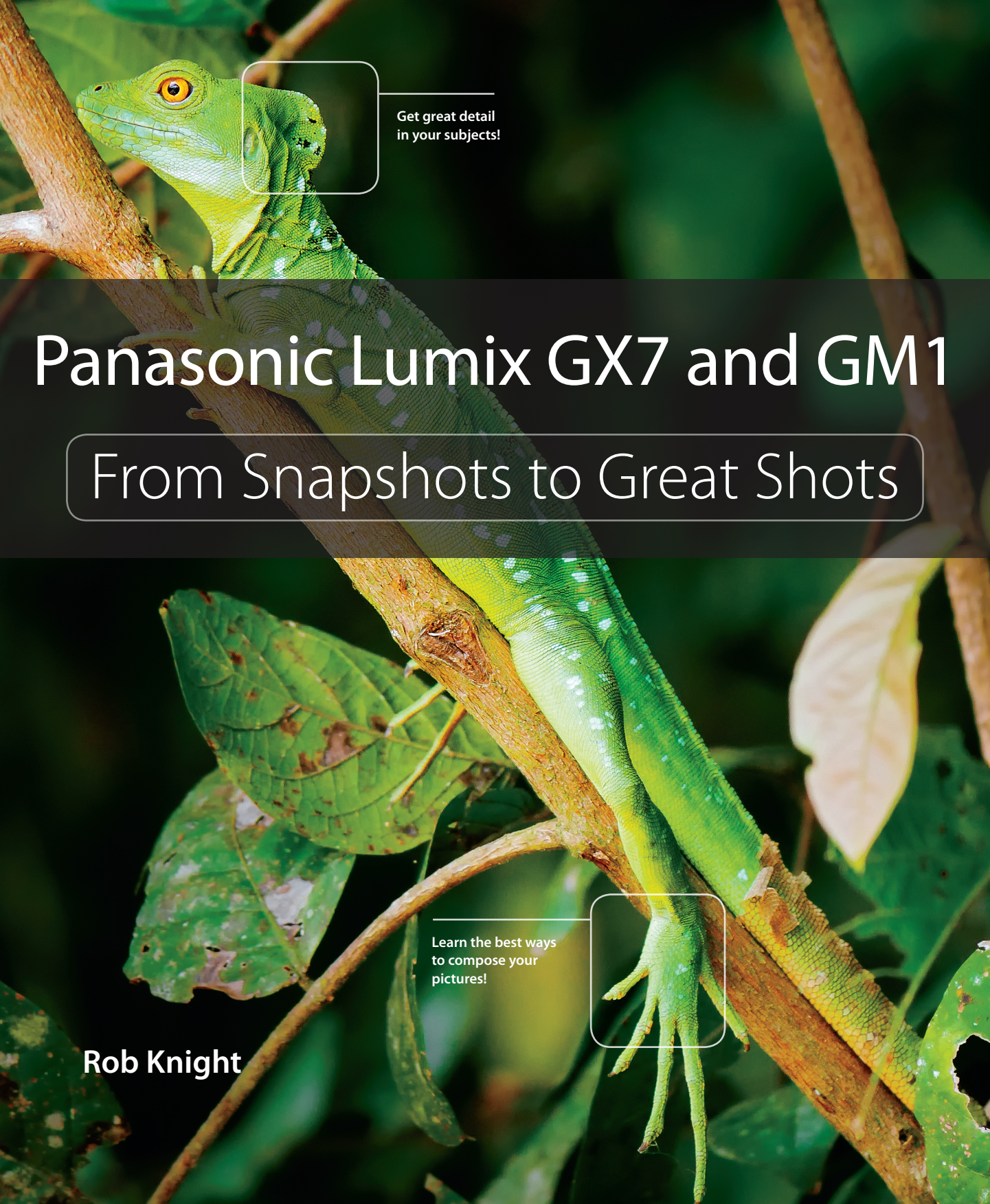

Panasonic Lumix GX7 and GM1

From Snapshots to Great Shots

Rob Knight

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Dedication

I could not have written this book without the love and support of my wife, Becky.

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Contents

Introduction

There is a lot of buzz these days about mirrorless cameras. Mirrorless cameras are generally much smaller than traditional DSLR cameras, but the camera body is only part of the equation. The Lumix GX7 and GM1 use a smaller image sensor than most DSLRs, which allows the lenses to be smaller and lighter as well. It's the combination of outstanding image quality and smaller gear that attracted me to Lumix cameras in the first place. You obviously see the same advantages in the GX7/GM1, because you're reading this book! There are hardly any resources like this for Lumix camera owners, and I'm really excited to write the first Lumix book for Peachpit Press. This book is not a rehash of the owner's manual, but rather a resource to teach photography with the specific technology present in the camera that you now own. 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: Why does this book cover two cameras?

A: The GX7 is a natural choice for a book like this because it has many features that make it a great camera for beginners and serious photo enthusiasts alike. It may seem strange to include the little GM1 in the same book, but the two cameras have the same sensor, processor, autofocus, and more. Since the cameras share so many functions and produce the same great image quality, I thought GM1 users would benefit from the same tips and techniques as GX7 users. When you see tutorials throughout this book, you will see the settings for the GX7 followed by the same settings for the GM1.

Q: Where can I find the GX7 and GM1 manuals that you reference in this book?

A: The basic owner's manual that is included in the box with your camera doesn't cover a lot of the functions that I will discuss. The page number references in this book are for the "Owner's Manual for advanced features," which is available in PDF form. I like to download the advanced manuals to my smartphone or tablet so I can access them when I'm out shooting. I have uploaded both manuals to my website so you can find them easily. You can download them at http://robknightphotography.com/GX7guide.pdf and http://robknightphotography.com/GM1guide.pdf.

Q: If I have the advanced manual, why do I need this book?

A: The advanced owner's manual is a great resource that covers every feature of your camera. The manual does a good job of telling you what a feature does or how to 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. As you read through the book, you will see callouts that point you to specific pages in your advanced owner's manual that are related to the topic being discussed. These are meant to expand upon the feature or function that I cover as it applies to our specific needs.

Q: What can I expect to learn from this book?

A: Hopefully, you will learn how to make 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 GX7/GM1 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 full-page photos that include captions, shooting data, and callouts so you can see how all 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 all 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 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: 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 Lumix GX7/GM1. Take some time to learn the basics and then put them to use. Photography, like most things, takes time to master and requires practice. One of the most important things I tell my students and others about my own photography work is that I'm still learning. Always remember that it's not the camera that makes beautiful photographs—it's the person using it. Photography is one of those activities that let you explore, no matter if you are traveling or shooting your child's birthday party. So enjoy the experience, learn from your mistakes (which I encourage you to make), and take your snapshots to another level—to great shots.

ISO 800 • 1/8 sec. •
f/1.4 • 25mm lens

4

The Professional Modes

Taking Your Photography to the Next Level

Your creativity comes through in your images when you can control your camera, and the professional exposure modes allow you such control. With practice, these modes will probably become the backbones of your photography. They allow you to influence the three factors that make exposure: *aperture, shutter speed, and ISO.* Accessing the professional modes is as simple as turning the Mode dial to P, A, S, or M. If you want to take that next step in controlling your photography, it is important to understand not only how to control these modes, but why and when to adjust them so that you make the images you want. So let's move that Mode dial to the first of our professional modes: Program Auto.

Poring Over the Picture

A road trip is a great way to find new subjects to photograph and to practice using your camera. Shooting in different locations every day and reacting to ever-changing lighting conditions will really keep you on your toes! I made this photo on Route 66 in Hackberry, Arizona. The Hackberry General Store is a great example of the classic Americana you can still find along the "Mother Road."

I used a fish-eye lens and placed the camera close to the old Ford to intentionally distort the proportions and make the car look larger than life compared to the buildings in the background.

ISO 400 • 1/200 sec. • f/8 • fish-eye lens

P: Program Auto Mode

There is a reason that Program Auto (P) mode is only one click away from the Intelligent Auto mode: With respect to aperture and shutter speed, the camera is doing most of the thinking for you. If that is the case, why use Program Auto mode instead? Program Auto mode gives you the ease of use offered by Intelligent Auto Mode, and adds the ability to change settings like ISO and white balance. Think of a family picnic outdoors in a partial shade/sun environment—I want great-looking pictures, but I'm not looking for anything to hang in a gallery. I might use Program Auto mode because it's quick and easy, but it gives me more control than the automatic modes, including Intelligent Auto Plus, can deliver.

Manual Callout

A comparison of the different professional shooting modes begins on page 89 of your GX7 owner's manual, and on page 83 in the GM1 manual.

When to use Program Auto (P) mode instead of the automatic modes

- When shooting in a casual environment where quick adjustments are needed
- When you want control over the ISO
- 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, so the camera is trying to balance our three photo factors (ISO, aperture, and shutter speed) to make a good exposure. Since the idea is to take more control of my images, I'll choose a white balance setting that is appropriate for the conditions. In this case I would probably choose the Daylight setting. Then I would choose an appropriate ISO setting. 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; 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.

With the ISO selected, we can now make use of the other controls built into Program Auto mode. By rotating the Front dial (the Control dial on the GM1), we 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 (**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 Front dial (GM1: Control dial) clockwise. Do you want a larger aperture so that you get a narrow depth of field? Then turn the dial counterclockwise until you get the desired f-stop. By clicking and rotating the Rear dial (GM1: ▲, then Control dial), we can adjust the exposure compensation. Turn the dial to the left to make the image darker, and to the right to make the image brighter.

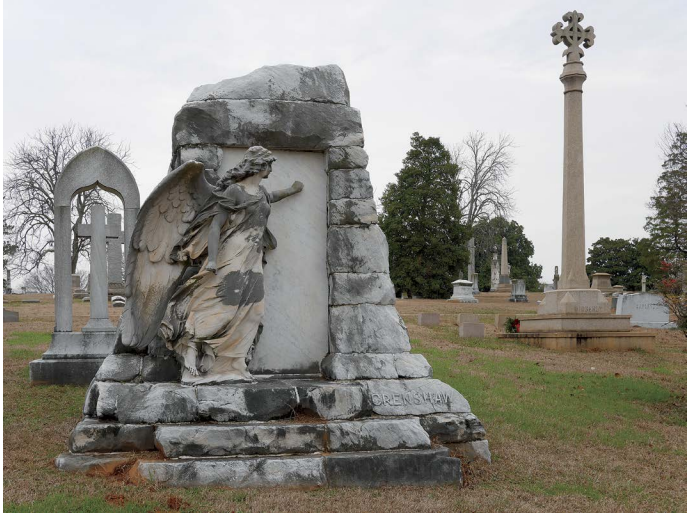

Figure 4.1
This is my first shot, using Program Auto mode. The camera chose f/8, which gives me enough depth of field that the foreground and background are in focus.

ISO 200 • 1/160 sec. • f/8 • 20mm lens

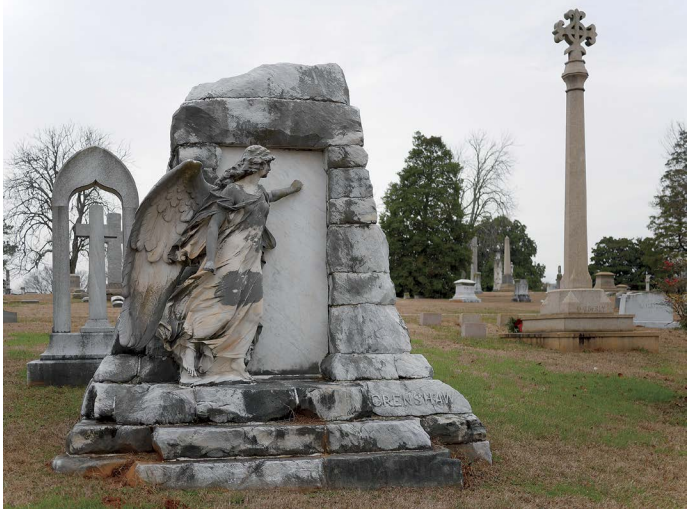

Figure 4.2
I turned the Front dial on my GX7 to "shift the program." I opened up the aperture to blur the background. Notice that the camera kept the exposure the same by changing both the aperture value and the shutter speed.

ISO 200 • 1/3200 sec. • f/1.8 • 20mm 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:

- 200: Bright, sunny day
- 400: Outdoor shade, or when using flash
- 800: Indoor lighting at night or cloudy conditions outside
- 1600: 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 Auto mode and see how we can make all of this come together.

Setting up and shooting in Program Auto mode

1. Turn your camera on, and then turn the Mode dial to align the P with the indicator line.
2. To select your ISO on the GX7, press the ISO button (▲), rotate the Rear dial to the desired setting, and press the Rear dial to select (the ISO selection will appear in the electronic viewfinder and the rear LCD panel).

   On the GM1, press the Fn1 button we assigned to ISO in Chapter 1. Rotate the Control dial to the desired setting and press MENU/SET.
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 electronic viewfinder or on the display panel on the back of the camera.
5. While the meter is activated, roll the Front dial (GM1: Control dial) left and right to shift the program and use a different aperture and shutter speed combination. Click and turn the Rear dial (GM1: ▲, then Control dial) to adjust the exposure compensation.
6. Select the program and 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.)

A: Aperture Priority Mode

A on the Mode dial refers to Aperture Priority mode. It is one of the most useful and popular of the professional modes. Aperture Priority mode is considered a semiautomatic mode because it allows you to control two factors of exposure while the camera adjusts for the other. You choose the aperture value and the ISO, and the camera chooses the shutter speed.

This is one of my favorite modes because the aperture value largely 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 factor that controls how much of 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 (low f-stop number) 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, then using a small aperture (high f-stop number) will render the greatest possible depth of field.

When to use Aperture Priority (A) mode

- When shooting portraits or wildlife (**Figure 4.3)**
- When bracketing images for HDR photography (**Figure 4.4)**
- When shooting landscape photography, which often benefits from a large depth of field (**Figure 4.5**)

Figure 4.3
A large aperture (low f-stop number) and a longer focal length create a very blurry background to emphasize the subject.
ISO 100 • 1/200 sec. • f/5.6 • 45mm lens

Figure 4.4
I combined three different exposures of the same scene to create this HDR image. Combining multiple exposures can help capture the entire dynamic range of a scene. It is best to keep the aperture value consistent while adjusting the shutter speed for different exposures.

ISO 800 • f/11 • multiple shutter speeds • 16–35mm lens

Figure 4.5
The smaller aperture setting (higher f-stop number) brings sharpness to near and far objects.

ISO 200 • 1/400 sec. • f/8 • 35–100mm lens

F-stops and aperture

The numeric value of your lens aperture is described as an *f-stop*. The f-stop is a photography term that technically 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 and ISO 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.

We have established that Aperture Priority (A) mode is highly useful in controlling the depth of field in your image. 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. 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 to reduce hand shake and blurriness in the final picture. 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 allows the shutter stay open longer.

Setting up and shooting in A mode

1. Turn your camera on and then turn the Mode dial to align the A with the indicator line.
2. To select your ISO on the GX7, press the ISO button (▲), rotate the Rear dial to the desired setting, and press the Rear dial to select (the ISO selection will appear in the electronic viewfinder and the rear LCD panel).

   On the GM1, press the Fn1 button we assigned to ISO in Chapter 1. Rotate the Control dial to the desired setting and press MENU/SET.
3. Turn the Front dial (GM1: Control dial) to select the aperture value (f-stop). Turn the dial to the left for a larger aperture (lower f-stop number) and to the right for a smaller aperture (higher f-stop number).
4. Point the camera at your subject, and then activate the camera meter by depressing the shutter button halfway.
5. View the exposure information in the electronic viewfinder or on the rear LCD panel.
6. Press and turn the Rear dial (GM1: ▲, then Control dial) to change the exposure compensation to make the image brighter or darker.

Zoom lenses and maximum apertures

Some zoom lenses (like the GX7's 14–42mm 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 14–42mm zoom, the lens has a maximum aperture of f/3.5 at 14mm and only f/5.6 when the lens is zoomed out to 42mm. 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.

S: Shutter Priority Mode

The S on the mode dial stands for Shutter Priority mode. Like the Program Auto and Aperture Priority modes, Shutter Priority mode gives us freedom to control certain aspects of our photography. In this case, you select the shutter speed and ISO, and the camera chooses the aperture value.

The shutter speed determines just how long you expose your camera's sensor to light. The longer the shutter remains open, the more time your sensor has to gather light. Two of the major influences on the sharpness of an image are camera shake and the subject's movement. The shutter speed can affect how sharp your photographs are. This is different from the image being sharply in focus. 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. The camera doesn't display the entire fraction. 1/30 is shown as 30, 1/250 is shown as 250, and so on.

When to use Shutter Priority (S) mode

- When working with fast-moving subjects where you want to freeze the action (**Figure 4.6**); much more on this in Chapter 5
- When you want to emphasize movement in your subject with panning or with motion blur (**Figure 4.7**)
- When you want to create silky-looking water in a waterfall (**Figure 4.8**); more on this in Chapter 7

Figure 4.6
Fast-moving subjects can be frozen with the right shutter speed.
ISO 200 • 1/1000 sec. • f/8 • 70–200mm lens

Figure 4.7
I used a relatively slow shutter speed and panned the camera to follow the subject and create this motion blur effect.
ISO 400 • 1/60 sec. • f/20 • 28–300mm lens

Figure 4.8
A long exposure was used to give the flowing water a silky look. A tripod is a must for shots like this.

ISO 200 • 15 sec. • f/8 • 12mm lens

As you can see, the subject of your photo usually determines when you will use S mode. If freezing action or showing motion is the most important factor in making the photo you want, then Shutter Priority mode might be the way to go. It is important that you are 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 you don't always get a second chance to shoot a fast-moving subject. It is important to practice and learn what those speeds represent in terms of their ability to stop the action or show motion blur.

First, let's examine just how much control you have over the shutter speeds. The GX7/ GM1 has a shutter speed range from 1/8000 of a second all the way down to 60 seconds. With that much latitude, you should have enough control to capture almost any subject. The other thing to think about is that S mode is considered a "semiautomatic" mode. This means that you are taking control over two aspects of the total exposure while the camera handles the other. In this instance, you are controlling the shutter speed and ISO, 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 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 see your aperture display in the electronic viewfinder and the rear LCD panel 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, if not 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), but it is important to know that there can be limitations when using S mode.

Setting up and shooting in S mode

1. Turn your camera on, and then turn the Mode dial to align the S with the indicator line.
2. To select your ISO on the GX7, press the ISO button (▲), rotate the Rear dial to the desired setting, and press the Rear dial to select (the ISO selection will appear in the electronic viewfinder and the rear LCD panel).

   On the GM1, press the Fn1 button we assigned to ISO in Chapter 1. Rotate the Control dial to the desired setting and press MENU/SET.
3. Turn the Front dial (GM1: Control dial) to select the shutter speed. Turn the dial to the right for faster shutter speeds and to the left for slower speeds.
4. Point the camera at your subject, and then activate the camera meter by depressing the shutter button halfway.
5. View the exposure information in the electronic viewfinder or on the rear LCD panel.
6. Press and turn the rear dial (GM1: ▲, then Control dial) to change the exposure compensation to make the image brighter or darker.

M: Manual Mode

Once upon a time, long before digital cameras and programmed 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. 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. 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, 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 to set the f-stop (aperture), the shutter speed, and the ISO to achieve a correct exposure. If you need a faster shutter speed, you will have to make the reciprocal change to your f-stop or ISO to get the correct exposure. Using any other mode, such as S or A, 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 your environment is fooling your camera's light meter and you need to maintain a certain exposure setting (**Figure 4.9**)
- When shooting with flash, LEDs, or strobes (**Figure 4.10** on the next page)
- When you need to maintain exposures between different frames for a panorama (**Figure 4.11** on the next page)

Figure 4.9 The bright costumes and dark background can fool your camera's meter. Even though the light falling on the dancers isn't changing, the camera might make different exposure decisions based on what is in the frame at the time.

ISO 200 • 1/500 sec. • f/11 • 24–70mm lens

Figure 4.10
Shooting in Manual exposure mode makes it relatively easy to balance ambient light with strobes or (in this case) Speedlights.

ISO 1000 • 1/1000 sec. • f/8 • 24–70mm lens

Figure 4.11 **I combined six individual images to make this panorama. Manual exposure mode is essential to keep the exposure consistent between frames.**

ISO 200 • 1/80 sec. • f/8 • 70–200mm lens

Setting up and shooting in Manual mode

1. Turn the Mode dial to align the M with the indicator line.
2. To select your ISO on the GX7, press the ISO button (▲), rotate the Rear dial to the desired setting, and press the Rear dial to select (the ISO selection will appear in the electronic viewfinder and the rear LCD panel).

   On the GM1, press the Fn1 button we assigned to ISO in Chapter 1. Rotate the Control dial to the desired setting and press MENU/SET.
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 electronic viewfinder (GX7 only) or on the rear LCD display.
5. The exposure is displayed on a scale with marks that run from –3 to +3 stops, with a 0 mark in the center. Adjust your aperture value, shutter speed, and ISO to move the exposure indicator along the scale. A "proper" exposure will line up the indicator with the 0 mark in the middle of the scale. 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 overexposing (allowing too much light for a proper exposure).

6. (GX7) Use the Front dial to change the aperture value. Turn the dial left for a larger aperture (small f-stop number), and right for a smaller aperture (large f-stop number).
7. (GX7) Use the Rear dial to change the shutter speed. Turn the Rear dial left for a slower shutter speed, and right for a faster shutter speed.
8. (GM1) Use the Control dial to adjust both the aperture value and shutter speed. Use the ▲ cursor button to switch between the two.

How I Shoot: A Closer Look at the Camera Settings I Use

I shoot mostly travel photography, landscapes and wildlife. For travel and landscape work, the depth of field is usually my first consideration, so I use Aperture Priority mode for the majority of my shooting. I use the aperture value along with my lens selection to get the effects I'm looking for. A narrow aperture (high f-stop number) and a wide-angle lens give me maximum depth of field. A telephoto lens and a wide aperture (low f-stop number) make it easy to defocus the background and isolate my subject.

I try to keep the shutter speed above 1/60 if I am handholding the camera so I get sharp images with no camera shake. The GX7 has in-body image stabilization that allows me to handhold the camera at slower shutter speeds if I need to, and many Lumix lenses have an Optical Image Stabilizer.

I like to keep the ISO as low as possible, but I'm not afraid to raise the ISO to get a shutter speed I can work with. The GX7 and GM1 have such great performance at higher ISOs that I regularly shoot up to ISO 1600 or even 3200 when I need to.

When I'm shooting on a tripod, I set the ISO as low as possible, set my desired aperture value, and let the shutter speed fall where it may. I don't worry if the shutter speed gets too slow, because the tripod will keep the shot steady. It is also a good idea to use a remote or timer when using a tripod so you don't introduce camera shake when you press the shutter release.

When the camera and I don't see eye to eye about what the "correct" exposure is, I use exposure compensation to make the image brighter or darker. I get a live exposure preview on the LCD and EVF so I can see the effect of my adjustments before I take the shot. In Manual mode, you adjust all of the settings yourself based on the camera's meter, so you don't need exposure compensation. You can get a live exposure preview in Manual mode if you turn on Constant Preview in the Custom menu.

Normally I shoot in Manual exposure mode if I'm shooting wildlife. I'm shooting multiple images at a time in Burst mode, and want my exposure to be consistent from shot to shot. For wildlife, you need a fast shutter speed to freeze the motion of fast-moving animals. I like to use a lens with a fast maximum aperture, and I shoot with the lens wide open (at its lowest f-stop). Then I set the shutter speed and adjust the ISO to get a good exposure. A fast shutter speed helps reduce camera shake when you are using longer telephoto lenses. As a rule, you want the shutter speed to be equal to or greater than your focal length. For example, if you are shooting with a 200mm lens, you want your shutter speed to be at least 1/200 of a second.

When reviewing my images on the GX7 or GM1, I use the DISP button to cycle through the different review screens (**Figure 4.12**). Most important to me are the "blinkies" and the histogram. The blinkies show areas of overexposure in the image as blinking black and white. The histogram shows the tones in the image as a graph, with the shadows on the left and the highlights on the right. These tools let me know when I need to adjust my exposure so I'm not losing information in the highlights or shadows.

Figure 4.12 **The GX7 and GM1 have several options for reviewing your images. This view shows an RGB histogram, as well as a blinking warning on the image (shown here in black) where highlights are overexposed, or "clipping."**

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 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 automatic modes, but to get serious with your photography, you should learn the professional modes.

Starting off with Program Auto mode

Set your camera on Program Auto (P) mode and start shooting. Become familiar with the adjustments you can make to the program and exposure by turning the Control dials. While you're shooting, try different ISO settings and notice how your aperture and shutter speed values change.

Controlling depth of field with A mode

The name of the game with A mode is depth of field. Set up three items at different distances from you. I would use chess pieces or something similar that you can place close to the camera. Now focus on the middle item, and set your camera to the largest aperture that your lens allows (remember that 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.

Learning to control time with S mode

Find some moving subjects and then set your camera to S mode. Have someone ride a 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. Start with your shutter speed at 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.

Giving and taking with Manual mode

Go outside on a sunny day, and with the camera in Manual mode (M), set your ISO to 200, your shutter speed to 1/200 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 1/100, and then set your aperture to f/22. Now go the other way. Set your aperture to f/8 and your shutter speed to 1/400. 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 1/200 at f/16 and try just moving the shutter speed without changing the aperture. Just make 1/3-stop changes (1/160 to 1/125 to 1/100 to 1/80), and then review your images to see what 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.

Share your results with the book's Flickr group!
Join the group here: flickr.com/groups/panasonicGX7_fromsnapshotstogreatshots

Index

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

Z