

A young man with dark hair, wearing a black long-sleeved shirt with a white Under Armour logo, white baseball pants with a gold stripe, and black Nike sneakers, is sitting on a green metal bench in a dugout. He is holding a wooden baseball bat across his lap. The background is a green brick wall. The lighting is dramatic, highlighting the man and the bat against the dark background.

MASTERING NIKON SPEEDLIGHTS

A Complete Guide to
Small Flash Photography and the
Creative Lighting System

ALAN HESS

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AND THE CREATIVE LIGHTING SYSTEM**

Alan Hess

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*This book is dedicated to my wife, Nadra;
without her, none of this would have been possible.*

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INTRODUCTION

For years, I would just tell people I was an available-light photographer, and I would leave my Speedlight in the bag or, more often, at home. I would then end up making excuses about the quality light and my inability to change it.

That all changed one morning back in 2003 when I witnessed Joe McNally demonstrating the Nikon SB-800 Speedlight and the new Nikon Creative Lighting System. I watched in amazement as Joe photographed a dancer leaping across the stage using a couple of small flashes that were triggered right from the camera while audience members held the remote flashes. The resulting images were properly exposed, were well lit, and looked as if they were shot with a full studio worth of gear instead of just a couple of small flashes. The ease of setting up and using multiple flashes off-camera without big battery packs or extra gear was amazing. That day changed how I felt about using small flash, and it opened up a whole new way of lighting. With the Creative Lighting System, Nikon had created a way for the camera and flash to work together to get the best lighting possible, and Advanced Wireless Lighting now offered the amazing ability to trigger off-camera Speedlights with a Speedlight on the camera.

I wrote *Mastering Nikon Speedlights* with a very specific goal in mind. I intended this book to be a resource for anyone who wants to learn about the Nikon Creative Lighting System and small-flash photography. Not only will it help you better understand using on- and off-camera flash techniques, you won't have to spend a fortune on dozens of Speedlights and every light modifier ever made to use these techniques.

I work on a really tight budget, and all the gear I purchase needs to be something that I will get maximum use out of. All the gear I use in this book is stuff I actually own and use regularly, but I did not buy it all at once. I started with a single SB-800 in 2003 and added gear as I needed it. The great part about the Nikon Creative Lighting System for the budget-minded photographer is that the older Speedlights, such as the discontinued SB-600 and SB-800, work right alongside the newer units like the SB-910 and SB-500.

Here's a section-by-section breakdown of what you'll learn:

- **Section 1:** In this first section, you'll learn the basics of light. The better you understand how light behaves, the better you can control it. Chapter 1 covers the intensity, direction, and color of light. Chapter 2 deals with measuring the light and camera metering modes, and Chapter 3 covers the basics of exposure, including the shutter speed, aperture, ISO, and equivalent exposures. Chapter 3 also deals with the exposure modes on the camera and exposure compensation.
- **Section 2:** The chapters here are all about gear: the cameras, Speedlights, batteries, accessories, light stands, and light modifiers. Chapter 4 details the current lineup of Nikon DSLRs and which CLS functions are available on each type of camera from the professional models all the way to the entry-level model. Likewise, Chapter 5 details all the Nikon Speedlights available, including such discontinued models as the SB-800 and SB-600. These are great flashes, and even though they are not available through Nikon anymore, plenty of photographers

(including me) are still using them, and many times they can be purchased for a lot less than new Speedlights. This section also covers the types of batteries, battery packs, TTL cords, the Close-Up Kit, the light modifiers that I use for small flashes, and the different ways to hold your flash when used off-camera.

- **Section 3:** This section delves into the Creative Lighting System (CLS) in depth. Here you'll find chapters on flash fundamentals and the Creative Lighting System, Advanced Wireless Lighting features, and off-camera flash triggers.
- **Section 4:** At this point, the book starts putting to work all the tools and techniques from the previous sections. You'll learn about portrait lighting, working with moving subjects, and lighting for product photography. These chapters cover the basic ideas and concepts behind these different subjects.
- **Section 5:** The final part of the book is filled with examples of using the Nikon Creative Lighting System in real-world scenarios. Chapters 15 through 17 demonstrate lighting the same subjects first with a single flash connected to the camera, then using a single off-camera Speedlight, and finally using multiple Speedlights. I wanted to make sure that the examples using the Speedlights were those that anyone could do and not just photographers with a closet full of Speedlights. The idea is to show that you can get great shots without having to have tons of gear; it's more about using what you have. Chapter 18 offers examples of action portraits, from simple single-Speedlight shots to more complicated setups. The final chapter contains examples of product photography and shows what you can accomplish with just a few lights at your disposal.

- **Appendix:** As an added value, I compiled a "Speedlight Resources" appendix that lists all the gear I used in the book and where to get it, providing all the URLs for the companies mentioned. To access this bonus content, just log in or join peachpit.com (it's free) and then enter the book's ISBN on this page: www.peachpit.com/store/register.aspx. After you register the book, a link to the appendix will be listed on your Account page under Registered Products. (If you purchased an electronic version of this book, you're set—the appendix is already included in it.)

I wrote this book to cover a wide audience from beginners to those who already have the basics down but want to experiment with the Creative Lighting System. With that in mind, not all of you will need all the chapters in this book. For those who are just starting out, I recommend starting at the beginning and working through the chapters in order because they do build on each other. For those photographers who already have the basics down, you might just want to skim the first section as a quick refresher before getting to Section 2. Because Section 2 covers the gear used, it is more of a reference as you use the Nikon Speedlights. Chapter 5 in particular is meant to be referred to as you use the actual flashes; it covers the buttons, dials, and settings for the current compatible Speedlights all in the same place.

The rest of the book is meant to be read in order, but you can skip around if, for example, you are more interested in photographing products and want to dive into those chapters first.

I hope you enjoy this book and have fun using your Speedlights both on and off the camera.

Alan

June 2015

DUGOUT

Photographing athletes on location is a real challenge, especially when you don't have a lot of time and can't bring in a lot of gear. Although soft, diffused light works well for ballerina, it doesn't for baseball players. For this photo of Sam, I decided to make a more dramatic shot by keeping the light tight and focused. To accomplish this, I used a grid over the front of the flash, which focused the light and produced little spill. I also used a higher shutter speed than for the ballerina to reduce the amount of ambient light.

EQUIPMENT

For this simple portrait, the gear was quite basic (**Figure 15.8**): one camera and lens, plus one flash with a modifier. The one extra piece that helped with aiming the light was the TTL cord, which enabled me to move the flash off the camera.

- **Nikon D750 DSLR:** You can use any camera for this type of photo.
- **24–70mm f/2.8 Nikkor lens:** This lens gave me the focal length I needed to photograph the subject and not be so far away that the flash couldn't reach.
- **Nikon SB-910 Speedlight:** Any of the Speedlights will work in this situation. The SB-900 and SB-910 have slightly bigger flash heads, which work better with the Rogue Grids, but a little gaffer tape solves any looseness.
- **Rogue Grid:** This is a great small flash modifier when you want to create a tight beam of light. With the three different grid patterns, it is more versatile than a snoot.

- **Nikon SC-29 TTL cord:** I needed a way to have the flash think it was still on the camera but be more adjustable. The TTL cord was the solution to this problem.
- **Black gaffer tape:** The Rogue Grids are great, but they can come loose if the flash is moved around a lot. The gaffer tape works great to hold the grid in place.

The great part about the Rogue Grid design is that you can remove the grid holder while the mounting piece is still attached to the flash. This way you can easily add a gel or change the grid angle. The Rogue Grid comes with two honeycomb grids that you can stack inside the grid holder in different configurations. You can produce 16-, 25-, and 45-degree grid spots just by switching out the grids. I have found that occasionally the grid holder can come loose and fall off the flash, however, so



Figure 15.8 The gear for this shot was simple: camera, lens, flash, and Rogue Grid. The Rogue Grid is actually four separate pieces: a holder that attaches to the flash, a front piece that holds the grids in place, and two different grid inserts that can stack to create the narrow 16-degree spot.



Figure 15.9 To hold it securely, I used gaffer tape to attach the Rogue Grid holder to the SB-910 Speedlight mounted on top of the camera. I also used the gaffer tape to make sure that no light leaked out the bottom or around the sides of the grid.

I usually use a piece of gaffer tape to make sure that it is secured to the flash head, as you can see in **Figure 15.9**.

With the Speedlight mounted on the camera, I needed to take the photos in landscape orientation to accomplish the look I envisioned. With the flash positioned on top of the camera, the light striking the subject comes from the top of the frame, which is what I wanted. If I turned the camera into portrait position, the light would have come from the side of the frame—the wrong direction. For that reason, I needed a way to change the flash position, which is where the TTL cord came into play.

I needed the ability to aim the flash a little more accurately, so I added the SC-29 TTL cord, which would allow me to hold the flash in my left hand for aiming. When the flash is mounted on the camera with the grid, the grid tends to point slightly downward, which is not what I wanted as it would light up too much of the subject's legs (**Figure 15.10**). Using a TTL cord will help you aim your flash more accurately at the subject.

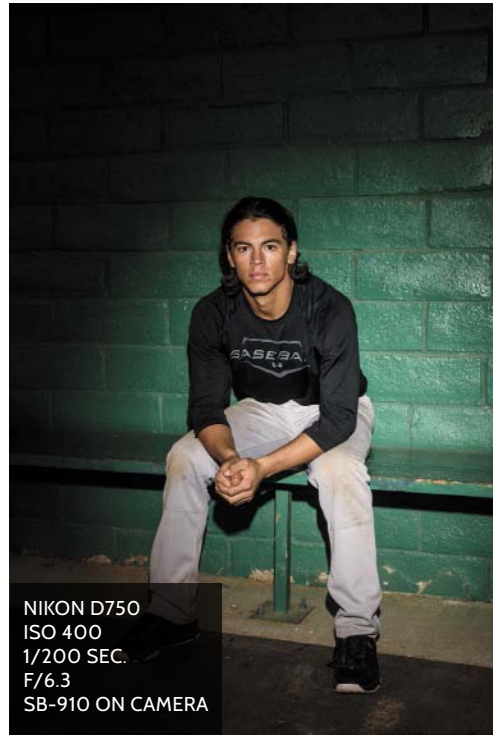


Figure 15.10 Sam sat in the dugout during the test shots. The setting was a simple bench in the dugout with a green wall as the background. The flash on the camera is lighting up too much of the image, especially his legs.

SETUP

The setting for this photo was the dugout at a high-school baseball field. The green color of the walls and the rough textures made for an interesting and somewhat gritty look and feel. I wanted to accentuate this gritty feeling—another reason to use a harder, more focused light.

Because I could hold and aim the light but was limited by my arm length, I had Sam sit facing

toward me (**Figure 15.11**). I wanted the light aimed at his face to be the main light in the scene and not have any of the ambient light affect the image. To do this, I used a fast shutter speed (1/200 second)

to reduce the amount of ambient light and a deeper depth of field (f/6.3) as I wanted to make sure to capture some of the texture of the green wall. You can see the lighting diagram in **Figure 15.12**.

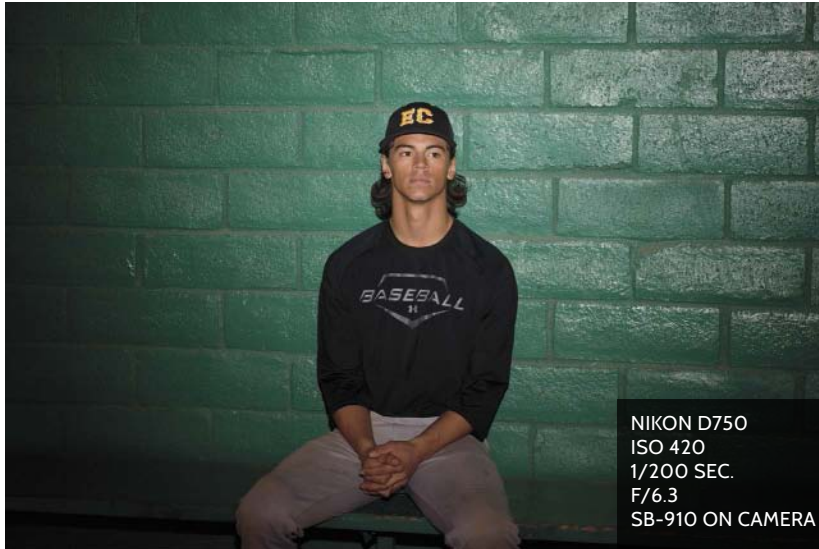


Figure 15.11 Sam sat in the dugout during the test shots. The roof over the dugout caused the whole area to be in deep shadows.

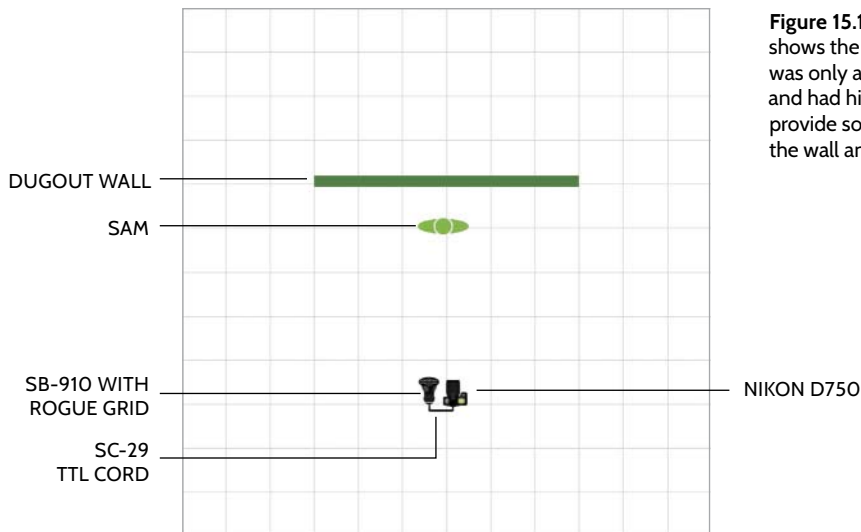


Figure 15.12 The lighting diagram shows the shot's simple setup. I was only about 12 feet from Sam and had him lean forward a little to provide some separation between the wall and his head.

The difficult part of creating this image was holding the flash at the right angle while taking the photo. I would love to tell you that it worked perfectly every time, but that would be a lie. As you can see from **Figure 15.13**, the light wasn't quite on target for a few shots. It didn't take me (and won't take you) long to get the final shots, but getting the light just right needs an extra frame or two.

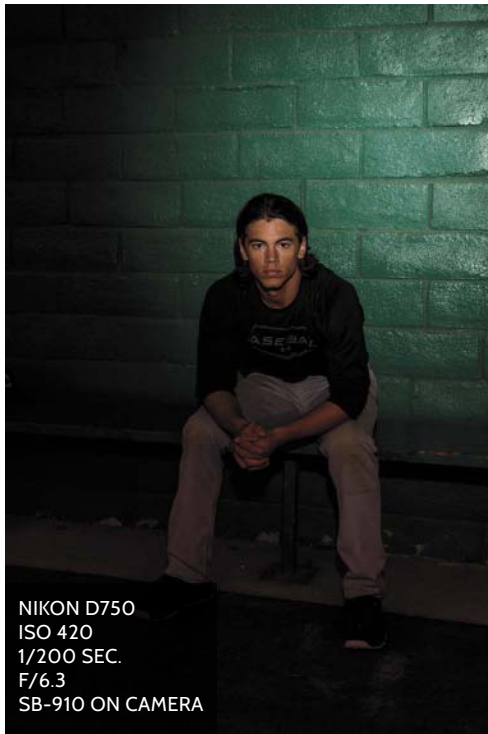
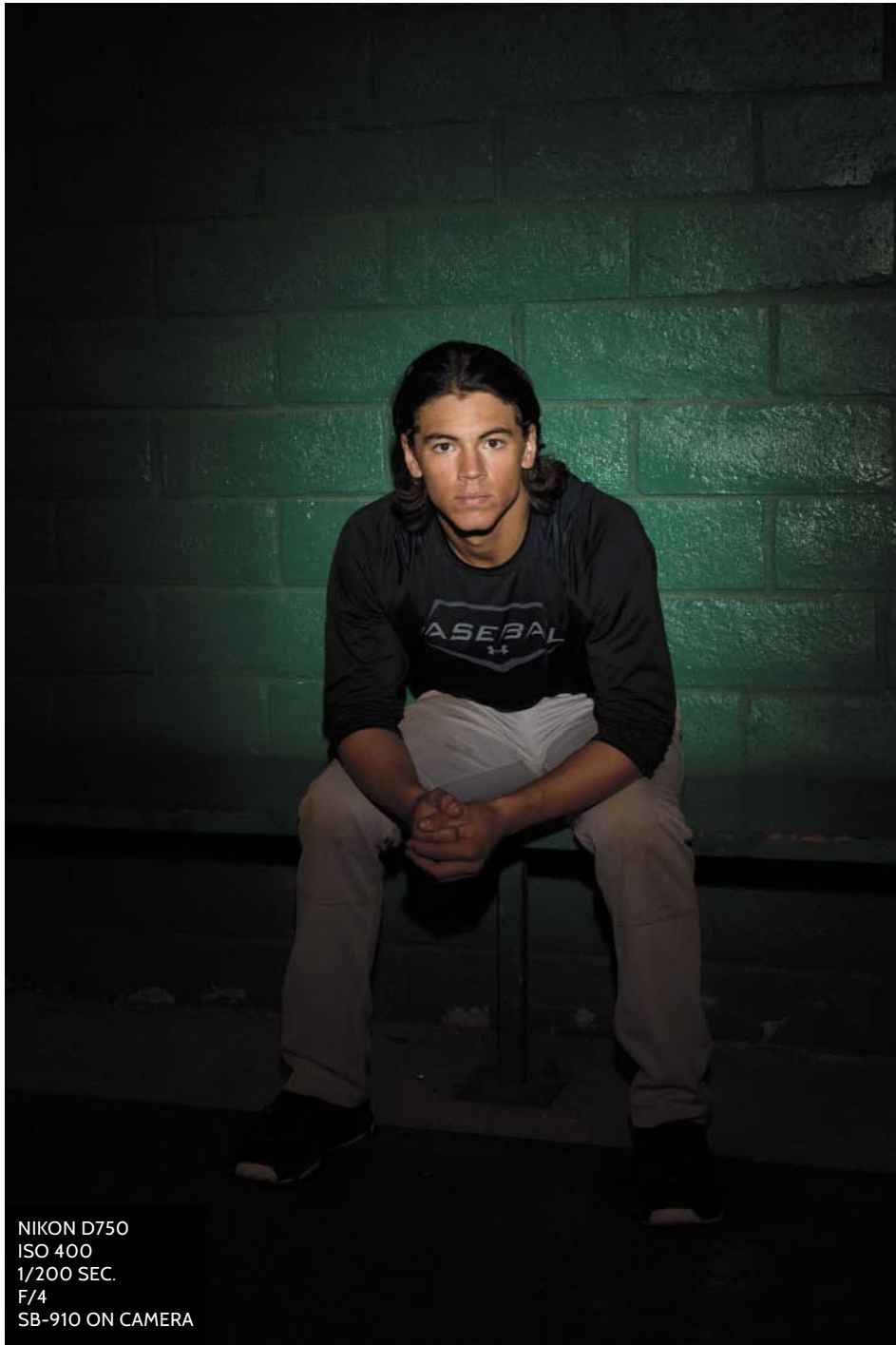


Figure 15.13 In this outtake, you can see that the flash is aimed off to the right and not on the subject. It does take a couple of tries to get the light aimed where you want it.

FINAL IMAGES

In **Figure 15.14** the focus is on Sam with tight light created by using the two grids stacked. The spill of the light and the beam's tightness depend on the size of the grid you use: The smaller the degree, the tighter the beam of light is. The Rogue Grid uses a 25-degree grid and a 45-degree grid. When you put both in the holder, you get a 16-degree grid.

The photo was taken with the camera in Manual mode, set at 1/200 second, ISO 400, and f/6.3. The SB-910 was set to TTL mode, which worked great and gave the correct exposure on Sam's face. The flash was attached to the camera with a TTL cord allowing me to aim the flash. This worked well but does take some practice. It is important to stay in the same position between photos, while checking that you are aiming the flash correctly during the shots. With the grid attached to the Speedlight, there is not a lot wiggle room in where to aim the flash, because the beam of light is so tight and without much spill.



NIKON D750
ISO 400
1/200 SEC.
F/4
SB-910 ON CAMERA

Figure 15.14 Adding the 25-degree grid to the 45-degree grid in the grid holder creates a 16-degree light, which is much tighter light that really worked for this image.

KIDS

Photographing multiple subjects with a single, on-camera Speedlight is pretty easy—if they are all grouped tightly together and facing the camera. When the subjects are spread out (as kids usually are), the challenge increases because the light is attached to the camera and can't be aimed at more than one subject at a time.

As a solution for my session with these kids, I used a combination of the ambient light already in the scene and some flash into a gold reflector, which bounced some of the light back into the image, and a TTL cord allowing me to control the direction of the light. My idea was to match the color of the light coming through the window by using the gold reflector to bounce and change the color of the light from the flash.

EQUIPMENT

My equipment list will look familiar from the previous sections:

- **Nikon D4 DSLR:** Any of the Nikon DSLR cameras will work in this situation.
- **24–70mm f/2.8 Nikkor lens:** The working distance was really tight, and I needed the wide-angle focal lengths. I also needed to be pretty close to the reflector because the TTL cord does not have that much reach and the flash was just sitting on the floor in front of the reflector.
- **Nikon SB-910 Speedlight:** Any of the Speedlights can work in this situation.
- **TTL cord:** The TTL cord allows me to take the flash off the camera, but the flash and the camera still think that they are connected.

- **Gold reflector:** The gold reflector enables me to bounce the light and change the color in a single step. The reflector is a great tool to soften the light.

The only new piece of equipment here is the gold reflector (**Figure 15.15**). Most reflectors come with multiple covers providing you with different colored surfaces to reflect the light. To get a warmer light, I like to use the gold or gold-mixed-with-white side, depending on how much gold I want in the image. Another way to add a warmer light is to use a colored gel over the flash. If you opt to use an orange gel, then you probably want to use a white reflector, or the light being bounced into the image might end up looking more like a radiation glow than a warm tone. Because I was shooting in the morning, the light coming from the window was warm and quite bright. The light from the flash and reflector was intended to add some fill and even out the overall light.



Figure 15.15 The gear for this shoot was basic. I always have a reflector (or two) with me because you never know when you will need to bounce or block the light.

SETUP

The photos of the kids were taken in their living room, which included a large window that provided great available light. I planned to supplement that light using the SB-910 on my camera to make that light bigger and softer. I set up the large gold reflector to my right and angled it to bounce the light into the scene, creating a more natural-looking fill light. I could have tried to use the reflector alone to just bounce the window light, but I wanted more control over the direction of the bounced light. The kids were posed as shown in **Figure 15.16** with the reflector off to the side. You can see the lighting diagram in **Figure 15.17**.

FINAL IMAGES

The key to getting this photo to look natural was not to overpower the natural sunlight but to add just some fill light to the image. It still needed to look as if the only light source was the sun coming through the window.

I wanted just a small pop of light to bounce off the reflector, so I set the Speedlight to Manual mode and the flash power to 1/16 as a starting point. The camera was set to Aperture Priority mode at f/5.6 and ISO 800. The shutter speed determined by the camera was 1/25 second for the first exposure, as shown in **Figure 15.18**.



Figure 15.16 The kids were playing a game on the floor, so I positioned the flash and the reflector to bounce the light into the scene. I positioned the flash on the floor and attached the TTL cord so that the flash could stay in front of the reflector while I moved the camera.

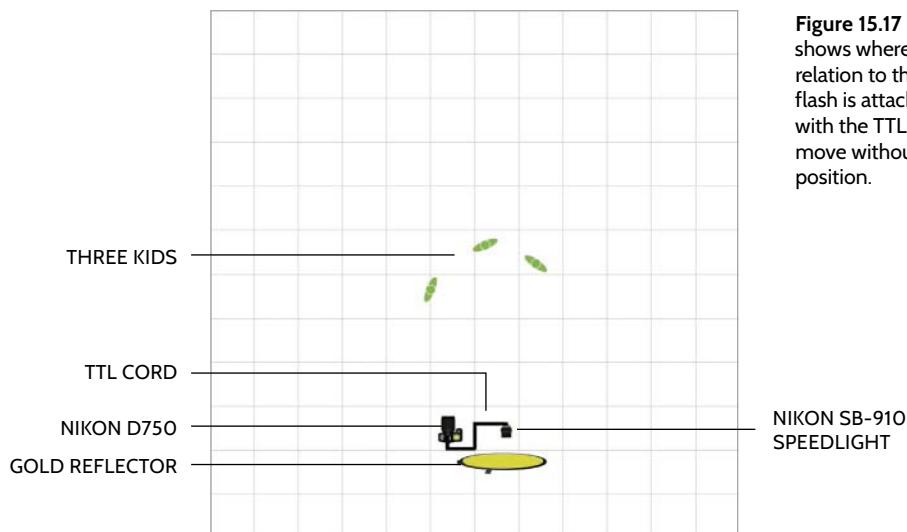


Figure 15.17 The lighting diagram shows where the reflector is in relation to the kids. Because the flash is attached to the camera with the TTL cord, the camera can move without changing the flash position.

For the second shot, I got down on the floor and photographed the kids playing from their level (**Figure 15.19**).

The key to this technique is to not overpower the existing light source or create a conflicting light

source. The best way to check for a conflicting light source is to look at the shadows; they should fall in only one direction. If you see two distinct shadows in two directions, then the image will look unnatural.



NIKON D750
ISO 800
1/25 SEC.
F/5.6
SB-910

Figure 15.18 From this overhead angle, I can see that the light is actually pretty even over the kids, so now it is just a matter of changing the composition.



NIKON D750
ISO 800
1/25 SEC.
F/5.6
SB-910

Figure 15.19 Changing my position didn't change the light at all because the flash and the reflector didn't move.

CODY

When photographing Cody in his home, I wanted to bounce the flash off a white wall to create a larger, softer light source. I had never been at the location before, so I packed a piece of white poster board that could be used as a stand-in for any white wall. Because Cody is a singer and songwriter, I wanted to get a natural feel to the images and have him playing a guitar.

EQUIPMENT

The equipment for this shoot of Cody was really simple: a camera, flash, and bounce surface (**Figure 15.20**). I also brought along a portable black background in case I needed to block out the background. When I don't know what the shooting location will look like, I make sure I have some basic pieces that allow me to at least create a portrait against a black background.

- **Nikon D750 DSLR:** You can use any DSLR for this photo.
- **24–70mm f/2.8 Nikkor lens:** I needed a lens that would allow me to capture both the subject and some of his surroundings, plus that would allow me to work in close. Because the flash was on the camera and needed to illuminate the scene with bounced light, I couldn't work further away. The 24–70mm lens worked perfectly.
- **Nikon SB-700 Speedlight:** Any of the Speedlights will work in this situation.
- **White poster board:** When you want to bounce your flash off a nearby wall or ceiling to create a softer light and nothing is available, a piece of white board will work as a substitute.
- **Black portable backdrop:** This portable backdrop is white on one side and black on the other. It works wonders as a backdrop or as a big flag to block out other light sources.



Figure 15.20 This is a basic kit: a camera, lens, and flash, along with the portable backdrop and white board. Many times you will be able to use existing walls or ceilings to bounce the light. When you can't, a piece of poster board works great.

My plan for this shoot was to use the white poster board as a reflector to bounce the light into the scene. You could just as easily use a white wall or an actual reflector, but white poster board has two big advantages:

- **Inexpensive:** This piece of white board cost less than \$10 and has lasted me for more than a year. It isn't all that pristine anymore, but it does exactly what I want it to do: It acts as a substitute for a white wall. I either lean the poster board against some furniture or use a big clamp and a light stand to hold it up.
- **Adjustable:** One of the nice things about having your own piece of reflective material is that you can place it where you need it. If you use an existing wall to bounce the light, you are limited by the angle; you can't just pick up and move the wall.

There are also some disadvantages:

- **Size:** A wall is bigger than any piece of board you are going to bring, so the light will be softer from the big wall.
- **Easily damaged:** The poster board is made of paper, so it is easily damaged and may need replacement quite often if you use it frequently.

I took the black backdrop with me as a precaution, in case I needed to block the light from bouncing off the background. Planning ahead paid off, because I did need to block the light and the backdrop made the whole process easier.



Figure 15.21 You can see the position of Cody on the floor in front of the couch. The black portable backdrop behind him blocks the light from bouncing off the glass doors.

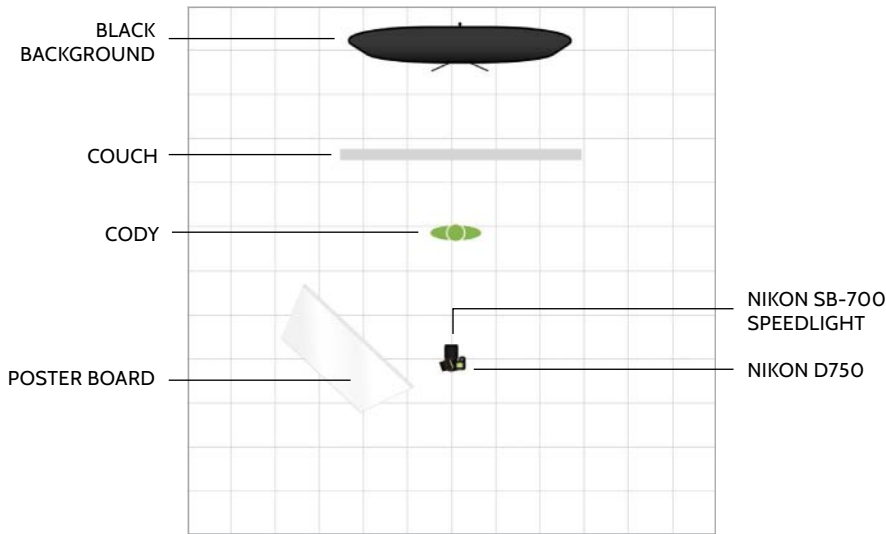


Figure 15.22 As you can see in this lighting diagram, the setup for this shot is simple: The flash on camera is aimed and bounced off the poster board to the left, creating a large soft light that illuminates Cody who was sitting in front of the couch.

SETUP

The idea for this photo was to illuminate Cody with the light bounced off a white wall or if there wasn't a properly positioned wall, then off the white poster board instead. Bouncing creates a larger, softer light than with the straight flash. Many times you can bounce the light off a nearby wall or ceiling, which works great. When you don't have a wall handy or the ceiling is too high, however, a piece of white poster board or a white reflector is an effective substitute. The general concept is that the small hard light from the Speedlight becomes a larger softer light when it bounces off the larger surface. I placed the white board next to me at a slight angle and then just rotated the flash head so that it was aimed at the board and not at Cody. **Figure 15.21** shows the actual setup, while **Figure 15.22** provides a lighting diagram.

FINAL IMAGE

For this image, I took a series of test shots while Cody sat on the floor playing his guitar (**Figure 15.23**). I wanted to be sure that the angle and light were right.

I set the camera to ISO 400, $f/5.6$, and $1/250$, which got rid of most of the ambient light and allowed the reflected light from the white board to fill the room as planned. Once I had the lighting as I wanted it, I fine-tuned the composition by adjusting my position slightly and asking Cody to look up at me, as shown in **Figure 15.24**. The SB-700 was set to TTL mode with the flash compensation set to +1 to pump out more light. This photo was a little flat as the light was a little flat, but it was a good start to where I wanted to go with lighting Cody.

Figure 15.23 I took a few test shots of Cody to check whether the lighting was how I wanted it.



Figure 15.24 In this final shot of Cody, you can see the small light of the flash reflected in his eyes and the angle of the flash bouncing off the board, creating the shadow on his right side.

STRAWBERRY SPLASH

Sometimes the easiest photos to take look the most impressive and complicated. For instance, suppose you want to capture a strawberry splashing into milk at the moment the berry breaks the surface of the liquid. This action sounds difficult to capture, but it really isn't. The hardest part is having the patience to drop the strawberry into the milk over and over again.

GEAR

This shoot does not need a lot of gear because it uses just one light. The real issue with this shoot is that it can get messy—a side effect of those splashing milk drops. The gear needed for this photo is as follows:

- **Strawberries:** You need some good-looking strawberries to drop in the milk. For the example shot, I spent a few minutes in the supermarket picking out the best pint of strawberries. Not all the strawberries need to be perfect, just two of three that have that proper strawberry shape. The color is also important; you are looking for a deep red because the image will be very bright. If your strawberry is on the lighter side to start with, it will look washed out in the final photo.
- **Milk:** The cheapest gallon of milk at the local supermarket works great. You can also add a little cold water, if you need to stretch the amount out.
- **Plastic tub:** You need a tub to hold the milk, one that's deep enough to hold enough milk to create a good splash as the strawberry hits it. A white plastic tub works the best, but you can also use a clear one, as long as it is big enough so that you don't see the edges (you don't want to see anything that doesn't look like milk). Once again, the supermarket offers inexpensive options.
- **Speedlight:** The image will be lit by a single Speedlight in a softbox. I used an SB-910, but you can use any Speedlight that can act as a remote.
- **Softbox:** The Speedlight needs to be diffused so that you don't get hard shadows when the milk splashes up. I used the 26-inch Westcott Rapid Box Octa, which was the perfect size to light up the splash.
- **Boom or Century Stand:** The light needs to be placed above the tub of milk and aimed down so that it can light the splash from above. To do this, you need a way to hold the light in place. A boom or a century stand can handle the job with ease. I prefer to use the century stand because it takes up less space, and I don't have a lot of room to begin with.
- **Commander unit:** You will need a way to trigger the light from the camera. I used the SU-800, but you can use another Speedlight or the built-in flash to trigger the flash.
- **Camera and lens:** For the example photo, I used the Nikon D4 and a 105mm macro lens. You will want to use a lens that allows you to shoot a little wide so that you don't miss the splash. You can always crop the image later.



NIKON D4
ISO 1600
1/2000 SEC.
F/7.1

Figure 19.1 The goal with this shot is to have the strawberry in focus and to capture the instant it breaks the surface of the milk.

- **Tripod:** For this shot to work, the camera needs to be set in a tripod that can hold it at a downward angle above the plastic tub.
- **Towels:** You can't have too many towels handy on a messy shoot. I placed one towel under the plastic tub to catch any of the milk drops that made it over the edge but quickly realized I needed another towel to dry the milk from the strawberries I used as models. Each time I dropped a strawberry into the milk, I needed to fish it out and gently dry it for the next take.

TAKING THE PHOTO

The setup for this photo is simple: Place the tub full of milk on the work surface and the Speedlight in the softbox above it so the light aims straight down on the milk. Then, you drop the strawberry and press the shutter release button as the strawberry hits the milk (**Figure 19.1**).

The first step is to get the exposure right using a shutter speed that will freeze the action. With the camera set to Manual exposure mode, I tried setting the shutter speed to 1/2000 and the aperture to f/7.1. This gave me a shutter speed that froze the

Figure 19.2 Here is how the milk looked before I got the exposure dialed in. (I didn't need to drop a strawberry until I had the proper exposure, but a photo of just milk here would have been dull in more ways than one.) To help whiten the milk, I ended up increasing the output of the flash from 1/8 to 1/4 while keeping the camera settings the same.



NIKON D4
ISO 1600
1/2000 SEC.
F/7.1

splash and enough of depth of field to keep the strawberry and splash in focus. I set the Speedlight to act as a remote in Manual flash mode at 1/8 power.

The final step is to adjust the ISO. You want the white milk to look white, so I suggest starting at an ISO of 800 and taking a photo. If the milk is not white enough, you can move the ISO to 1600. If the milk is still not white enough, you can either increase the ISO or increase the output of the flash. For **Figure 19.2**, for example, a setting of 1/2000 second, f/7.1, and ISO 1600 with a Manual 1/8 power on the flash was still a little dull. I increased the power to 1/4, and that worked perfectly. Because the milk is white, it tends to reflect the light so it acts as a second light source.

The next step is to set the camera's focus on where you believe the strawberry is going to land. If you keep the camera on the Continuous Auto-Focus setting, the camera will try to focus as you press the shutter release button. This can cause a delay when you try to take the photo. You want to use

Manual focus and pre-focus on the spot where the splash will happen. I just floated a clothespin and used auto-focus to get focus set; then I turned the camera to Manual focus and made sure I didn't move the camera, lens, or milk (**Figure 19.3**).

The next steps are to actually drop the strawberry and take the photo. I held the strawberry over the milk with my right hand and put my left on the



NIKON D4
ISO 1600
1/2000 SEC.
F/7.1

Figure 19.3 I used a clothespin to act as the strawberry while I adjusted the focus. Because it was right on the surface, I could easily focus on it.



Figure 19.4 The sequence of the strawberry drop proves timing is everything and practice is vital.

shutter release button. Then it was just a matter of dropping the strawberry, quickly moving my hand out of the way, and pressing the shutter release button as the strawberry hit the milk—over and over and over and over again.

You can see in **Figure 19.4** that you not only have to press the shutter release button at the right moment but also need to move your hand out of the way to avoid a shadow of the hand in the milk. Press the shutter release button too early, and the strawberry is frozen in mid-air and out of focus; press the shutter release button too late, and the strawberry is covered in milk. You also need to pay

attention to the look of the strawberry; for example, the middle image is ruined by a bruise on the berry.

I probably dropped the two best-looking strawberries into the same tub of milk more than 50 times before I got a shot I really liked. Between each drop, I waited until the milk was flat, and I dried off the strawberry. The final image (**Figure 19.5**) was the one where I could see the strawberry clearly and the splash looked the best.

The setup for this shot is simple, and the results are fantastic. It's easy to try with a minimum of gear—just have a towel handy.



NIKON D4
ISO 1600
1/2000 SEC.
F/7.1

Figure 19.5 Here's the final strawberry splash image, which was my favorite of the shots I took.

SUNGLASSES AND WATCH

Depending on the product, your photography you may want to enhance or reduce reflections. Glasses are a great subject to photograph, for example, especially against a solid white background. The frames and lenses are both reflective but usually in different ways because of their materials. You also need to make sure that there is something that the lenses of the glasses can reflect to give them shape. A wristwatch is slightly trickier to photograph because you need to watch the angle of the watch face in relationship to the light so that you reduce the reflection on the glass. I put these two products together in the same section because the lighting is really similar, and both can be shot with just one Speedlight.

GEAR

You can take this type of shot using a single Speedlight in a softbox and a couple of bounce cards. The only real differences are the subject and the angle of the light.

- **Speedlight:** The image is lit by a single Speedlight in a softbox. I used an SB-800, but you can use any Speedlight that can act as a remote.
 - **Softbox:** The Speedlight needs to be diffused so that there are no bright spots to reflect off the glass. I used the 26-inch Westcott Rapid Box Octa because it is the perfect size for this. It is small enough to be easily managed but large enough to produce a pleasing soft light.
 - **Boom or century stand:** The light needs to be placed above the product and aimed down. A boom or a century stand can hold the softbox in position and can easily be adjusted as you tweak the position of the light.
 - **Commander unit:** You will need a way to trigger the light from the camera. I used the SU-800, but you can use another Speedlight or the built-in flash to trigger the flash. You can also use a TTL cord because the distance between the camera and the flash is short enough.
 - **Camera and lens:** For this photo, I used the Nikon D750 and a 105mm macro lens, allowing me to fill the frame with the product. For the watch, I moved the camera in much closer than for the sunglasses.
 - **White paper:** I used a single large sheet of white paper as the backdrop.
- **Sunglasses and watch:** Both subjects have reflective glass surfaces that need to be cleaned to remove dust, dirt, and especially any fingerprints.
 - **Wire:** I used a small piece of wire to keep the watch strap in a loop. Buckle the strap and then place the wire inside and bend it to the right shape to position the watch exactly where you need it.

TAKING THE PHOTO

The key to these photos is the surface that the product is placed on. Using a large piece of white paper, you can create a seamless white backdrop for the glasses to sit on. You can see the glasses sitting on my version of the background in **Figure 19.6**.

For the sunglasses shot, the main light was an SB-910 in a softbox placed facing down over the work table and slightly toward the back. The SB-910 was set to Remote mode, channel 1, and group A. I triggered it from the camera using the SU-800, but you can trigger yours with any Speedlight or built-in flash that can be used in Commander mode. You can also use a TTL cord because the distance from the camera to flash is short enough.

Two more light sources finish the photo: a couple of bounce cards to open up the shadows on the side. Place these on either side of the glasses (**Figure 19.7**). For the final image (**Figure 19.8**), I set the Speedlight at 1/4 power and triggered it from the SU-800.

For the wristwatch photo, I replaced the sunglasses with the watch and moved the camera in closer. I used a few small pieces of wire to hold the watch-strap in a circle and then positioned the watch facing the camera.

Once the watch was in position, I moved the camera closer to fill the frame with the watch face and angled the overhead light until it looked right (**Figure 19.9**). I then added the bounce cards into place (**Figure 19.10**) to create the final image (**Figure 19.11**). Once again, I triggered the Speedlight from the camera using the SU-800 in Manual mode at 1/4 power, the same as for the sunglasses.



Figure 19.6 Sit the pair of glasses right on the seamless background.



Figure 19.7 Here the bounce cards are placed to add the highlights to the side of the glasses. You can adjust the cards to taste.



Figure 19.8 The final image of the sunglasses needed only a single light and a couple of bounce cards.

NIKON D750
ISO 400
1/200 SEC.
F/20



NIKON D750
ISO 400
1/200 SEC.
F/20

Figure 19.9 Without the bounce cards in place, you can see that the bottom and the bottom edges of the watch are still a little dark. The bounce cards fix that.



Figure 19.10 This behind-the-scenes shot shows the setup for the wristwatch image with the watch and the bounce cards in place.

Figure 19.11 The final watch image shows the face of the watch in great detail.



NIKON D750
ISO 400
1/200 SEC.
F/20

KNIFE SET

Photographing knives can teach you all about reflective metal objects and the best way to light them. For this photo, I upped the stakes a little and posed three knives together, each at a slightly different angle. Lighting the background separately adds some separation from the knives. This image needs five Speedlights. One lights the background, one lights the overall scene, and each knife has a separate light on it to cause the reflection in the

blades. The hardest part of this photo is getting the right angles on the Speedlights in front that create the bright reflections on the blades. Each has to be adjusted until it's just right.

GEAR

This photo needs more gear because each of the knives needs its own Speedlight to create the

reflection off the blade. If you want to try this but don't have a lot of lights, try it with just one knife and don't light the background. Then instead of five Speedlights, you can do it with two.

Here is the gear needed for the photo:

- **Knife set:** I used a set of three throwing knives because they are all the same and contain a lot of metal to reflect back at the camera. The handles are also metal but wrapped in paracord, adding some texture to the image.
- **Speedlights:** I used five Speedlight in the example image, but if you have one knife, you can get away with two lights. For the three-knife setup, you need one Speedlight on the background, one over the top in a softbox, and one on each knife.
- **Softbox:** The Speedlight over the top of the knives needs to be diffused so that you don't get hard shadows. I used the 26-inch Westcott Rapid Box Octa because it is the perfect size to light up all three knives. If you want the knives spaced further apart, you will need a bigger softbox or a strip softbox so that all three are covered.
- **Boom or century stand:** The overhead light needs to be placed above the knives and aimed down. To do this, you need a boom or a century stand to position the softbox.
- **Commander unit:** You will need a way to trigger the light from the camera. I used the SU-800, but you can use another Speedlight.
- **Camera and lens:** For this photo I used the Nikon D4 and a 70–200mm lens. You can use any lens that gives you the look you want. I wanted to shoot from further away to provide room to place the accent lights that illuminate the different blades, and the 200mm focal length allowed for this easily.

- **Tripod:** The camera needs to be set in a tripod that can hold it while you set up and test the lights.
- **Justin clamps:** These allow you to really fine-tune the exact placement of the Speedlights, which is what you need here. You can use the Justin clamps on light stands as I did or just pull up some chairs and clamp the lights to their backs.
- **Light stands:** You need a light stand in the back to hold the background light and three light stands up front to hold each of the lights that create the reflections. If you use the Justin clamps, then you can use anything as a light stand; just clamp the lights to a chair back, for example.
- **Snoots:** The light used to create the reflections in the blades needs to be tightly controlled so that it doesn't spill over and light everything in the scene. You can use any snoots to do this; I used three of the Rogue FlashBenders rolled up as snoots.
- **Custom backdrop:** The backdrop is a piece of paper that is made to look like wood. You can buy some great papers to use in product photos at any good art supply store.
- **Wood:** I used a plain piece of scrap wood to hold the knives in place—simple and effective.
- **Rogue Grid:** A Rogue Grid is used on the background light to control the spill of light.

TAKING THE PHOTO

Build the lighting for this photo from the back forward with the background light first, then the overhead light, and finally the three accent lights. For the example, I positioned the knives in the piece of wood point first and placed the wood on the work



Figure 19.12 The background light aims at the custom art paper.



Figure 19.13 The background light alone silhouettes the knives.

table. I then placed an SB-800 Speedlight on a low light stand and aimed it at the background. With a Rogue Grid over the flash head, the SB-800 was set to Remote mode, channel 1, and group C. For the background, I used a piece of art paper that was made to look like wood. You can see the setup in **Figure 19.12**. The goal is to create a bright spot in the middle of the background with the wood pattern at the edges. You can see the example image with only the background light firing in **Figure 19.13**.

The next step is to add the overhead main light. I used an SB-800 Speedlight in a Westcott Rapid Box Strip light placed overhead and to the rear of

the knives. The Speedlight was set to Remote mode, channel 1, and group A. I wanted the overhead light to add some light to the whole scene and add some illumination to the top of the knives. The overhead light firing alone creates **Figure 19.14**.

The most difficult part of this setup is aiming the three Speedlights used to illuminate the knife blades. For the example, each of these is set to Remote mode, channel 1, and group B. Because all these lights are in the same group, they will all have the same power and need to be roughly the same distance from the blades. Each of these Speedlights also needs a snoot over the end to control the spill of light. (I used a Rogue FlashBender.) To simplify

positioning these lights, turn off two of the flashes and aim the first one, and when you have that flash aimed properly, repeat the same process for the other two lights. You can see the three speed lights in **Figure 19.15** all aimed at the work area. Each of the Speedlights is in a Justin clamp and mounted on a light stand. **Figure 19.16** shows how the individual lights look when fired separately.

The final step is to turn on all the lights and make sure everything still looks great. In **Figure 19.17** you can see all three front lights are turned on, as well as the overhead light. All that is needed is to turn on the background light. The final settings for the images were Manual power at 1/8 for group A, Manual power at 1/64 for group B, and Manual power at 1/8 for group C (see **Figure 19.18**).

Figure 19.14 In this test firing, the knives are lit by just the overhead softbox held in place with a century stand. The light is over and slightly to the rear of the knives.



Figure 19.15 The three accent lights need to be aimed individually. The three Speedlights used for the example shot are mounted in Justin clamps on light stands, and each has a Rogue FlashBender as a snoot.



Figure 19.16 In these images, you can see how the individual lights each illuminate and reflect off of a different blade.



Figure 19.17 Test just the front lights and the overhead light.



Figure 19.18 Here's the final image of the knife set with all of the Speedlights firing.

CAMERA BODY

I take a lot of photos of cameras, flashes, and other gear, which are a lot more challenging to photograph than you might think. Because the gear is usually a combination of plastic, rubber, metal, and glass, you must deal with several different reflective surfaces. You also want certain features, such as the model name, to be properly lit and basically look as good as possible. To succeed, you need to add little splashes of light in just the right places. Doing so requires a combination of multiple Speedlights, flags, and bounce cards. Plus, to light the background, you need another Speedlight, grid, and gel.

GEAR

This image takes more lights than you would think: Four Speedlights are needed to light up everything just right. Here is a complete gear list:

- **Camera body:** The model for the example photo is the Nikon D750 with the MB-D16 Battery Pack. This camera makes a difficult product to photograph, especially because the name plate is at a different angle than the Nikon logo and both need to be lit properly.
- **Speedlights:** The image is lit by a four Speedlights. The main light is in a softbox over the camera, then two different Speedlights highlight different parts of the camera, and a fourth Speedlight lights the background.
- **Softbox:** The main Speedlight needs to be diffused so that you don't get hard shadows. I use the Westcott Rapid Box strip because it is the perfect size to light up the camera body.
- **Snoots:** The two accent flashes need snoots so that the light from them doesn't just spill everywhere. Two small Rogue FlashBenders rolled into snoots, one on each Speedlight, work perfectly to control the light.
- **Rogue Grid and gels:** One of the easiest and coolest-looking backgrounds can be created by using a Rogue Grid and a colored gel.
- **Flags:** A couple of pieces of black poster board help to control the spill of light.
- **Bounce cards:** A couple of pieces of white poster board help to open up some of the shadow areas and add a little light, especially to the sides of the camera.
- **Boom or century stand:** The light needs to be placed above the camera and aimed down so that it illuminates the top of the camera. To do this, you need a way to hold that light in place. Either a boom or a century stand can do this with ease.
- **Justin clamps:** Clamps hold and position the two Speedlights that illuminate the details on the camera. Because they allow the flash to be precisely positioned, I use Justin clamps either attached to the work surface or mounted on light stands.
- **Light stand:** You will need a couple of light stands for the two Speedlights that add the detail light, as well as one for the back light. Depending on your setup, if you use the Justin clamps, the two detail lights can be mounted on just about anything from a chair to the actual work table.



Figure 19.19 The D750 and the background light are in position, and the SB-800 is fitted with the Rogue Grid and red gel.

- **Commander unit:** You will need a way to trigger the lights from the camera. I used the SU-800, but you can use another Speedlight. I used all three groups for this photo, so I recommend an SB-900, SB-910, SB-800, or SU-800.
- **Camera and lens:** For the example photo I used the Nikon D4 and a 70–200mm lens, but you can use any camera and any lens you want. The key to consider is how much of the surrounding area you want in your image.
- **Tripod:** For this shot to work, the camera needs to be set in a tripod that can hold it in the same spot while you adjust the lights.
- **Black board:** The background is a piece of black board.

TAKING THE PHOTO

The first step is to set up the work area and clean the model camera and lens. Wipe off the camera and use compressed air to blow the dust off the rubber

grips. Polish the logo and the camera name with a lint-free cloth and clean the lens. Once you set the model camera on the work surface, try hard not to touch it at all to avoid fingerprints. If you do have to move the model camera, use a cloth or cotton gloves to help reduce any fingerprints or smudges.

The next step is to set up the camera that you're using to take the photo. Place it on a tripod and aim it at the model camera. Because I took the example photo specifically for this book, I wanted to take a portrait-orientated photo, so I set the camera in the tripod vertically and aimed straight at the model camera.

With both cameras in position, set up your lights. I set the background light, an SB-800, to Remote mode, channel 1, and group C. I placed it on a short light stand positioned between the work surface and the background, which was a plain piece of black cardboard. The SB-800 was fitted with a Rogue Grid and a red gel, as well (**Figure 19.19**). I picked red because the Nikon colors on the camera are black and red, but you can use any color you wanted.

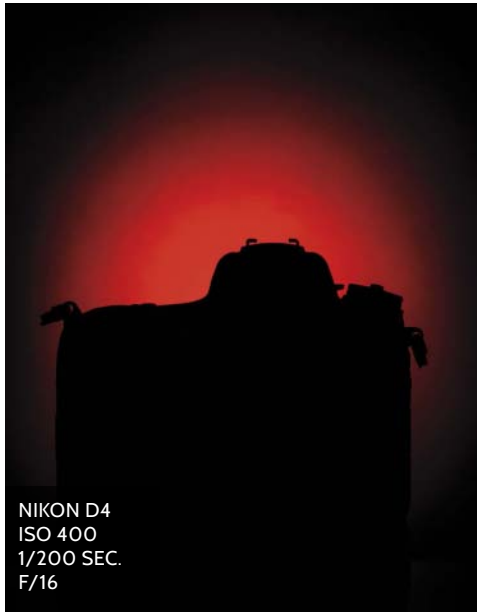


Figure 19.20 Take some test shots to begin. Here I photographed the Nikon D750 with just the background light turned on.

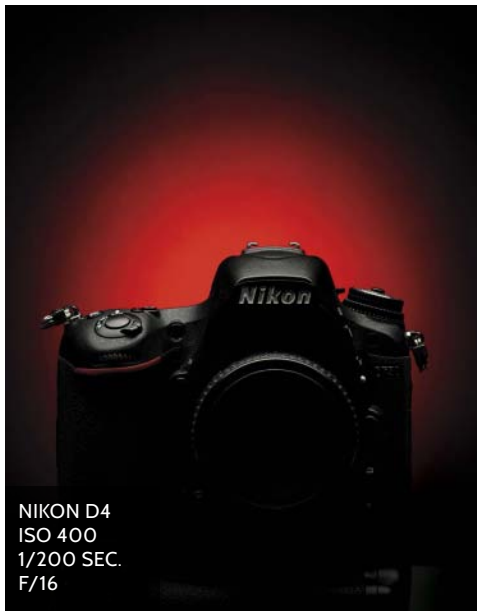


Figure 19.21 As a test, I photographed the Nikon D750 with the background and overhead lights both on.

Now it is just a matter of taking some test shots to ensure the background light is in just the right place. For the example, I first set the camera to Manual mode with a shutter speed of $1/200$ second, an $f/16$ aperture, and an ISO of 400. On the SU-800 with the channel set to 1 and groups A and B turned off, I set group C to $1/4$ power and took some test shots as I adjusted the position of the background light. I still didn't like the color, so I adjusted the power to $1/2$ and got the image shown in **Figure 19.20**.

Once the background light is set, position the main light, which is the one overhead in the softbox. I used the SB-910 in a Westcott Rapid Box Strip held above and slightly behind the camera using a century stand. I set the Speedlight to channel 1



Figure 19.22 The Nikon D750 setup shows the placement of the bounce cards.



Figure 19.23 Here's the Nikon D750 photographed with just the background light on and the bounce cards in place. You can see how they help define the edges of the camera.

and group A, and I set the Commander's mode to Manual power at 1/8. The main light and the back-light together produce the image in **Figure 19.21**.

Next, place the bounce cards to help the main light illuminate the sides of the camera, adding just a little fill light and giving the camera some shape. Also, add a set of flags to keep the front lights from spilling into the back where you don't want them. You can see the setup in **Figure 19.22** and the effect the cards have in **Figure 19.23**.

The final step is to add the two accent lights that illuminate the front of the camera. Place the first accent to light up the left side of the camera and the second to illuminate the right side. The light



Figure 19.24 All the lights are now firing, but as you can see, the D750 name is still not reflecting the light in the way it should.

needs to hit the D750 and bounce off at the proper angle to give it the shine.

I set the two front lights both to channel 1 and group B and then placed them really close to the camera. Manual power at 1/128 is just enough light to illuminate both the front left and right of the camera body. The angle is the key, however. As you can see in **Figure 19.24**, the light on the D750 name was off at first and the text was not reflecting the light and looked dull. All I needed to do was move the light slightly to the right, and the angles at which the light hit the reflective name plate changed. The name bounced the light right at the camera, making the D750 stand out in **Figure 19.25**.

Figure 19.25 Changing the accent light produced this final image with the lights bouncing off all the surfaces exactly the way I wanted.



BEVERAGE BOTTLE

Photographing a bottle full of liquid and making it look appealing takes some work. It's not difficult, but it can take a quite a few lights and some careful placement of flags to get the light just right.

The basics for this photo are to light the bottle and the liquid inside with a light shining through the bottle right at the camera. A light on each side adds some shape to the bottle, and a light overhead lights up the bottle cap and the top part of the glass. Another light then illuminates the label, and a final light adds a red splash to the background.

GEAR

This photograph takes the most gear out of all the examples, but much of the lighting is actually very subtle. Here is the gear you will need:

- **Bottle:** Just pick your favorite bottle to photograph.
- **Speedlights:** The image is lit by four Speedlights. It needs a light shining through the bottle, one overhead, a separate light for the label, and then a final light on the background.
- **Softbox:** The overhead Speedlight is in a small softbox because the light needs to be diffused so that you don't get hard shadows.
- **Rogue Grid and gels:** Some of the easiest and coolest-looking backgrounds are created by using a Rogue Grid and a colored gel.
- **Snoot:** A snoot on the light used to illuminate the label keeps the light from spilling all over the rest of the scene.
- **Bounce cards:** A couple of pieces of white poster board create the lighting on the side of the bottle.
- **Boom or century stand:** One light needs to be placed above the bottle and aimed down so that it illuminates the bottle cap. Either a boom or a century stand can hold a light in this position with ease.
- **Justin clamps:** These are needed to hold and position the Speedlights that are going to illuminate the details on the label and the Speedlight that will light the background.
- **Light stand:** You will need a light stand for the Speedlight that adds the detail to the label.
- **Commander unit:** You will need a way to trigger the lights from the camera. I used the SU-800, but you can use another Speedlight. I used all three groups for this photo, so I recommend an SB-900, SB-910, SB-800, or SU-800.
- **Camera and lens:** For this photo, I used the Nikon D4 and a 105mm lens, but you can use any camera and any lens you want. Your choice depends on how much of the surrounding area you want in your image.
- **Tripod:** For this to work, you need a tripod that can hold the camera in the same spot while you adjust the lights.
- **Black board:** The background is a piece of black board.
- **Glycerin:** You can get this at the pharmacy. When mixed with some water and put in a spray bottle, glycerin adds that moisture to the glass that makes the image pop and the bottle look like it's fresh-from-the-cooler cold.



Figure 19.26 The bottle glows with just the background light on.



Figure 19.27 The overhead light in a LumiQuest Softbox aims down at the bottle.

TAKING THE PHOTO

Position the bottle in the middle of the work area and set up the camera facing it. Once the bottle and camera are in place, try to not move them at all. The first lighting step is to set up the light in the background that will blast its photons through the bottle right at the camera and make the liquid in the bottle glow. For the example, I set this Speedlight to Remote mode, channel 1, and group C. Even though I am setting up the background light first, I still use group C because I consider it a background light. The idea is to get the bottle glowing but not so much that it looks

radioactive. **Figure 19.26** shows the bottle with only the background light firing.

The next step is to add the overhead light that illuminates the bottle cap and the neck of the bottle. I used a small LumiQuest softbox on an SB-800 set to Remote mode and group A. This light is positioned over the bottle and pointed straight down to create the effect in **Figure 19.27**. This light will also light up the sides of the bottle using some bounce cards that are set up around the bottle shown in **Figure 19.28**.

The next step is to add the light for the label. For the example, I used an SB-910 on a light stand



Figure 19.28 The four bounce cards positioned around the bottle reflect light back to create the great edge lighting.



Figure 19.29 The Speedlight in the Justin clamp attached to the light stand aims at the bottle.

positioned right by the camera lens. I used a Justin clamp on the side of the light stand so that the light could be right over the lens, aimed directly at the label. A Rogue FlashBender used as a snoot kept the light tight and right on the label. You can see the setup in **Figure 19.29**. For the example, I set this light to Remote mode and group A. It will fire at the same power and mode as the overhead light, but I can control its power and spread by just changing the distance between it and the bottle.

The final step is to attach a light to the top of the background holder and aim it down. Equipped with a Rogue Grid and a blue gel, this light was set to Remote mode and group B for the example. **Figure 19.30** shows the light's position, and you can see the final image in **Figure 19.31**. The power settings for the three groups were 1/4 power for group A, 1/8 for group B, and 1/64 for group C.



Figure 19.30 Here is the background light positioned above the background.

Figure 19.31 Here is the final image with all four Speedlights firing.



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