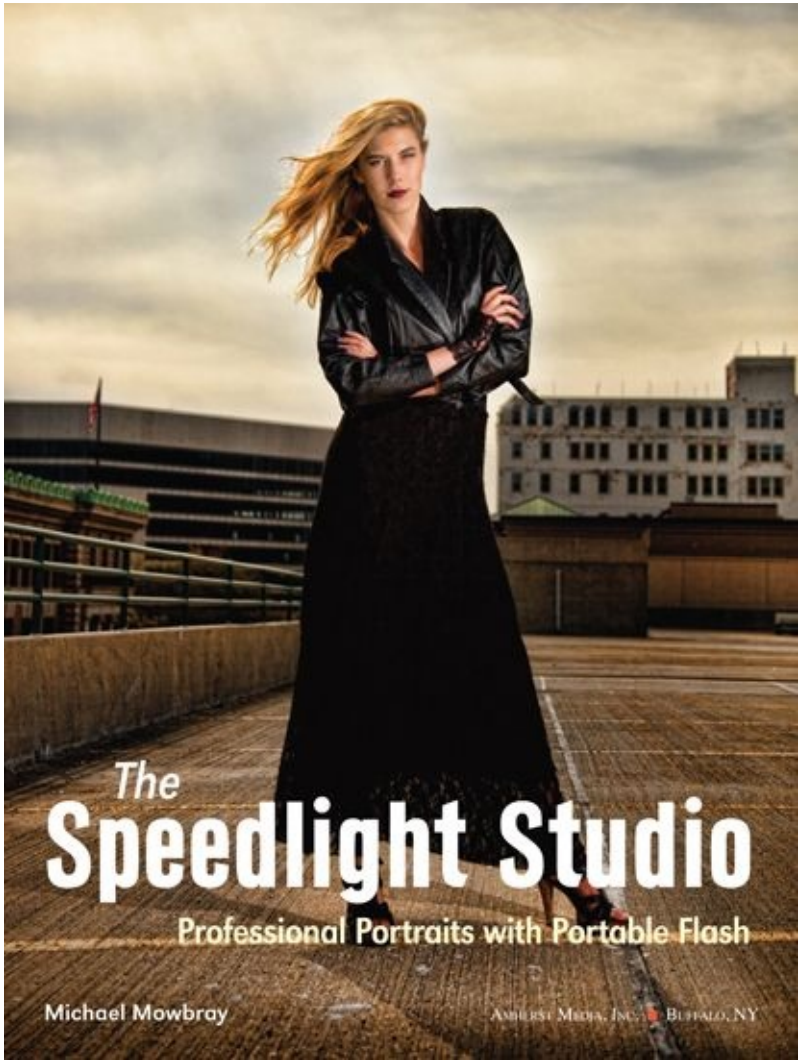




The
Speedlight Studio

Professional Portraits with Portable Flash

Michael Mowbray, *M.Photog.Cr.*



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Speedlight Studio

Professional Portraits with Portable Flash

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ARTIST MEDIA, INC. • BUFFALO, NY

About the Author



Photograph © Krystal Lamberty.

Since opening Beautiful Portraits by Michael in 2001, Michael Mowbray (M. Photog, Cr.) has gone on to win many awards for his portraiture and was named International PPA Photographer of the Year Gold Medalist in 2011 and Bronze Medalist in 2012 and 2013. He has had the highest scoring wedding portrait in Wisconsin seven times, including Wisconsin Best of Show–Wedding in 2007, 2008, 2009, 2011, 2012, 2013, and 2014. He has won the prestigious Kodak Gallery Award five times and the Fuji Masterpiece Award for Outstanding Wedding Portraiture three times. Michael has also been named one of the top ten photographers in Wisconsin multiple times. He has earned both his Master Photographer and Photographic Craftsman degrees from Professional Photographers of America (PPA), and speaks around the country on the topics of weddings, seniors, and speedlights. See more of Michael’s work at his consumer website, www.beautifulportraits.com. His website dedicated to photography education can be found at www.michaelmowbray.com.

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Foreword

Ever wonder if speedlights could work for lighting *everything* at your studio? I asked myself that very question several years ago. As a creative and technical challenge, I was determined to find the answer. And the answer? A resounding “Yes!” I now use speedlights for 99.9 percent of my lighting work—in the studio and on location, on-camera and off-camera. Everywhere. As primarily a senior and wedding photographer, I have found that speedlights fit my working style to a tee.

The funny thing is, I own a complete set of “studio” lights that are now sitting in the closet gathering dust. As I’ve built my lighting style around the mastery of speedlights, I’ve found that my work has gotten better; I’ve crafted a unique style, my sales have increased, and my workflow has gotten simpler. Plus, I’ve gotten my evenings back in the summer! I now schedule my senior portrait sessions between 10AM and 6PM because I no longer *chase* light, I *create* it. And I no longer fear the sun, I embrace it.

In this book, I will show you how to set up a completely speedlight-based studio. I will go in depth regarding gear and techniques, with scores of example portraits and lighting diagrams. I make it easy for you to follow along and replicate the portraits that I show. In fact, if you skip over the speedlight-specific sections that open this book, it could be used as a guide to set up *any* type of strobe-based studio lighting system.

“I’ve crafted a unique style, my sales have increased, and my workflow has gotten simpler.”

Throughout the book, I use the words “speedlights” and “flashes” interchangeably; both terms refer to the common battery-powered flashgun that fits into the hot shoe on your camera (though I prefer to set mine free to roam the countryside). My current cameras of choice are the Canon 5D MKIII and 5D MKII, and the primary flash model used to create the vast majority of images in the book is the Canon 580EXII. You do not need to exactly replicate the gear I used to create these images; Nikon gear works just as well, and non-name brand flashes (I’m partial to the Godox/Neewer 850 and the Nissin Di866 II) can also give you a lot of the same features and bang for your buck.

Hopefully, you can use this book as inspiration to jump-start your speedlight portraiture!

1. Understanding Speedlights

It's an exciting time to be a speedlight photographer! So many new speedlight options have been introduced in the past couple of years, from the revolutionary 600EX-RT flash from photography powerhouse Canon, to many intriguing offerings from third-party manufacturers like Godox, Phottix, Nissin, and YongNuo. In fact, those so-called "off brands" are beginning to pressure Canon and Nikon by offering feature-packed flashes that rival the name-brands at a fraction of the price. This should lead to a more competitive marketplace as new purchasing options abound. Ideally, this will drive down the price of the Canon and Nikon speedlights. It will be interesting to see how this plays out over the next couple of years. In any event, there's never been a better time to transition to a speedlight-based studio!

"I have found that there really is very little that speedlights cannot do in a studio or location lighting environment."

In this section, I will delve into the good, the bad, the ugly, and the beauty of speedlights. As we move to the next section, I'll include brief overviews of the top speedlight offerings in the market as of this printing. (For reviews of subsequent models, visit my website for professional photographers at www.michaelmowbray.com.) Throughout the book, I will focus primarily on speedlights that have at least some level of advanced functionality, such as TTL (through the lens metering compatibility), remote power adjustment, and/or off-camera slave functionality (via radio and/or optical or infrared signals).

The World of Speedlights

Speedlights aren't perfect. But then again, neither are those multi-thousand-dollar Profoto lighting systems favored by many commercial and fashion photographers. Having worked with many different artificial lighting systems myself, however, I have found that there really is very little that speedlights cannot do in a studio or location lighting environment.

Truly, the only place I see speedlights coming up short is in situations where one needs a ton of light delivered conveniently. For example, I certainly can stack eight speedlights together to match or exceed the output of one AlienBees 1600—but how convenient is that? And if my eight speedlights were all Canon 600 EX-RTs, at \$500 each that would run \$4000 versus the \$600 for an AlienBees 1600, plus a Vagabond mini battery to make it portable. On the surface, in this pure power comparison, the speedlights do not make sense. But ... what if you already own the eight speedlights? Perhaps you are a wedding photographer and have that many to cover a two-photographer team with both on-camera and off-camera flashes as well as having several backups. In this case, would it make economical sense to purchase the AlienBees 1600 and battery? Perhaps not. It's an argument that I often face when championing speedlights (and one I often have with my buddy, Dan Frievalt, just for fun).



Here I have equipped a 7-foot parabolic umbrella with a Lightware FourSquare adapter holding four Godox/Neewer v850 flashes. For the test exposure, each flash was powered up to 1/1 (full power). At 10 feet in distance and ISO 100, this yields $f/9$. At just 5 feet, this jumps up to $f/18$. That's quite a bit of power to use—especially when you consider the ramifications of using a higher ISO. For example, ISO 160 would deliver $f/22$ at 5 feet. The cost for four v850 speedlights with receivers? Less than \$500.



With the flash heads tilted to 45 degrees in order to better fill the entire parabolic fabric, this setup generates pretty even light output across the whole umbrella.

Let me chase this argument one step further. Instead of the more pricey Canon 600EX-RTs, what if we were to swap in eight Neewer tt850 flashes that have approximately the same power output as the Canon flashes, but at a street price of \$105 each. That \$840 total investment makes more sense—but you also lose the off-camera TTL features, which the Neewer tt850 does not feature. Oh, and if you couple in a FT16s receiver for each flash along with a Cells II-C transmitter, you can achieve high-speed sync with these flashes and manually dial your power up and down from camera position. At this point, the total investment would be around \$1200—but you'd have an *eight-light* setup that would allow you to do almost anything with your lighting! The same investment would get you just two “studio” lights (using the AlienBees 1600s plus a battery setup, as an example).

“My personal preference is for speedlights, and I will effectively shape and expand that argument throughout this book.”

Of course, the “features” argument expands from there and gets more complex, but my overriding point is that either choice makes sense and will be functional. There is no one right answer. My personal preference is for speedlights, and I will effectively shape and

expand that argument throughout this book.

The Pluses and Minuses of Speedlights

Let's begin with a discussion of the pluses and minuses of working with speedlights, though much of this falls into a gray area, because not all pluses and minuses are true across all speedlights. Confusing, huh? I'll explain as I go on.

Pluses	Minuses
Small = portable. A single speedlight takes up very little room—and my entire lighting kit (sans light stands) fits under the seat of even the small regional jets.	A small light source is a hard light source. You need to diffuse or soften in order to create “pleasing” portrait light for most subjects.
Battery powered. There are no cords or a need for an outlet on location.	You will need to purchase and charge many AA batteries to cover most multiple-speedlight setups you might use.
Smart. TTL speedlights work with the camera's metering system to calculate output for a balanced exposure.	TTL is difficult for many photographers to grasp (but I provide a clear explanation in this book).
Powerful. There is a lot of power packed into this small light source.	Not as powerful as many “studio” lights—unless you bundle multiple speedlights together.
Inexpensive. Quality off-brand flashes can be found in the \$100 range.	Pricey for the higher-end name brands. Prices are in the \$500 range for top Canon and Nikon flashes.
Easy to accessorize with a plethora of options. From RadioPopper TTL transmitters to MagMod grid and gel systems, there are a lot of ways to customize how your flash works.	Need to accessorize. You need modifiers and accessory devices in order to tap into the full potential of your speedlights.
High-speed flash sync. With this feature, you can battle the sun and achieve shallow depth of field by syncing at shutter speeds up to $\frac{1}{8000}$ second.	Often inconsistent firing outside—unless you use a radio-based remote triggering system.
Hybrid modeling light feature allows you to determine the rough direction and lighting pattern (the speedlight pulses for a few seconds in this mode).	Lack of a constant modeling light. This makes it more difficult to see and tweak the light direction and pattern.

2. Manual Mode: The Basic Way to Start

The most basic way to start working with a speedlight is set it on manual and turn the power up/down on the flash itself to achieve your desired exposure. It's simple, and often it's the least expensive way to get started because basic manual flashes (ones that do not have TTL capability) can be found for around \$60. For example, a YongNuo YN560 manual flash was \$61 at last check. It is just slightly less powerful than the Canon 600EX-RT, yet it costs hundreds of dollars less because it does not have the advanced eTTL and radio-triggering features of the Canon model. You simply set the power level somewhere from full power ($\frac{1}{1}$) down to $\frac{1}{128}$ power and shoot. To determine the right setting, you'll need to use a quality light meter that can measure flash exposure. And, because this is primarily a book on studio lighting, you will need to find a way to trigger your speedlight(s) when they are detached from the camera.



A Canon 600EX-RT set to manual mode.

Light Meters

Measuring the quantity of light coming from your flash to help you determine exposure requires the use of a flash meter. Most quality light meters can measure both ambient (continuous light sources like the sun, indoor lighting, etc.) and flash (quick bursts of light from a speedlight or a studio strobe). Your in-camera meter cannot measure the light from a manual speedlight set up off-camera. You have to use a light meter.

I personally think that Sekonic makes some of the best light meters available, and to

me the best all-around meter, in terms of affordability and reliability, is the L-358.

The L-358, sadly, has been discontinued, but they can be easily found on the used market for \$200–\$250. Otherwise, the entry-level L-308 can be purchased for about the same price new. The replacement for the L-358 is the L-478d, which can be found for about \$340 new. Many other light meters are on the market, but you cannot underestimate the value of a quality, accurate light meter. The top brands, Sekonic and Gossen, are the go-to meter brands for most professional photographers.

The Metering Mode

Once you have a flash meter, how do you meter for a flash exposure? First, you need to set your meter to the manual flash setting. The close-up of the meter to the bottom right shows four icons across the top. They represent, in order:

Sun	Ambient light.
Lightning bolt	Cordless flash; the flash must be triggered manually by you.
Lightning bolt + C	Corded flash; the flash is triggered by a sync cord that you run from the PC connection on the meter to the flash.
Lightning bolt + T	Radio triggered flash; you have a special radio module installed in your meter that can remotely trigger flashes connected to PocketWizard or RadioPopper receivers.

When you are just starting out, you will usually be using the first flash meter setting (the lightning bolt) and will need to trigger your flash manually using a separate transmitter and receiver. This is covered in [chapter 4](#).



The Sekonic L-358 light meter.



Close-up of a light meter.

Camera Exposure Settings

Flash-Sync Speed. When working with flash, your shutter speed must be set at or below your camera's flash-sync speed. What is "flash-sync speed"? It is the fastest shutter speed at which your camera can operate when using a flash, firing the light at the instant the shutter is fully open. For many cameras, this setting is $\frac{1}{200}$ or $\frac{1}{250}$ second. You will need to consult your camera's manual to determine the maximum flash-sync speed for your specific camera.

However, this flash-sync speed is based on having an *on-camera* flash. I have found, in practice, that the very slight delay you have when you use a transmitter to fire an off-camera flash (called “propagation delay”) can make your effective flash-sync speed one shutter speed setting slower. Meaning, if your camera’s flash-sync speed is $\frac{1}{200}$ second, your actual safe shutter speed setting will likely be $\frac{1}{160}$ second when using off-camera flash. Any shutter speed slower than that will also be safe. But the slower your shutter speed is, the more likely you are to introduce blur due to camera shake or subject motion. As a best practice, try to keep your shutter speed at one notch below your flash-sync speed when working in the studio. For me, I set my shutter to $\frac{1}{160}$ second on my Canon 5D MKIII. I then set the corresponding shutter speed on my light meter.

ISO Setting

The next step in metering is to set my desired ISO, which (in the studio) is generally between ISO 100 and 400—and occasionally higher. Why not just always use ISO 100? Perhaps you were taught that any ISO above 100 starts to get noisy. And perhaps that was true ... in 2002. Today’s digital sensors give us the opportunity to capture high-quality, virtually noiseless images at higher ISOs. On my 5D MKIII, I can cleanly photograph portraits at ISO 800 with little concern for visible, objectionable noise. If you find the noise on this camera objectionable at ISO 800, then my advice to you is to quit pixel-peeping at 100 percent magnification on your monitor! Much of what you see as “noise” on screen will not appear in prints. My other piece of advice is to go shoot some ISO 400 or 800 35mm film to see what “noise” used to be acceptable. (We used to call it “grain!”)



This is the sole portrait in this book that was photographed using only available light. Why show it? It was shot about thirty minutes *after* sunset at ISO 25,600 on the Canon 5D MKIII using an 85mm lens at $f/1.8$ with shutter speed of $\frac{1}{40}$ second. Is there grain? Sure. But is it still a nice portrait? Absolutely!



A portrait taken at ISO 800. Noise? What noise? (Settings: Canon 5D MKII, $\frac{1}{60}$ second, f/4.5, ISO 800).

In the studio, I would much rather fire my flashes at $\frac{1}{2}$ power at ISO 200 than fire them at full power at ISO 100. There are plenty of pretty good reasons:

- ▶ I will get faster recycle times.
- ▶ I can fire my flash at least twice as many times on the same set of batteries.
- ▶ I am far less likely to overheat my flash.
- ▶ I will have less wear and tear on the flash tube, extending the life of my flash.

Aperture

Once I've set my shutter speed and ISO, the next step is to determine my desired aperture or f-stop (used interchangeably). Why not just fire the flash and set the aperture according to how much light we have? Because I want to dictate the depth of field for the image. It really is the first creative decision I make that directly ties into the technical settings for the image.

In the studio, I photograph a lot of my individual portraits at f/4.0 to f/6.3. This keeps the eyes sharp while having a gradual focus falloff toward the back of the subject's head. This increases toward the background, keeping the background soft yet with some detail. For families, I target an aperture of f/11, giving me great depth of field and better sharpness on everyone in the family as their faces fall into different planes (varying distances from my lens to their respective faces). For a tight beauty shot of a model who is facing square to the camera, I may set my aperture to f/1.8 to attain very shallow focus on the eyes only and achieve a very soft *bokeh* on everything from the eyes on back. I have different apertures for different needs—all determined by me before any shot is taken.

Let's assume, for our example, that I have set my ISO at 200 and my shutter speed at $\frac{1}{160}$ second. Now, I want an aperture of f/6.3. I position my flash where I want it to be (I'll get into greater detail on this later in the book). Then, I place my light meter right at the subject's face with the dome pointed directly at the flash. I trigger the flash and get my

reading (remember—the meter needs to be set to the proper “flash” setting). Let’s say my reading is f/8, which is $\frac{2}{3}$ stop stronger than what I need. In this case, I must turn down the power on my flash by $\frac{2}{3}$ stop. Makes sense, right? After I have done so, I take another meter reading. It should say “f/6.3.” Perfect. Now I have matched the flash exposure to my desired camera settings. But what if I have multiple flashes? Whoa, slow down, Tiger. I will be covering that when I outline multiple-light setups for portraiture later in the book.

Proper Exposures

So why should you set your aperture to the exact reading of the flash meter? The flash meter is measuring the amount of light reaching your subject. By setting your aperture, ISO, and shutter speed to match the meter, you will be creating a proper exposure that represents the true tonality of your subject. This means you will be capturing an image of your subject that represents how they actually look (more on this in [chapter 6](#) on lighting for portraits). While there can be creative reasons to intentionally under- or overexpose your subject, until you intimately understand how to capture *proper* exposures, please do not go out and purposefully capture poorly exposed images. I feel it is better to use a proper exposure to record as much subject detail and image data as possible and creatively darken or brighten your image in postproduction. If you overexpose your image, you will be losing detail in the highlights—and blown-out highlight detail is gone. Period. No data. An underexposed image lacks data in the shadows, and while you can sometimes extract some of this data in post-processing, the result is a lot of digital noise in the shadows. Why? You didn’t have enough data to begin with.

So capture accurate, proper exposures. With this methodology, you will always have the original, properly exposed image to fall back on.



You can achieve very shallow depth of field with a rapid falloff with a large aperture like f/1.8. Photographed with the Canon 5D MKIII and 85mm f/1.2 lens.

3. TTL: A Different Way of Working with Speedlights

If working in manual mode is the basic way to start, then using the TTL (through the lens) mode is more like a masters-level approach. It's a more complex way of thinking, but once you grasp the concepts and techniques, TTL can streamline your efficiency when working in fast-paced lighting situations like you find as a wedding and event photographer. Personally, I believe there is a time and place for both methods, and I will switch back and forth depending on the situation. Studio work? All manual. Wedding outdoor portraits in the sun? Mostly TTL. Candid? TTL. Outdoor senior portraits? A mix of both. Let me talk a little more about how I use TTL for challenging outdoor and location photography to help give you a better feel for when I think TTL works best.

How TTL Works

At the center of my outdoor and location lighting technique with speedlights is an understanding of how the flash and the camera interact using the TTL metering system. TTL hinges off of the camera's built in reflected-light metering system. This system measures the light that bounces off the subject and comes back through the lens (hence "TTL").

From there, TTL meter has one job and one job only: to make a recommended exposure setting that will balance out the scene to an average reading of 18 percent gray, or the mid-point on a histogram showing luminance. Let me restate that in more simple terms: your camera's metering system wants to turn everything into middle gray. Taking a portrait of polar bear on snow field? Your camera's metering system will want to turn it gray. Taking a portrait of a black panther on black velvet rug? Your camera's metering system will want to turn it gray. This can be troublesome if you don't know how to compensate. However, armed with this knowledge, we can actually *use* this constant to help us make our desired exposures.

"TTL can streamline your efficiency when working in fast-paced lighting situations like you find as a wedding and event photographer."

Notice I didn't say "accurate exposures." While it is important to know how to record an accurate exposure showing the true tonality of a scene, it is even more important to know how to push exposures and bend them to our wills to create what we want. For example, I often purposely underexpose midday blue skies in order to render a deeper blue. In reality, the sky at that time to the naked eye was not as deep as I chose to render it. I made a creative and technical decision to make the sky darker—and I did that by first understanding the TTL meter reading in the camera, and by knowing how to override my camera's automated exposure settings in order to achieve my desired result.



I underexposed the ambient light in the scene by about $1\frac{1}{3}$ stops in order to get a rich blue in the sky and water. I counteracted this underexposure by lighting my bride with two off-camera speedlights to camera right, and my on-camera speedlight firing as a fill light. The result is dramatic and eye-catching. I popped the contrast and saturation a little in postproduction using the Nik Color Efex Pro “Tonal Contrast” filter, then added a texture screen from my Textureland collection.

Making a TTL Exposure

We’ll look at that process more in a moment—but first, let’s cover how the flash interacts with the camera’s TTL system.

First, the meter reads the ambient light in the scene. Then, the camera takes into account any settings you have made that affect the exposure. This includes the ISO and your exposure mode. If you're shooting in manual mode, your camera simply marks the point on your meter scale where you will achieve a "balanced" exposure, based on averaging the scene to middle gray. It's up to you to manually change settings from there. If you're shooting in aperture-priority mode (Av), your camera takes into account your hard-set aperture and sets your camera to the corresponding shutter speed in order to achieve a "balanced" exposure based on averaging the scene to middle gray. If you've set your camera to shutter-priority mode (Tv), your camera takes into account your hard-set shutter speed and sets your camera to the corresponding aperture in order to achieve a "balanced" exposure based on averaging the scene to middle gray. (And if you selected the program [P] mode ... well, just go sit in the corner and ponder your poor life choices. No pro should be shooting in program mode.)

Next, if you are in Av or Tv mode, the camera takes into account whether you have dialed in any exposure compensation (EC). Exposure compensation is an important tool that allows you to override the camera's metering system to make desired adjustments. Remember our polar bear on the snowfield example? If you dial in exposure compensation of $+1\frac{1}{3}$ stops, the camera will record the white of the scene properly. You are essentially telling the system to ignore what it sees and not make the white subject gray; you are the master and know better.



Exposure compensation adjustment on the camera.

If you have a speedlight on the camera, turned on, and set to TTL, the camera senses that. At this point, it will fire a preflash to illuminate the scene at $\frac{1}{32}$ power. It reads the reflection of this flash, mixes it in with the exposure already determined for the ambient scene, and then sends a command to the flash to fire at the power level appropriate for achieving and maintaining a balanced exposure according to all of the settings and adjustments above. One sidetrack to this combined exposure is if you have separately set any flash exposure compensation (FEC) on your flash or in your camera. If you have, the camera will then add to or subtract from the flash exposure based on this override.

“You are essentially telling the system to ignore what it sees and not make the white subject gray; you are the master and know better.”



Setting the flash exposure compensation (FEC) on a flash. On the left, the FEC is turned up $+2/3$ stop on a Canon 580EXII. On the right, the FEC is turned up $+1$ stop on a Canon 600EX-RT.

Finally, the shutter opens and your camera records the exposure.

What I have just described is a pretty complex scenario that all happens in a brief fraction of a second as you start to depress your shutter button. This, my friends, is why cameras and dedicated TTL speedlights cost so much: they have these complex brains inside to help you get the right exposure. We just need to be smart enough to understand what the camera is “seeing” and know when to override and adjust based on this knowledge and what we want the camera to record from our own creative and technical points of view. Professional photography is not for dummies!

TTL in Practice

Let me explain my core technique in full. We’ll use a midday, full-sun, outdoor bridal portrait as an example. My first step is to use the sun as a backlight only. This means that the sun is serving as a hair and edge light—but, more importantly, it is not on the subject’s face causing harsh shadows or a serious case of the squinties.



I placed the sun at the bride's back and used off-camera flash to balance the light on the shadow side of my subject.



The sun was placed behind the couple to serve as edge/rim light. I fired two off-camera flashes to fill in the shadows and provide proper lighting on my subjects.

The problem with this arrangement is that the bulk of the ambient light (from the sun) is coming from *behind* my subject. This would render her face dark if I were to create an accurate exposure for the scene. I could choose to spot meter my bride's face and expose for that meter reading, but then my entire background and the sky behind my bride would be blown out and overexposed.

My other option is to add light in order to fill the shadow on the front of my bride and to help balance out the overall exposure. I could use a reflector to accomplish this, but I have found that reflectors often cause a case of the squinties; the sharp light off a silver reflector is too much for most subjects to handle. I could try a softer white reflector, but that would not provide enough light to balance the exposure of the background sky and render it the deeper tone of blue I desire.

“I choose speedlights as my lighting tool because they give me the option of using high-speed sync in order to have shallow depth of field in my portrait.”

In this example, my only real lighting option to accomplish my creative goal is to use off-camera flash to create enough light to fill the shadow side of my bride and to give me the exposure and creative look I desire. I choose speedlights as my lighting tool because they give me the option of using high-speed sync in order to have shallow depth of field in my portrait (more on this later in the chapter). So, let's apply our knowledge of TTL to my

example of my bride out in the midday sun.

My preferred camera settings are for a shallow depth of field portrait. In Av mode, let's say I set the camera at ISO 100 and f/4. As my camera reads the ambient light in the scene, it sees a lot of bright, blue sky and a white dress. Because its job is to achieve a balanced exposure and to render everything to 18 percent gray it will automatically slightly underexpose the scene. I will still typically dial in $-\frac{1}{3}$ stop exposure compensation and underexpose the ambient light even more in order to deepen the sky. The camera will provide the appropriate corresponding shutter speed, which in this case is $\frac{1}{3200}$ second. Holy cats! That's a fast shutter speed, right? This is a major reason I default to Av mode for this type of portrait; once the shutter speed climbs above $\frac{1}{500}$ second, I really no longer care how high it goes. It won't affect my ability to handhold the camera or to stop average motion. I let the camera worry about it and figure out the proper setting.

High-Speed Sync for Shallow Depth of Field

But wait a minute ... how can the flash handle a shutter speed that fast? Isn't the maximum flash-sync speed around $\frac{1}{200}$ second? Yes, it is—with *normal* settings. However, if you set the flash to high-speed sync (HSS) for Canon or the camera to focal-plane mode (FP) for Nikon, something magical happens: the flash no longer fires just *one* quick burst of light. Instead, it pulses to time the very narrow gap between the front and rear curtains of the shutter as it passes in front of the sensor. This creates an even flash exposure across the entire scene, and allows you to use a wide-open aperture in order to achieve a shallow depth of field.

“You will see several images in this book where I feature a nice, spiky sun in my shot. That's this technique in action.”

The trade-off is the high-speed sync pulsing robs a lot of power from the flash, so you need to work with the flash very close to your subject (the closer the better). Or you can choose to double up the number of speedlights in order to compensate for the power loss. This is the option I typically pick.

In practice, I fire a quick test shot with an image like this and then adjust the exposure compensation and flash-exposure compensation to taste. As a general rule, I try not to turn down the exposure compensation more than $1\frac{1}{3}$ stops. Once I go below this point, my ambient light seems to just “disappear.” It could be a quirk in the system, but it is what I have found works for me.

Deep Depth of Field

Another option using TTL is to purposely avoid high-speed sync to get maximum depth of field. I use this technique when I want to include the sun itself in the shot. You will see several images in this book where I feature a nice, spiky sun in my shot. That's this technique in action. I simply switch from Av to manual mode, set my shutter speed to $\frac{1}{200}$ second, and set my f-stop to anywhere between f/16 and f/22. My goal is to use f/22 to get the best “spiky sun” (caused by the aperture blades). If I cannot get my flash close enough to achieve this aperture, I open up my aperture until I can get the exposure I desire. By

dropping my shutter speed to the maximum flash-sync speed (the fastest “normal” shutter speed that will sync with my flash), I am allowing the flash to fire at full output without having to go into the power-robbing high-speed sync mode. Remember, high-speed sync is only necessary when you need a shutter speed faster than your maximum flash-sync speed.



One of the keys to getting the “spiky sun” look is to use a small aperture like $f/22$. The number of spikes will depend on the number of aperture blades in your particular lens. Here, I used a 20mm Sigma lens because I like the focal length and the blade configuration for this type of image.

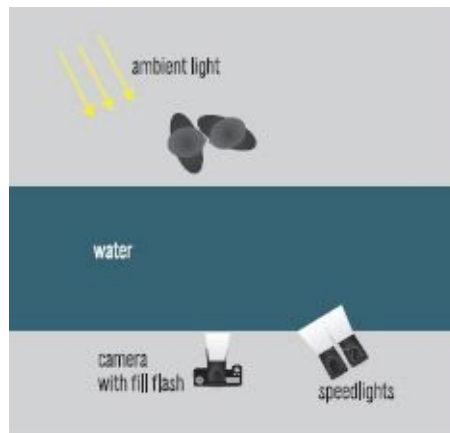
The cool part of shooting with TTL is that I can make these decisions at the camera position—without running to reset my off-camera flash. And I can easily photograph the first frame with a shallow depth of field (like $f/4$), then make a quick setting change on the camera and shoot the next one with a very deep depth of field (like $f/22$). I do this by leveraging the TTL system and its ability to adjust exposure settings based on my input.



The shape of your spiky sun depends on the blade configuration in your lens. This image was captured with a Canon 24–105mm lens, which has eight curved aperture blades. With the sun behind the subjects, I shot with an on-camera flash for fill, and two speedlights to camera right as the main light on my subjects.

Communicate TTL to Off-Camera Flash

The last piece of the off-camera flash/TTL puzzle is the communication between your camera and your flash(es) when they are not physically connected to the camera. That's the subject of the next chapter.



4. Free-Range Speedlights

Once you remove your speedlight from your camera's hotshoe and begin to work with it off-camera, you have taken your first step toward becoming a true speedlight artist. Nothing is more boring than flat light pounding your subject directly from your camera position. Ugly. And no other flash technique screams "Amateur!" like direct flash.

Speedlights yearn to be free and want to help you create beautiful, dimensional portrait lighting. Just one impediment stands between you and this dimensional portrait light that you seek: how does one get the darn things to fire when they are not in the hotshoe? Good question. Fortunately, there are many answers and options for getting the right system to fit your needs and budget. Let's explore them.

Corded Remote Flash

One way to trigger your off-camera flash is with a cord that connects the flash to the camera. There are two basic types: the PC cord and the proprietary TTL cord.

The Quick List

First, here's the quick list of triggering methods for off-camera speedlights:

Corded slaves

Optical slaves

Infrared slaves

Simple radio systems

Advanced manual control systems

Advanced TTL systems

The Terminology

"Slave" is such an ugly word. I only use it here because it is the term used by many manufacturers to describe an off-camera flash that will be triggered remotely. I prefer the terms "remote flash," or "off-camera flash," or simply "remote," and will use these terms interchangeably whenever I can instead of "slave." I will use "slave" when it is the term used by a particular manufacturer (Canon's flashes, for example, have "master" and "slave" settings).

PC Cords

Typically, this cord runs from the PC connection on the camera to the PC connection on the flash. When the shutter button is pressed on your camera, a small electrical charge gets sent to the PC connection. This charge runs through the cord to the flash, which then fires. It's simple and mechanical—but it's not a methodology I would recommend unless you are in a pinch. Here's why:

1. Reliability. PC connections can be twitchy. If the cord gets slightly pulled out, it loses its connection. I’ve also had a number of flashes where the cord only worked when it was connected just a certain way. If I turned it slightly it stopped working.

2. Durability. Cheap PC cords do not last very long. Quality cords tend to cost *more* than inexpensive radio triggers.

3. Standardization. Cord connections aren’t all standard—they come in many shapes and sizes. While most cameras have the standard PC connection, your flashes could have a PC connection, a 2.5mm or 3.5mm miniplug, a old-style “house socket” (as found on older Vivitar flashes), a proprietary connection, or none at all (like you find on the Canon 430EXII)! For the latter flashes, you would need a PC-to-hotshoe cord (PC on one end to connect to the camera, plus a hotshoe connection on the other end to slide into the flash). These can be pricey.

4. Cord Length. The fourth issue is the limitation of the cord length. While cords can be an okay solution if your off-camera flash is only a few feet away from the camera, what if you want to place it twenty feet away? That’s one long cord!

5. Accident Potential. Lastly, if you forget that your flash is connected to your camera via a cord and you move your camera, you could pull your flash over and run the risk of breaking it—or hitting your subject! (How good is your liability insurance policy?)



The silver PC connector is visible near the base of the speedlight.



The PC cable is connected to the flash at one end. The other end connects to the camera's PC connection or hotshoe.



Corded flash with a dedicated TTL hotshoe cord.

TTL Cords

Manufacturers who have more complex TTL flashes, like Canon and Nikon, also offer proprietary TTL cords that run from the camera's hotshoe to the base of the flash. These cords carry the full TTL information back and forth from the camera to the flash, so the flash operates the same as if it were resting in the camera's hotshoe. These cords are

avored by wedding photographers who use camera brackets that place the flash up above the camera on a separate bracket. This special cord allows them to use the flash in TTL mode while it is technically “off-camera.” I worked with a system like this for many years before I got tired of carrying around the extra weight of the bracket. Trust me—my neck and shoulders thanked me. Instead of using direct flash, I now primarily bounce my flash. I won’t go into great detail on how to do this in this book as there are many great resources that cover this technique. One that I’d recommend is my friend Neil van Niekerk’s excellent book *On-Camera Flash: Techniques for Digital Wedding and Portrait Photography* (Amherst Media®, 2009), which is available at Amazon and many other book retailers.

“These cords carry the full TTL information back and forth from the camera to the flash, so the flash operates the same as if it were resting in the camera’s hotshoe.”



An optical slave available from FlashZebra. This connects to the PC port on your flash.



This YongNuo flash has two optical slave options. S1 triggers the flash when any other flash fires. S2 ignores the preflash fired by an on-camera TTL flash and will trigger only on the actual flash for the exposure.

To sum up: go corded only if you have to. It's a clunky solution and there are easier, more effective approaches out there.

Optical Slaves

Some flashes have a special sensor called an optical slave built in. This sensor detects the quick burst of light from another flash and will trigger the flash in which it resides. This is a simple technical solution that has a few limitations, but it generally works pretty well and can be much easier to use than a cord-based approach. Of course, not all flashes have a built-in optical flash sensor. In fact, relatively few of the more advanced flashes have this. The Nikon SB800 had an optical slave, but it was replaced by the Nikon SB900/910 several years ago. None of the current Canon flashes have a built-in optical slave. However, these flashes can be fitted with an accessory optical slave that connects either to the PC connector or to the hotshoe. Manufacturers of optical slaves include Wein, FlashZebra, and Sonia. If you go this route, just be sure that the optical slave that you purchase is compatible with your particular flash.

While few to none of the top-end flashes have an optical sensor (the infrared system in most of the top flashes is a whole different animal that I will address next), there are a number of very affordable manual flashes that have this feature. Manufacturers like YongNuo, Godox, Neewer, Cheetah, LumaPro, and many other so-called “off brand” flashes have a built-in optical slave. To use it, simply set your off-camera flash to the manual setting you desire and activate the optical slave function.

They're simple, cheap, and easy to use. But what are the downsides?

- 1. Distance.** Many optical sensors are good up to 30 feet away—but the closer the remote flash is to the triggering flash the better, by far.
- 2. You Need a Second Flash.** You need a flash to trigger the off-camera light, so you are forced to have a flash in your hotshoe or to use a pop-up flash (if your camera is so equipped). The problem is this: the point of using off-camera flash is *not* to have light coming from the camera position. There are workarounds, but this is still a sticking point.
- 3. Line-of-Sight Limitations.** An optical sensor can be easily blocked, as it is primarily a line-of-sight technology. The sensor needs to “see” the triggering flash. If you put your off-camera flash into a softbox like the Westcott Apollo, the optical sensor will be blocked and the flash won't be triggered.
- 4. Any Flash Can Fire It.** If someone else fires a flash, your off-camera flash will fire, too. This can be a real pain at a wedding.

Like most things in photography, “cheap and easy” has some trade-offs.

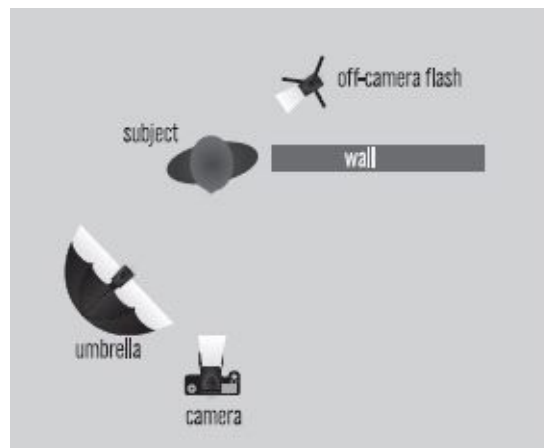
Optical Sensors, Part 2: Infrared TTL

For years, both Nikon and Canon have included infrared TTL communications systems in their flash systems. This system enables an on-camera “master” (Canon) or “commander” (Nikon) to transmit TTL data to an off-camera “slave” (Canon) or “remote” (Nikon) flash. A dedicated proprietary transmitter like the Canon ST-E2 or the Nikon SU-800 can also be used to communicate TTL information back and forth with the off-camera flashes. This ingenious system works exceedingly well when the infrared line-of-sight system maintains a viable connection.

“If you go this route, just be sure that the optical slave that you purchase is compatible with your particular flash.”

In the Canon system, only the 600EX-RT, 580EXII, 580EX, and 550EX can serve as a master flash. Each of these (as well as the 430EXII and 430EX) can serve as slave flashes. In the Nikon system, only the SB900/910, SB800, and SB700 can serve as a commander flash. Each of these (as well as the SB600) can serve as remote flashes. In addition, several off-brand flashes will integrate with the infrared systems, as outlined below:

YongNuo YN-565EX II	Works in slave mode for Canon and Nikon
Phottix Mitros+	Works both in master and slave mode for Canon and Nikon
Nissin Di866II	Works in both master and slave mode for Canon and Nikon
Nissin MG8000	Works in both master and slave mode for Canon and Nikon
Nissin Di700	Works in slave mode for Canon and Nikon



The problem with line-of-sight technology is that anything can block the transmission, including your softbox or umbrella, a tree, a wall, or even your assistant if he or she is standing in the wrong spot.



If you place your speedlight inside of a softbox, like this 50-inch Westcott Apollo, you have to use some type of radio-based trigger in order to fire the speedlight. The optical infrared system is blocked by the construction of the softbox.

This system works quite well when the master and slave flashes are close to one another, but place the off-camera flash in a softbox and you will lose this communication ability. In addition, when shooting outdoors, bright sunshine can interfere with these signals and can cause them to be inconsistent. Lastly, distance can also be a problem; the effective range is 25 to 30 feet outdoors in “favorable” conditions. For these reasons, many photographers elect to add on a radio-based system to assist the infrared system and make it more reliable in non-favorable situations.

Simple Manual Radio Systems

Simple radio systems function as what I call “Marco/Polo” systems. Like the swimming pool game where the seeker closes his eyes and calls “Marco!” and all of the other players respond “Polo!” and the seeker has to find them, simple radio systems have a transmitter (Marco) and a receiver (Polo) that waits for the signal and then triggers the off-camera flash.

These systems come in all shapes and sizes, brands, and price ranges. The long-time market leader in this area is PocketWizard. PocketWizard makes a number of simple triggering systems, from the venerable PocketWizard III to the MultiMax transceiver (transmitter and receiver combination) to the newer PocketWizard X. I have often said that you really can’t go wrong in buying the PocketWizard triggers, but you can also spend a lot more than you really have to (I just lost any chance of getting sponsored by PocketWizard ... sigh). While the PocketWizard III and MultiMax products do have some nifty features (such as changeable groups, an intervalometer function, speed cycling, and more), the vast majority of photographers utilize them as a simple Marco/Polo system. They use the on-camera trigger to fire one or more off-camera flashes. That’s it. And quite honestly, a \$30 system from Cheetah, YongNuo, PixelKing, Godox, or any other manufacturer will do the exact same thing—at a fraction of the cost.

If you are budget-conscious (who isn't nowadays?), then I encourage you to explore quality options at a lower acquisition cost. Read reviews and ratings to make an informed decision. In my opinion, you really shouldn't need to invest more than \$50 per unit (transmitter or receiver) in order to get gear that you can use reliably. It's a simple radio; it shouldn't cost much. And for a few bucks more (or even about the same price) you can get systems that allow you to remotely turn the power up and down, which is a huge convenience. I'll address these options next.

Advanced Manual Radio Systems

An advanced manual transmitter system allows you to use your on-camera transmitter to remotely turn the power up and down on your off-camera flashes. With a system like this, you no longer have to run from flash to flash, manually turning the power up and down to tweak your lighting—you can do it all from the camera! All of my studio lighting is based on using one of these systems with my speedlights.



YongNuo makes inexpensive manual triggers and recently released a line of low cost TTL triggers as well.

The system I have quite successfully used for four years is the RadioPopper Jrx units coupled with RadioPopper Cubes and Canon flashes. While I still have this system, I have quite recently begun to use an excellent off-brand system by Godox/Neewer, and it appears that this will be my studio system of choice going forward.

Let's take a look at these two systems, along with some other options that have become available. As I said in the beginning of this book, it is an exciting time to be a speedlight artist with these new options in the marketplace.

RadioPopper Jrx System

At its core, the RadioPopper Jrx transmitter and receiver work together as a simple Marco/Polo system. They operate in the 902–928 MHz radio frequency, offer sixteen different channel selections, and will trigger essentially any flash with a PC connector, flash port, or hotshoe—provided that the right cord is used to connect the receiver to the flash. The transmitter and receiver both use the slightly pricey CR123A 3-volt battery. The Jrx system uses the same frequencies as the RadioPopper PX system (described in the next section), so I can also use a PX transmitter to trigger my Jrx receivers. Another handy feature! After four years of extensive use, I have found this system to be very reliable.



The RadioPopper Jrx transmitter on the left and receiver on the right.

“I simply move the light I want to be stronger closer to the subject. It’s a little clunky, but it works.”

As you look at the Jrx transmitter, you will notice that it has three knobs. What are these knobs for if this is a simple Marco/Polo system? Well, my friend, it has capabilities beyond its core Marco/Polo function. For example, you can connect a common phone cord between the Jrx receiver and any Paul C. Buff studio strobes (AlienBees, White Lightning, Einstein) and use the rotating knobs on the transmitter to remotely turn the power up and down on up to three separate groups of strobes. The groups are determined by setting the toggle switches numbered 5 and 6 on the receiver.

But this is a book about speedlights, not studio strobes, right? Good news! If you couple your speedlight with a RadioPopper Cube, you can use the Jrx transmitter to turn the power up and down remotely on up to three different groups of speedlights! The RadioPopper Cube leverages the TTL system of the speedlight to choke the power up and down according to the settings on the transmitter. Very cool! I should note, however, that while this works with all current Canon TTL flashes, it will not work with the latest Nikon flashes (SB910, SB900, and SB700). This is how I have controlled my speedlights in the studio for the past four years. Two common setups I use are:

Setup 1:

Group 1—Key light

Group 2—Fill light

Group 3—Edge lights

Setup 2:

Group 1—Key light and fill light (the fill light is about twice the distance from the subject, which creates a 4:1 lighting ratio)

Group 2—Background light, or sometimes an up-light for drama

Group 3—Edge lights

Because I often use four or more speedlights (and sometimes as many as six), the “three group” system has been limiting; I would often like to vary the power separately on *each* of the speedlights. In these cases, I will use distance as another adjustment. For example, if I want one edge light to be stronger than the other and they are both in the same group (usually group 3), I simply move the light I want to be stronger closer to the subject. It’s a little clunky, but it works.

Still, I have yearned to have more control over each of my different flashes. The answer to my yearning appeared on the market in just the past year.



A cell phone shot of my FT-16S transmitter used to photograph headshots on location. It shows group A set at $\frac{1}{8}$ -.3 power ($\frac{1}{3}$ stop under $\frac{1}{8}$ power). This was enough for my key light to provide f/5.6 at ISO 320 with the flash placed inside of a 50-inch Westcott Apollo softbox.

Godox/Neewer 850 and FT-16s Systems Godox is a Chinese manufacturer that makes flashes and accessories for several brands, including Neewer and Cheetah, in addition to its own. The same flash is sold as the Godox v850, the Neewer tt850, and the Cheetah v850. I personally own the Neewer nameplate for the flash.

The flash itself is a well-constructed manual speedlight that is close in power to the Canon flagship 600EX-RT. Yet the 850 has several remarkable differences. First, it is powered by a 11.1-volt lithium ion battery. Most speedlights are powered by four 1.5-volt AA batteries (6 volts total) and require an additional battery pack to provide fast recycle times. With its lithium ion battery, the 850 can recycle in a mere 1.5 seconds on full power, so there’s no need for an external battery pack!

Second, the 850 has a special port on its side into which you can fit an FT-16S receiver. The receiver is tiny and lightweight because it has no battery. Instead, it is powered by the flash’s battery, which is very convenient. The separate FT-16S transmitter allows you to turn the power up and down remotely on up to *sixteen* different groups. Wow! The power can range from $\frac{1}{1}$ (full) power down to $\frac{1}{128}$ power in $\frac{1}{3}$ -stop increments. You can also power off any flash in the group.



A cell phone shot showing the corresponding power level on the main light. It also shows a full battery level after 422 pops during this location shoot. Impressive.

Lastly, and perhaps most surprising, is the price: The 850 flash's street price is \$105, and the transmitter and receiver combo can be found for \$32. For under \$150, you have an off-camera flash that allows you to turn the power up and down remotely and provides you with power comparable to flashes that cost five times as much. Add on additional flashes at \$105 each along with receivers at \$18 each, and you can outfit a studio pretty inexpensively. I just purchased five Neewer 850 flashes, five receivers, and two transmitters for a total price of around \$650—or about the price for 1½ Canon 600EX-RTs. Now, that probably isn't a fair comparison, because the Canon 600EX-RT has some advanced TTL features that are lacking in the Neewer system, but I don't *need* those advanced features in the studio.

High-Speed Flash Sync with the Neewer 850

You can achieve high-speed sync with the 850 flash by coupling it with the Godox Cells II-C transmitter. Use the FT-16S transmitter to set your power level remotely, then place the Cells II-C in the hotshoe of the camera. It will transmit your camera's shutter speed to the flash via the FT-16S receiver. Set your flash to the high-speed sync setting, and your 850 will now sync with your camera at shutter speeds as high as $\frac{1}{8000}$ second. It's a high-end feature that rivals \$500 flashes just by adding in the \$60 Cells II-C transmitter.

An added level of convenience with the Neewer 850 system is that I can charge one battery per flash. In my old system, I would need to charge *twelve* AA batteries per flash—four for the flash itself and eight for the external battery pack. And as I've said, the FT-16S receiver is powered by the same battery as the flash. The transmitter runs on just two rechargeable AA batteries, of which I currently have plenty.



The FT-16S receiver clips into the side of the flash and allows you to remotely control the power up and down using the FT-16S transmitter.

With this new system, I can easily change the power on any of the individual speedlights in my studio setup. I simply set each on its own group, as noted below. In practice I have greatly enjoyed the additional flexibility this new system has given me.

Group A Key light

Group B Fill light

Group C Edge light, camera right

Group D Edge light, camera left

Group E Background, or hair, or up-light



Godox/Neewer Cells II transmitter.

Advanced TTL Radio Systems

The small, elite field of high-end TTL transmitter systems has recently been expanded as well. At first, only the top manufacturers (Canon and Nikon) had the ability to transmit TTL information from one proprietary flash to another using a built-in infrared system. Then, RadioPopper created a way to leverage this built-in infrared system and turned it into a more reliable radio-based system (the PX) that would work at longer distances, around corners, and when the speedlights were placed inside a softbox. Next, PocketWizard created its FlexTT5 system that intercepted the TTL signal by placing the transmitter between the hotshoe and the flash. The Flex sent that signal to a remote receiver which then fed the TTL information to the off-camera flash via the hotshoe. Two years ago, Canon shook things up by introducing the 600EX-RT that incorporated a built-in radio control that would work only with other 600EX-RT flashes and the new ST-E3 RT dedicated transmitter (though the 600EX-RT would still work in optical infrared mode with older Canon TTL flashes). Now, there are new players that have piggy-backed onto the name-brand technologies and have created product offerings that rival their higher-priced competitors. But which is the best? Which are poor investments? Honestly, it's hard to tell, but I will share what I have experienced and my overall thoughts on the options.

RadioPopper PX

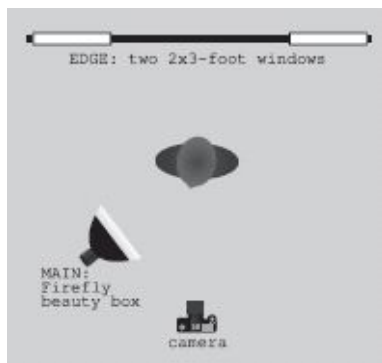
This system was truly a game-changer for my photography. While I had dabbled with the infrared TTL system from time to time, I primarily used a manual Marco/Polo-type system to trigger my off-camera flashes when photographing weddings or portraits outdoors. This worked fine except for when I wanted shallow depth of field, which would require a high shutter speed in order to offset my more wide-open aperture. Without the high-speed sync that TTL would afford me, I was out of luck. Then the PX system walked into my life (to the tune of \$249 per transmitter and receiver, at the time) and I set out to rock the outdoor

wedding and portrait world with my high-speed sync flash shots out in the midday sun. The look was totally unique to my area at the time; my rich blue skies and dramatic lighting for wedding portraits clearly set my work apart from everyone else who was running into the shade every chance they got. I scoffed at them—ha HA! I soon became a TTL off-camera speedlight junkie, all because of the RadioPopper PX.



One of my RadioPopper PX transmitters affixed via Velcro atop my on-camera master flash. I also use a silicone wrist band to doubly secure the transmitter.

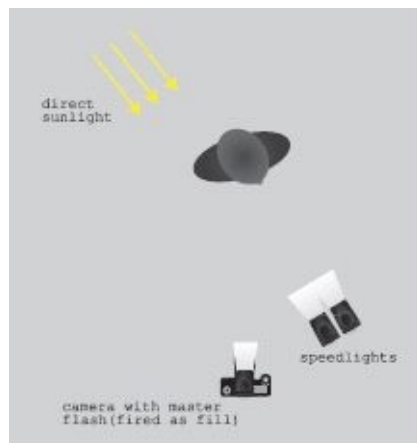
The underpinnings of the PX system are deceptively simple (though I really couldn't explain the engineering behind it). First, the PX transmitter sits atop the flash head, where it intercepts the TTL signal from the flash. It converts that information into a data packet and sends it via radio waves to the PX receiver. The receiver interprets that data, then converts it back into an infrared signal that is fed into the infrared port on the slave flash. It's pretty nifty—and I have found it to be pretty consistent. About the only time I ever have to troubleshoot is when it gets hot out and the foam-rubber cushion between the PX receiver and the flash loosens up and occasionally slides over enough that it blocks the infrared port, thus blocking the signal being sent from the receiver into the slave flash. It's the first thing I check if things aren't firing, and it's usually the culprit. Other quick troubleshooting check points are:



One Canon 580EX II speedlight in a Firefly beauty box was fired in eTTL using the RadioPopper PX system. The ambient light from two small windows provided the edge lighting.

1. Is the master flash set to “master”? And is the slave flash set to “slave”? It rates a “Duh!” in simplicity, but it was the problem at this morning’s engagement shoot. Oops.
2. Are the RadioPoppers turned on? (Yes, really.)
3. Did your off-camera flash fall asleep because you forgot to turn off the power-saving “sleep” feature?
4. Are the master and slave flashes set to the same channel?
 5. Are the PX transmitter and receiver set to the same channel (which is a different system from the channel inside the flash)?
 6. Is the PX receiver set to the right slot to align with the flash you are using as the slave?
 7. Is the PX transmitter aligned with the front of the flash (Canon) or the back of the flash (Nikon). Is the pickup on the front of the transmitter facing forward?
 8. Is the battery power on any of the PX units lower than level 5? (They will still work at low levels, but could become inconsistent.)
 9. Are you using quality alkaline AAA batteries in your units?
10. Is the transmitter set to the type of flash you are using (Hc for Canon; Hn for Nikon)?

If none of these tips work, then the next most likely problem is that your flash head is worn out and not sending a clean signal. This happens with Canon 580EX II flashes as they age; when it does, I simply send them to Canon Professional Services and they replace the flash head assembly for about \$125. A simple test to see if this is the problem is to check whether the flashes will trigger in optical infrared-only mode. It’s best to test them inside and relatively close together. Alternate them back and forth; if they all work as master or slave, then the final problem likely rests with the RadioPopper units. I have found that my handy little check list will solve at least 95 percent of the problems anyone has. Generally, it’s operator error.



An on-camera Canon 580EX II flash was set to master (fired) with RadioPopper PX transmitter. Two Canon 580EX II speedlights off-camera were set to eTTL and slave mode. They were fired with RadioPopper PX receivers.

PocketWizard FlexTT5

The PocketWizard FlexTT5 allows you to manually control the power up and down on up to three different groups using the ControlTL feature. So, in some ways, it is like the RadioPopper PX and Jrx systems combined. I own a set of these, but truth be told, I haven't really worked with the system extensively. While most of my friends tend to be "RadioPoppies," I know a lot of photographers who swear by PocketWizards and others who think they are inconsistent. (Of course, that is tempered by the fact that I have also

encountered a lot of photographers who cannot seem to work with either system, which makes me think that they might be “technology intolerant.”)

The FlexTT5 system works a bit differently than the built-in infrared and RadioPopper PX systems, which use a high-speed sync technology. As explained in [chapter 3](#), the high-speed sync mode times a pulsed flash with the narrow opening between your first and second shutter curtains when shooting at shutter speeds shorter than the flash-sync speed. This allows you to use very high shutter speeds (up to $\frac{1}{8000}$ second), but the pulsing does rob a lot of power from the flash. The FlexTT5 uses a different approach that is called hypersync. Rather than pulsing the light, it produces a normal flash of light with precision timing to align it with the moving shutter curtains. This allows more light in the image than high-speed sync can provide, and works with higher-powered flashes like studio flash packs and monolights. That’s a pretty cool technology.

Phottix Odin and Mitros+ Flash

This is an interesting new contender that I got to play with only briefly, but it appeared to be well made and well thought out. The Odin is a radio-based TTL transmitter that can work with the Phottix brand Mitros+ flashes—or, with the addition of the Odin receiver, any of the Canon or Nikon TTL flashes. In addition, the Mitros+ can work as an on-camera master flash that will also control the flashes with the Odin receiver (or other Mitros flashes in slave mode). This appears to be a very nice hybrid system. Like the PocketWizard FlexTT5 system, the Odin transmitter/receiver combo will allow you to remotely control your flashes in TTL or manual. The Odin transmitter and receiver combo run about \$329, with add-on receivers in the \$130 range. The Mitros+ flash with built-in transceiver is \$399.



The Phottix Odin transmitter and receiver.



The Phottix Mitros+ flash has a built-in radio transceiver for communicating TTL and manual power settings.

YongNuo

YongNuo is perhaps best known for its inexpensive line of manual flashes, but they now have several new offerings in the TTL flash and transmitter market—and they have been getting strong reviews.

The first is the YN-E3-RT, an obvious knockoff of the Canon radio transmitter designed to work with their flagship 600EX-RT flashes. The YongNuo version offers all of the same features as the Canon version but comes in at about half the price (\$145 versus \$289 street price). I can neither recommend nor reject this trigger as I have not worked with it. I merely point out its existence as an option to consider.

The next item is the YN 622C and YN 622N for either Canon or Nikon respectively. With the YN 622 system, a transmitter fits in the hotshoe of the camera (similar to the PocketWizard FlexTT5) and then remote flashes slide into the hotshoe on top of the transceiver. In addition, an on-camera flash can fit atop the transmitter when seated in the hotshoe, so you do not have to give up an on-camera flash to use this system—a nice option. The YN 622 will transmit TTL information and will work in high-speed sync. You can also remotely control the power up and down on your Canon or Nikon flashes in up to five different groups. The price is only about \$40 each, a far cry from what RadioPopper and PocketWizard charge for their TTL triggering systems. Mix in YongNuo's own \$175 TTL high-speed sync flash, the YN 568 for both Canon and Nikon, and you have a pretty inexpensive option for on- and off-camera TTL flash photography that includes an option for high-speed sync.

Read Reviews and Check the Specs

As the industry is changing rapidly in this area, my advice is to check out the various gear review sites like www.dpreview.com, www.flashhavoc.com, www.strobist.com, and my own blog, www.michaelmowbray.com to stay abreast of new gear as it becomes available. Also, check out the sites for the various manufacturers I have mentioned:

Nikon: www.nikonusa.com

Canon: www.usa.canon.com

Godox: www.godox.com

Phottix: www.phottix.com

YongNuo: www.yongnuo.photography

RadioPopper: www.radiopopper.com

PocketWizard: www.pocketwizard.com

It's great to have so many quality options available to speedlight artists! And there appear to be even more on the way.

5. Flash Modification

Flash Zoom

The zoom feature of speedlights is designed to adjust the flash coverage width in order to best match the field of view of the lens you are using—or to suit your creative intent.

How It Works

The zoom feature automatically kicks in when you are using a branded flash (Canon flash on Canon camera, etc.) and have the flash pointed straight ahead. If you use a telephoto lens, the beam narrows to match. If you use a 24mm wide-angle lens, the beam widens to match.

If, however, you turn your flash head to the side or straight up, all bets are off. The zoom level no longer adjusts. In most cases, a non-frontal or off-camera flash will default to a 24mm or 35mm setting. Fortunately, when bouncing or using off-camera flash, you always have the option of manually setting the zoom.

For instance, when I bounce flash I will often manually set the zoom of my Canon 580EXII to 105mm in order to tighten the beam and give it a bit more power. Wait ... what? You get more power when you tighten the beam? Yes, indeed. In fact, I have determined that as you progress through the standard zoom settings on your flash (24mm – 28mm – 35mm – 50mm – 70mm – 105mm), you increase the effective output power by $\frac{1}{3}$ stop. Very interesting.



Photo showing zoom level on 600EX-RT

How does this apply in the field? Let's say that you set your flash as close as you can to your subject in the scene and you have it at full power and the default level zoom of 24mm. However, you are still $\frac{2}{3}$ stop under-powered on your flash exposure. You could add another flash, or ... you could change your zoom level from 24mm to 35mm. Yes, your beam will be a little narrower, but in most cases that will be fine and will not cause

unsightly drop-off or vignetting on your subject. Problem solved.



Ashley and Jeff were on a small wooden bridge over a stream. I couldn't get the flashes close to them without sacrificing my assistant to the stream, so the closest I could place the speedlights was on the shore on camera right. To compensate for the distance, I had my assistant manually set the zoom on each speedlight (there were two) to 80mm. This provided me with a narrower beam of light that would travel farther before dissipating.

Zoom Levels

The zoom level of the flash head gives us an interesting technical and creative tool to utilize. Creatively, we can choose the coverage field from the flash, selecting from very wide to a focused, almost spotlight effect. Additionally, as we concentrate the focus of the flash beam, we also increase its effective power. Each of the photos below were captured at these settings: $\frac{1}{160}$ second at f/7.1, ISO 100, at a distance of 5 feet from the background. Yet note the actual output of the flash at each zoom level.



Zoomed to 24mm. Output = f/7.1.



Zoomed to 70mm. Output = f/10.



Zoomed to 50mm. Output = f/10



Zoom at 14mm with diffusion panel flipped down. Output = $f/4$. Note that the diffusion panel eats up $1\frac{3}{4}$ stops of power difference between 24mm and 14mm with the panel in place.



Zoomed to 28mm. Output = $f/8$.



Zoomed to 35mm. Output = $f/9$.



Zoomed to 80mm. Output = f/10.



Zoomed to 105mm. Output = f/11.

Zoom as a Creative Tool

This technique also works as a creative tool. Let's say that you want a dramatic spotlight look and all you have is your bare, off-camera speedlight. Trying zooming the flash to 105mm (or 200mm on the top-end Canon and Nikon flashes) and you now have a spotlight effect. You can narrow the beam further with a simple drink coozie (I hand out my own branded Snootzies at workshops) for an easy snoot effect. Ta-da! Or, add on the MagMod grid system (detailed in my section on Hollywood glamour portraits; see [chapter 7](#)) to have even tighter control over your spotlight. It can be an effective way to get a different, creative look.



My Snootzie is a simple foam drink coozie used as a snoot. Be sure to use a black or gray one to avoid adding any color

cast to your flash output.



Notice the difference between the bareheaded speedlight image (top) and one where I softened the speedlight with a 60-inch octabox (bottom). We'll consider more examples from this sequence later in the chapter when we look at light modifiers.

Hard Light or Soft Light?

By definition, “soft light” in portraiture describes a gradual transition from highlight to

shadow. “Hard light” describes a rapid, almost instant transition from highlight to shadow that results in hard-edged shadows.

Which effect a light source will produce depends on the apparent size of the light source relative to the subject. And it’s the *apparent* size that is the key. The sun, for instance, is a huge light source—the largest object in our solar system. Yet on a sunny day I can close one eye and hold up my thumb to block the sun. The relative *apparent* size of the sun to me as the subject is small. It will produce hard light. Conversely, a 60-inch octabox placed 2 feet from me would appear to be huge—it would envelop my entire field of view if I looked directly at it. This would provide soft light.

With that knowledge, is a bareheaded, unmodified speedlight inherently a hard or soft light source? In average use, it would be a hard light source. It would appear to be small in size from the subject’s viewpoint. Given that fact, I work with speedlights in two basic ways:

1. Use Bare Flash to Match Other Hard Light Sources

I use the hard nature of the bareheaded speedlight to match with the hard nature of the sun and other hard light sources to create dramatic portraits. In creating such images, I use dramatic posing and storytelling to work hand-in-hand with the dramatic lighting. In that way, everything makes visual sense. To me, it does not make sense to use hard lighting for a standard smiling headshot. It’s incongruent. The majority of my dramatic outdoor portraiture is based upon using bare speedlights.

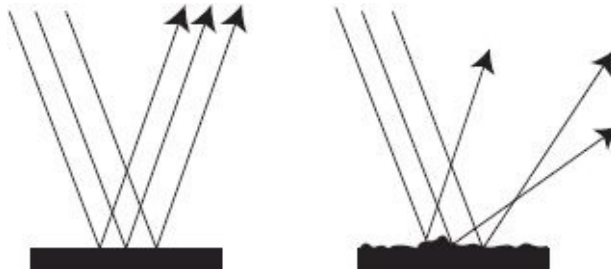
2. Modify the Flash for a Softer Effect

When I don’t want hard light, I modify the speedlight using devices like softboxes and diffusion panels (and to a lesser degree, umbrellas) that spread the light and create a larger light source in relation to my subject. This type of lighting is more conducive to portraits where the subject is looking at the camera, and/or smiling. Virtually all of my in-studio portraiture is based upon using light-softening modifiers. This look works well for romantic couple portraiture, as well.

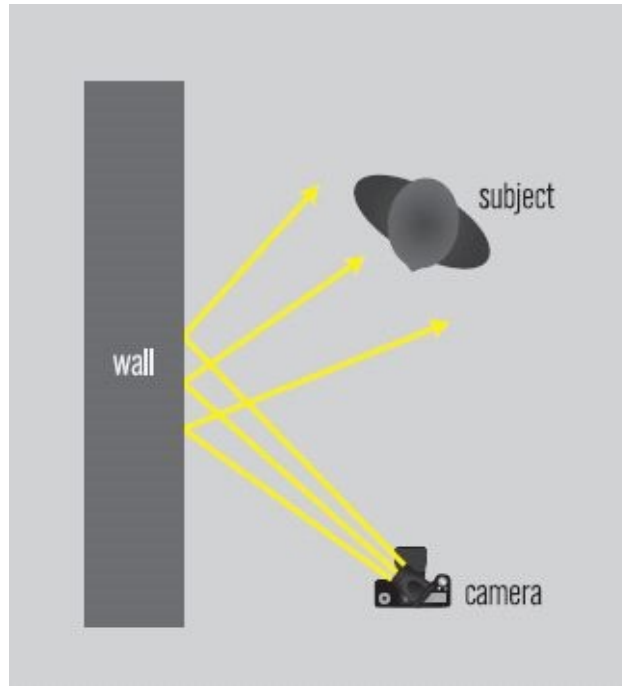
Bouncing the Flash

The cheapest (\$0) and often easiest way to soften the hard light coming from your flash is by bouncing it off of a nearby wall and/or the ceiling. Unless the wall is a highly reflective surface, like a mirror, the light bounces and scatters off the surface of the wall, creating a diffuse reflection. Without getting into deep physics (and I’m not smart enough to wade into that pool), the act of bouncing softens the light by making the light source appear to be bigger in relation to the subject.

The light being bounced off the wall will also pick up the some of the color from the wall, so you need to be careful where you are bouncing your flash. White walls work great; cream walls will reflect a little warmer light, which can be pleasing; red or green walls can create color-balance nightmares, as can wood-paneled walls.



An uneven surface (right) helps to redirect the angles at which the light rays reflect back toward the subject, creating the appearance of a larger, softer light source. The light is also less concentrated and less specular.



This simple bouncing technique just requires turning the flash head toward the wall. The reflected light that strikes the subject will be larger and softer.

Flash bounced straight up off of a ceiling can work well as a fill light. We'll take a detailed look at fill light and light positioning for portraiture later in the book.

Umbrellas

Likely the cheapest and most accessible flash modifier is the venerable umbrella. Good umbrellas can typically be found for less than \$30 and come in a variety of sizes, though I prefer the ones sized at 45 inches and larger. They also come with different fabrics (white, silver, and translucent) and two different orientations (shoot-through and reflective). The handiest umbrellas have a white inner lining and a removable black outer fabric layer so you can use them in the reflective orientation (with the black fabric in place) or in the shoot-through orientation (with the black fabric removed). Umbrellas are lightweight, very portable, easy to use, and convert a small, hard light source like a speedlight into a large swath of reasonably soft light.



A 60-inch umbrella set up in a shoot-through configuration with the outer black fabric removed.



The speedlight is attached to the top of an umbrella adapter and aimed into the umbrella. I prefer to flip down the diffusion panel on the front of the speedlight to spread the light more evenly to fill the umbrella.



I find it best to flip down the diffusion panel on your flash in order to widen your flash's light beam to fill the entire umbrella and to lessen the center hotspot.



Add on the black panel and the umbrella turns back into a reflective configuration.

While silver-lined reflective umbrellas will return the most light, I often find them too specular—meaning that they can create bright, unattractive highlights on your subject (generally on the forehead and nose). Because of this, I favor the white-lined umbrellas; they deliver light that is more gentle ... although not as soft and diffuse as a softbox, as you will see in the following pages.

The lightweight, portable nature of the umbrella also contributes to one of the major downsides: they are not very durable. It is easy to bend the slim metal ribs and easy to tear

the fabric from the ends of the ribs. Also, it is difficult to use umbrellas outside; even a light breeze will catch and fill the fabric, turning your lighting setup into a prop from *Mary Poppins*. Still, it is hard to beat the softness they deliver at a low price, making umbrellas a good place to start for the budget-minded photographer.



This 72-inch parabolic umbrella features a bright white inner lining.



The same 72-inch parabolic is now outfitted with two speedlights that serve to better fill the entire surface area of the umbrella and to provide more light output.



A 72-inch parabolic with two Neewer TT850 speedlights provided the broad, soft light for this fun, deconstructed look from a fashion shoot.

Umbrella-Style Softboxes

The next step up from umbrellas, and the first step into the softness that a softbox can deliver, is the category of umbrella-style softboxes. The unqualified leader in this category is Westcott with their line of very popular Apollo softboxes. Photek's line of Softlighter

softboxes is also popular, as are a number of boxes offered by smaller manufacturers on eBay and other web sites and photo retailers.

These softboxes blend the lightweight portability of an umbrella with the directional softness of a classic softbox. The Westcott Apollo utilizes a bottom-access vent that allows you to run your light stand up into the box itself. As with umbrellas, you will need a standard umbrella adapter, such as the Manfrotto 026 Swivel Umbrella Adapter, to attach your softbox to the light stand. Then, you use the footie that comes with most speedlights (or a metal cold shoe) to screw onto the brass stud and affix your speedlight to the light stand. Your speedlight is then pointed toward the back of the softbox so that the light will bounce off of the reflective material, scatter around the box, and pass out through the front diffusion fabric to create a large, diffuse light source.



The Westcott 50-inch Apollo creates pleasing, soft light that is perfect for on-location headshots. Here, it was combined with a Westcott 28-inch Apollo as a fill light and a Westcott 26-inch Rapid Box as a separation hair/edge light.



The Westcott Apollo 50-inch softbox combines the portability of an umbrella with the more diffuse softness of a standard softbox.



With the front diffusion panel flipped up, you can see how the speedlight is positioned inside of the box and fired toward the back of the box.



You can see how the center of the Softlighter is brighter than the edges. Why do you think that is? One reason is that it is a shorter distance for the reflected light to travel from the center of the box to the diffusion panel and the light rays that travel to the edges dissipate more on the longer trip. Why else?



The center shaft of the Photek Softlighter II comes out through the vent in the front diffusion panel and fits into a standard umbrella adapter. The Velcro snugs around your flash head to help eliminate any undiffused light leakage.

My personal favorite in this category of softboxes is the Westcott 50-inch Apollo. I have used one for many years of on-location headshots and portraits. While it is a little beat up, it is still going strong. The 50-inch Apollo retails for around \$170.

The Photek Softlighter II is built upon a more classic umbrella design but incorporates a front diffusion panel to help lessen the specularly associated with most umbrellas. Instead of placing the speedlight inside of the box, the Softlighter II has a Velcro-closure slit in the front diffusion panel that allows you to place your speedlight on the outside of the box. This placement can come in handy if you are relying on an infrared line-of-sight transmitter system, such as is incorporated into most Canon and Nikon flashes (see [chapter 4](#)).



I have my Softlighter on a C-stand with a Kupo boom arm to serve as a fill light in my studio when needed. You can see from this shot that it is just a few inches from my ceiling fan, about 12 feet above the floor at the top of the Softlighter.

Standard Softboxes

The modern softbox is the *de rigueur* light modifier used by professional photographers. A standard softbox consists of an enclosure (box) around your light source, which is usually located at the back of the box and attached via an adapter commonly called a “speedring.” The inside of the box is lined with reflective material and the front of the box has a translucent diffusion panel. Many softboxes also have an inner baffle consisting of a small piece of diffusion fabric located near the strobe to provide an initial scattering of the light. The light then bounces around the reflective interior of the box and passes through the front diffusion panel, scattering the light rays even further. This “double scattering” of the light rays is important; it’s why the light coming from such a softbox is very diffuse and lacking in specularly. This means that the light will be quite even and lacking in strong highlights that other light sources can cast onto your subject.



I find the 1x4-foot stripbox with the egg crates attached works perfectly as an edge light.



The rear view of a 1x4-foot stripbox shows the well-constructed speedlight-dedicated speedring adapter. The updated Profoto speedlight adapter is even better as it allows you to connect two speedlights at the same time!



For the cover photo of Katie, a 1x4-foot stripbox was used as the key light. Don't be afraid to mix around your lights and try new looks!

“What softboxes are the best? The easy answer is the biggest ones that you can afford and fit in your studio. Of course, that is assuming you want the softest light possible.”



The lighting was pretty simple for this image. I had one speedlight in a Creative Light 2-foot square softbox suspended on a boom over Sophie. I was seeking to create a simple, dramatic, almost noir-like portrait.

When we speak of the “quality of light” we most often focus on the softness of the light. This “softness” is a function of the size of the light source in relation to the subject (as discussed earlier in this chapter). The second important element in quality of light is specularities: how well defined (or, even better, *undefined*) the highlights created by the light source are. A very specular light source, such as a bare speedlight, will create strong, hard-edged highlights on a reflective object (such as our subject’s skin in a portrait). There is little to no diffusion/diffraction of the light rays traveling from the bare speedlight to the subject. They travel in a straight line together and reflect mostly in a straight line together, creating a strong highlight. However, scatter these light rays through a diffusion panel, then scatter them again through a second diffusion panel, and you break up those strong highlights. Now, the light rays are striking and reflecting off of the subject at different angles. That’s a long explanation, but it’s an essential one in understanding why we prefer devices like softboxes when photographing portraits. The light coming from them is just plain more pleasing.

So, what softboxes are the best? The easy answer is the biggest ones that you can afford and fit in your studio. Of course, that is assuming you want the softest light possible. Creatively, that doesn’t always fit. This is why I prefer to have softboxes of different sizes. Also, not every softbox manufacturer out there has a speedring or adapter

that will accommodate speedlights. Shocking, I know. One company that does, and I highly recommend, is what was formerly the line of Creative Light softboxes. Creative Light was absorbed into Profoto and is now their RFi line of softboxes. The standard softboxes I currently have in my studio are:



My 50-inch Apollo softbox by Westcott collapses like an umbrella, making it very portable. Yet it delivers a very nice, soft look. It's my go-to modifier when very diffused light and portability are needed for an on-location shoot.

- Creative Light** one 5-foot (60-inch) octabox
- Creative Light** two 1x4-foot stripboxes with eggcrates
- Creative Light** one 1x3-foot flat-front stripbox
- Creative Light** one 2x2-foot square softbox
- Larson** one 3.5x5.5-foot softbox
- Larson** one 48-inch Lightbender softbox

Like most softboxes, the Creative Light/Profoto RFi boxes require a speedring to attach your speedlight (or any other standard studio strobe) to the box itself. I do like the Creative Light/Profoto speedlight speedring, especially when compared to the speedring for my Larson box, which seems cobbled together as an afterthought.

There are other high-quality softbox options out there. Just be sure that any box you are considering can be easily adapted to work with speedlights. Also, consider spending a

little bit if you are outfitting your studio for the long run. I've had my Larson large softbox for more than a decade and it looks and performs like new. The same goes for the Creative Light/Profoto softboxes that I've owned for about six years.



A steampunk portrait of Nicole Bottensek captured with the Westcott Rapid Box 26-inch with the beauty dish deflector plate installed.



A second spooky look from the same shoot with Nicole Bottensek. The Westcott Rapid Box 26-inch is on a boom arm and is set up as a beauty dish. The back light is a gridded speedlight on the floor behind Nicole. Fog from an inexpensive fog machine was added. Wardrobe by Rachel Frank. Makeup by Colour Law. Hair by Kristin Lillig.

Westcott Rapid Box

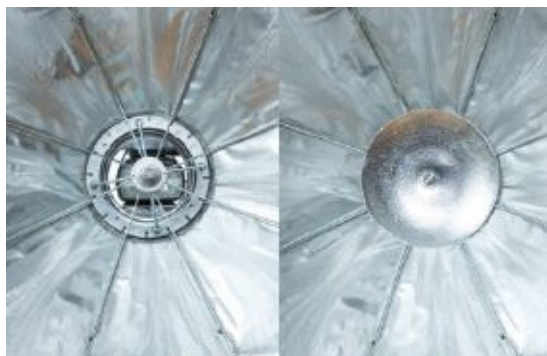
After fourteen years as a full-time professional, I have come to a number of conclusions about gear, many of which I espouse in this book. One major one is this: studio softboxes work great in the studio, but they are a pain when working on location. So, I have my studio lighting gear and I have my location lighting gear—with a few pieces that mix between. My absolute favorite small, portable, location softbox is the line of Westcott Rapid Boxes. A close second is an inexpensive generic 30-inch umbrella-style softbox I picked up on Amazon for \$30.



Westcott Rapid Box 26-inch with the front diffusion panel attached (left)—and a peek inside the Rapid Box (right). Here, the optional beauty dish deflector plate is attached. For sharper, snappier light, the Rapid Box can be used without the diffusion panel, as shown.

The Westcott Rapid Box is made especially for speedlights and is available in three sizes: 20-inch, 26-inch, and 10x24-inch strip. It comes in a nifty little carrying case and sets up in about a minute. It's portable, easy to use, and efficient—three very important criteria for me. And, of course, the light must look great, too.

Your speedlight fits into a cold shoe on the back of the Rapid Box, or you can remove the cold shoe and screw directly into your receiver if you are using something like a RadioPopper PX, RadioPopper Nano, YongNuo YN 622, or PocketWizard FlexTT5. The speedlight fires into a small deflector to help break up the center hotspot and scatter the light before passing through the removable front diffusion panel. A separate 5.5-inch deflector plate is available to attach to the center post and convert the Rapid Box into a pop-up beauty dish.



Two straight-on views, with and without the deflector plate attached.

Lightbender

The curved Lightbender softbox is designed to provide light that wraps around the face. It works well as a beauty light, especially when coupled with a curved Eyelighter reflector in a clamshell configuration. I purchased my Lightbender from the now defunct Larson Company, but you can find similar models from Sweetlight Systems and JG Professional Lighting.



The Larson 48-inch Lightbender is curved to provide light that fits the curve of the human face.



The Lightbender was coupled with the Eyelighter reflector in a clamshell configuration. The Lightbender was slightly above and in front of the subject (just out of frame) and the curved reflector mirrored it below to cast light back up into her eyes.



Each of the individual images on this sports poster features dramatic uplighting using the Lightbender.



The Lightbender was on a low stand and aimed back up at Erin to create a striking, dramatic look.

I also like to use the Lightbender as a dramatic uplight. Uplighting is sometimes derisively called “horror” lighting (it *does* work for the horror look) and it should really be used sparingly. But it *can* have a powerful effect when implemented creatively. It’s a look I like to use for my sports portraits as well as with some of my models.

Beauty Dish

As its name implies, a beauty dish is often used to create “beauty” portraits and is a very common tool used by fashion, beauty, portrait, and boudoir photographers. A beauty dish is essentially a parabolic reflector that has one unique difference: a deflector plate is added to the middle of the dish to soften the specular hotspot typically created by a normal flash reflector. The end result is focused light that has both contrast and softness to it. Most beauty dishes have diameters in the 20- to 22-inch range, but there are also many in much larger sizes. Personally, I’ve found a 22-inch beauty dish to be just right for my work. In my section on beauty lighting (see [chapter 7](#)) I go into more detail on how I prefer to use a beauty dish in my portraiture.



This lightweight 22-inch beauty dish features adapter options that fit one or two speedlights. You can find it at Kacey Enterprises.



It’s common to add on a diffusion sock with a beauty dish in order to soften specular highlights.



A rear view of the beauty dish showing how one speedlight is centered to shoot through the back and into the deflector plate, which helps to scatter the light around the outer dish.



Since beauty dishes often work best centered above the camera lens and close to the subject, it is best to use a boom arm so that the light stand will not be in your way. Here, I used a Manfrotto boom on a classic C-stand.





This is one of my favorite beauty setups. The main light was a 22-inch beauty dish in front of and slightly tilted down toward Erin to light the mask of her face and to provide a catchlight. A curved Eyelighter reflector bounced light back up, softening the shadows and providing a unique catchlight. Dual edge lights set to approximately 45 degrees and behind her created separation. That's it—three lights and a reflector for beautiful lighting.



MacGuyvered Solutions

If you don't have access to a softbox or umbrella, here's a quick solution that works as a simple, large flash diffuser. Using a bracket attached to a light stand, set up a large reflector frame with a translucent panel. Place your speedlights behind the panel and position them for even coverage across the fabric.

Too “Flashy”?

Photographers who experiment with speedlights often feel the look is too “flashy.” The images here—and, for that matter, in the rest of the book—are my response. You have to learn to control how the speedlight affects the exposure. You can turn the power up and down in manual mode, or adjust the flash exposure compensation in TTL. If the result is too “flashy,” make an adjustment. It's not about the flash—it's about you.



A 40x72-inch reflector frame with a translucent panel was flipped horizontally and attached to a light stand using a bracket.



Behind the diffusion fabric I placed two speedlights to provide even coverage across the whole panel, which will diffuse the light from the small flashes.



Here's a portrait I created using my MacGyvered diffusion panel as a softbox.



I did not want much punch from my off-camera speedlights, just a little extra light to open up the shadows on her face, clean up the green color cast from the foliage, and add nice catchlights. Instead of firing my speedlights at full power, I dialed down the flash exposure compensation and fired them through a scrim. This gave me the subtle light I needed to blend with the ambient light of the overcast day.



Test1: Creative Light 60-inch octabox. Speedlight set to $\frac{1}{60}$ power. Very pleasing, soft light with low specularity on the highlights.



Test 2: Generic 30-inch umbrella octabox. $\frac{1}{4}$ power. Note the stronger shadows and the increased specularity of the highlights on the forehead, nose, and cheek.

Comparing the Light Modifiers

As one can imagine, not all lighting modifiers are created equal. Perhaps that is why there are scores of them on the market.

To better help you see and understand the differences between the many different modifiers I have mentioned in this book, I brought in my model friend Ellie Sarmadi to very patiently sit in a similar pose as I set up each modifier and photographed portraits. Notice the difference in the hardness and shape of the shadows, as well as the specularity (brightness/hardness) of the highlights. In addition, some modifiers require more light to achieve the same exposure; I have noted differences in power settings as I made my way through the modifiers. In addition, notice how much “spill” light hit the background. None of the photos in this sequence have been retouched in any way. The base settings were as follows:

Key light: Neewer tt850 speedlight set to achieve $\frac{1}{60}$ second at f/5.6 and ISO 200. The power level varied based on the modifier in order to achieve a constant f/5.6. The key light was placed at 48 inches away from the subject and at approximately 30 degrees above and 30 degrees to the left of the camera.

Background light: Neewer tt850 speedlight set to $\frac{1}{32}$ - $\frac{1}{3}$ power, giving me f/4.5. This light never changed throughout the sequence.



Test 3: 22-inch Kacey Enterprises Beauty Dish. $\frac{1}{4}$ + $\frac{1}{3}$ power. Pleasing light and a little less specular than the previous small softbox, but not as soft as the 60-inch octabox.



Test 4: 60-inch Photek Softlighter umbrella with diffusion panel. $\frac{1}{4} + \frac{1}{3}$ power. Slightly more specular than the same sized softbox.



Test 5: 60-inch umbrella in shoot-through mode. $\frac{1}{2}$ power. Similar in looks to the Softlighter at first glance.



Test 6: 60-inch umbrella with white interior in reflective mode. $\frac{1}{4}+\frac{1}{3}$ power.



Test 7: 72-inch Parabolic Umbrella. $\frac{1}{4}+.3$ power.



Test 8: 50-inch Westcott Apollo umbrella-style softbox. $\frac{1}{4}+.3$ power.



Test 9: 28-inch Westcott Apollo umbrella-style softbox. $\frac{1}{2}+.3$ power. Definitely more specular than its 50-inch brother, and, surprisingly, required 1 more full stop of power to achieve the same exposure.



Test 10: 26-inch Westcott Rapid Box. $\frac{1}{4}$ power. This used the least amount of power of the different modifiers tested.



Test 11: 1x4-foot Creative Light stripbox with eggcrate. $\frac{1}{2}$ power. Very directional light (partially because of the eggcrate attachment) with stronger shadows and very little wraparound or spill. It also needed more power than most other modifiers.



Test 12: Bareheaded, unmodified speedlight. $\frac{1}{16}$ power. Very hard, specular, unpleasing portrait light. Also, there was a slight color shift from the modified lights.

Compare Them All

Discounting the last unmodified image (test 12), each modifier on its own could clearly be considered a valid solution for softening a speedlight for portrait use.

Now, however, look at them side by side (next two pages) and decide which devices are better for modifying a speedlight. Notice how the strength and size of the shadows and highlights change. Also, notice how much the light “wraps” to the shadow side of the face. Notice how much light spills onto and lights the background in addition to the background light.

Most importantly, which would you choose? Which suits your eye the best?

“Notice how the strength and size of the shadows and highlights change. Also, notice how much the light ‘wraps’ to the shadow side of the face.”



Creative Light 60-inch octabox.



Generic 30-inch umbrella octabox.



22-inch beauty dish.



60-inch Softlighter umbrella with diffusion panel.



60-inch shoot-through umbrella.



60-inch white reflective umbrella.



72-inch white parabolic umbrella.



50-inch Westcott Apollo.



28-inch Westcott Apollo.



26-inch Westcott Rapid Box.



1x4-foot stripbox with eggcrate.



Bareheaded speedlight.

6. Portrait Lighting Concepts



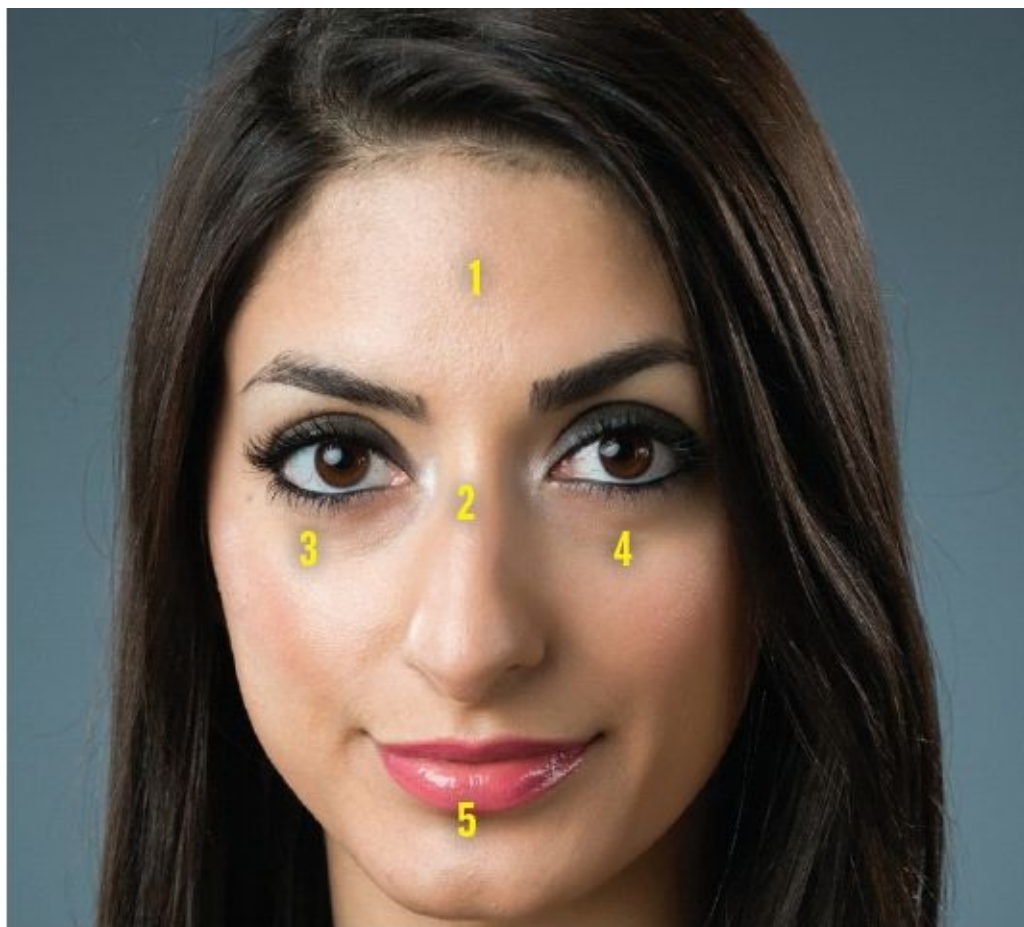
A close-up shows catchlights in Ellie's eyes from the key light at the 10 o'clock position.

The Basics of Portraiture

A photograph is two-dimensional; it has length and width. A person is three-dimensional; you have length, width, and depth. So how can we as photographers communicate the reality of a three-dimensional world using a two-dimensional medium? We paint with light to create brighter and darker areas on the face (highlights and shadows) and trick the eye into seeing dimensional contours and shapes.

One of the first tenets of portrait lighting is to ensure that our primary light (the key

light) is off-axis with the camera. Quite simply, this means that the key light comes from anywhere but the camera position. Light coming from the camera position, such as light from an on-camera flash, creates flat light—light that flattens out our subject and diminishes the appearance of contours, shapes, and depth. Direct flash from an on-camera speedlight can be harsh and very unflattering. This is the primary reason I harp on getting the flash *off the camera* whenever possible—or using bounce techniques when off-camera flash is not possible. Do whatever you must to create dimension; direct flash from an on-camera flash is for amateurs who do not know any better. If you want to be a professional photographic portrait artist, your first step is to do everything you can to create dimensional light.



The five planes of the face: the forehead (1); the bridge of the nose (2); the left and right cheekbones (3,4); and the chin (5).

What Is a Key Light and Where Should I Put It?

Your key light is your primary portrait light. It's the big dog—the main event. It's typically your brightest light. It sets the tone and direction for your portrait. Yeah, it's kind of a big deal. Here's the way I think about my key light: it's the light used to illuminate and show dimension on the face. For most portraits (there are exceptions to every rule), I use the key light to get light into the following positions on the face:

The Eyes

I like to get catchlights visible in the subject's eyes. Catchlights are specular reflections of your key light showing in the eye. Where should these catchlights appear? If you think of

the iris of the eye as a clock, I want the catchlights to appear either at the 10 or 2 o'clock position. That is one checkpoint that tells me that my key light is in the right spot.

The Five Planes of the Face

These are the areas of the face where we like to have a little extra light (highlights) to help show dimension. The five planes are:

The forehead

The bridge of the nose

The left and right cheekbones

The chin





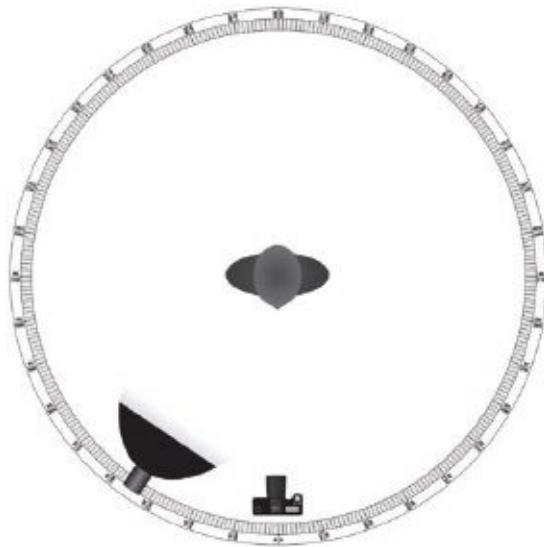
Portraits created with a single speedlight in a 60-inch octabox (top) and a single bare-headed speedlight (bottom). See the difference in the size, shape, and consistency of the shadows?

Positioning the Main Light

So where does the key light go? Imagine an overhead view of your studio (actually, you don't have to imagine this; there's a diagram on the facing page). Now, draw a circle with your subject right in the middle. Mark off all 360 degrees of the circle. Place yourself with your camera at the 0 point. Your key light should be placed somewhere in between 30 and 45 degrees on the circle.

This placement puts your key light at an angle to your subject; it's the beginning of creating dimensional light. Why? The portion of your subject's face closer to the light will be brighter than the farther side of the face. In fact, a small light source like a bare speedlight would create a dark shadow on the far side of the face close to the ear, since no light would reach there. In contrast, a large light source like a 4x6-foot softbox would be large enough to wrap light around onto the far side of the face. There may still be a shadow (which is good because shadows are one of the keys to showing dimension), but the shadow will be lighter and less defined. In essence, the light will appear to be softer. Ah. Are you getting the picture?

“This placement puts your key light at an angle to your subject; it's the beginning of creating dimensional light.”

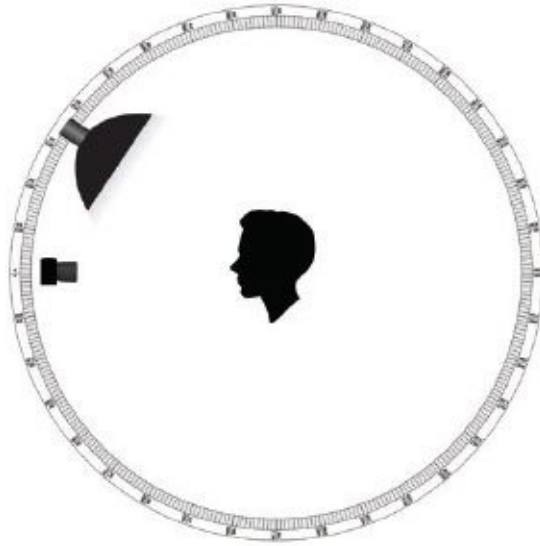


The camera is at the 0 degree position on the circle. The key light is placed 30 to 45 degrees off axis, falling on the subject from an angle.

I demonstrated the difference between common light softeners like umbrellas, large and small softboxes, beauty dishes, and more, in the previous chapter. So you should already be aware that not all light softeners are created equal; each can have a place in your lighting kit for a specific look. At this point, though, you should have another burning question: How *high* should the light be placed? Great question! Let's take that same 360 degree circle and flip it vertically. If your camera height is at 0 degrees, then your key light should be elevated to somewhere between 20 to 45 degrees. Subjects with deep-set eyes will require a lower angle to get light in their eyes. Conversely, subjects with flatter features can take a higher angle, which also lends itself to more dramatic lighting.

Light and Shadow

Yes, there is a methodology for creating pleasing portrait light for the human face. I prefer to think of it less from the viewpoint of where to place the *light* and more from the viewpoint of where to place the *shadow*. A portrait without any shadow lacks depth and dimension; it is typically viewed as being flatly lit. For example, a portrait lit with direct, on-camera flash is generally viewed as having "poor lighting," because it looks flat and lacks dimension or interest. Don't believe me? Maybe you would listen to a more credible source, like, say, Leonardo da Vinci? He said:



The key light is elevated, shining down onto the subject at about a 30 degree angle.

Shadow is the obstruction of light. Shadows appear to me to be of supreme importance in perspective, because without them opaque and solid bodies will be ill defined; that which is contained within their outlines and their boundaries themselves will be ill-understood unless they are shown against a background of a different tone from themselves.





The interplay of light and shadow is what creates a sense of depth in a two-dimensional image.

Light without shadow is like day without night; only in seeing the contrast between the two can we appreciate the beauty in each.

Tonalities

Before I get into describing the different lighting patterns we use as portrait photographers, however, let me briefly talk about the three tonalities we seek to create and control to affect the overall look and mood of the portrait. These are the highlight, the shadow, and the true skin tone.

The highlight is the brightest part of the image. In portraiture, we often find highlights on the five points that comprise the mask of the face: the forehead, the bridge of the nose, the right and left cheekbones, and the chin. Highlights can be bright and hard-edged or soft and subtle. Observing them can help to determine whether the lighting will be perceived as “soft” or “hard.”

The shadow is the darkest portion of the image. It is the difference between the shadow and the brighter portions of the image that help create the illusion of depth and dimension in a two-dimensional medium, such as a portrait.

The true skin tone is the subject’s realistic skin tone at it appears under normal, measured light. What does that mean? Simply, it is a true representation of how the subject normally looks. The base of our exposure is what allows us to show the subject’s true skin

tone. At this base exposure, which is derived by measuring the exposure value of our key light with a light meter and setting our camera to this reading, we are able to render the subject as he or she truly looks. Light-skinned or dark-skinned, it does not matter.

“It is the difference between the shadow and the brighter portions of the image that help create the illusion of depth ...”





The subject's skin tone as it appears to the eye under normal lighting is the base level for an accurate exposure.

Lighting Ratios

You may have heard the term “lighting ratio” before. It specifically refers to the difference between the base exposure (the true skin tone value) and the shadow, as measured with a light meter. A 1-stop difference between the true skin tone value and the shadow (for example f/8 and f/5.6) is referred to as a 2:1 lighting ratio. This means that there is twice as much light reaching the face as there is reaching the shadow area. (As we move between full f-stops, we are either doubling or halving the amount of light that we are letting in through the lens.) A 2-stop difference between the true skin tone value (the base exposure) and the shadow area is called a 4:1 lighting ratio, as there is four times as much light reaching the face as there is reaching the shadow.



High ratios can be used selectively for more dramatic effects.

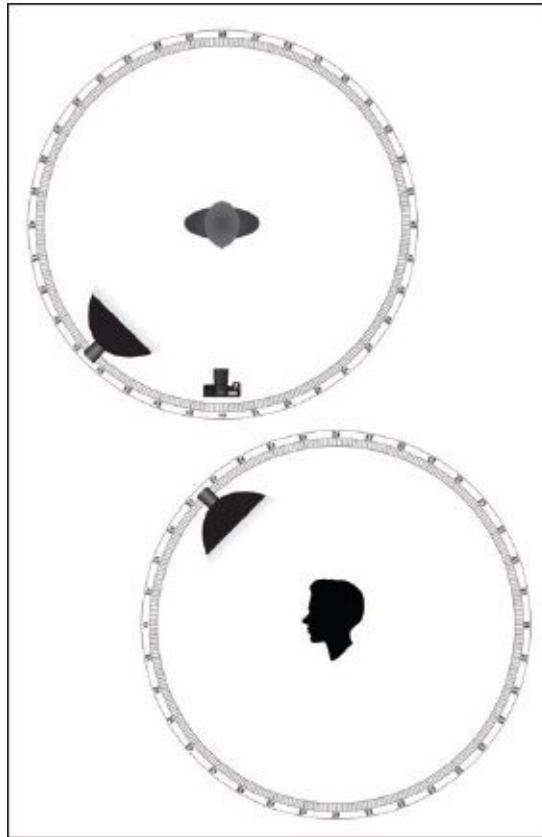


Lower ratios are appealing in most portraits.

Lighting ratios are good to know and understand from a technical aspect, but what is more important as a creative portrait photographer is the visual effect these ratios have. Essentially, stronger (higher) lighting ratios tend to have more drama or mystery or impact than lower ratios. So, you could assume that an 8:1 or 16:1 lighting ratio will tend to have more drama than a 2:1 lighting ratio.

But which one sells more? Ah, that's an astute question. In general portraiture, I have found 2:1, 3:1, and 4:1 ratios tend to sell more readily than stronger ratio portraits. However, these low ratio portraits can get pretty boring pretty fast. My advice is to mix it up for your clients. Offer a variety of looks and lighting ratios to enhance your ability to appeal to more tastes and to give yourself the opportunity to sell more.





Rembrandt lighting creates a defined triangular shape below the eye and on the cheek opposite of the key light. Here, the key light is to the right of Ellie and is creating the triangle on her left cheek. Note the strong shadow casting down from the nose and connecting with the shadow on the cheek. In this example I have used hard lighting to over-emphasize the look; when used with softer lighting or with the addition of fill lighting, the Rembrandt light pattern can be quite pleasing.

Lighting Patterns

Now that you have a better understanding of the role that shadow plays in creating dimension in a portrait, let's talk about where to place the shadow. There are four common descriptions of shadow placement (five if you include flat/direct lighting with no shadow at all):

1. The Rembrandt Lighting Pattern

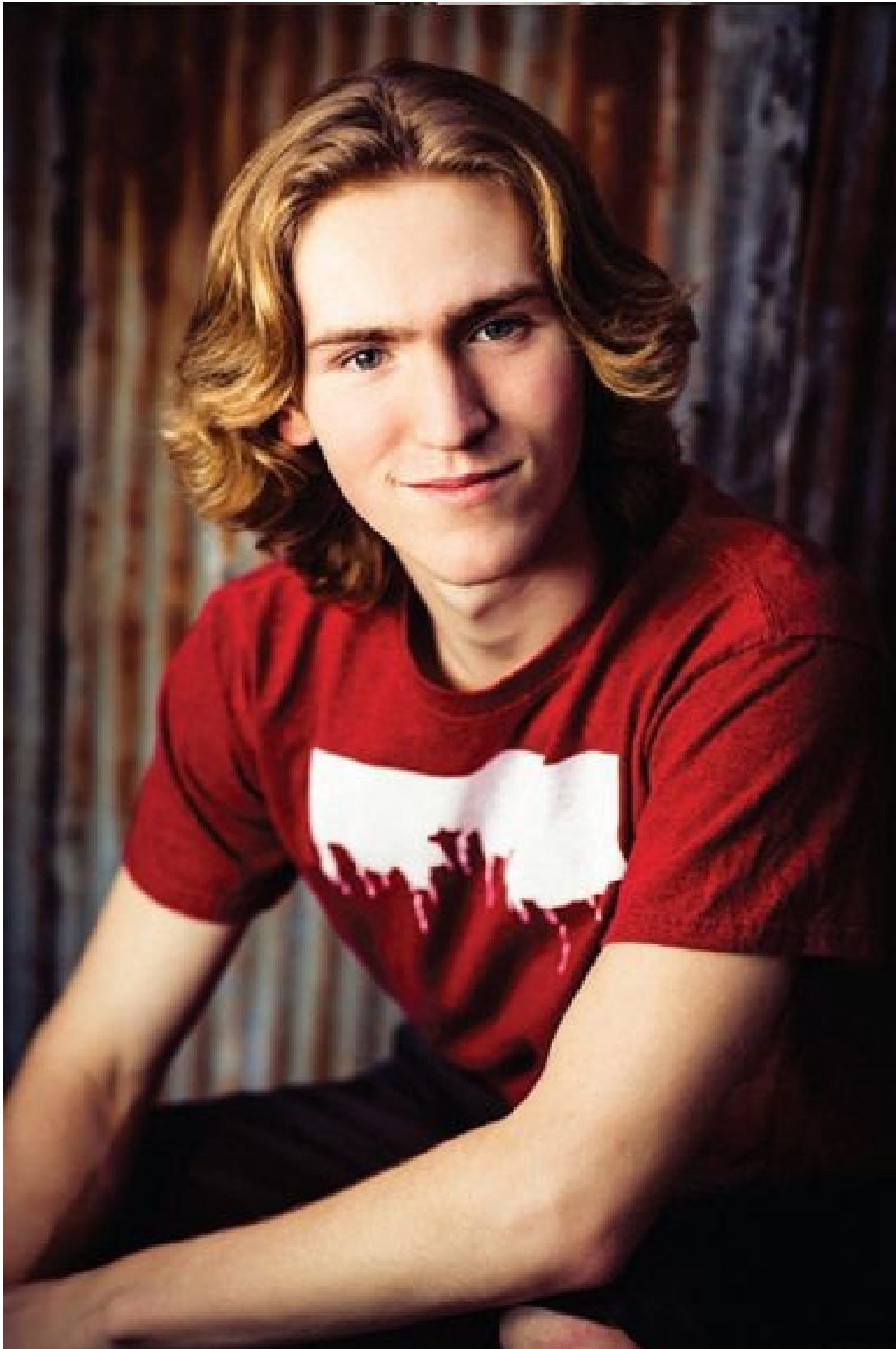
As you can probably guess, the Rembrandt lighting pattern mimics the lighting pattern that the master Rembrandt van Rijn often painted in his portraits. Visually, it is easily identified by a triangular highlight on the side of the face opposite of the key light. To create a Rembrandt light pattern, the key light is placed at a 45 degree angle above the subject's face and at a 45 degree angle to the left/right of the camera.

The Rembrandt lighting pattern can be used with most subjects, though it does tend to be a more "dramatic" style of lighting. You can control the strength of the shadow by adding or subtracting fill light on the shadow side of the face. "Strong" Rembrandt lighting can be helpful in thinning the face if your subject has a fuller face, as the shadow helps to conceal some of this width.

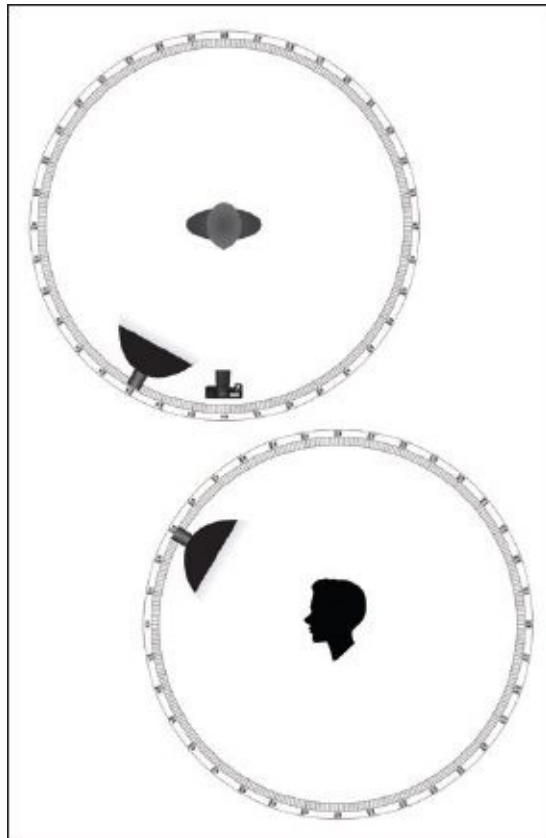
"The Rembrandt lighting pattern mimics the lighting pattern that the master Rembrandt van Rijn often painted in his portraits."



The stronger shadow and smaller Rembrandt triangle on his left cheek help to add mood and drama to this senior portrait of James.



This shows a “softer” representation of the Rembrandt lighting pattern. Note the triangle of light on his left cheek (camera right) and how it helps to show dimension on his face.



This image shows a loop lighting pattern with the key light 30 degrees to the side and 30 degrees above the camera. For teaching purposes, I am using hard light in these examples to define the characteristic shadow more strongly. Normally, I would prefer a more subtle shadow than this.

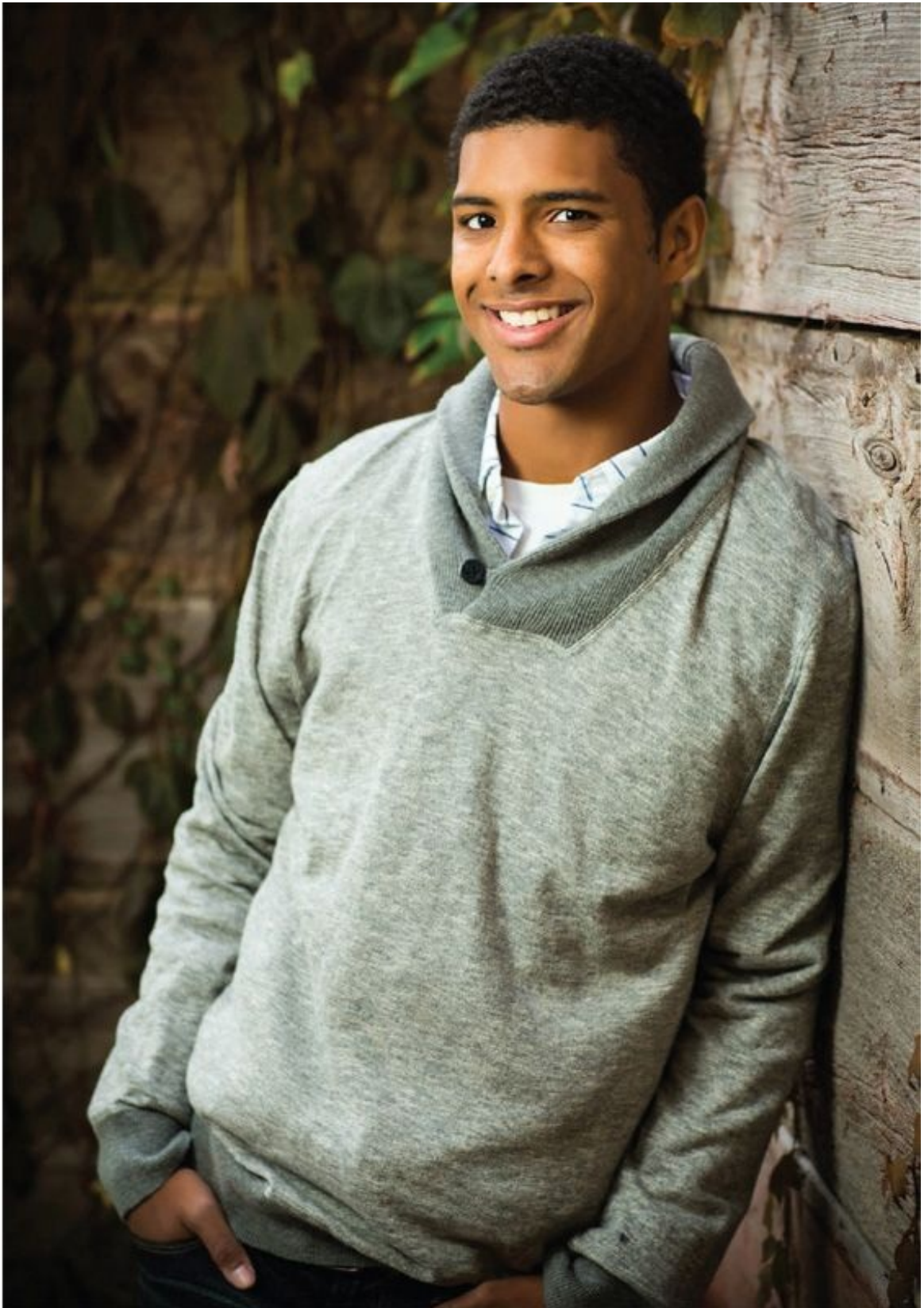
2. The Loop Lighting Pattern

The loop lighting pattern is the meat and potatoes of portrait photography. Loop lighting looks good on virtually everyone. The “loop” in loop lighting describes a small, oval shadow cast by the nose. It is achieved by using a 30/30 lighting arrangement: the key

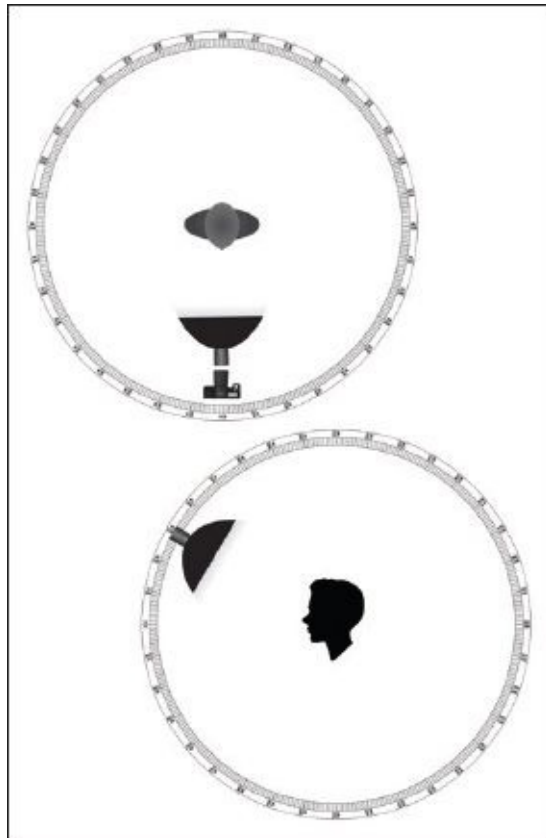
light is approximately 30 degrees up from the subject and approximately 30 degrees to the side of the camera. I say “approximately” as this arrangement can be tweaked to fit the subject and the mood you want.

When using loop lighting, be careful that the loop shadow does not stretch down to touch the lips or mouth; this is a sign that your key light is too high. Nor should the loop shadow be cast up the cheek; this is a sign that your key light is too low.

I always tell my students to make loop lighting their “go-to” lighting pattern. When in doubt, use loop lighting. It looks good on most everyone.



The subtle loop lighting and classic two-thirds view of VJ make for an attractive portrait.



This image shows a butterfly lighting pattern with the key light placed directly above the camera (for a forward-facing subject) or on-axis with the subject's nose (when the subject is at an angle to the camera). The main light is normally about 30 degrees above the camera to create this pattern. Butterfly lighting can be very striking when you have a subject with strong cheekbones. Again, to show the light pattern, I've used a harder light source than I would typically use in a portrait session.

3. The Butterfly Lighting Pattern

With butterfly lighting, the key light is essentially a direct light, meaning that it is coming

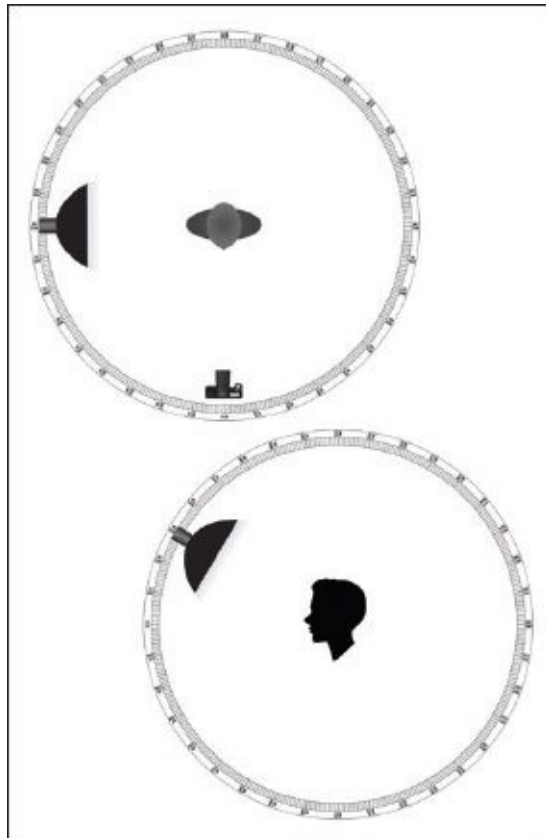
from the same position as the camera. To create shadow and dimension on the face, the light is raised above the camera position. I show several examples of this in [chapter 7](#), where I deal with beauty lighting.

The butterfly lighting pattern is defined by the small, butterfly-shaped pattern cast directly under the nose. I have to admit, I'm hard-pressed to really see the "butterfly" shape in the shadow, but I'm not one to argue the point. The key is that the shadow drops directly under the nose. Again, be careful that the shadow does not dip down and touch the lips or mouth.

Unlike loop lighting, butterfly lighting is not for everyone. I normally reserve it for subjects who have symmetrical features and/or strong cheekbones. It can sometimes emphasize unevenness in the structure of one's face.



By turning Brianna toward the light set to camera left, I created a butterfly lighting pattern under her nose while creating dimension on her face as well. A common mistake photographers make is assuming that the butterfly pattern can only be created when the subject is facing directly toward the camera. This is incorrect. The term refers to the shape and placement of the shadow and it can be created with the subject turned slightly away from the camera, as is shown here.



Split lighting has a lot of drama and mystery, but should be avoided for general portraiture. To create this pattern, the key light is placed at a 90 degree angle to the subject, so it lights only half of the face.

4. The Split Lighting Pattern

Split lighting is defined by light and shadow dividing the face in half, with the dividing line running down the bridge of the nose. Honestly, it's not a good look for general portraiture. And while it can be interesting for dramatic portraits, it should be used

sparingly unless you really are seeking a highly dramatic look.

Direct, Short, and Broad Light

Now that we have established the terms to describe the shape and placement of portrait lighting patterns, we also need terms that describe the direction of the key light in relation to the face. These are: direct, short, and broad.

Direct lighting is pretty easy: the subject is turned directly toward the camera. In most portraiture, however, we find that at least a slight angle to the face is more pleasing. But which way should the face turn?

If the subject's face is turned toward the key light, it is considered short lighting. This helps to visually thin the face by turning the shadowed side of the face toward the camera. Because of this effect, short lighting is the most flattering light for many people.

If short lighting describes when the face is turned toward the light, broad lighting describes when the subject's face is turned away from the key light. It's called broad lighting because the key light is primarily striking the more visible side of the face; this tends to visually broaden the face. As you can guess, most people do not want to have their face look wider than normal. Consequently, broad lighting should be used sparingly and only when you purposefully wish to broaden the subject's face. A common example is when a subject has a long, narrow face. In that case, broad lighting his or her face can help to balance it out visually.

“If the subject's face is turned toward the key light, it is considered short lighting. This helps to visually thin the face by turning the shadowed side of the face toward the camera.”



Short light. The subject's nose is pointed in the general direction of the key light, thus thinning the face by turning the shadowed side of the face toward the camera.



Broad light. The nose is turned away from the key light and the fully lit side of the face is turned toward the camera.

This serves to broaden the face and should be used only with people who have narrow faces or strong cheekbones. Broad lighting looks fine on Ellie here, but you should avoid it for most people.



Full view.



Seven-eighths view.

Facial Views

The term “facial view” refers to the angle of the face toward the camera and describes how much of the face and the sides of the head we see.

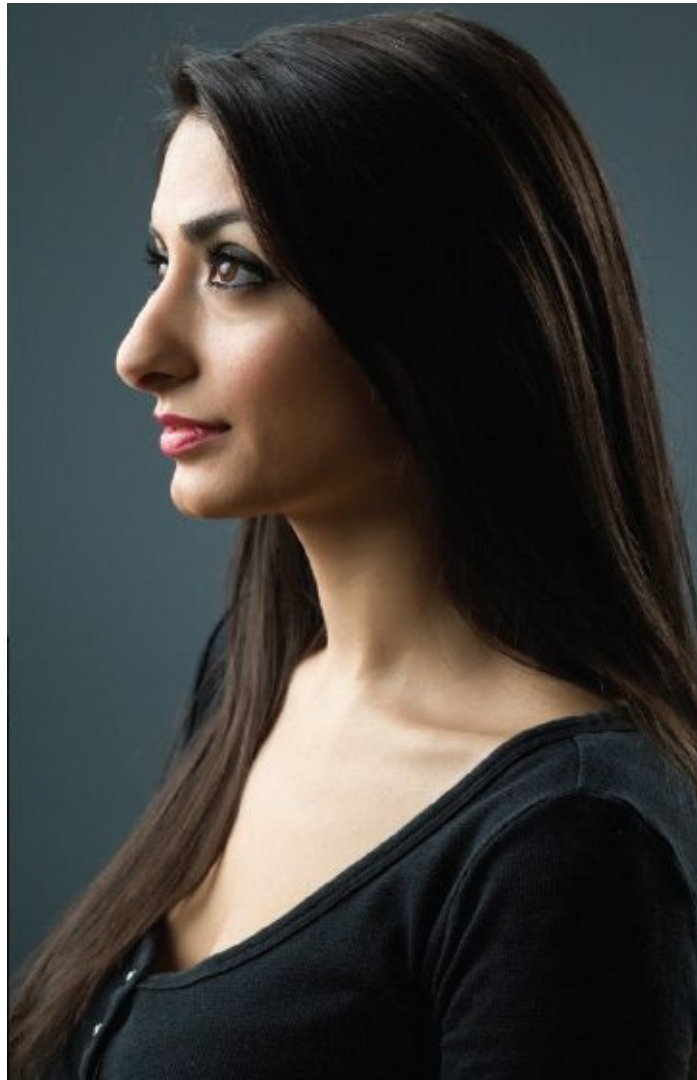
In full view, we see the full face as well as both sides of the head and ears (if not covered by hair). In the seven-eighths view, the head is turned slightly—a more pleasing view for most portraits.

In a two-thirds view, the head is turned a bit more and we can see two-thirds of the subject’s face, with one-third turned away. This is one of the most pleasing and popular face positions for portraiture.

The next position is a full profile, in which the face is turned sideways to the camera. Now, there is a lot of debate about whether the far eye should be hidden or if just a few eyelashes or a small portion of the eye should show. For most of my profiles, I hide the far eye. In the example shown here of Ellie, I show a little of the far eye. Which is right? It depends on the person and the photographer.



A two-thirds view.



Profile.

Don't Go Too Far!

If you turn the subject's face much beyond two-thirds view, you run the risk of the nose protruding beyond the edge of the cheek, thus giving the visual effect of artificially extending the nose (I call this the Pinocchio effect). It also puts the eyes at what I call a "distrustful" angle. In this image (right), the subject is placed in an awkward position where the whites of her eyes show too much and the tip of her nose is in danger of breaking the plane of her far cheek. The whole view looks off.



In the basic pose, your subject's shoulders and torso are turned toward the key light.

Basic and Feminine Posing

In summary so far, we have descriptions for the different lighting patterns and terms for which way the subject's face is pointing. So what's left? The description of which way his or her torso is pointing. That completes the lighting and the basic pose. The two ways I describe the position of the torso in relation to the key light are "basic" or "feminine."

Basic Pose

In the basic pose, the torso is turned toward the key light. We call this the "basic" pose (some call it the "masculine" pose, but I feel that is antiquated) because it works with everyone. If you've been paying attention so far, you'll have realized that there is a formula for portrait lighting and posing that is virtually foolproof as it works with just

about any subject. Need help? Here it is:



In the feminine pose, the shoulders and torso are turned away from the key light. Have your subject turn her head back toward the light, as is shown above, to create more pleasing short lighting on the face. Without this change, her face will remain turned away from the key light, thus putting her into broad lighting, which often makes the face appear wider.

Loop lighting pattern + two-thirds view of the face + basic pose (torso turned toward light) = \$

It really can be that simple at times. But that can also get boring and repetitive. Luckily, there are scores of variations on this basic setup.

Feminine Pose

The counterpoint to the basic pose is the feminine pose. In the feminine pose, the shoulders and torso are turned away from the key light. The obvious clue to why it is called the feminine pose is that it mostly looks good on women. Now, I've seen great portraits of men who are essentially placed into what is technically the feminine pose, but it's a truly gifted photographer who can pull this off. My advice is to use it only with women. The key to all of this instruction is to have a methodology and purpose to your lighting and posing!

Portrait Lighting Setups

Can you create a portrait with just one light source? Absolutely! Each one of the following portraits of Ellie stands on its own merits. However, notice how adding in fill and accent lights increases the visual interest. So it's not wrong to use just one light (especially if that is all you have!), but often you can create a stronger portrait with more. Each of the following was created using a 60-inch octabox as the key light; it was positioned 48 inches away from Ellie.

One Light

Our single, large light source creates soft light that is low in specularities. The shadow helps

to create a very nice dimension to her face. Does this one-light portrait work? Yes! But I would like to soften up the strength of the shadow just a little. The easiest and cheapest way to do that is to add in a reflector on the shadow side of the subject opposite the key light. Reflectors come in all shapes and sizes, from pop-up round reflectors that run \$50 to stand-alone large rectangular studio reflectors. They also come with different materials, though my advice is to stick with silver or white as they are neutral colors and will not introduce a color cast on your portrait.

To soften the shadow, especially by her nose, I added in a 42x78-inch free-standing shiny silver reflector for the rest of the portrait examples. You can buy these from a number of equipment outlets, or you can make your own out of foam core sheets that you spray paint silver on one side and leave white on the other. There are any number of ways to create a studio reflector; find which one works best for you as you will find it's an inexpensive yet invaluable tool.



One light. Note the nice dimension created by the shadow and the catchlights at the 10 o'clock position. This portrait can surely stand on its own, but let's see what additional lights can do to improve it.

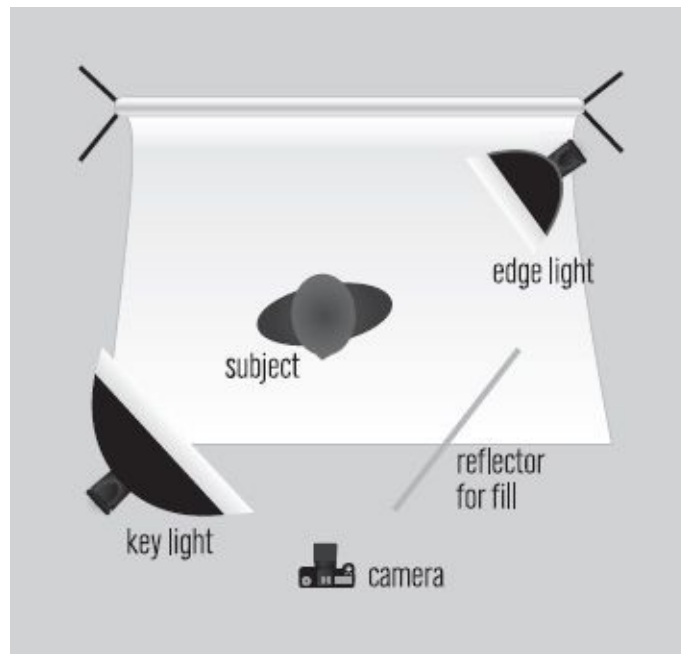


Two lights and a reflector. Note the pleasant shine the edge light creates on her hair. Your female clients will love that! Also, the light creates separation between her left shoulder and the background to give added depth to the image.

Two Lights (and a Reflector)

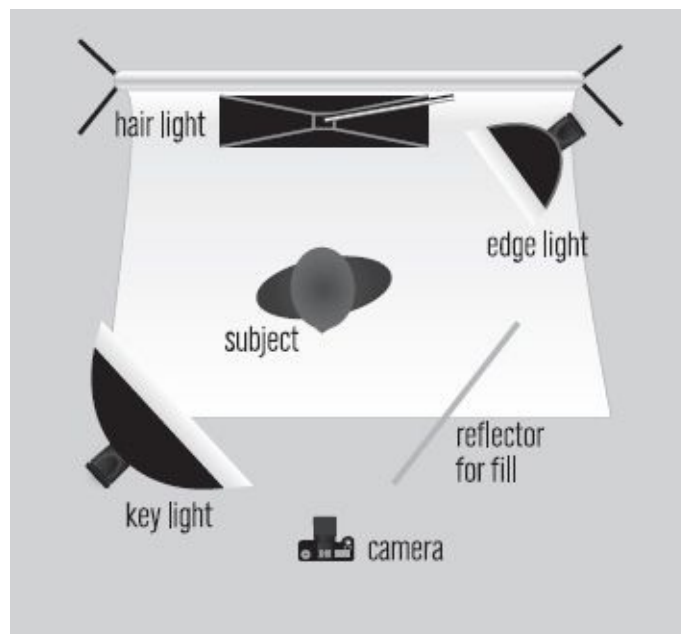
If you have a second light to use, the big question is, “Where do I place it?” There are four primary options:

1. Near the camera position to serve as a fill light.
2. Above and behind the subject to serve as a hair light.
3. Behind the subject and pointed at the background to serve as a background light.
4. Behind and to the side of the subject, 180 degrees opposite of the key light, to serve as an edge/accent light. (I prefer the term “edge light” as it more accurately describes what the light is providing.)



Two lights and a reflector. The edge light is directly opposite (180 degrees) from the key light and approximately the same distance from the subject as the key light. In this case, that's about 48 inches.

For two-light setups, I almost always use the second light as an edge light. This light helps to separate the subject from the background, and in the case of female subjects with long hair, it creates a very pleasing shine on their hair. My favorite modifier to use as an edge light is a 1x4-foot strip box with an eggcrate baffle on the front to better focus the light where I want it. This reduces spill and the chance of the light flaring in my lens. I position my edge light approximately 48 inches behind and to the side of the subject at approximately a 45 degree angle back toward the subject.



Three lights and a reflector. The edge light is directly opposite (180 degrees) from the key light and approximately the same distance from the subject as the key light. A 1x3-foot strip box is added overhead, parallel to the floor, as a hair light. The light from it skims the top of the hair.

Three Lights (and a Reflector)

Let's say that you are fortunate enough to be in the three-light crowd. Where do you place that third light? We have the same options as before with our second light: edge light, hair

light, fill light, or background light. Each has its merits, so the answer is “it depends.” Look at the image and decide where the additional light will most flatter the subject. Your job as the creative professional is to make the tough creative decisions.

In this case, I decided to add in the hair light above and behind Ellie to further the separation effect I began creating with the addition of the edge light and to enhance her beautiful, glossy black hair with a bit more shine. This third light is a 1x3-foot strip box that was mounted above and behind Ellie. It was placed 9.5 feet above the floor.



Three lights and a reflector. Our third light helps to wrap the separation around the top of her head and to add more shine to her hair as well.

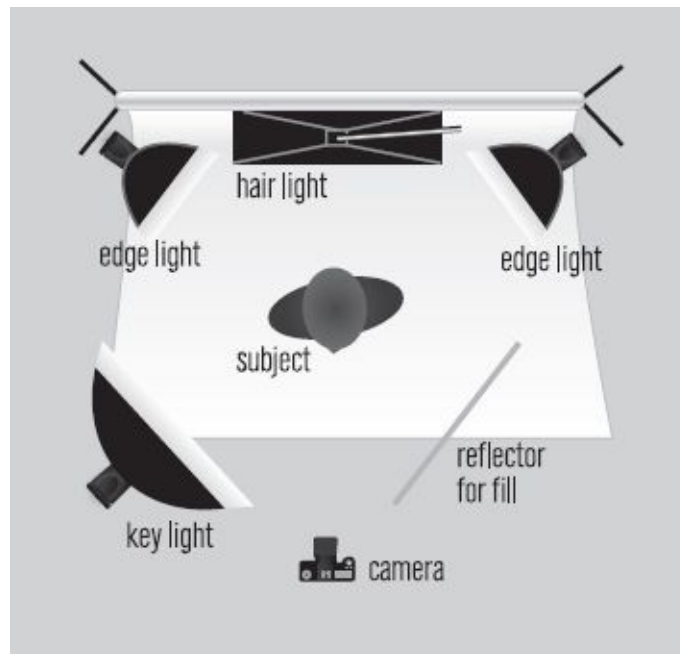
“Let’s say that you are fortunate enough to be in the three-light crowd. Where do you place that third light?”



Four lights and a reflector. The additional edge light creates a balance between the left and right sides and continues the separation from the background. Caution: Be careful that your edge lights do not clip the subject's nose or create unusually strong highlights on the subject's face. Be mindful of your placement and adjust if needed.

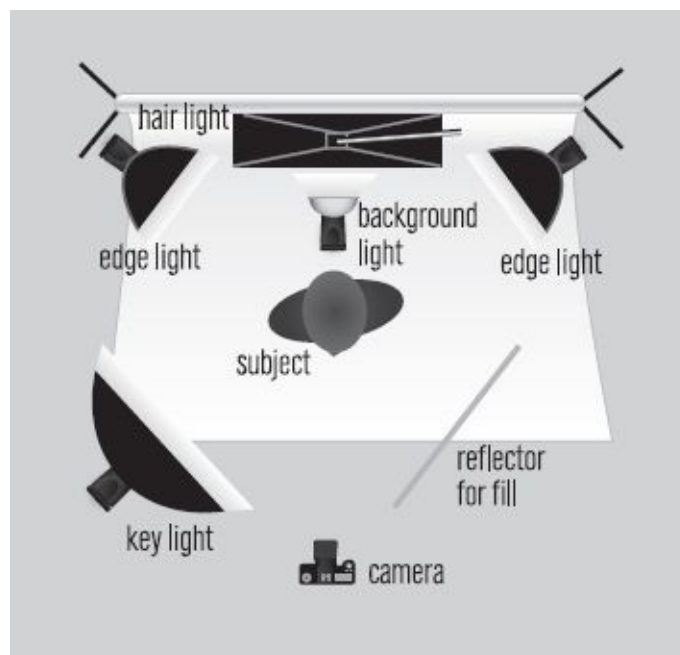
Four Lights (and a Reflector)

Four lights? What in the world can we do with four lights? The simple answer is to pick one of the two remaining spots where we haven't already placed a light. Are there really just "two" spots left? I think not. In much of my portraiture, I use double edge lights. This means I add an edge light on both the left and right sides of my subject. It helps create balanced separation, plus I like the look. It also gives me the flexibility to turn my subject in any direction and still have the edge light that I desire. So, my choice for the fourth light is to create an edge light on the camera-left side of my subject with another 1x4-foot stripbox with an eggcrate identical to the edge light on the right



Four lights and a reflector. The edge lights flank the subject at approximately the same distance from the subject as the key light. A 1x3-foot strip box is added overhead as a hair light.

“It also gives me the flexibility to turn my subject in any direction and still have the edge light that I desire.”



Five lights and a reflector. The fifth speedlight is outfitted with a honeycomb grid to provide a circular highlight on the background. This creates additional separation and dimension in the portrait.

Five Lights (and a Reflector)

Five lights?? Stop the insanity! If using five lights sounds foreign to you, take into consideration that I often use six lights in the studio—amazing, right? I could use the fifth light as a fill light by my camera, and that is most often the choice I make. In this case, however, I was happy with the quality of the light on Ellie’s face and felt like adding a fill light would be overkill. So, I opted to create further separation by producing a lighter spot on the background with a speedlight that was outfitted with a Strobies honeycomb grid. The grid helps to focus the light and to create a circular highlight on the background.



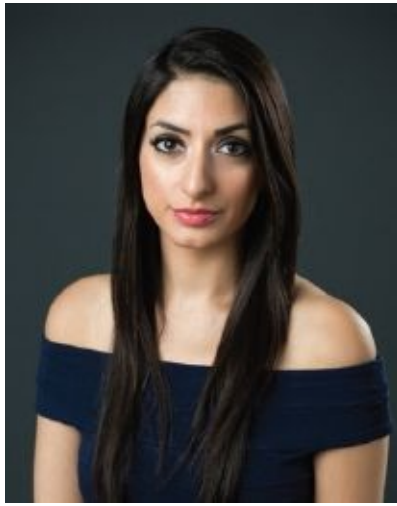
Five lights and a reflector. A glow on the background better defines the subject and enhances the sense of depth.

That's It!

There you have it—how to use just one speedlight, or as many as five, to create beautiful portraiture. Notice the progression and differences as I show the portraits all together on the next page.



One light.



Two lights plus a reflector.



Three lights plus a reflector.



Four lights plus a reflector.



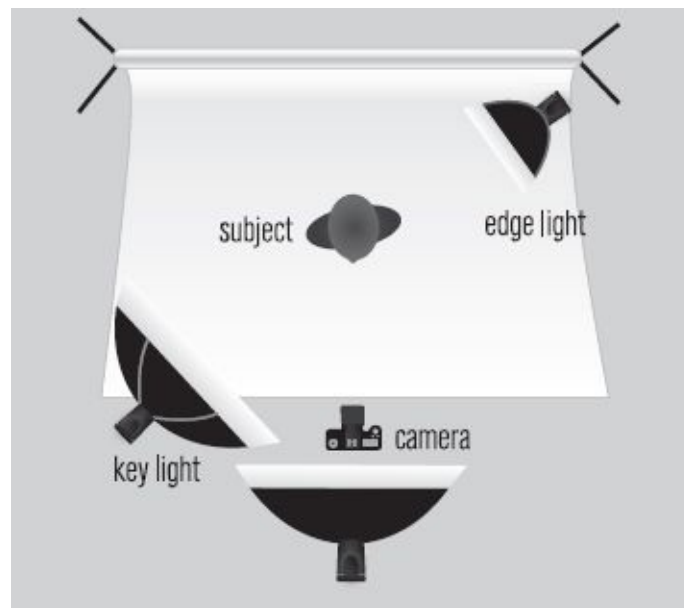
Five lights plus a reflector.

7. Portrait Lighting in Action

Now that we've laid the groundwork for basic portrait lighting with off-camera speedlights and a variety of modifiers, it's time to put those concepts into practice on some common portrait jobs. We'll work from simple to advanced lighting techniques in this chapter.

Lighting for Babies

I actually prefer using natural window light for most of my newborn and baby pictures. Yes, really. I do not like unnecessarily subjecting newborn eyes to a lot of flashes. But sometimes the window light just doesn't cut it, especially once the baby gets more active and wiggly. Then I need the higher shutter speed and motion-freezing effect that flash can give me. Generally, flash comes into play for babies three months and older. Fortunately, my 60-inch octabox becomes a *huge* light source when I can move it in close to a baby. For these portraits of adorable Tobi Lynn, I used a 60-inch octabox as my key light to camera left, a 60-inch Softlighter as a fill light at the camera position, and a 1x4-foot stripbox as an edge light.



I used a 60-inch octabox for my key light to create soft yet directional light that mimics window light.



This was created with the same lighting setup. I finished it with one of my Desaturated Warm vintage Lightroom presets to achieve the muted, vintage look.

Lighting for Composites

Composites are becoming a large part of both my senior portrait business and my creative fashion shoots. What do I mean by “composites”? For my work, it’s an original portrait (or portraits) photographed in the studio on a green screen background. I then extract the portrait image and place it into a different background. That background could be an image I’ve shot separately, a background that I purchased, or a background that is more “artistic” in nature.

I believe it is important to choose the background for the image first and then match your subject’s pose and lighting to fit that selection. It is especially important to note any strong direction to the lighting in your chosen background. When lighting for composites, it is critical to use edge lights in order to create separation between your subject and background. This allows you to extract your main subject more easily—without any telltale remnants of the background remaining in the image.



I photographed Lane in the studio, then composited his photo with a stadium background image I had purchased from Streetscapes Backgrounds (www.streetscapebackgrounds.com).

“Use edge lights to create separation between your subject and background. This allows you to extract your main subject more easily—without any telltale remnants of the background remaining in the image.”



I photographed this stadium while on location for a different senior’s portrait session. Now, the stadium is part of my background library.

For my senior client Dylan (below and facing page), I increased the strength of the edge light on camera left in order to account for the strong sunlight in the chosen composite background of a sport field. I also use an aperture that gives me deeper depth of field to make sure that the subject is sharp from front to back. Generally, I use f/11 as a

target aperture, but will sometimes utilize a slightly more open aperture like f/8, which was the case for Dylan's image.



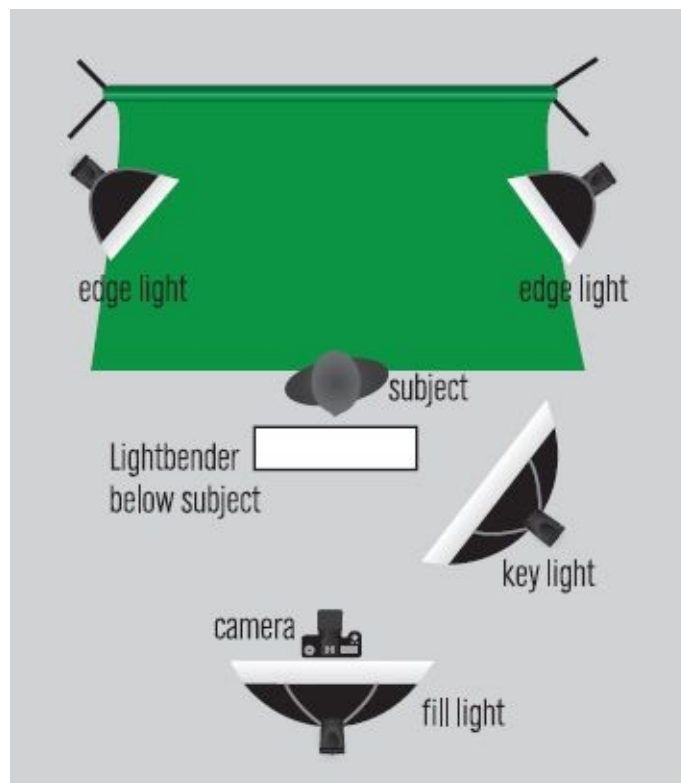
The original capture on a green-screen background. I shot this on a Canon 5D MKIII with a 24–105L lens. The exposure was $\frac{1}{160}$ second at f/8 and ISO 500. (See separate lighting diagram for light placement.) Note that even though my cloth green-screen background was wrinkled, the extraction in Photoshop came out cleanly.



I captured the various poses of Dylan on a green screen background in the studio, then composited these photos onto one of the textures from my own Textureland Backgrounds. This image earned a Merit in the Master Artist category of the PPA International Photographic Competition.



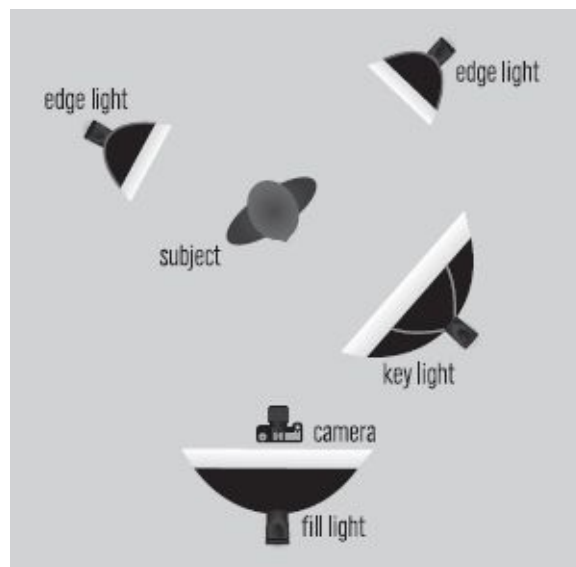
With the sunset in the background to the left, it was vitally important to the believability of the image to place a strong edge light to that side of the subject.



I used a variation of my “standard” lighting for composites. For the intense, aggressive look, I added a 48-inch Lightbender softbox about 1 foot off the floor and aimed up at Dylan. This provides the dramatic uplighting that I use in some of my sports composites. It’s unusual, but works well for this look.



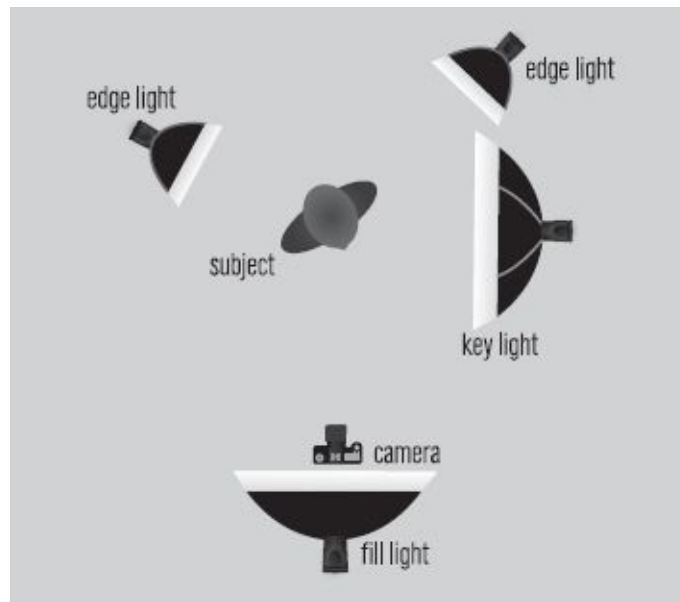
This image of Mitch was captured using a green screen in the studio, then combined with an edgy background from Richard Sturdevant’s “Steampunk” collection (www.sturdavinci.com).





I selected Erin's position prior to taking the shot as I needed to arrange my lighting to match the scene. Note how the light on Erin's face and arm matches the natural light coming from the upper right in the setting.





I used the leading lines to draw the viewer in toward Erin while placing her on a power point using the Rule of Thirds. She is also slightly brighter than the background, allowing her to pop and become the dominant subject.

Steampunk

Steampunk is a popular look for creative photographers, designers, stylists, makeup artists, and models alike. It mixes a blend of fantasy with a gritty, industrial “realness” that is fun to photograph. The images here were captured as the “second look” from a creative collaboration with one of my favorite models, Erin Thomson. We worked with makeup artist Vanexa Yang and hair stylist Sarah Kretzschmar.

For both images, I paid very close attention to the direction of the light as well as the settings themselves in order to match the lighting, the mood, and the camera angle to ensure that the subject would properly blend with the background. The background for each composite was selected from Richard Sturdevant’s exquisite collection of steampunk backgrounds (www.sturdavinci.com).

Hollywood Vintage Glamour

I have long admired the classic portraits created by George Hurrell in the golden age of Hollywood. His iconic portraits of such stars as Humphrey Bogart, Veronica Lake, Katherine Hepburn, and many, many more add to the glamour of that era. I always wanted to play with this style but just never got around to it until I attended a program presented by Lou Szoke, a master photographer based in Illinois. Lou uses miniature halogen spotlights with barn doors to re-create this vintage look. I decided it was high time that I test out this technique, so I purchased four hot lights and went to work. The result is the first image in this section (below), featuring model Ellie Sarmadi.

I loved the glamorous look. I also appreciated the creative and technical challenge that took me outside of my comfort zone. I highly suggest that you try to push outside of your comfort zone from time to time in order to grow as an artist. I dug how I could really focus light into small areas to “paint” the light just where I wanted to. As opposed to using large softboxes to create a broad wash of soft, general light, this approach forces you to be

very specific and careful with directing your light. Just a slight change in placement could create unwanted harsh shadows.



Hot lights are a hallmark of photography in the classic Hollywood style—but they're not the only way to create these images.

However, I ran into two downsides to using these hot lights (wanna buy some hot lights?):

- 1. The lights are really hot.** I used a wooden clothespin to adjust my barn doors because the light made the metal scorching hot.

- 2. The lights are not very bright.** The limited light output (*i.e.*, the quantity of the light) forced me to use higher ISOs than normal for portraiture (ISO 800–1600) and slower shutter speeds ($\frac{1}{3}$ to $\frac{1}{100}$ second). That meant I ended up losing a few images due to camera shake. I like to move and adjust quickly when I shoot, so I do not like using a camera stand or tripod. That might have mitigated the shake, but it would have tied me down too much.

All in all, it was a great creative exercise. However, being the speedlight guy that I am, it got me to wondering if I could create the same look using speedlights. Even though bare speedlights are inherently small, hard light sources, you can't achieve the same pinpoint control needed without using modifiers.

Fortunately, I had recently picked up a new modifier system that I had funded as a Kick-starter project: the MagMod system (www.magnetmod.com). Now, this is a great speedlight modifier system. It starts with a silicone rubber adapter that will fit virtually any speedlight (a huge plus). Embedded into this adapter are two powerful rare-earth magnets. These magnets allow you to quickly slap on accessories that cling very tightly to the magnets. Genius! The two main accessories are a honeycomb grid and a gel holder. The MagGrid honeycomb grid tightens the speedlight's output to a 39 degree spread. Additional grids can be stacked to tighten that spread even further. That is exactly what I

did for my test shoot.



The MagMod uses extremely strong magnets to attach grids and gel holders to the front of the flash.

“It got me to wondering if I could create the same look using speedlights. Even though bare speedlights are inherently small, hard light sources, you can’t achieve the same pinpoint control without modifiers.”



I was able to re-create the classic Hollywood glam look using five speedlights. Other than cropping, this image is straight out of the camera as I captured it using the monochromatic mode on my Canon 5D MKIII. The lighting setup is seen on the facing page.

For my key light, I stacked three grids on the front of my speedlight, giving me a very tight beam estimated at 10 degrees. Edge lights, each with one grid attached, were placed behind and to either side of my model, Erin. I needed a gridded speedlight to shine through my wrought iron and wood screen, but unfortunately I ran out of my supply of

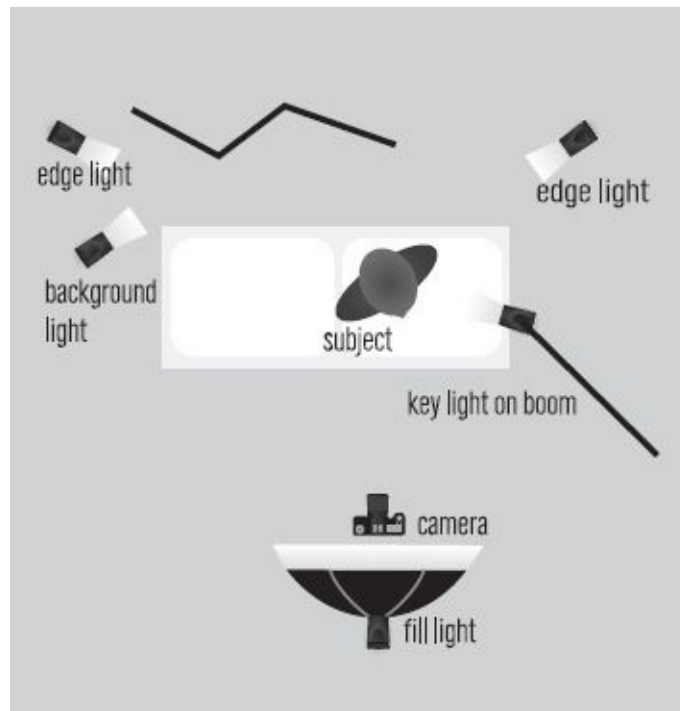
MagGrids. So, I used an Interfit hard-plastic grid I had lying around and was able to create the background lighting effect I desired. Lastly, I used a speedlight in a 60-inch Photek Softlighter above and behind the camera position to create a subtle level of fill light for the scene. The end result? Love, love, love it. And I solved the problem of the hot lights—no excessive heat, and the flash combined with a higher shutter speed of $\frac{1}{160}$ second allowed me to handhold the camera without losing any images to camera shake.



Another image straight out of the camera (slightly cropped). I used a similar lighting setup, but the lines in the background are shadows cast by shining the gridded speedlight through the spindles on the back of a child's wooden chair turned on its side.



A pullback from the shoot to show the set and the lighting placement. The background was a simple white vinyl sweep.



The key light has a MagMod with three MagGrids stacked on front. The two edge lights each have one MagGrid. The background light was an Interfit honeycomb grid. The fill light was a 60-inch Photek Softlighter. All speedlights were Canon 580EX IIs controlled using a RadioPopper Jrx system with RadioPopper Cubes for each speedlight.



Another image from the same shoot with Erin, processed using Nik Silver Efex 2 for a vintage look.

Beauty Lighting

My patented recipe for beauty lighting is 1 part beauty dish + 1 part Eyelighter reflector + 1 part edge lights + 1 part beautiful subject. Garnish with an 85mm lens, shake, and stir with a fan. Sounds easy, right? It is, in fact, deceptively simple. Of course, as with any great recipe, there are nuances that go into making the recipe just right. So let's break down the ingredients and talk about the nuances.

Part 1: Beauty Dish

For a majority of my beauty lighting—whether for a model, a mom, or a high school senior—I place the beauty dish in the butterfly lighting position: in-line with the client's

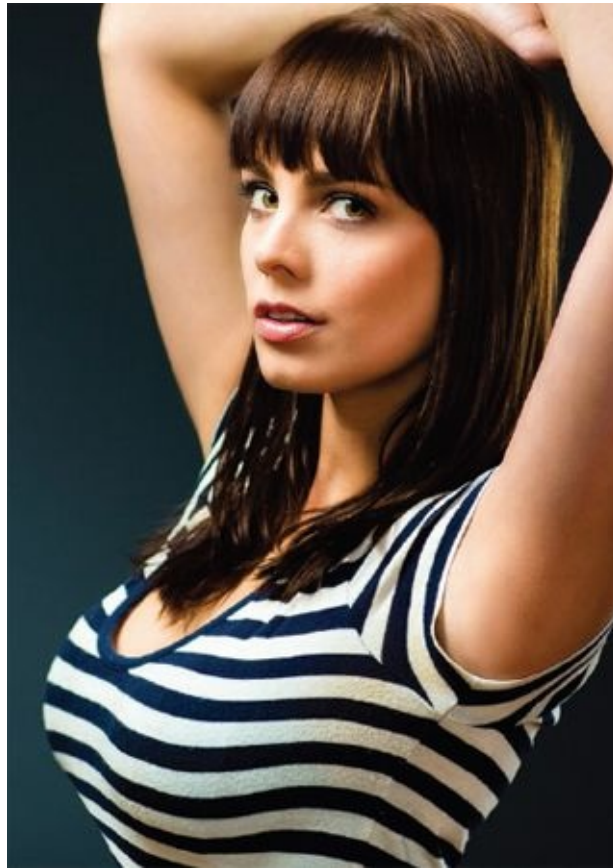
face and slightly above the camera angle, high enough to just be barely out of the camera frame. The beauty dish is tipped down to about a 30 degree angle, flat enough to maintain a catchlight in the subject's eyes but angled enough to send light into the reflector (see [Part 2](#)) so it is bounced back up. The beauty dish is placed about 24 to 30 inches from the subject. (Details on my preferred beauty dish can be found in [chapter 5](#).)



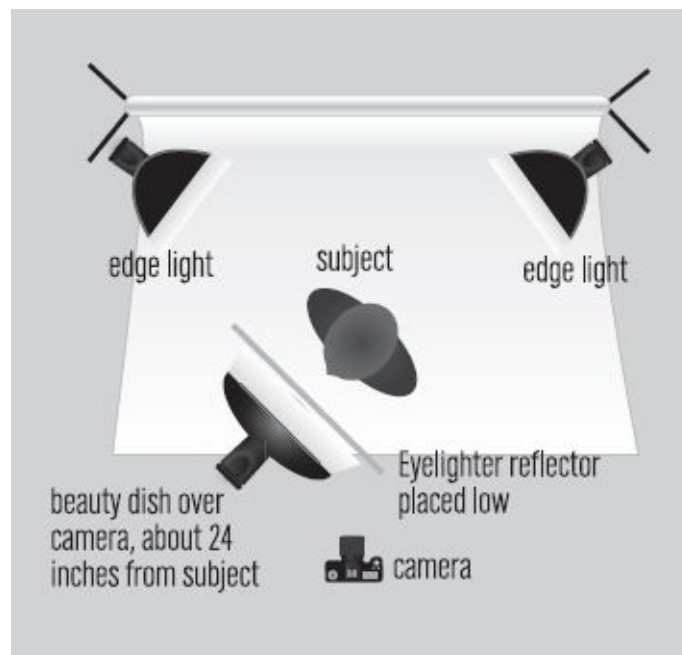
Demonstrating my recipe in practice with the lovely Elizabeth Twenge.



Get your beauty dish close! I feel it works best 24 to 30 inches away from the subject. Here, I used it with a Eyelighter curved reflector at about waist level to soften shadows under her nose and chin. The Eyelighter also provided a curved catchlight in the bottom of her irises.



For this second image from Elizabeth's shoot, I moved the beauty dish to angle at camera left. I was actually still creating a butterfly lighting pattern—she just moved and the light and pattern moved with her.



The beauty dish and reflector shifted to match her head position. Everything else stayed the same.

Part 2: The Eyelighter Reflector

The Eyelighter is an ingenious reflector created by master photographer Larry Peters and sold by Westcott. The curved reflector casts diffuse light back up at the subject's face, softening shadows under the chin and nose while creating curved catchlights in the bottoms of the subject's irises. These curved catchlights make the eyes appear more luminous and beautiful. For standing poses, I place the reflector at approximately waist

height. For seated poses, I place the reflector as high as I can without it appearing in the frame. Truth be told, however, I greatly prefer standing poses for beauty shots and generally avoid seated poses. It allows for better freedom of movement.

Third 3: Edge Lights

If you have been paying close attention throughout this book, you will have noticed that almost all of my portraits have two edge lights, one on either side and behind the subject. Edge lights help separate the subject from the background and provide a stronger dimensionality to the portrait. For beauty portraits, I raise my two 1x4-foot strip boxes up higher to align the center of the box with the subject's shoulders. This provides a nice shine to the hair, separation of the shoulders from the background, and definition to the jawline if desired.





Adding edge lighting provides nice shine on the hair (left) and can, if desired, better define the jawline and cheekbones (below).



This image of Erin Thomson shows very subtle butterfly lighting that has been softened by an Eyelighter reflector. The image is unretouched to show what good lighting and makeup can do. Hair and makeup by Vanexa Yang.

Part 4: Beautiful Subject

This was a little tongue-in-cheek, especially since I believe it is our job to make *every* client look and feel beautiful, handsome, etc. However, as I mentioned earlier in the lighting patterns section of this book ([chapter 6](#)), the butterfly lighting pattern that I mostly use for this type of portraiture works best with subjects who have strong cheekbones

and/or symmetrical faces. That doesn't mean that you cannot attempt this lighting with anyone and everyone—in fact, I encourage it as part of the learning process. However, I have found that it tends to work best when your subjects have the aforementioned physical features.

Garnish: The 85mm Lens

While most any telephoto lens will do (I recommend staying in the 85mm–135mm range for these portraits), the 85mm is very well suited for this type of portraiture. It has just enough compression to flatter the subject while being short enough in focal length to allow you to work relatively close to the subject. That can be important, since it lets you easily tweak the lighting placement just by reaching out. If you spring for the 85mm f/1.2 lens from Canon or the 85mm f/1.4 lens from Nikon, you also have the ability to use a really shallow depth of field to get a very creamy *bokeh* effect to the background. Be forewarned that the subject's eyes will need to be on the same plane, though; more than about a half-inch shift in plane will make one eye fall out of focus when using a very shallow depth of field such as you find with an aperture of f/1.2 or even f/1.8. For most of my beauty portraits, I use an aperture of f/4 or f/4.5.



I use a Vornado floor standing fan to create a strong but safe breeze in the studio.

Shake and Stir with a Fan

Don't be afraid to mix things up a little bit—especially once you get a few great beauty shots in the can. Let your subject move a little bit, incorporate their hands into the image for a softer touch, or add in a fan to get the hair moving. I especially like the last two twists to the image. It adds a great fashion-feel to the image and will help make your client feel glamorous. Most clients have fun with this part of the shoot, too, as it is the closest thing that many will come to their vision of a “fashion shoot.”



For this senior portrait, I shifted the beauty dish to camera right to match Katherine's turn to that direction. Then I cranked up the edge light to the left and added in the fan to get her hair moving. Love it!



Christina is a self-described "tomboy" and was skeptical when I suggested we do some beauty shots during her session. I like opportunities like this to show my senior clients a different side of themselves. Needless to say, Christina and her family loved the new look. I used my standard beauty lighting setup, then post-processed the shot using one of my Preset-o-rama BW Glam presets for Lightroom.

Some photographers use a leaf blower (I'm not a fan of that; I am afraid of shooting something into my client's face and the noise is deafening) or a small wind machine, but I

prefer a simple consumer-grade floor standing fan made by Vornado. It is relatively inexpensive and has variable speed controls.

Commercial Photography

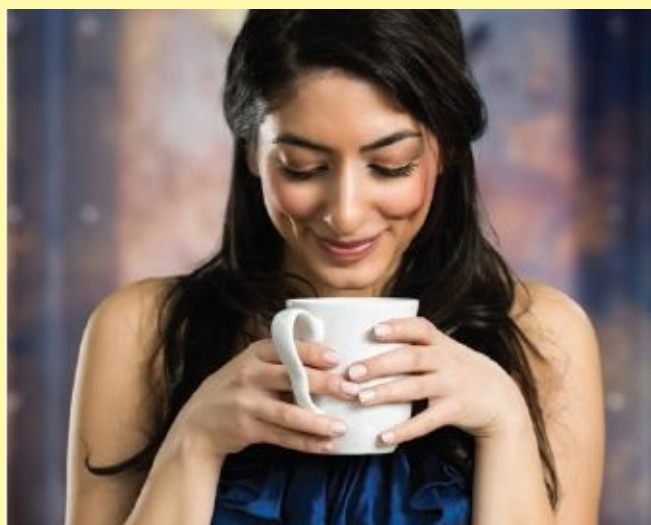
I often find commercial photographers tend to be the snobbiest when it comes to equipment; some disdain even *considering* speedlights as an option. I obviously bring a different perspective, and it's really not totally from left field since I spent eleven years working at two different ad agencies prior to becoming a professional photographer myself. In my advertising work, I often hired commercial photographers and directed photo shoots for clients like Famous Footwear, Kimberly Clark, Filterfresh Coffee, US Cellular, and more. I have a lot of experience viewing this from both sides of the camera, so my viewpoint is fully informed. And my viewpoint is that 95 percent of what I have seen, shot, and directed could be handled by speedlights.



A freshly made steaming latte photographed on location. The brown and green tones are actually building signs across the highway from this retail location. A skilled photographer can use any resource to enhance the composition.



An image straight out of the camera from the latte shoot for a national coffee company. It was 100 percent lit with speedlights.



Ellie enjoying a steaming cup of coffee (bottom). The original image was shot on a green screen (top) for a national coffee company.



This was photographed using speedlights for the key and edge lights and softened window light as the background light coming from behind and to the left.

When I first left the ad agency world, I still maintained a foothold in the industry by working with several advertising clients and providing marketing and graphic design services in addition to photography. (It was pretty cool that I could work on a design project and then subcontract any needed photography to myself!) Much of the work has been for a coffee company and for a gift catalog for a Wisconsin cheese retailer. And in recent years, all of the lighting for the commercial photography has been created using speedlights, including the images shown here.



An “energized office worker” image for a national coffee company. I photographed it with six speedlights strategically placed around this small office area.

The moral of the story: speedlights are just as valid as any other lighting source, as long as they can create the light you need to get the job done. So hold your head high as you create wonderful commercial images with your speedlights!

8. Location Portraiture

Lighting (and Other) Gear

As mentioned previously, I have separate setups for studio work versus location work. I also subdivide my location work into two different gear setups: location studio and mobile studio. Let me explain the difference.

Location Studio

I use my location studio gear when I am setting up what I call a “nailed down” studio on location. This means, I am creating a standard studio setup that doesn’t have to move. The best example for this is when I photograph corporate headshots on location. I may be photographing three executives or an entire staff of two-hundred. Each shot needs to be consistent, just like I photographed it in the studio. The only difference is that I am using my portable, location gear. My core setup for this includes:

“I may be photographing three executives or an entire staff of two-hundred. Each shot needs to be consistent, just like I photographed it in the studio.”

Key light:	Westcott 50-inch Apollo umbrella softbox
Fill light:	Westcott 28-inch Apollo umbrella softbox, near the camera position
Hair/edge light:	Generic 30-inch umbrella octabox (found on Amazon for \$30!) or a Westcott Rapid Box 26-inch
Additional:	Background stand with hanging/pop-up background; Light stands for each of the three speedlights with modifiers; Lightweight tripod; Posing stool for seated portraits

Mobile Studio

The purpose of the mobile studio is to be ultra-portable for weddings or portrait sessions where we are moving from place to place, typically with a tight timeline. Because of this, I don’t have time to tear down and reset lighting gear—it all needs to be very portable at a moment’s notice. Also, because much of this work is outside, there is an additional lighting challenge: I must work with abundant ambient light. Often, I am faced with settings that have varying exposure to the sun. As I detail in [chapter 3](#), utilizing speedlights set to TTL helps me work quickly with these difficult ambient lighting situations.



Here's a cell phone shot of my location studio setup for corporate headshots. My key light is a 50-inch Westcott Apollo. My fill light is a 28-inch Westcott Apollo raised up high to avoid reflection on eyeglasses. My edge/hair light is a Westcott 26-inch Rapid Box. I am using a simple solid, light- gray Freedom Cloth background from Denny Manufacturing, which is attached to a crossbar held by studio clamps on top of 7-foot lightstands. My Canon 5D MKIII with a 70–200L f/4 IS lens is atop a MeFoto Roadtrip lightweight tripod. My speedlights are all Neewer tt850 flashes with Neewer FT16s receivers. The power settings are manually controlled from camera using a Neewer FT16 transmitter.



A view of the Neewer FT16 transmitter in the hotshoe on my camera. As you can see, my power setting for group A (which is my key light) is $\frac{1}{8}$ –.3 power. At this power setting, I am good for upwards of two-thousand flashes!



Two Canon 580EXII speedlights outfitted with RadioPopper PX receivers and affixed to an RPS LightBar. They are powered by an older Nissin PS300 power pack.

In full sun, I will place the sun behind the subject and create dimensional portrait light on the front of the subject (the shadow side, since the sun is behind them) using one to three bare speedlights. Why put the sun behind the subject? To eliminate squinty eyes, for one. In addition, direct midday sun is extremely hard and contrasty, making for unattractive lighting. Lastly, the sun can now serve as a hair/edge light, giving my subject some separation from the background. Here's what I use:



Two speedlights ganged together off camera to the right provided the light necessary to carve my subjects out of this backlit setting.

Weddings: Canon 580EXII and 600EX-RT flashes set to TTL and high-speed sync, triggered using the RadioPopper PX system and powered with external battery packs.

Portraits: Neewer tt850 flashes set to ½ to ⅓ (full) power and high-speed sync, triggered using the Cells II-C transmitter in the hotshoe.

With either set of speedlights, two are ganged together on a RPS LightBar (which fits up to four speedlights) as my key light. One is often fired from the camera position as a fill light.

In the shade, I take a different approach and my lighting setup will depend on the quality of the ambient light in the shade, and whether I choose to use the ambient light as my key light, my hair light, or if I even want to shut it down entirely and use only the light that I create using speedlights. So I even subdivide my mobile studio gear into full sun and shade setups. It all sounds complex, but it really isn't. I do strive for simplicity, especially when I am on the go. Here's what I use:

Key light: One speedlight in a Westcott Rapid Box 26-inch as key light

Edge light(s): One or two optional speed lights outfitted with MagMod grids or Snootzies to serve as edge lights (if desired)



A speedlight fired in a Westcott Rapid Box 26-inch provides the pleasing, dimensional portrait light in this otherwise flatly-lit shade setting.



One speedlight fired through a Westcott 26-inch Rapid Box in the shade. It helps to provide a little more snap and dimension where the ambient light was soft but pretty flat.

Lighting and Composition Challenges

When I am outside of my controlled studio environment and working in the “real” world, the complexity of the lighting situation increases dramatically. I encounter a number of challenges that must be worked out.

First, I must determine my composition, which leads to a number of creative and technical questions:

1. Where in the scene will I place my subject?
2. How will I frame/compose the image?
3. Are there leading lines I wish to use—or distractions I wish to minimize?
4. What level of “sharpness” do I want on my foreground and background (which determines my depth of field)?
5. Which lens will I use to achieve the framing and depth of field I desire?

Color Temperature

When combining flash with ambient lighting, balancing the colors of the light sources (or using their imbalances creatively) is an important consideration.

DAYLIGHT LIGHT SOURCES	COLOR TEMPERATURES
Clear Blue Sky	8000–27,000K
Misty Daylight	7200–8500K
Overcast	6500–7200K
Direct Sun, Blue Sky	5700–6500K
Midday Sun (9:00AM–3:00PM)	5400–5700K
Sun at Noon	5000–5400K
Early Morning/Late Afternoon	4900–5600K
Sunrise/Sunset	2000–3000K
ARTIFICIAL LIGHT SOURCES	COLOR TEMPERATURE
Fluorescent/Daylight	6500K
Electronic Flash	6200–6800K
Fluorescent/Cool White	4300K
Photoflood	3400K
Tungsten-Halogen	3200K
Fluorescent/Warm White	3000K
General-Purpose Lamps (200–500W)	2900K
Household Lamps (40–150W)	2500–2900K
Candle Flame	2000K

Second, I have to determine how I will work with the ambient light. Guess what? That leads us to more questions:

1. How much of the ambient light do I want in the background? On the subject?
2. What is the *quality* of the ambient light? Is it soft or hard light?
3. What is the volume/intensity of the ambient light? In short, what is the *exposure value* of the ambient light?
4. What is the color—or, heaven forbid, *colors* (in mixed lighting)—of the ambient light?

Third, I must figure out how to make my subject look great.

1. Where should I place my subject?
2. What type of posing fits the subject and the scene?
3. What type of lighting (hard or soft) and what light pattern (Rembrandt, loop, butterfly, or split—and then, short or broad light) works best?

4. What type of light modifier should I use?
5. How do I create separation between my subject and the background?

Lastly, I need to determine how I will match the light I create with my speedlights to work with all of the factors listed above. For example, if the color of the ambient light is the orange/red light created by tungsten light bulbs, do I place gels on my speedlights to match the color of the ambient light? Or, do I mix the light sources together and allow the areas that receive primarily tungsten light to go warm in color and have my subject look “natural” as I color balance my camera to the daylight color temperature of the light coming from my flashes? I have one caution if you choose the latter option: be sure that the exposure value of the ambient light on your subject is at least 2 stops less than the exposure value of the light from your flash. If you mix the two lights sources at similar exposure values, you will get a color balancing nightmare of blue and orange on the subject. U-G-L-Y! So your choice is to either gel the flash(es) to harmonize with the tungsten light, or underexpose the ambient light and let your flash(es) be dominant.



In this image, I let the ambient light in the background be naturally golden while I lit the subject with a key light and an edge light that were color balanced to 5500K.



This environmental portrait was created within a few feet of the earlier example. This time, I slowed my shutter speed to allow more of the ambient light to affect the background. This resulted in two slightly different looks from the same location.



I fitted the flashes with a CTO gel from my MagMod system to better match the tungsten ambient light. I set my camera's color balance to tungsten, captured the image in RAW, and then tweaked the color balance slightly in Adobe Lightroom to suit my color preference. This approach rendered the colors in the background as they naturally appear to the eye.

The bottom line is to be cognizant of the ambient light in your scene and make creative and technical decisions that match your vision for how you want both the ambient light and your flashes to affect the lighting in the image.



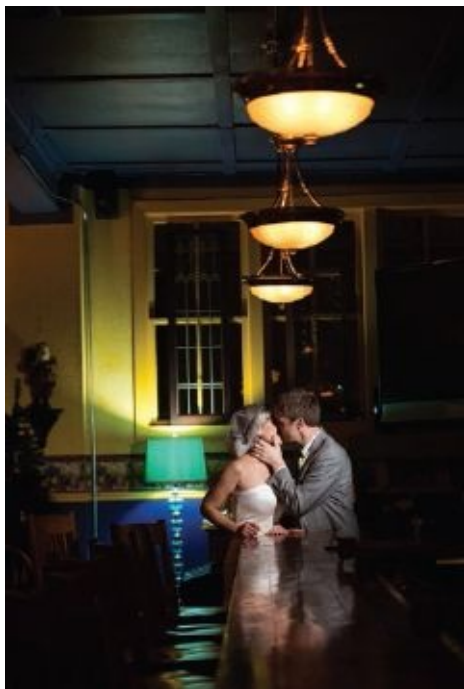
I created a harder-edge fashion feel in this bridal portrait by pulling the beauty dish back further, thus reducing its softness. The shutter was dragged to allow the candlelit chandelier to show.



A single off-camera speedlight zoomed to 105mm helped to spotlight this couple and pull them out from their monochromatic setting.



This senior was placed in the spotlight by outfitting a Neewer tt850 flash with a MagMod adapter plus two honeycomb grids.



I balanced the exposure of the off-camera flash with the existing ambient light to help pull this scene together.



This ghoulish portrait of Heather was a combination of a Westcott Rapid Box as the key light plus one blue-gelled speedlight for the background and one blue-gelled speedlight as the edge light for her. A portable fog machine added to the ambience. Hair by Kristin Lillig. Makeup by Colour Law. Wardrobe design by Rachel Frank.

Shooting Outdoors

In addition to the techniques for scene selection and analysis described in the previous section, there are specialized lighting approaches to keep in mind when shooting portraits outdoors.

Adding Fill in the Shade

Most “natural light” folks would be satisfied with the light we found in the shade of this stucco building (below). I found it too flat and boring, however—and his eyes lacked the spark that catchlights provide. The solution was to add in some pop with off-camera flash.

When creating this image, I was field testing the new Godox AD360 speedlight, a powerful flash that runs off a separate lithium-ion battery pack. The Godox AD360 along with its required PB960 power pack generates 2 stops more light than the standard Godox v850 speedlight. Or, in other words, it provides power equivalent to *four* speedlights! It works in high-speed sync, but it’s manual only; there’s no TTL. It is compatible with the Godox/Neewer FT16 and Cells II-C transmitters when used with the FT16 USB connected receiver. It is an interesting alternative for those who want studio power in a lightweight portable flash—and it’s a natural extension for anyone using the Godox/Neewer 850 flashes because it works with the same transmitter system. For this portrait, I modified the speedlight with my inexpensive 30-inch umbrella-style softbox. My flash was triggered with the Neewer FT16 transmitter and FT16 receiver.



This is straight out of the camera. I added flash to make the image more dimensional and add catchlights in the eyes. I shot it with my Canon 5D MKIII using an 85mm f/1.2 lens. In aperture-priority mode, my exposure was $\frac{1}{200}$ second at f/2.8 and ISO 50. My best guess on power level on the flash was $\frac{1}{8}$ power.



The Godox AD360.

Battling the Sun

As noted, I tend to use the bright sun as a backlight, so it serves as a hair and edge light. This means that the bulk of the ambient light in the scene is coming from behind my subject. This would render the face dark (underexposed) if I were to create an accurate exposure for the scene. Alternately, I could choose to spot meter the face and expose for that meter reading—but then the background and the sky behind my subject would be blown out (overexposed).

My other option is to add light in order to fill the shadow on the front of my subject and to help balance out the exposure. I could use a reflector to accomplish this, but

reflectors often cause a case of the squinties. If I want to accomplish my creative goal, the only real lighting choice to is to use off-camera flash to create enough light to fill the shadow side of my subject and to give me the exposure I desire.

I choose speedlights as my lighting tool because they give me the option of using high-speed sync in order to have shallow depth of field in my portrait, or I can choose to have a greater depth of field by choosing settings that do not need the high-speed sync feature. The cool part is that I can make that decision at the camera position without running to reset my flash. Also, I can easily photograph the first frame with a wide aperture (like f/4) for a shallow depth of field, then make a quick change on the camera and shoot the next frame at a small aperture (like f/22). I do this by leveraging the TTL system's ability to adjust exposure settings using my input.



Other than a slight boost in vibrance and saturation in Lightroom, this image is straight out of the camera. The “sun” was created by two Canon speedlights set to high-speed sync and ganged together on an RPS bar. My on-camera master flash fired as fill. I shot this image on my Canon 5D MKIII with an 85mm f/1.2 lens. The exposure was $\frac{1}{1600}$ second at f/4 on ISO 100.

There are times when extreme depth of field can enhance an image. One such occasion is when I want to include the sun in my shot. In this case, I do not want a bland, shapeless white blob in the sky; I want something with drama and character—I want a spiky sun! To get a spiky sun, you have to shoot with a really small aperture. Generally, I prefer f/22 if I can make it work, but at least f/16 is recommended. When I use such a small aperture, the corresponding shutter speed to properly expose for the ambient light in the scene is typically between $\frac{1}{100}$ and $\frac{1}{200}$ second, below the maximum flash-sync speed of my camera. This allows me to use the full power of my flashes (rather than the power-limiting

high-speed sync mode). As a result, I can battle the sun and win, getting enough light on my subject while darkening the sky slightly and creating spikes on the sun. Where do the spikes come from? They result from the shape of the lens aperture blades. The more blades in the lens, the more spikes. In fact, I purchased a Sigma 20mm f/1.8 lens just to do this type of shot because it has nine blades, giving me an incredible spiky sun (see the image on [page 23](#) for an example).



Here's another shallow depth of field high-speed sync image that is straight out of the camera—this time lit with the Godox AD360 with attached reflector and frosted panel. The flash was triggered with the Godox Cells II-C transmitter in the hotshoe, which communicated the high-speed shutter data to the flash. The high-speed sync was manually enabled on the flash and the power was remotely set to ½ power via a handheld Neewer FT16 transmitter. The full sun was used as a hair/separation light. I shot it on a Canon 5D MKIII with an 85mm f/1.2 lens. The exposure was $\frac{1}{2000}$ second at f/2.5 and ISO 100.



I fired two off camera Canon speedlights and one on-camera master flash to carve Zack and Amanda out from the shadows and balance them with the bright sky in the background. I shot this with a Canon 5D MKIII with 15mm fisheye lens. The exposure was $\frac{1}{160}$ second at f/20 and ISO 160.

Conclusion

Yes, speedlights can be—and are—valid professional lighting tools. You can use them in the rain or on a train. Inside a softbox or when lighting a fox. Try them! Try them, and you'll see, that speedlights work well for you and for me. (My apologies to Dr. Seuss.)

Hopefully, I have shown you a number of ways that speedlights can help you with your portrait lighting. These portable, powerful little babies have so much untapped potential. Learn how to use them to light virtually anything and you will be on your way toward maximizing your speedlight investment. And more importantly, you will be creating some killer portraiture along the way.

Happy flashing, my friends!



On a chilly November night, I had to work quickly. I placed a bare speedlight to camera right as the key and one to camera left for edge light.



By using a large, soft light source, combined with a fill light, I created a very soft, subtle loop shadow in this portrait of Brianna.

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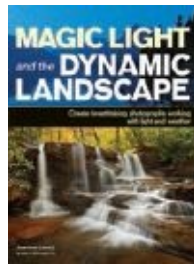
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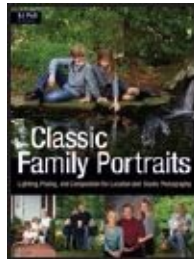
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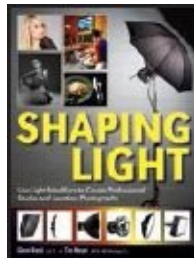
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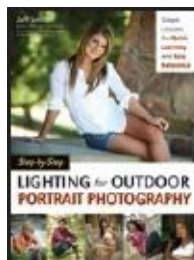
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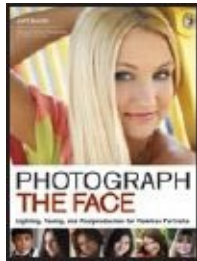
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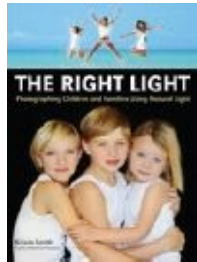
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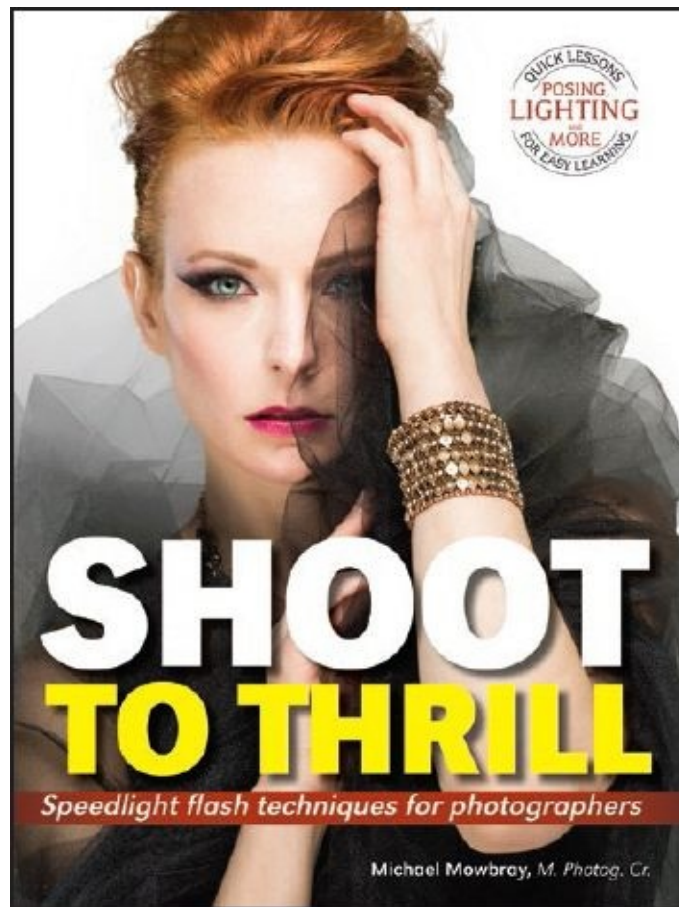
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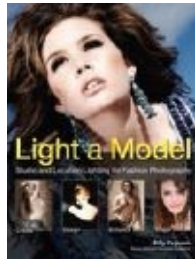
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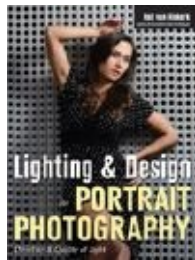
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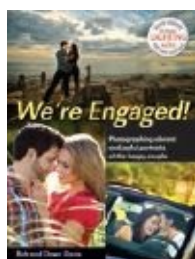
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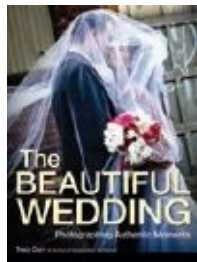
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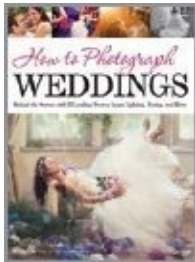
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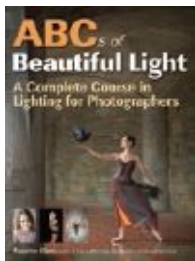
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