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GET OUT THERE AND TAKE SOME DAMN PHOTOS!  
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# Flash Photography Quick Start



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# Introduction

What You Will Learn in this Ebook

To understand flash photography we need to understand two fundamental things.

1. How flash photography works
2. How to think about flash photography.

The first point is the function. We have to understand how the flash actually works, both by itself and with the camera, and we have to understand the controls we have available to us and how to use them.

Beyond that we have to understand how the flash will impact the photo we are trying to create. In other words, we have to understand how light works, because it's the light that is important. When we understand the light, we'll be able to think about how it will make our photos look.

That allows us to move on to the second point, which is thinking about flash photography. if you're like most photographers, up to this point you've shot natural light, which means you get yourself into a photographic situation and you deal with the light that's already there.

This is the photographic equivalent of playing the cards you're dealt. You're in this situation, you have this light, whatever it is, and you have to make a photograph using it.

With flash photography, it's a little bit like dealing from the bottom of the deck, because you control the light. You choose where the light comes from, how powerful it is, how it hits your subject, and much more.

When we have total control over the light in our photos, we have to think about the shot differently. When we control the light, we must learn how to visualize the photo we want to create, and then figure out how to use our lights to create that shot.

One thing I want to make clear is that there is nothing wrong with using or not using flash. Some people say, "I'm a natural light photographer" as if that's somehow better because they don't use "artificial light".

The bottom line is that light is light, and if you understand light and how to manipulate it for your photography, you're going to start making magic.

It reminds me of a quote, by photographer W. Eugene Smith, "Available light is any damn light that's available!"

Let's get started

# What You Need To Know About Your Flash

In this chapter we'll be looking at the three most important functions of your flash. The Guide Number, the flash recycle time and the flash zoom range.

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## Guide Number

The first thing we want to know is how powerful a flash is, and this is determined by the Guide Number.

The Guide Number tells us how powerful the flash is by figuring out the furthest distance the flash can be from a subject and still light the subject for a photo.

As a result The Guide Number is given as that distance and is generally listed in both standard and metric. For example, the Canon 580 EX II has a guide number of 190 feet or 54 meters.

This isn't the greatest way to express the power of the flash, but unfortunately it's the standard for speedlights.

What's important here is realizing that (generally speaking), the larger the Guide Number on a flash, the more powerful the flash is. Having a more powerful flash gives you more flexibility in how we use that flash when creating a photo.

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## Recycle Time

After Guide Number, the next most important thing is the recycle time of the flash.

The recycle time is measured in seconds, and tells us how long it takes the flash to charge up between firings. The Canon 580 EX ii has a maximum recycle time of 6 seconds between full power flashes. Generally speaking the shorter the recycle time the better the flash.

However, the recycle time depends on the amount of power/light the flash is using., which is why some flashes list the recycle time as a range rather than a single time.

One nice thing some flashes have is an audio beep that tells you when the flash has recharged and is ready to fire again.

The recycle time is important because it dictates how long you have to wait between shots for the flash. If your flash doesn't recharge fast enough, you could miss shots. Either by waiting for the flash, or if you fire before the flash is ready, you'll get a dark and poorly lit shot.



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## Flash Zoom

Next we have the zoom range of the flash, which is how wide or tight your flash beam can be focused.

The front opaque front panel of a speed light is called the fresnel, and the flash bulb is behind the fresnel.

Flash zoom allows you to move the flash bulb closer to, or further away from the fresnel, which changes how wide the beam of light is when the flash fires.

If the flash bulb is right up against the fresnel, the light is going to shoot out in a wide beam, covering a large area. If you move the flash bulb back, the light is funneled or focused by the casing all around it, focusing the beam tighter and covering a smaller area.

The flash zoom is important for two reasons. The first is it allows the flash to adjust the beam for the focal length of the lens which you are shooting.

For example if you're shooting with an 85mm lens, but the flash head is zoomed out to 14mm, the flash is going to put out a beam and illuminate an area MUCH wider than the camera and lens are actually seeing.

When you're shooting at 85mm and the flash is at 14mm, that's not necessarily a problem as long as your subject is getting enough light from the flash for your photo.

If however we flip the situation around it's different. If you're shooting at 24mm on your lens, but the flash is zoomed to 105mm, the tight beam of light is only going to illuminate a tiny portion of the scene you are trying to capture, leaving the rest of the scene largely in the dark.

The second reason it's important is that sometimes you want the beam zoomed to 105mm when you're shooting at 24mm, so you can control exactly what part of the scene is illuminated. Being able to control this gives you the option to change the beam of light to suit your needs for the shot you are creating.

These are the basic capabilities you should be aware of on any flash you own or are considering purchasing. There are other features available on these flashes, but for right now we want to keep things simple.

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## Sync Speed

This isn't actually a flash feature, it's a camera feature (actually a camera limitation), but it's something you need to know about when using flash.

The sync speed is the fastest shutter speed on your camera where the camera can completely open the first curtain of your shutter before the second curtain starts to close behind it.

What this means is that for your sync speed (and any shutter speed slower than your sync speed), when you take a photo the entire sensor in your camera is exposed, allowing the light from the flash to expose over the entire image.

At shutter speeds faster than your sync speed, before the first curtain of your shutter has completely opened, the second curtain starts to close behind it.

What this means is that for shutter speeds faster than your sync speed the image sensor is never entirely exposed, and that means that the flash can't expose over the entire image.

It looks like this:



The black bar you see on the bottom of the image is the shutter curtain blocking the light from the flash.

The bottom line here is that you need to know the sync speed of your camera so you know which shutter speeds you can and can't use.

Finding your sync speed is pretty easy. Just check your camera manual or do a google search for your camera model + sync speed.

Example: "Nikon D500 sync speed"

# Smart And Dumb Flashes

There are two basic kinds of flashes out there. TTL flashes and Manual Flashes. Before I explain the difference, I want to point out that one type of flash is not better than the other, they just have different capabilities.

TTL flashes are flashes that can communicate with the camera. This allows the camera and flash to work together to determine flash settings without the photographer having to change any settings. TTL flash is auto mode for your flash.

TTL stands for Through The Lens, and different manufacturers have their own TTL systems. Pentax has the P-TTL system, Canon's is E-TTL II and Nikon's is called i-TTL. Despite that, they basically work the same way.

When we use TTL flash to take a photo, the flash fires twice. It happens very quickly, so we don't normally see it.

The first time the flash fires is the pre-flash, which comes BEFORE the photograph is actually taken.

The pre-flash fires to allow the camera to gather information. What happens is the light from the pre-flash hits the subject, then bounces off of the subject and into the camera.

The pre-flash lets the camera evaluate the scene and include the light from the flash in it's metering calculations. Once the camera makes the calculations, it sends a signal to the flash and says, "I need this much power for this subject!" Then the flash fires at the requested power as the camera takes the photo.

The main advantage to shooting TTL is you don't have to set the flash settings yourself. Because the camera and flash communicate, you can let the camera take care of it for you. TTL flashes can not only be operated as manual flashes, but TTL flashes can also have additional functions not available to manual flashes such as High Speed Sync and Second Curtain Sync. Although not all TTL flashes have these features.

A disadvantage to TTL flash is that for every single photo you take, the camera will evaluate and potentially adjust the flash output for that shot. If you want absolutely consistent results from shot to shot, this is not 100% reliable because the TTL system recalculates every single shot.

TTL flashes are also generally more expensive than manual flashes, and the main disadvantage to TTL comes when you take the flash off of the camera and start working wirelessly.

Manual flashes are flashes that have no TTL capabilities. As a manual flash, the only communication between the camera and the flash is the signal to fire.

That means that the photographer has to set all the flash settings for each shot. This sounds scarier than it actually is, which is why I pointed out earlier that TTL flashes aren't necessarily better than Manual flashes.

I mentioned that TTL flashes can operate as manual flashes, but manual only flashes cannot operate as TTL flashes. So the main disadvantage of a manual flash is that it's manual and not TTL. Being manual you also don't get features like High Speed Sync.

# Understanding Your Light Sources

As photographers, when shooting without flash, we've been shooting with one light source, the ambient, or existing light. This is the light that comes from the sun, or the light fixtures in a room, the moon and stars, street lights, all of the light that has always just been there when you find a scene and photograph it.

When we add flash into our photography, we're adding a light source, and we have to consider each light and how it affects the shot.

These two lights are different kinds of light sources. The ambient light is a continuous light source, and the flash is an instantaneous light source.

Continuous light is light that is always on, this means that before, during, and after you have taken a photograph, the continuous light continues to emit light into the scene.

Instantaneous light is light that flashes for a very brief period of time as the photograph is being recorded.

When working with a mix of continuous light and instantaneous light, different settings will affect your light sources differently.

It works like this: ISO and Aperture will affect how much continuous light AND instantaneous light captured, but your shutter speed will ONLY affect the amount of continuous light that is captured.

The reason for this is the instantaneous nature of the flash. The flash fires in a single, very fast burst of light, which is going to be recorded in your photo regardless of the shutter speed you shoot at.

For example, here's a shot at 1/160 of a second, f3.2 and ISO 100:



Here we can see there is very little of the ambient light being captured, (remember, the ambient light is our continuous light).

Now here's a shot with the exact same settings (1/160, f3.2, ISO 100), but with the flash turned on:



Notice how the ambient light is still very low. The flash filled in the subject's face, and lit up the background just a little bit.

Now, in this next shot, the shutter speed was changed from 1/160 to 1/60. That's a change of +1 1/3 stops, making the ambient light brighter in the photo (show with the flash):



Though the ambient light in this photo is brighter, the intensity of the flash did not change. By slowing the shutter speed down to keep it open longer, more ambient light was captured.

However, because the flash is an instantaneous source that fires for such a brief period of time, the length of the shutter speed made no difference to the amount of light captured from the flash.

What this allows us to do is control the level of ambient light captured independent of the amount of flash light that is captured in a photo.

This is the kind of control we want to have as photographers. By being able to control each light source and how it affects our photos, we can carefully construct a shot that looks exactly the way we want it to look.

Now, you can also change the exposure of the flash independent of the ambient light.

You do this by changing the light/power output of the flash!

Depending on the type of flash that you have you can do this one of two ways.

If you have a TTL flash and you are using it in TTL mode, you change the Flash Exposure Compensation (*this is just like exposure compensation, but instead of changing the camera settings to affect the ambient exposure, it changes the FLASH output to change the flash exposure*)

If you have a manual only flash (or are shooting your TTL flash manually), you change the power output of the flash.

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## Light Sources Recap

- Using your camera settings, you can control the level of your ambient light independent of your flash.
- ISO and Aperture will change the exposure for BOTH the ambient light and the flash.
- Shutter Speed will change the exposure for ONLY the ambient light.
- Using your Flash Settings you can control the level of your flash exposure independent of your ambient light
- On a TTL flash in TTL mode you change the flash exposure with the Flash Exposure Compensation Function
- On manual flash or a TTL flash in manual mode, you change the power output of the flash.

# Camera Modes And Your Flash

When using flash, you have to determine how you're going to use the ambient light, and how you're going to use the flash.

When using TTL flash, the camera mode you shoot in determines how the ambient light and how the flash are used in the shot.

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## Program Auto

In Program Auto, when using TTL flash the flash is used as the main light, and the ambient is used as fill light.

Using TTL flash in Program Auto is actually pretty crude because it really only has one goal, to give you enough light from the flash to allow for a sharp handheld shot.

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## Priority Modes

When shooting in any Priority mode, the goal of TTL flash is different. What the camera does is calculate the ambient light exposure as if you weren't using flash, but then uses the flash to illuminate the main subject of the photo.

*This means that if you're shooting in a priority mode with flash, and you're in a low light situation where you're getting long shutter speeds, using flash will not change the shutter speed!*

Because you're in a priority mode, the camera assumes you want the ambient light in the scene exposed normally, making it your main light, while the flash is used to fill in your subject with some extra light.

This is the first thing that trips up photographers new to flash. They think, "If I get a flash and put it on the camera then I'll get faster shutter speeds and my photos won't be blurry anymore."

These are often photographers shooting in priority mode, and when the flash doesn't work they way they anticipate, they get discouraged and stop using their flash.

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## Manual Mode

In manual, we have total control, which is why I recommend shooting in manual mode when working with flash, but we can't just set our settings all willy nilly!

Remember the Aperture, Shutter Speed and ISO settings have a different affect on different light sources, so let's see how to take total control over your flash and ambient light to create amazing photos.

# Building A Shot

Now that we know how to control the flash and the ambient light using all of our settings, we can put it into practice. To do that we're going to use a process I call, Building a Shot.

When working with multiple light sources to create a photo, you want to be methodical. If you try to set up all of your lights to create your shot, and then try to adjust them all together, you'll just end up with a big, complicated mess.

It doesn't seem like a big deal with working with just ambient and flash, but when you start working with multiple lights, using two or three or four lights in a shot, it can turn into a big headache.

The first step in the process of building a shot is to visualize what you want the final photo to look like. By knowing what you want the end photo to look like, you can figure out how to use the lights you have to make that photo.

For this demonstration, this is the result we want to build to:



This is a two light setup. One light is the ambient light, and the other light is the flash.

The first thing we do to build a shot like this is set the ambient exposure. We always start with the ambient exposure. To do this we turn off the flash and set our aperture, shutter speed and ISO for the ambient light. When we do this, we need to keep in mind things like depth of field, our sync speed and how each element impacts the different light sources.

Looking at the reference photo, we can see that the ambient light is very low, which means we're using the ambient light as the fill light. As a fill light we want just enough of the ambient light to fill in the scene.

If we set the exposure to 0 for the ambient light, That's like putting the ambient light at full power. Full power ambient light makes sense if the ambient light is the main light, but as a fill light, we don't want the ambient light at full power, so we're going to turn it down.



To turn down the ambient light, we need to underexpose the photo. So for the first test shot, I first set my ISO to 100, which is the lowest ISO available on the camera. Setting the ISO as low as possible will make it easier to underexpose the ambient light.

Next I set the aperture at f5, because I want a some depth of field in this shot, and closing the aperture down some also makes it easier to underexpose the ambient light.

Finally, I set the shutter speed, for a -2 exposure to underexpose the ambient light by 2 stops.

That put my shutter speed at 1/80, which is fine to use because it is below my sync speed (1/250 on my camera).

After setting the settings you need to take a test shot, which I did, and it looks like this:



Right now we're just concerned with how the ambient light looks, and at -2, it looks pretty good.

If it was too bright, I would adjustment the shutter speed to underexpose it further. If it was too dim, I would increase the ISO because I don't want to open up my aperture more, decreasing my depth of field, and I shot this with an 85mm lens, so I didn't want to decrease my shutter speed below 1/80 of a second.

What we're using the ambient light for is to give a little context and depth to the overall scene, and at -2, it looks great.

Now that the ambient exposure is set, I'll turn on the flash and bring in our second light for the shot. And because we have a reference shot we can look at it to determine where is the light coming from.



In this shot, the light is coming from the above and in front of the subject. How do I know this? Well, I know this because I took and setup this shot, but you or anyone else can figure this out by reading the photo.

In every photo there are signs that tell us where the light is coming from.

The first sign is to look in the eyes. See the catchlights in the eyes? The catchlights are in the upper middle of the eyes. Seeing this tells us that the light is above and in front of the subject.

There is further evidence of this in the shot as well. The highlights on her bottom lip and eyebrow, and the shadows under her nose, lower lip and chin all point to light being above and in front of the subject.

So now, if you're shooting with your flash on your camera, how do you use it to create light that hits our subject from above and in front?

You point the flash head at the ceiling.



By pointing the flash head up at the ceiling, the light from the flash will hit the ceiling, which is above and in front of the subject, and then bounce down and illuminate the subject.

This looks pretty darn good, but the flash exposure is a bit too low compared to the reference shot, so I adjusted the flash exposure compensation (using TTL flash) up  $+2/3$  of a stop and took another shot.



And that's it!

In addition to building a shot, we've just made a light modification. When working with flash, there are two main modifications you can make to a light, and those modifications are to change the direction of the light, and to change the size of the light.

In the case of this shot, we modified the direction and the size of the light simply by pointing the flash head at the ceiling.

Let's talk about the size first. When light from a source falls directly on a subject, with nothing in between the light and the subject to change it, it's direct light which is also generally harsh and unflattering light. Direct light, which is also called hard light creates strong and well defined shadows, with very strong reflective highlights.

The shot on the next page is a perfect example. Look at how shiny the highlights are on the face, and notice the very sharp shadow created on her neck by the chin, as well as the big circular shadow on the backdrop.



When the light is tight and small like it was in this shot, the light hits the subject in the face, and doesn't really go anywhere else, creating the hard shadow on the backdrop and the shiny highlights all over her face.

However when the light bounces off the ceiling, it goes all over the place, changing the size and direction of the light. Essentially, the ceiling becomes the light source, and the ceiling is BIG.

Because it's big, light from the ceiling goes EVERYWHERE, illuminating everything, instead of just illuminating the face. This eliminates the shadow on the backdrop, because the light from the ceiling is illuminating the backdrop.

It makes the shadow under the chin softer as well, because light from the ceiling is bouncing under the chin and illuminating it. It softens the highlights on the face because the light is bouncing off of the ceiling and hitting a larger area of the face, spreading out the light that was formerly concentrated so tightly and brightly in the first shot.

This is the first and easiest way to modify your light when shooting flash on camera, to bounce the light off of another surface to change the size and quality of that light.

One thing that I need to point out is that sometimes you might try to bounce your flash and find that it isn't lighting up your subject very well. In that case you might try to increase the flash exposure compensation to tell the flash to give you more light. If you do that and the next photo doesn't get any brighter, than your flash is already firing at full power, and it can't give you any more light.

So that's how you build a shot. It's a very simple process, but by going step by step and light by light, you can easily create exactly the look you want in your image!

## Conclusion

Now this is clearly not all there is to learn about flash photography, but it is enough to get you started. The most important thing is to remember how to control your flash exposure and your ambient exposure, and to remember to work one light at a time through your shot!

The more you practice and work with your flash the better you will get, so you need to shoot with it as much as possible!

And, if you want to get a real jumpstart and learn everything you need to know to take amazing flash photos, and save yourself a bunch of trial and error, check out my [Understanding Flash Photography Video Course](#).

Understanding Flash Photography expands on everything covered in this quick start guide and MUCH MORE including:

- Detailed walk through of how to use TTL flash
- Detailed walk through of how to use Manual flash
- How to shoot with your flash on and off camera
- The different types of light modifiers you can use
- How to use second curtain sync
- How to use High Speed Sync
- and much more...

[Go check it out](#), and then...

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