flash sync

The basic idea behind the term flash synchronization (flash sync for short) is that when you take a photograph using the flash, the camera needs to ensure that the shutter is fully open at the time that the flash goes off. This is not an issue if you are using a long shutter speed such as 1/15 of a second but does become more critical for fast shutter speeds. To ensure that the flash and shutter are synchronized so that the flash is going off while the shutter is open, the T6s / T6i implements a top sync speed of 1/200 of a second. This means that when you are using the flash, you will not be able to have your shutter speed set any faster than 1/200. If you did use a faster shutter speed, the shutter would actually start closing before the flash fired, which would cause a black, underexposed area to appear in the frame where the light from the flash was blocked.

Figure 8.11

A long exposure and a tripod were necessary for this twilight photo of the Lincoln Memorial.

ISO 200 • 8 sec. •
f/9 • 18mm lens



Once you have the noise reduction turned on, set your camera to Aperture Priority (Av) mode. This way, you can concentrate on the aperture that you believe is most appropriate and let the camera determine the best shutter speed. If it is too dark for the autofocus to function properly, try manually focusing. Finally, consider using a cable release (see the “Pimp My Ride” bonus chapter) to activate the shutter. If you don’t have one, check out the sidebar “Self-timer” earlier in this chapter. Once you shoot the image, you may notice some lag time before it is displayed on the rear LCD. This is due to the noise reduction process, which can take anywhere from a fraction of a second up to 30 seconds, depending on the length of the exposure.

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