



## Understanding Exposure, Fourth Edition: How to Shoot Great Photographs with Any Camera

By Bryan Peterson



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**This newly revised edition of Bryan Peterson's most popular book demystifies the complex concepts of exposure in photography, allowing readers to capture the images they want.**

*Understanding Exposure* has taught generations of photographers how to shoot the images they want by demystifying the complex concepts of exposure in photography. In this newly updated edition, veteran photographer Bryan Peterson explains the fundamentals of light, aperture, and shutter speed and how they interact with and influence one another. With an emphasis on finding the right exposure even in tricky situations, *Understanding Exposure* shows you how to get (or lose) sharpness and contrast in images, freeze action, and take the best meter readings, while also exploring filters, flash, and light. With all new images, as well as an expanded section on flash, tips for using colored gels, and advice on shooting star trails, this revised edition will clarify exposure for photographers of all levels.

*From the Trade Paperback edition.*

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### Editorial Review

#### About the Author

BRYAN PETERSON is a professional photographer, internationally known instructor, best-selling author, and founder of The Bryan Peterson School of Photography at [www.bpsop.com](http://www.bpsop.com). His trademark use of color and strong, graphic composition have garnered him photographic awards from *Communication Arts* and *Print* magazines. He makes his home in Seattle, Washington.

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#### INTRODUCTION

The year was 1975, but it seems like yesterday that I first introduced the “photographic triangle” to a group of about forty students. It was on a Saturday, and I was running an all-day workshop on understanding exposure on the campus of Portland Community College as part of a program of continuing adult education.

I had never presented to a group this “large,” and little did I know then that groups of forty students one day would swell toward one thousand attendees. My journey has in many respects been truly humbling.

When I first picked up a camera in the summer of 1970 (a suggestion made by my older brother Bill, who was a keen amateur photographer), my intention was to use the camera as a way to record landscapes and cityscapes. I was an “artist” and wanted to capture those scenes for later sketching with my inks and charcoals. Little did I know then that the reference photos I took with my brother’s camera would send me on a photographic journey that has lasted more than forty-five years. I have had far more adventures, chance encounters, and good fortune than should be legally allowed for a single lifetime. Of course, all of my adventures have not been without some setbacks, unbelievable obstacles, and momentous challenges, but somehow I’m still here churning out another edition of *Understanding Exposure*.

During those first five years, 1970 to 1975, I made it a point to write down *every* exposure for the reference photographs I took. When I would review each image, I knew which aperture I used and which shutter speed I used and was soon able to determine why one aperture in conjunction with a particular lens would produce a massive depth of field or a very narrow depth of field. I also knew which shutter speeds were capable of creating motion-filled water, windblown flowers and leaves, and razor-sharp action-stopping subjects. I was soon figuring out that in every picture-taking situation, I was presented with no fewer than six possible exposure options and those six exposure situations could easily be changed to a different set of six options merely by changing from one film to the other; an ISO of 50 produces a different set of six possible correct exposure options than does an ISO of 200 or an ISO of 640, and so on.

I soon found myself making a drawing of a triangle in one of my notepads, showing the three ingredients of every correct exposure: aperture, shutter speed, and the ISO. Of course at the heart of the triangle was the light meter, whose “job” is 100 percent dependent on the photographer’s ability tell it which aperture or shutter speed he or she is using and how many “eyeballs” (ISO) he or she wishes to use for a particular scene. I mention all this for one very important reason: I emphatically believe today, just as I did back then, that if you will invest the time needed to understand the vision of the photographic triangle and the many “creatively correct” exposures it offers, your mind will be truly free to create almost *any image* it can conceive in camera!

I am all too familiar with the phrase “the third time’s a charm,” and I honestly thought that when I finished the third edition of *Understanding Exposure*, it would be the *last* edition I’d write for one simple reason: I felt I had exhausted the subject of understanding exposure. Obviously I was wrong!

I am incredibly humbled by the response to the earlier editions, with combined sales of more than one million copies in seven different languages. With numbers like that one might ask, “Why mess with a winning formula?”

To be clear, I am not messing with the winning formula, but since the third edition of *Understanding Exposure* was released in 2009, even more changes have taken place in the photo industry. The one change I readily welcome is the ease of using an electronic flash. One I don’t appreciate as much is the extremely high dynamic range that many cameras are quickly approaching. In a single shot, a few of today’s cameras’ sensors are capable of capturing upward of 9 stops of light to dark exposure, and at this rate a sensor soon will be recording the human eye’s ability to see a 16-stop range! This is a huge change from the days of film, when one might expect about a 5-stop range of light to dark. Why is this a problem? In some cases it will mean the end of the many beautiful sidelit landscapes of great contrast in which the strong highlights are in marked opposition to the deep and dense shadows. There will no more of this stark contrast because of the sensors’ ability to create images that cover a much wider exposure and tonal range.

On the flip side of all this new technology, I am hearing from more and more amateurs who have not only realized the limitations of their camera phones and are buying DSLRs but are also interested in “getting it right” in camera rather than relying on after-market software to clean up their exposure mistakes. In effect, it seems the trend today is akin to the days of film, when most, if not all, amateur photographers took pride in “owning” their creativity. They relied solely on their knowledge of the multitude of creative exposures that lie within the photographic triangle and a full understanding of the power of light, *including* the use of electronic flash. I have seen more evidence of “owning one’s creativity” in the last twelve months than I have seen in the previous five years, and needless to say, I am thrilled. I am not, nor have I ever been, nor will I ever be a fan of automated exposures. And yes, beyond the choice to shoot in any automated camera-setting mode, my disdain for automation includes the use of highly manipulative photo software, with HDR (high dynamic range) being just one example.

I am pleased to say what some call my formula (what I call the photographic triangle) for award-winning exposures has not changed one iota since I first introduced it to a group of forty students way back in 1975. Despite the digital age we are in and will be living in for what I am guessing will be years and years to come, the formula for award-winning exposures is no different today from what it was in 1975 and even as far back as the 1930s.

A correct exposure was, is, and always will be a combination of *your* choosing the right-size hole in your lens (the aperture), and the right amount of time that light is allowed to remain on the digital sensor (shutter speed), and how both of these factors are influenced by your choice of ISO.

Back in the day, the pinhole camera proved to be a terrific method of recording an exposure (it was much like a hole in a lightproof shoe box that held a piece of light-sensitive film), and as far as I am concerned, the digital camera of today is nothing more than a lightproof shoe box with a piece of light-sensitive “film” inside. Granted, these cameras don’t look like lightproof shoe boxes, but they perform in much the same way, albeit they record a single image a bit faster.

Now that the digital age of photography has grown up since the first introduction of the Kodak/Nikon DCS with its whopping 1.3-megapixel charge-coupled device (CCD), it’s also fair to say that many shooters who are just starting out in photography are *more* confused than ever before, and for this I hold the camera manufacturers responsible.

Because of their attempts to make so much of the picture-taking process automated, the simple manual cameras of yesterday have been replaced by cameras reminiscent of the cockpit of a Boeing 747-400. I don't know about you, but I find the cockpit of a 747-400 amazingly intimidating! The once simple shutter speed dial on the camera body and the once simple aperture dial normally found on the lens have taken a backseat to dials that are crammed with "features" such as Landscape mode, Flower mode, Portrait mode, Aperture Priority mode, Action Sequence mode, Sports mode, Group Portrait mode, Shutter Priority mode, and Program mode, and there is even a bee on the Flower mode! Combine all that supposed automation with auto white balance, auto ISO, and auto flash and you've got a recipe for frustration. Attesting to this frustration are the many shooters who have discovered that automation works only sometimes and only with some subjects. As my email in-box shows on a daily basis, there is nothing worse or more embarrassing to a beginning photographer who has taken a really nice image than being asked how he or she did it and not having a clue.

Just last month, I received an email from a young man who had been selected to show his work in his office's cafeteria. He wrote me to say that he had no clue about exposure and was sure that once his prints were on display, many of his coworkers would begin to press him for information about his photographs that he did not have, such as aperture and shutter speed and even lens choice. I do not want to suggest that this is vitally important information that one needs to know to take great photographs, but I believe it is vitally important information if one wishes to make great photographs consistently.

Understanding exposure is not hard at all, as more than 900,000 photographers all around the world have already discovered. The only requirement is that you throw away your camera's instruction manual *after* you reference it to learn one thing: how to set the controls to manual. Here is a clue: On every DSLR, you will find the symbol M, and when the dial is set to M, you are sitting in the copilot's seat, about to go on a maiden voyage. Sure, setting your camera to M might seem scary at first, but you should have no worries since I, the captain, am sitting right next to you. And once you begin to experience the freedom of truly flying on your own, you will be asking yourself, "What ever possessed me to think I couldn't do a manual exposure?" Honestly, it's that easy; I promise!

With manual exposure, the world of truly creative exposures will open up to you. You will discover the utter joy of owning your exposures from beginning to end, and taking part in their creation. The joy of that one image can last lifetimes as generations yet to come continue to enjoy the work you create!

Also, in this fourth edition of *Understanding Exposure*, all the photographs have been replaced.

Not only does this give it a freshened up appearance, but I also have added two additional and invaluable subjects that have much to do with award-winning exposures: an expanded section on the ease and joy of shooting with electronic flash and shooting star trails, and a section on the use of flashlights as another tool for extremely creative in-camera exposure options!

Flash photography was touched on only briefly in the third edition of *Understanding Exposure*, and many of you let me know that you wanted to see a more thorough discussion in this edition. As the saying goes, "Ask and you shall receive!"

Yes, I know the use of portable electronic flash is deserving of its own book, and that is why I wrote just such a book about three years ago. However, since that time even more amateurs have begun working with flash, most with utter confusion about how, when, and where to use it; this is all the more reason to include a simple and easy-to-understand section on using an electronic flash off camera.

I will add that the ease of using flash is, in my view, the only highlight the camera manufacturers have come up with that really deserves mentioning.

Simply put, automated TTL flash delivers on its promise of “foolproof flash exposure” far more often than not, and the information I am providing in this fourth edition of *Understanding Exposure* is more than enough to get you started down the road of creative flash exposure. If you want even more on the subject of flash, you can purchase my book *Understanding Flash*.

In closing, keep in mind that you are not alone in the confusion or frustration you will at times experience. If you ever need someone to talk to, I encourage you to get online with other like-minded shooters. One way to do that is to participate daily in a public forum in which just about anything photographic is discussed. A great place to do that is my site, [www.youkeepshooting.com](http://www.youkeepshooting.com). Whether you have questions you would like to ask me, wish to contribute an answer, or simply want to upload photos for some honest feedback from your peers, it's a great resource for understanding exposure.

## Users Review

### From reader reviews:

#### Joshua Ricker:

Why don't make it to become your habit? Right now, try to prepare your time to do the important take action, like looking for your favorite guide and reading a publication. Beside you can solve your problem; you can add your knowledge by the reserve entitled *Understanding Exposure, Fourth Edition: How to Shoot Great Photographs with Any Camera*. Try to make book *Understanding Exposure, Fourth Edition: How to Shoot Great Photographs with Any Camera* as your close friend. It means that it can to become your friend when you really feel alone and beside associated with course make you smarter than in the past. Yeah, it is very fortunated for yourself. The book makes you considerably more confidence because you can know every little thing by the book. So , we should make new experience in addition to knowledge with this book.

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#### Diana Pearson:

As people who live in typically the modest era should be update about what going on or data even knowledge to make these keep up with the era and that is always change and advance. Some of you maybe will update themselves by studying books. It is a good choice for yourself but the problems coming to anyone is you don't know which you should start with. This *Understanding Exposure, Fourth Edition: How to Shoot Great Photographs with Any Camera* is our recommendation to cause you to keep up with the world. Why, as this book serves what you want and wish in this era.

**Sally Canady:**

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