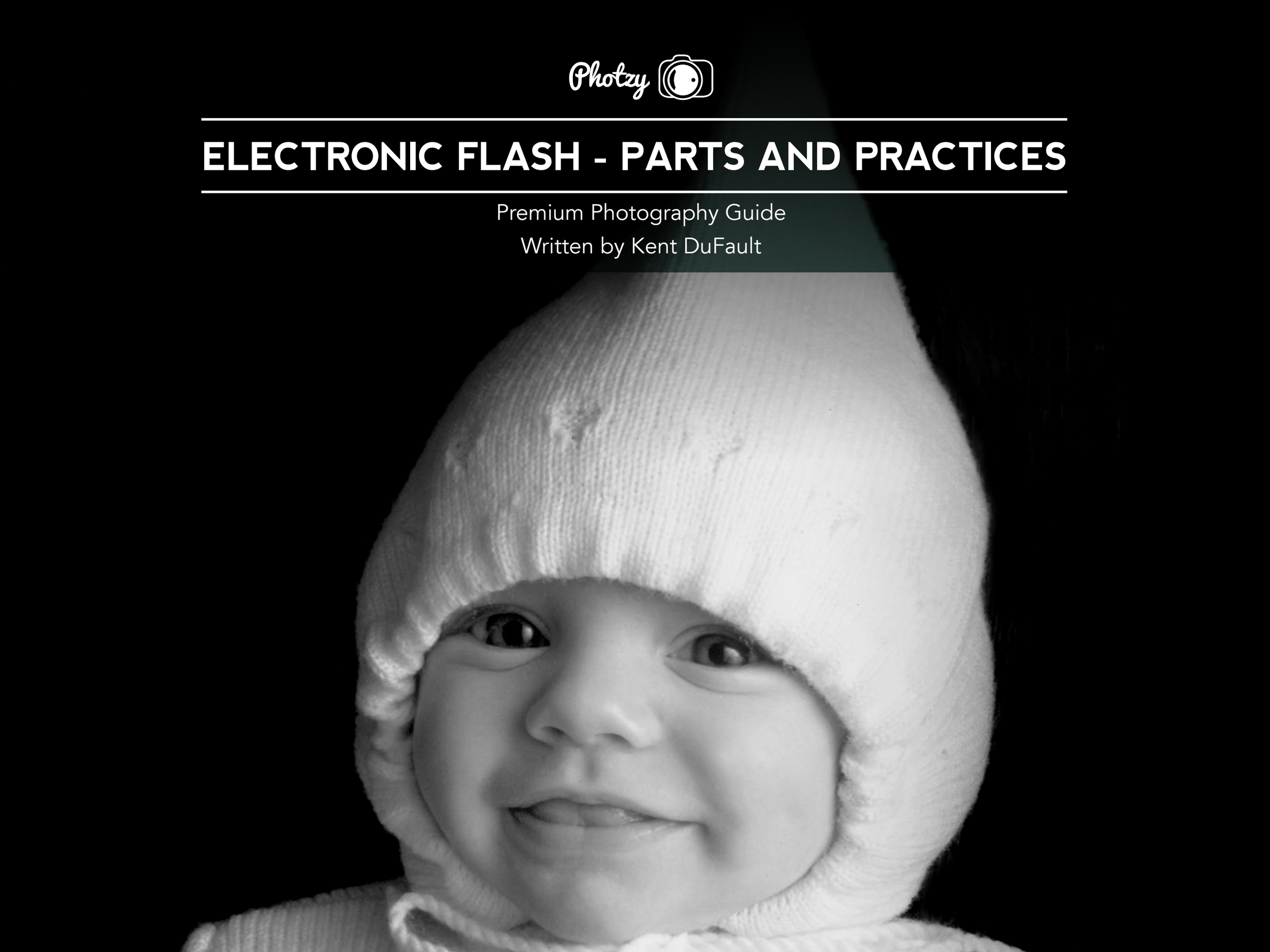
Photzy

ELECTRONIC FLASH - PARTS AND PRACTICES

Premium Photography Guide

Written by Kent DuFault



Every photographer that wishes to learn more about his or her craft eventually makes a choice to begin using a portable electronic flash.

Using an electronic flash can really be quite daunting when you start out, and it doesn't help that the manuals are not user friendly.

With electronic flash comes an entire new realm of terms and settings.

If you've ever attempted to use an electronic flash, and your pictures came out too dark or way over-exposed, or any of the other numerous problems that can occur, you are not alone.

I have lived through this trauma myself, of trying to understand what was going on with my expensive camera and electronic flash.

Most of the tips, which you will find in this book, could be found in other locations. But my purpose was to try and gather as much information as I could (about electronic flash) and put it in one easy-to-use reference.

I spent a lot of time working on this. I really tried to think of every question or problem that you might have.

However, if I missed something, something that you do not understand about electronic flash, use the contact information at the end of the book and I will do my best to get an answer for you.

I hope that you enjoy reading this book, studying your electronic flash(es) and putting it to use creating awesome photography!

It's an entirely new photographic world.

All my best,

Kent DuFault

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TIP 01

FLASH SELECTION

You want to make sure that your flash unit has all the features that you desire.

(To make your life easier!)

What type of features might you look for?

- ✓ You want a unit that is TTL compatible with your camera (ETTL compatibility would be even better!). Double-check this compatibility when purchasing a flash unit - especially if you're dealing an unknowledgeable seller.
- ✓ You want the flash unit to have a head that Swivels and Tilts. Don't be tempted to save a few dollars and get one that only Tilts. You will be sorry down the road.
- ✓ You want a flash unit that has Automatic Mode and Manual Mode. Most OEM flash units (Nikon, Canon, Sony, etc.) have this capability. But if you start looking into 3rd party flash units you will definitely need to confirm this feature.
- ✓ A "zoom" head is an awesome bonus! A zoom head helps adjust the angle of the flash to the lens you're working with. There are two types of zoom heads. One works automatically as you zoom the lens. The other kind requires you to manually adjust the zoom (such as the Vivitar 285HV). Some units will allow you to do both.

Stevan Sheets
https://www.flickr.com/photos/stevan/41877334/

- ✓ A unit with a “Master” and “Slave” function is invaluable for advanced work. This feature is only going to be available on your high-end flash units. There are also some flash units that work strictly as a slave but not a master. What this feature does is allow you to remove the flash from the camera and it will still fire when the camera fires.

- ✓ You want a flash that is powerful enough to reach out at least 15 meters, using ISO 100 and f/5.6. Flash power is a murky subject. It’s generally quantified by what’s known as a guide number. But, establishing a guide number is very subjective. We will talk more about this later. Suffice to say, you want to buy a powerful flash. For example, the flash that’s built into your camera probably isn’t sufficient (under most circumstances) for a correct exposure beyond 4 meters at ISO 100.

- ✓ Exposure Compensation Capabilities - When using your camera in automatic shooting modes, and the flash is in TTL mode, you will want to be able to compensate the output of that flash based on the subject matter.

As we go through our tips, we will touch back on most of these subjects. There is a lot to be learned.

TIP 02

THE LIGHT COMING OUT OF YOUR FLASH UNIT IS HARSH AND DIRECT

Fresco Tours
https://www.flickr.com/photos/frescotours/2839416417/

It's the equivalent to staring into bright sunlight (and nobody wants to do that). The only difference is that a flash is instantaneous, so your subject doesn't really see the harsh light; but the camera does!

Dwight Sipler
https://www.flickr.com/photos/photofarmer/2968551437/sizes/l/

Attach an 8.5" x 11" piece of card stock paper to your flash with a rubber band. (Put it together just like you see in the illustration.) You can experiment with little cards and bigger cards. You could even try gluing tinfoil to a card and see how that affects the light!

On a cloudy day, you could look directly into the sky with no problem at all! **The clouds have "softened" the light.**

You can soften the light coming from your flash unit with a simple piece of paper and a rubber band! (Yes, there are commercial products that you can buy to soften the light of your portable flash. But why not start out this way until you get the hang of it? And we will discuss these other products later in the book.)

Hopefully you acquired an electronic flash unit with a **head** that swivels and tilts: if the flash head only swivels, or only tilts, that can work as well.

Wolfgang Lonien
https://www.flickr.com/photos/wjlonien/6406169545/

This simple technique softens the light from your flash and will produce beautiful lighting for your subjects - just like the photograph to the left.

Thomas Matthews
https://www.flickr.com/photos/thomasjm980/8359166751/

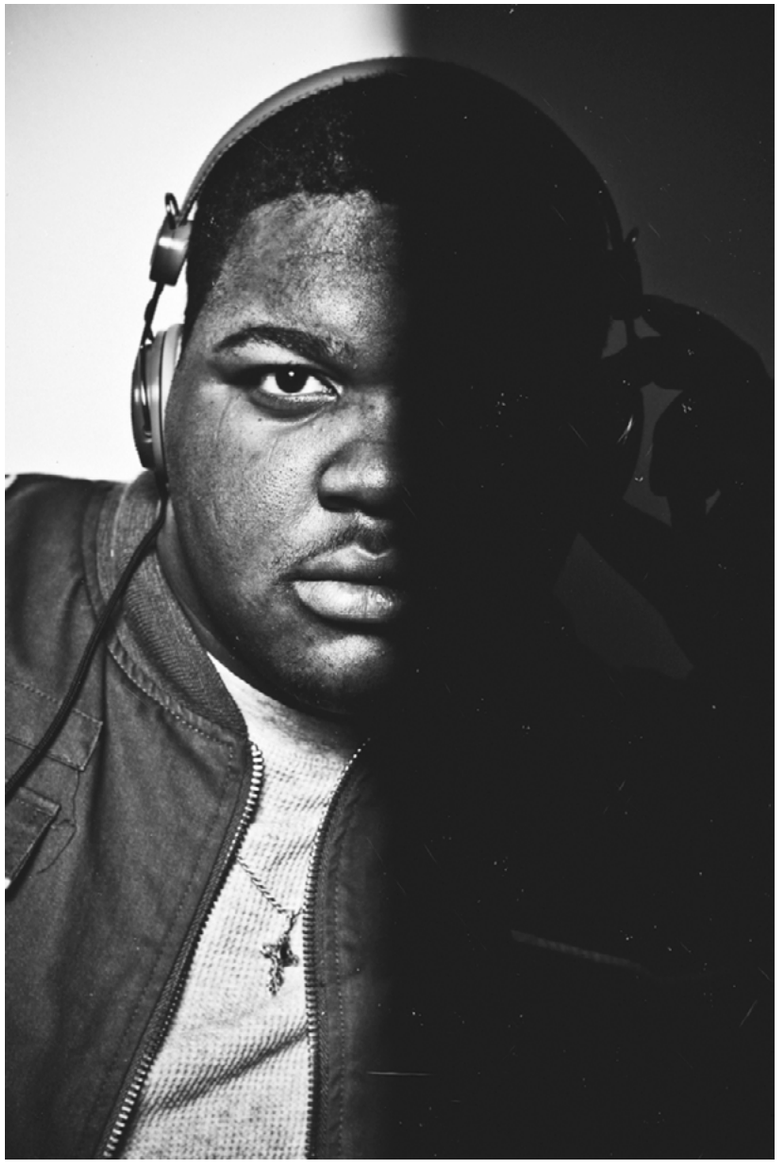
(You can also apply this tip to a simple pop-up flash unit!)

Attach a small mirror or a card covered with silver foil to your built-in camera flash as shown in the illustration to the left. This technique will re-direct the light upward to bounce off the ceiling. Please note that this technique (for the pop-up flash) will only work indoors with a standard height, light-colored ceiling. (In other words, it won't work if you're trying to bounce the light off of a 20-foot dark wooden ceiling.)

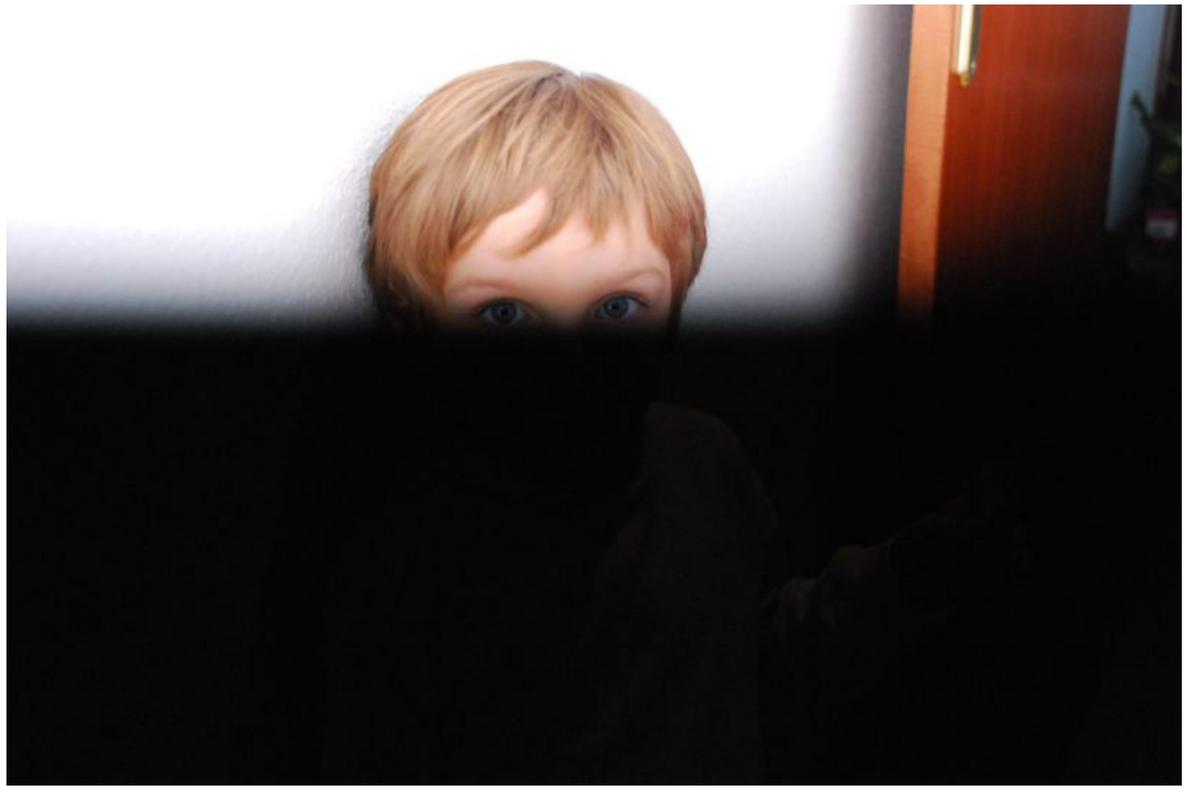
TIP 03

DON’T CUT YOUR SUBJECT’S HEAD OFF

Do these two photographs look familiar?



Jordan Beauchamp
https://www.flickr.com/photos/jboo/5611687086/



Frank Black Noir
https://www.flickr.com/photos/frankblacknoir/4344890424/

If your photograph looks like this when you are using your flash unit, you are experiencing a sync problem. For most photographers this ugly little problem rears its head when you're trying to use your flash in bright light.

What is flash sync? When you take a picture there is a shutter inside the camera that opens up to let the light pass through and then it closes. This "time period" is your shutter speed.

When you use a flash, the flash unit needs to fire in that window where the shutter is completely open; this is known as flash sync speed.

When you have a slow shutter speed, no problem; there is plenty of time for the flash to fire during the window.

The problem occurs when the shutter speed is too fast.

In the pictures above, the flash fired when the shutter was already closing. The part of the scene that is properly lit is where the shutter was still open to receive the light from the flash. The dark area is where the shutter had already closed, and the camera shutter blocked the flash from exposing the film or sensor.

If you study the two pictures, you will notice that in the picture of the woman, the black area is so dense that there is no detail at all. This means that there was very little ambient light at that location. The flash was the sole source of light that was exposing the picture. In the example with the man, you can see some detail in the dark area. This means there WAS some ambient light helping out with the exposure.

Earlier, I said that you're most likely to encounter a sync problem outdoors, in bright light, when using your flash as a fill light.

What does that look like?

In this example, I have indicated where the shutter curtain blocked the electronic flash in this outdoor portrait.

Sean McGrath
https://www.flickr.com/photos/mcgraths/4976695062

Rob Brewer
https://www.flickr.com/photos/rbrwr/2304852118

The key is the shutter speed.

Every camera has a maximum flash sync speed. You need to know what that speed is for your camera.

If your camera has a shutter speed dial, the maximum flash sync speed is often highlighted. If the shutter speed is displayed in the viewfinder it will often blink or turn red.

Here's the main point!

If you're taking flash pictures, and you notice that the light across the photograph is uneven, chances are your shutter speed is the culprit! You need to reduce your shutter speed to the shutter sync speed, or slower.

TIP 04

FILL FLASH IS YOUR BEST FRIEND!

easylocum
https://www.flickr.com/photos/easylocum/2934763214/

Reason #1 – The subject dictates a fast shutter speed, and you don't want to lose color and detail in the shadow areas. Plus, sometimes, you may not able to dictate your shooting position. Backlighting, or flat lighting, might be your only choice. A portable flash, used as a fill light, can help bump up the contrast and the color saturation.

We talked about flash sync speed and I previously hinted at why you might need to use a flash in bright light. The main reason would be as a fill light.

Let's look at a few examples-

Jorbasa Fotografie
https://www.flickr.com/photos/jorbasa/9493392141/

Reason #2 – Bright midday light creates nasty shadows that generally don't look pleasant, especially with people. However, midday, you may encounter a scene like the woman with the car above... It screams 'Create a photograph'. But, what if it isn't the right time of the day? What if it's noon with ugly overhead light? Your flash can provide a "fill light" to lighten up those shadows!

Fabio Aro
https://www.flickr.com/photos/fabioaro/4073009605/

Did you know that your shutter speed only affects the ambient light in your image and not the light coming from your flash! **That is as long as you don't exceed the maximum flash sync speed.**

Learning to use fill flash can take some practice. You have to evaluate the subject and the location before making adjustments to the power output of the flash.

Reason #3 – You are getting Super Creative! You want to "dial down" the ambient light so that your flash becomes the dominant light source in broad daylight. You're going for that "Magazine" look!

Alyssa L. Miller
https://www.flickr.com/photos/alyssafilmmaker/4386251915/

When a subject has dark tones, you may need to bump up the power of your portable electronic flash.

-J. Nillsson Photo
https://www.flickr.com/photos/joel_nilsson/14692931686/

Be careful, though. If you increase the power too much, or if your subject is lighter in tone, your fill flash will become overpowering and have an unflattering effect.

Chris Sit
https://www.flickr.com/photos/csphoto101/7808470688/

A well-balanced fill flash is usually about ½ to 1 stop brighter than the background. This last example of the girl with the headband is a perfectly balanced fill flash photograph.

- ✓ Don't think of using flash only in dark interiors
- ✓ In fill flash situations, set your camera meter to center weight or spot metering
- ✓ Fill flash often works best if you start out by increasing the flash exposure (not the ambient exposure) by +2/3 stop
- ✓ Keep your subject away from walls (or anything upright and lighter in color in the background). That will prevent secondary shadows from your flash from appearing on the wall.

You should give fill flash a try. It's a powerful tool that is relatively easy to master with some practice.

TIP 05

YOU MUST UNDERSTAND HOW AN ELECTRONIC FLASH LIGHTS (AND EXPOSES) YOUR PHOTOGRAPH AS COMPARED TO CONSTANT AMBIENT LIGHT

POP QUIZ

What happened in this photograph of the guitar player? An electronic flash was used. You can tell by the shadow. Why did this exposure turn out too dark?

Michael Allen
https://www.flickr.com/photos/michael_allen_photography/4922440850/

✓ The large white background fooled the exposure meter.

Sam DeLong
https://www.flickr.com/photos/bfsminid/3520487248/

Getting a proper exposure can be frustrating, especially when you add an electronic flash to the mix!

1. Flash duration is extremely fast (a momentary burst), which is why the exposure from your flash isn't affected by your camera's shutter speed. (Remember- the shutter speed must be at sync speed, or slower, as we discussed earlier.)

2. Aperture (f/stop) affects ambient exposure AND the flash exposure.

3. TTL flash metering works just like a regular camera meter. If there is a lot of white in the photo, the meter is going to want to turn it 18% gray. If there is a lot of black in the photo, the meter is going to want to turn it to 18% gray. A light meter wants to turn everything to an 18% gray tone! You have to evaluate your scene to determine the necessary exposure adjustments to the flash and/or the ambient light.

POP QUIZ

Your camera and flash are turned on and set to an exposure of 1/60th of a second at f/8.0 using ISO 200.

You would like to reduce the ambient light exposure by 1 stop without affecting the flash. What do you do?

- ✓ You change the shutter speed to 1/125th of a second.
  Remember- shutter speed doesn't affect flash exposure as long as you are at sync speed or slower.

Let's try again… You are in the previous scenario: 1/60th at f/8.0

You would like to increase the flash exposure by 1 stop and decrease the ambient exposure by 1 stop. What do you do?

- ✓ You change the f/stop to f/5.6. This increases the flash AND ambient exposure by 1 stop. So, you must now decrease the ambient exposure by 2 stops using your shutter speed. You set your shutter speed to 1/250th of a second (still within the range of your camera sync speed).

- ✓ What if 1/250th is out of flash sync speed for your camera? What if the fastest that your camera can sync is 1/125th of a second? What would you do?

  - Decrease the ISO from 200 to 100. That globally changes the exposure of both the flash and the ambient light by negative 1 stop. That resolves our decreasing the ambient exposure by -1 stop. Now, originally you wanted to increase the flash exposure by 1 stop. However, you've already decreased the flash exposure by -1 stop (when you cut the ISO in half). So, now… you must increase the flash exposure by +2 stops. You must change the f/stop to f/4.0.

John Benson
https://www.flickr.com/photos/j_benson/1407411461/

How would you set up your flash and your camera meter pattern to create this portrait on the left?

1. Turn the flash off.
2. Set your camera to manual shooting mode and your metering pattern to evaluative (matrix) metering.
3. Determine the correct ambient light exposure (we will say 1/60th at f/5.6). Set your camera to these settings.
4. Reset your camera metering mode to spot mode or center weighted.
5. Turn your electronic flash on and set it to TTL mode (ETTL if your set-up supports it).
6. Adjust electronic flash to +2/3 stop. (This brightens the skin on the face a bit.) Remember, when the flash fires, the meter is going to want to turn what it is reading to an 18% gray tone, including the woman's skin.
7. Adjust flash exposure compensation (up or down) as necessary.

Marcy Kellar
https://www.flickr.com/photos/marcygallery/3674344302/

There are other quicker ways to set up your camera and flash to take the portrait of the girl. This method is the most likely to give you a proper exposure - of both the girl and the background - as quickly as possible.

How about one more?

This one looks complicated.

Can you identify the exposure issues?

- ✓ Dark background
- ✓ White shirt and light skin
- ✓ Bursts of bright light in the background

Let's figure out how YOU could create this photograph!

Put the camera on a tripod.

- ✓ Set the camera to manual mode.

    1. Set the shutter speed from ¼ of a second to 1 second (depending on how much you want the fireworks to spread in the background).

- ✓ Set the metering pattern to spot.

    1. Take a camera meter reading of the sky.

    2. Reduce your exposure by ½ stop. (Remember- the meter is going to want to lighten the sky to an equivalent of 18% gray - which would be too light.)

    3. Set your f/stop. (We will say that the exposure is 1/2 of a second at f/5.6.)

    4. Attach a release cable to your camera.

Turn your electronic flash on.

- ✓ Set your flash unit to TTL (ETTL if your camera and flash support it).
    1. Adjust the flash exposure +1 stop using the Flash Exposure Compensation Setting (remember the meter is going to want to make that white shirt and the skin an 18% gray tone which will be too dark).
    2. Place the model in the shot and fire a test shot.
    3. Adjust flash exposure compensation as necessary.
    4. Adjust shutter speed to lighten or darken the background as necessary.
- ✓ Wait for fireworks.
    1. Tell the model to jump just as the fireworks burst.
    2. Fire the camera (use a remote shutter release if you have one).
- ✓ Have FUN!

You are now in control of your flash!

TIP 06

HOW YOU SET UP YOUR CAMERA AND ELECTRONIC FLASH SETTINGS CAN INCREASE (OR DECREASE) THE FLASH BATTERY LIFE

Paxson Woelber
https://www.flickr.com/photos/paxson_woelber/5425752305/

IMAGINE THIS

You've just spent the better part of a weekend hiking up a mountain with seven of your best friends. You've been shooting photographs all day, and you're about to reach the summit of said mountain…

As you make it to the top the light is getting low. You turn on your electronic flash, and your stomach sinks, as a slow whine tells you your batteries are dying…

Maybe you can't wrap your mind around mountain climbing?

Steve Jurvetson
https://www.flickr.com/photos/jurvetson/527333495/

Picture yourself at an event.

A REALLY BIG EVENT!

And someone famous shows up…

You raise your camera to shoot a picture, but the flash won't recycle!

(The famous person pauses, winks at you, and moves on before your flash finally recycles.)

That's not a great moment, is it?

One choice (on your part) can SIGNIFICANTLY increase your flash battery life!

Steve Hogarty
https://www.flickr.com/photos/escaped_monkey/2247450892/

Set your camera to Aperture Priority Mode.

Open your f/stop to the widest setting (f/2.8, f/4.0, etc.).

Shoot the majority of your photographs at this widest aperture setting with the electronic flash set to TTL/ETTL/iTTL (whatever your camera supports).

By doing this, you can actually extend your battery life by up to 25%.

The reason for this is because the flash won't have to work as hard to output sufficient light for a wide-open f/stop, such as f/4.0, as it would for an f/stop such as f/11.0.

When you don't need excessive depth-of-field; make a conscious choice to open up that f/stop as far as possible!

Reilly Butler
https://www.flickr.com/photos/r-butler/4836760608/

What if you do need some more depth-of-field? You can achieve the same result by increasing the ISO setting on the camera. The downside to that choice is the possibility of increased noise.

This is a great way to extend your batteries to last all day.

TIP 07

DON’T BREAK THE FOOT OF YOUR ELECTRONIC FLASH!

CAN YOU SPOT A POTENTIALLY COSTLY ACCIDENT IN THE FOLLOWING PHOTOGRAPHS?

Mark Sebastian
Don't break the FOOT of your electronic flash!

Garry Knight
https://www.flickr.com/photos/garryknight/11274282214/

Darron Birgenheler
https://www.flickr.com/photos/darronb/4224764287/

If you're going to break your electronic flash unit, chances are it will be the foot.

The FOOT is the small rectangular piece that slides into the hot shoe on top of your camera.

This is a very important part of your flash system as there are electrical contacts located in the foot that must fit snugly, or your flash will not operate correctly.

Brian
https://www.flickr.com/photos/makelessnoise/2791729846/

The potential problem lies in that the flash rides on top of your camera solely supported by the foot.

If that flash receives too hard of a bump, well, you can see what happens!

I have witnessed photographers who will pick up their camera off of the ground by grabbing the flash unit! This places all of the weight onto the foot.

The foot on a flash unit is either plastic or metal. A metal foot definitely holds up better than a plastic one, but either version can be cracked, or broken, fairly easily.

Two Things To Learn Today-

1. Protect your flash when it's mounted on the camera. Don't let it swing around (on the camera strap) and hit things.

2. If your flash is having trouble, misfiring, or not communicating a proper ETTL exposure, check the foot. It may have a hairline crack which isn't allowing the electrical contacts to fit snuggly.

TIP 08

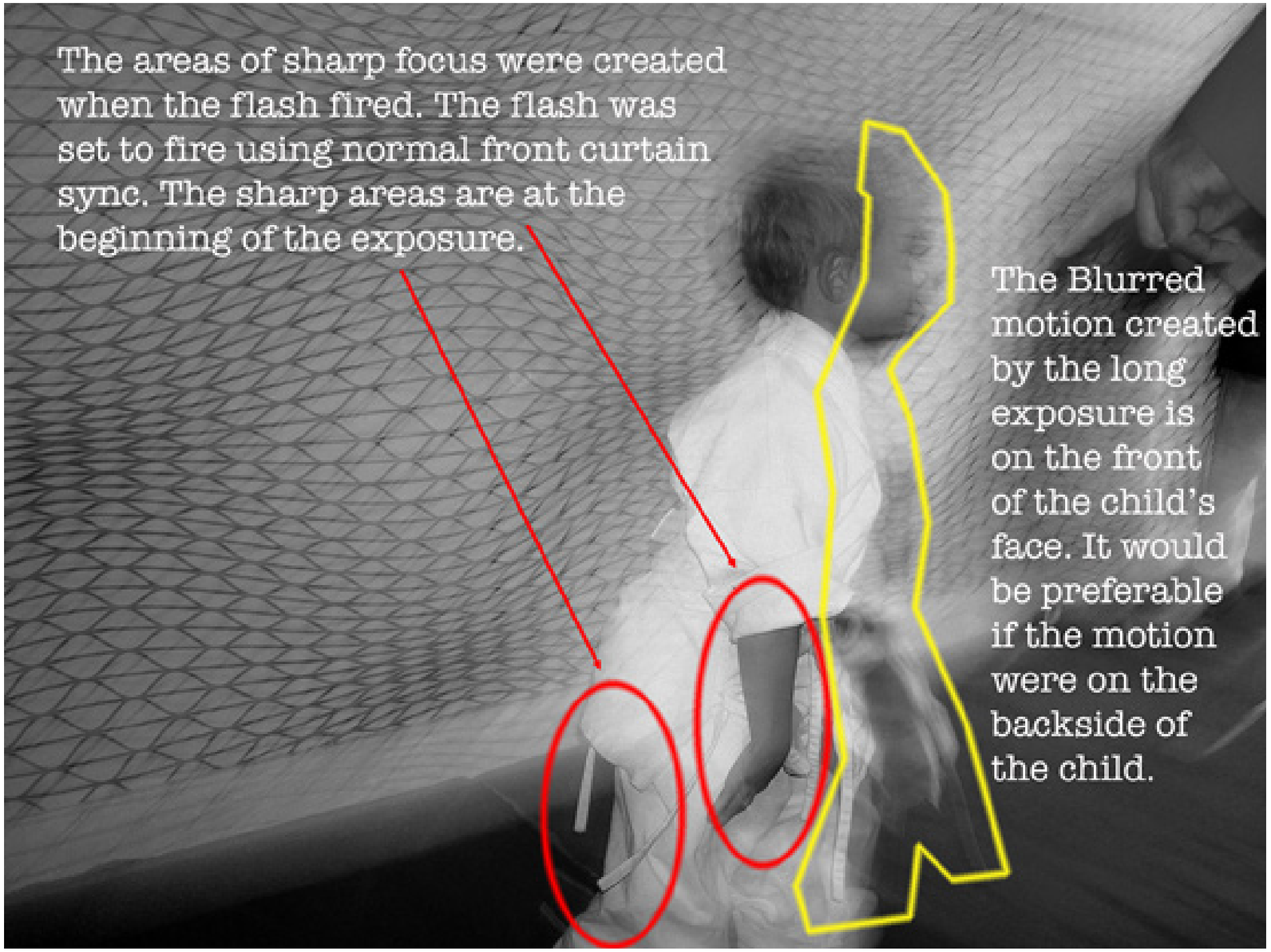
CAPTURE THE ACTION WITH REAR CURTAIN SYNC.

Cristian Iohan Ştefănescu
https://www.flickr.com/photos/icstefanescu/15235480070/

What is rear curtain sync?

That question is probably best answered by looking at some example photographs.

This photograph, on the left, was taken in extremely low light. The exposure for the ambient light was ¼ of a second at f/2.8. The photographer switched on an electronic flash to give a motion blur effect along with some sharp details caused by the flash duration. However, they used normal front curtain sync. How did that affect the final image?



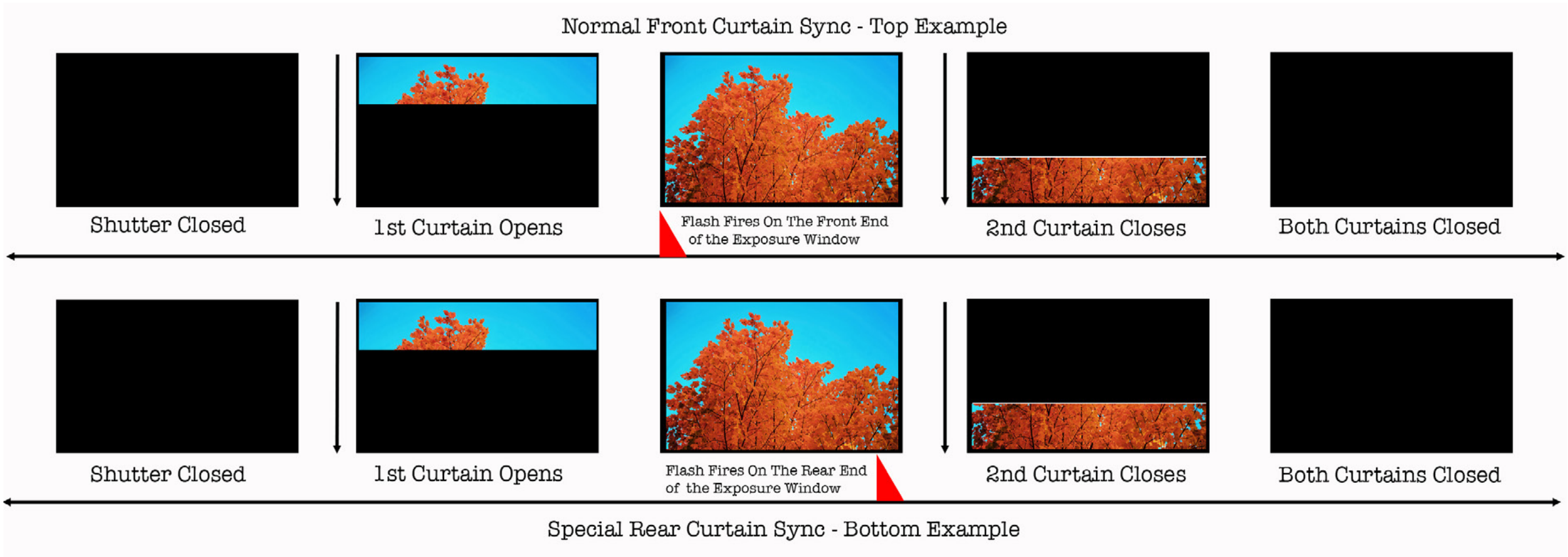
Cristian Iohan Ştefănescu
https://www.flickr.com/photos/icstefanescu/15235480070/

Richard Melanson
https://www.flickr.com/photos/richardmelanson/2857999586/

What does rear curtain sync look like?

Look at how sharp the man's face and arms are in the photograph to the left. Look at how blurred his back and the rear tire of the bicycle are. This image was taken at 1/60th of a second at f/13.0. It was pretty bright. Why did the photographer even use the flash? He used it for two reasons. He needed a fill light, otherwise the man's face would be dark. Secondly, he wanted to use the rear curtain sync feature to add drama and motion to his photograph.

Using rear curtain sync moved the blurred portion of the image to the rear side of the action.



Kent DuFault
https://www.flickr.com/photos/35449761@N04/16804293420/

This graphic helps to illustrate what rear curtain sync is.

The purpose of rear curtain sync is to give you more realistic looking motion in your photographs by placing the blur behind the subject.

Kent DuFault

How to turn on this feature will vary by the individual manufacturer and model. On this particular Canon flash unit, the three repeating triangles indicate the button for the feature. You will need to read your manual to determine how you would turn the feature on.

How do you use it? First you have to turn it on.

Once you have turned the feature on, how do you use it?

You're going to combine a slower shutter speed with the instantaneous burst of light from the flash unit.

How slow of a shutter speed should you use? It depends on the action. In our previous examples the little boy was photographed at ¼ of a second as he walked by, while the bicyclist was photographed at 1/60th of a second as he sped by. Yet, the amount of blur is pretty close to the same.

You may have to experiment to determine the right shutter speed for your situation.

Here is how I would set it up.

Use Shutter Priority, or Manual, for your shooting mode.

- ✓ Set the camera's metering mode to center weighted or spot.
- ✓ Set the electronic flash unit to TTL (ETTL if available).
- ✓ Set the electronic flash to Rear Curtain Sync.

Set your shutter speed based on the expected activity. (Make sure that the shutter speed doesn't exceed the maximum flash sync speed of your camera.)

- ✓ Adjust the shutter speed as necessary (generally, you will employ this technique with a shutter speed of 1/60th of a second down to 1 second. If you are outside of this range you may run into other technical issues.)

· Don't worry about depth-of-field while learning this technique. Often times, the shot is visually best if the sharpest area is small and isolated to the action.

TIP 09

ELIMINATE THOSE UGLY FLASH SHADOWS

Paul Stevenson
https://www.flickr.com/photos/pss/4076938961/

This has happened to every photographer on the planet. You take an electronic flash picture and ugly black shadows show up on the wall behind your subject.

There may be the occasion where you want this for an artistic effect.

However, if that's NOT the case, there is a super simple answer to this problem. Simply move your subject away from a solid wall!

Wolfgang Lonien
https://www.flickr.com/photos/wjlonien/11367849934/

In this example, the photographer moved his subject away from the wall. See how the shadow has lightened and moved off to the side? If he had been positioned even a little further away from the wall, the shadow would be gone completely.

TIP 10

USE ELECTRONIC FLASH TO SAVE A DULL DAY

See-ming Lee
https://www.flickr.com/photos/seeminglee/8730193281/

Digital images often don't look their best when captured under dull lighting conditions.

If you're out shooting under heavy overcast skies, or in deep shadow, and you wish to capture vibrant color with a full range of contrast, the electronic flash unit is your best friend. This is true even if you attempt to push up your ISO setting for more shutter speed and a smaller aperture.

Light is the key to color and contrast.

This photographer discovered a gorgeous lily just waiting to be photographed. However, it was located in deep shade. He pulled out his flash and used it off-camera (which we will be discussing shortly). The flash provided light to record the beautiful shades of pink and yellow. Those colors would be muted under deep shade light. Even adjustment in post-processing could not effectively produce the vibrant colors that the flash helped record.

Ruben Nadador
https://www.flickr.com/photos/rubennadador/5081717472/

When it comes to saving your photo session due to flat, uninteresting, natural light, nothing saves the day like a portable flash.

For an image like the one, on the left, of the young woman, set your equipment up like this…

Set your camera to Manual Mode.

- ✓ Set your camera's metering pattern to evaluative (or matrix).

Set your electronic flash to TTL (ETTL if your camera supports it).

Adjust the flash exposure compensation to +1/2 of a stop. (We don't want the skin tone going dark.)

- ✓ Take a test photo
  - · Adjust flash exposure using the flash exposure compensation setting or the f/stop.
  - · Adjust the background exposure by changing the shutter speed only.

TIP 11

USE A COLORED GEL TO CREATE A MOOD

Grant Goodyear
https://www.flickr.com/photos/g2boojum/441223794/

First let's talk about what constitutes a colored gel. It's anything that alters the color range of the light coming out of your electronic flash.

Normally, the light coming from your flash is full spectrum daylight.

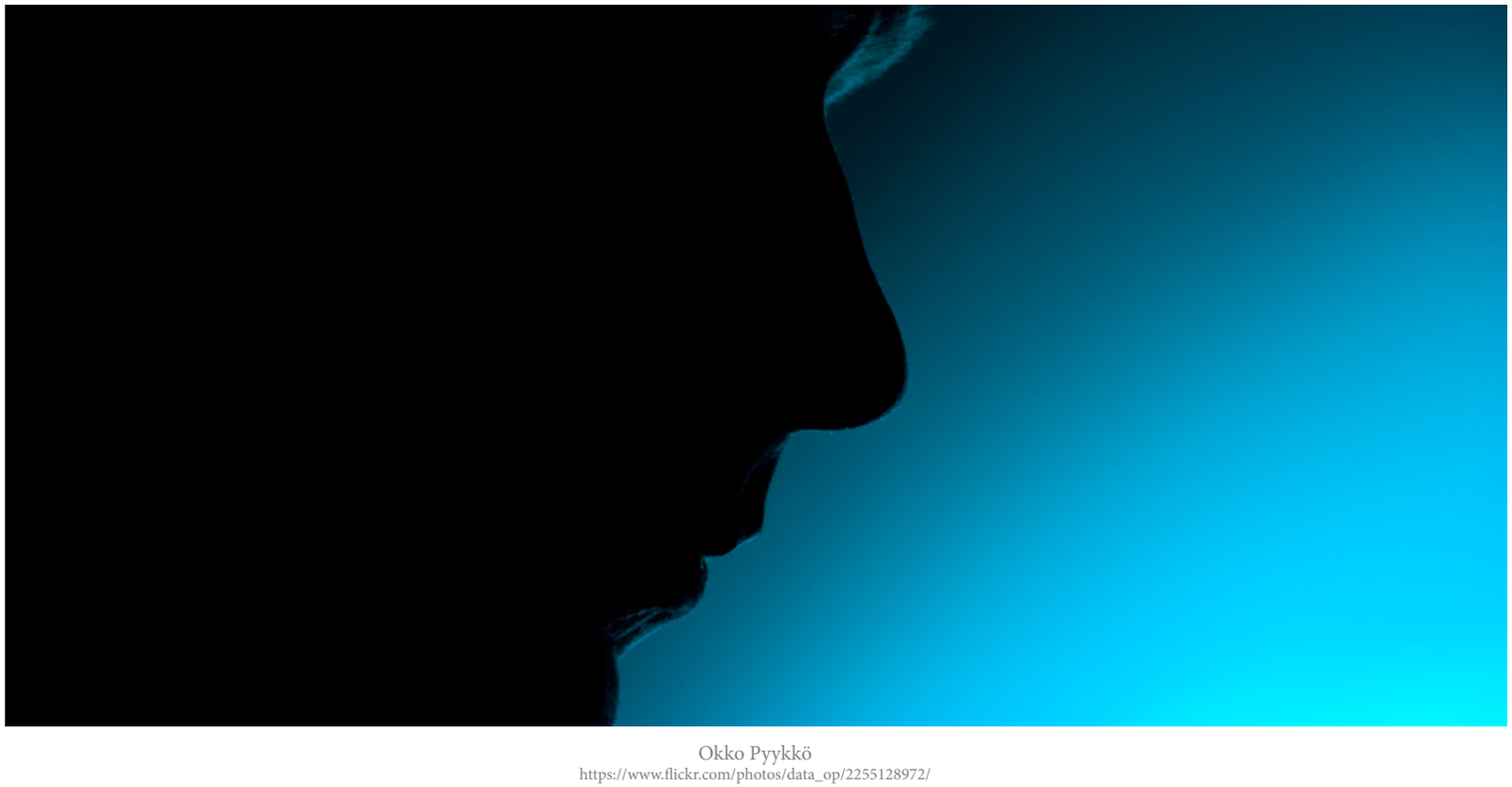
If you stick a pair of sunglasses in front of the electronic flash and the light passing through the sunglasses is now an amber color, those sunglasses have become a colored gel.

The same thing would be true if you held a red glass in front of the flash. I mention these things to help you think creatively when it comes to altering the color of the light coming from your flash.

Now, if you want more predictable results you can buy colored gels from most photographic suppliers as well as theatrical supply companies. You can even get them on Amazon.com.

Companies such as Roscolux offer thousands of light gel options like the examples on the left. If you can get your hands on a swatch book such as this, they are the perfect size to put right over the head of a portable electronic flash unit.

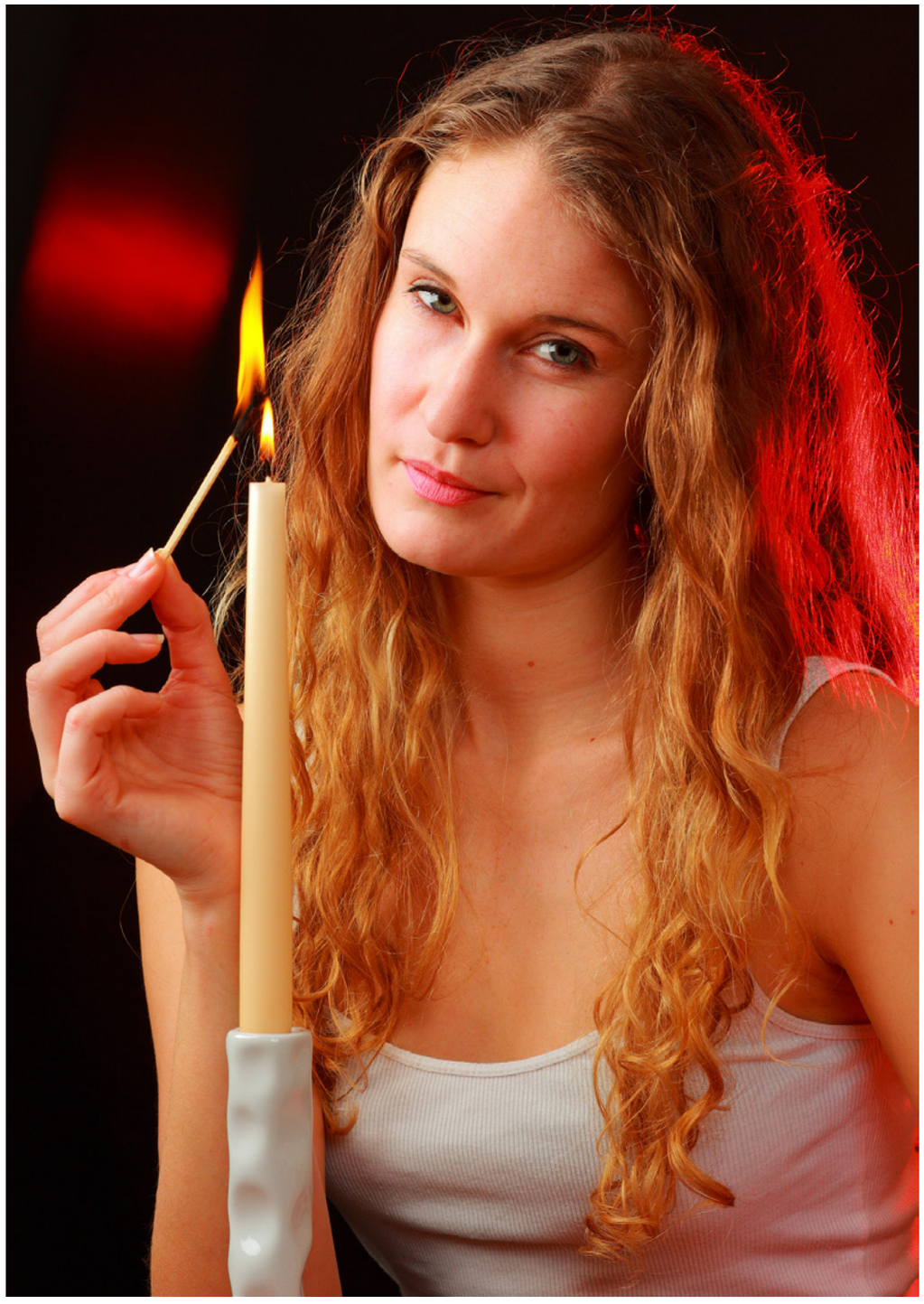
Just so you're not disappointed, there is one VERY important point that you must bear in mind when attempting to work with colored gels.



Okko Pyykkö
https://www.flickr.com/photos/data_op/2255128972/

Colored gels will only provide a nice rich color when no “white full spectrum” light is present. In the example on the left, all the room lighting was turned off. The room was dark. The more white light that could have been present in the room, the more washed out the color blue would have become.

Does this mean that you can’t have full-spectrum white light and a gelled light in the same picture? No, it simply means that the area that you light with a gelled light source should be in shadow. Don’t let your white light source spill into that area.



Roger Blackwell
https://www.flickr.com/photos/rogerblackwell/10652190496/

The photograph of the woman with the candle actually employed several electronic flash units. However, it could have been accomplished with a single flash.

Here is how this could be set up with a single flash unit.

Position the model next to a window with light blocking curtains.

- ✓ Set the curtains so that only a sliver of full-spectrum white light is passing through.
  - · Adjust the model and the candle until the sliver of light is illuminating them.

Darken all other lights in the room.

- ✓ Turn off lights and darken windows. The room should be as dark as possible.

Position electronic flash, with the red gel, on the shadow side of the model.

- ✓ If you have off-camera capability, position the flash to camera right, behind the model.
- ✓ If the flash must be mounted to the hotshoe because you don't have off-camera capability, swivel the flash head far to the right and bounce the light off of a large piece of white cardboard.
  - · Use duct tape to make sure no white is leaking from around the gel.

Ali Bindawood
https://www.flickr.com/photos/aliab55/12412745425/

Setting up the shot as illustrated above can help you learn how to mix gelled light and white light.

I included the portrait of the young girl, on the left, so that you have an understanding of what happens to gelled light if white light penetrates it. In this image, there was a red gel employed off to camera left. However, the white, full spectrum, main light spilled into the gelled areas. Take note as to how the gelled light looks washed out. Compare it to the previous shot of the woman with the candle.

Oslo_Lego
https://www.flickr.com/photos/57881779@N04/6495937907/

Using colored gels is a lot of fun. They're easy to use, and they can really create a mood in a photograph.

TIP 12

ADJUSTING EXPOSURE WITH TTL (ETTL) FLASH MODE IS DIFFERENT THAN ADJUSTING EXPOSURE IN MANUAL FLASH MODE

Chris Costello
https://www.flickr.com/photos/29854734@N07/7245567644/

Many photographers who are first starting with their portable electronic flash unit don't understand the differences between Manual Flash Mode and TTL (ETTL) flash mode.

One of the main differences between these two flash modes is; **how are you going to adjust the flash exposure?**

With a portable flash unit, and the sun, you always have two light sources at your disposal. The trick is how to adjust the exposure of each light source so that you get a "balanced" lighting scheme.

Let's imagine that you are going to create the portrait of the man by the fence. I'll detail the set-up in Manual Flash mode, and then again in TTL (ETTL) Flash Mode.

With the flash turned off, determine the correct exposure for the background. The camera's shooting mode can be manual or an auto mode. I recommend using the manual-shooting mode. I say that because fluctuating ambient light can change your exposure settings in an auto-shooting mode. Let's say the correct exposure for the background is 1/250th at f/8.0 at ISO 100.

Turn the flash unit on; set it to manual mode, and at full power.

Select your shooting position. Let's say it's ten feet from the subject.

- ✓ If your flash unit provides a distance scale, read it for the recommended f/stop. Let's say that it says from a distance of ten feet; your f/stop should be f/16.0.

    1. We already know that f/8.0 provides the correct exposure for the background. We don't want to change that. We want our flash exposure to be a little brighter than the f/8.0 setting. We need it to be f/11.0.
    2. In manual mode there are two main ways to change exposure for the flash. You can change the flash to subject distance, which in this case we can't because the flash is mounted to the camera. Or, you can change the power output.
    3. In this case, we will reduce the power by 1/2. This changes the correct exposure from f/16.0 to f/11.0.

- ✓ If your flash unit does not provide a distance scale, you have two choices to determine the flash exposure:

    1. Use a flash meter if you have one. Most folks today don't.
    2. Take a test shot. Adjust the aperture until the flash exposure looks correct. In our above scenario, we said that the flash exposure was correct at f/16 before we adjusted the power setting.
    3. Reset the f/stop to f/8.0 – Remember that was the setting we wanted for the background. Now adjust the flash output by setting it to ½ power.

Now let's recreate this up in TTL (ETTL) Mode-

With the flash turned off, determine the correct exposure for the background. The camera's shooting mode can be manual or auto. When using TTL or ETTL, using an auto shooting mode might be easier for you. I'll explain why in a second. Let's say the correct exposure is 1/250th at f/8.0 at ISO 100.

Turn the flash unit on; set it to TTL (ETTL) Mode.

- ✓ Set the Camera Metering Mode to center weighted or spot. (We want the camera meter to read the flash exposure off of the person, not the background.)

- ✓ In TTL (ETTL) Flash Mode, the camera and flash are going to set the exposure to whatever the camera settings are. In this case, TTL (ETTL) will try to establish an exposure output of f/8.0 on the model. But we don't want that. We want the exposure on the model to be 1 stop brighter so that the skin isn't too dark.

    - Find the Flash Exposure Compensation setting on either the flash itself or on the camera. Adjust it +1 stop to f/11.0.

- ✓ The reason you might find shooting in Auto Mode easier when using a TTL/ETTL/iTTL flash setting is because the entire system will adjust the exposure together. If the ambient light gets brighter, the exposure increases in tandem with the flash including the compensation setting. And the same is true if the ambient light were to dim; the ambient exposure would decrease along with the flash and the compensation setting. VERY IMPORTANT - this is only reliable as long as the exposure remains within the limitations of your equipment. It's easy to set up a portrait like this and start firing away thinking you have the exposure set, only to realize later that the light changed, you didn't notice, and now you have a lot of bad frames from your shoot. That's why I recommend manual shooting mode and ETTL flash mode. It provides the most versatility, speed, and safety.

To reiterate-

1. You adjust Manual Flash Mode exposure by changing the flash to subject distance, the power ratio setting, the f/stop, or the ISO setting on the camera.

2. In TTL (ETTL) Flash Mode, you adjust exposure ONLY with the Flash Exposure Compensation setting.

TIP 13

USE HIGH SPEED SYNC (HSS) TO CAPTURE MOTION

Kent DuFault
https://www.flickr.com/photos/35449761@N04/16448392373/

On the Canon 580 EX II portable flash unit, the High Speed Sync function is turned on by pressing this button until you see the correct icon lit on the LCD screen (the icon looks like a lightning bolt next to the letter "H").

There are two circumstances where you may wish to use your portable flash unit at a shutter speed higher than your camera's maximum flash sync speed.

The first thing that you need to do is check to see if this option is available with your flash unit.

When using High Speed Sync mode, your flash unit emits a series of short quick bursts of light rather than one powerful burst. The net result of this technique is that your flash unit will not be as powerful as you are used to. The faster the shutter speed that you try and sync to- the lower your flash power will become.

Kent DuFault
https://www.flickr.com/photos/35449761@N04/17068717895/

Once you've determined that your gear supports High Speed Flash Sync, there is a very important point to remember…

As you increase the shutter speed that you are attempting to sync to your flash will lose power. You need to keep your eye on flash-to-subject distance or you may end up with an underexposed photograph.

Let's look at two examples where you might want to employ High Speed Sync.

If you're photographing kids, pets, or any moving object, you may need High Speed Sync to freeze the action or to act as a fill light. Remember to keep your aperture wide open, as the flash power will be diminished. This image was shot at 1/480th of a second at f/2.0 with High Speed Flash Sync. The normal maximum flash sync speed for this camera is 1/250th of a second.

Soe Lin
https://www.flickr.com/photos/soelin/8670516518/

When doing macro photography, High Speed Sync flash can help you freeze the action of moving objects such as this water dripping, or flowers blowing in the breeze, or bugs moving. When using High Speed Sync in a macro situation, the flash is usually very close to the subject, so power loss isn't as big an issue. You generally can still use a smaller f/stop to increase depth-of-field while also employing High Speed Sync to stop movement.

Pedro Hespanha
https://www.flickr.com/photos/we-own-the-sky/8632815849/

TIP 14

HOW WIDE WILL YOUR ELECTRONIC FLASH COVER A SCENE?

Kent DuFault
https://www.flickr.com/photos/35449761@N04/16862169597/

This Canon flash has a wide-angle adapter built into it. Most mid-level to high-end portable flash units will have this feature. However, you can also purchase 3rd party adapters such as this - http://bhpho.to/1Fcw22A.

If you can't find a wide-angle adapter, you can use a bounce device such as this to increase the angle of coverage - http://bhpho.to/1CbnCCm. The only downside to using a bounce device is that you will lose a little bit of power output from your flash.

All electronic flash units have an "angle of coverage". You need to know what that angle is for your unit and you need to know at what focal length of a lens you are exceeding that angle of view.

For the Canon 580 EX II electronic flash, the widest angle of coverage reaches out to a 24mm lens. But that coverage can be extended with an adapter.

TIP 15

CLEAN THE ELECTRICAL CONTACTS ON THE FLASH FOOT

Gently scrub the contacts with the eraser until they shine. Be sure to blow off any debris that the eraser might leave behind. Doing this once a month will keep your flash working just like new.

Kent DuFault
https://www.flickr.com/photos/35449761@N04/17071570861/

Your portable flash unit is typically attached to your camera via the hotshoe connection.

Every flash unit will have electrical connections on the foot of the flash. This is how the flash unit talks to the camera.

If these connections become dirty, your flash may misfire or produce bad exposures.

Even a well cared for flash unit can have dirty connections. The oils from your skin can create a barrier that will cause misfires.

The easiest way to clean these contacts is with a pencil eraser.

TIP 16

DON'T FORGET ABOUT THE AMBIENT LIGHT WHEN YOU TURN ON YOUR ELECTRONIC FLASH

Pat David
https://www.flickr.com/photos/patdavid/6273170832/

If you turn on the flash without considering the existing light, or the camera settings, it can lead to images like the one above of the man holding the glass: photographs that appear unnatural.

This is probably the biggest mistake that photographers make when they begin to move into the use of electronic flash.

They believe that they simply need to turn on the camera, turn on the flash, set everything to TTL, and fire away.

Good “strobists” (photographers who like to use electronic flash) know that the light from a flash unit looks best when it’s mixed with available light.

In the photograph of the man holding the champagne glass, it’s easy to see that there was plenty of available light that the photographer could have used to give the photo more of a pleasant lighting scheme.

In this photo of the woman in the coffee shop, there was very little available light - probably less than what was available in the shot with the man and the champagne glass. This photographer effectively balanced the light between his flash and the ambient, existing, available light; the net result is a pleasing lighting scheme that appears realistic.

web4camguy
https://www.flickr.com/photos/web4camguy/2853843653/

How do you accomplish this?

First determine the correct exposure without the flash.

- ✓ If the shutter speed is too slow, consider supporting the camera on a sturdy object (such as a tripod or monopod), or raise the ISO setting.

Secondly, turn your flash unit on. Adjust the flash output so that it is ½ stop brighter than the background exposure setting.

- ✓ For example, if your background exposure was 1/30th of a second at f/5.6, set your flash exposure to f/5.6 ½.

Shoot a test shot and make adjustments as necessary.

In case you're wondering why a test shot is necessary (we've mentioned doing that several times in this guide), it's because subjects will reflect a varying amount of light based on their tonal range. In the example above, if the woman were wearing a black sweater, or a bright white shirt, that would vastly affect the exposure setting for the flash.

TIP 17

REMOVE THE LENS HOOD, OR USE A FLASH BRACKET, WHEN SHOOTING CLOSE-UP OR MACRO PHOTOGRAPHS WITH A FLASH

yellowcloud
https://www.flickr.com/photos/yellowcloud/3374884443/

If your flash is mounted to the hotshoe of your camera, and you shoot close-up to a subject, there is a good chance that the lens hood or possibly even the lens will cast a shadow onto your subject.

There are two potential fixes for this problem.

If it's the lens hood causing the problem, simply remove it.

A better alternative (no matter what is creating the shadow) is the use of a flash bracket.

The flash bracket will move the electronic flash away from the camera. This will give you more control over the direction and quality of the light in your image.

Remove the lens hood if it causes a shadow in your macro photography.

Miki Yoshihito
https://www.flickr.com/photos/mujitra/6111414841/

There are many different types of flash brackets. This version gets your flash up and off of the camera. However, it has limited movement after that. When you remove your flash from the hotshoe, you must have a way for the flash to communicate with the camera. Some cameras and flash units can do this wirelessly. You can purchase a wireless transmitter and receiver, or you can purchase an off-camera cord such as the one in the picture above.

Arend
https://www.flickr.com/photos/vermazeren/4326116042/

This flash bracket has more versatility in the placement of the flash. This setup in the photograph is wireless. You could use an off-camera cord in this type of setup as well.

Magnus Hagdorn
https://goo.gl/AUKujC

This illustrates an excellent macro/flash setup. The flash has been moved away from the camera lens with the bracket. A TTL cord has been used to control exposure. And, the light has been softened with a flash modifier.

TIP 18

WHAT IS THE DIFFERENCE BETWEEN TTL, E-TTL, E-TTL II, D-TTL, I-TTL, AND P-TTL FLASH?

That is a lot of TTL designations. Wouldn't you agree? It can be very confusing.

The first thing that you need to realize is that the "TTL designations" in Tip 18 represent three different camera brands.

- ✓ TTL, E-TTL, and E-TTL ii are Canon designations
- ✓ TTL, D-TTL, and I-TTL are Nikon designations
- ✓ P-TTL is Sony's designation

Figure out which designation belongs to your camera and flash.

All of this began with the term "TTL".

TTL stands for Through The Lens metering. When this label first appeared it had nothing to do with the electronic flash - it had to do with how cameras took a meter reading.

When SLR film cameras began using TTL technology, electronic flash (that had auto exposure capability) could not be measured by TTL. Instead, the flash unit had a small sensor on the front that measured the amount of light that was reflected back from the subject. The flash electronically cut the output when it decided that the required amount of light had returned to the sensor.

This method of flash auto exposure metering was better than nothing, but it was highly inaccurate a lot of the time.

Then, TTL technology moved into flash.

As part of this technological advancement, cameras acquired multiple focus points.

With that technology, when the flash fired, the exposure was determined at the film/sensor plane. With TTL technology, the camera and flash were “talking” to each other. When it said, “Hey! I’ve got enough light from you,” the flash cut off.

That form of flash metering was a vast improvement.

Here is where the TTL designations started getting complicated.

Camera technology began to advance quickly after the year 2000. Digital cameras became mainstream and film cameras became (more or less) history.

As part of this technological advancement, cameras acquired multiple focus points. And these focus points became adjustable. (You could set where the camera was going to focus.)

From here, E-TTL (Canon) and D-TTL (Nikon) technology was born. With this new technology, you could set a bias as to where the electronic flash exposure was going to be measured on the film/sensor plane.

Important point! “TTL” refers to the entire camera metering system: ambient and electronic flash. Once we migrate into all the other forms of TTL designations we are referring strictly to the electronic flash exposure and how the camera is going to read that exposure.

Kent DuFault
https://www.flickr.com/photos/35449761@N04/17096173067/

When using ETTL flash, if you lock focus (as in the example on the left), and then re-compose (as in the example on the right), your exposure can be thrown off as the camera is no longer "looking" at the same point within the frame to calculate exposure. When using ETTL flash, you should shift your focus point (blue arrow) to allow the camera to calculate correct exposure from the right spot.

However, there was a limitation to this technology as well. The exposure calculation point stayed with the focus spot that was set. So, if you locked focus, and recomposed your image, the exposure was no longer being calculated in the correct spot.

Canon's ETTL ii (or in the case of Nikon I-TTL, or Sony P-TTL) offers a higher level of control for the exposure calculation.

These advanced versions of exposure control look at either a center-weight metering pattern or a matrix-metering pattern. They also use a pre-flash to determine distance from the camera to the subject.

Most cameras and flash units manufactured after 2005 will utilize this advanced technology.

You might become confused, though. Some flash units allow the user to set the technology back to TTL. The manufacturers did this so that the flash units could be compatible with older cameras.

And… some flash units (such as my Canon 580 Ex ii), which are utilizing E-TTL ii technology, still use the acronym on the back of the unit that says ETTL.

Bottom line… you need to sort out what it is that you own so that you know how to use it!

TIP 19

WHY IS A CATCH-LIGHT PANEL A GOOD THING?

Kent DuFault
https://www.flickr.com/photos/35449761@N04/17310208842/

Many modern electronic flash units have a built-in catch-light panel. Some manufacturers may refer to it as a built-in bounce card.

The catch light panel serves two purposes when you are bouncing your flash.

- ✓ It will add SOME front fill light to your subject (not a lot because the card is very small).
- ✓ The primary purpose is to put a catch light into the eyes of the subject.

Danny Molyneux
https://www.flickr.com/photos/dannymol/14241255308/

Without a catch light, the subject's eyes can go very dark when bouncing the flash from an angle. This makes the eyes appear lackluster.

Stephen Thomas
https://www.flickr.com/photos/stef3d/2936051002/

A nice bright catch light opens up the eyes, as seen in the photograph on the left!

TIP 20

WHAT IS THE DIFFERENCE BETWEEN “MASTER” FLASH AND “SLAVE” FLASH?

Nick Nguyen
https://www.flickr.com/photos/nicktakespics/3529643587/

When you begin to experiment with off-camera flash, you can position the flash using a foot attachment such as the one seen on this Canon flash unit. Or you can attach the flash to a light stand. A flash unit that is set up this way (away from the camera) is called the Slave. You need to tell the flash unit that it will be used as a Slave by turning the function on with the control panel. If you have a flash unit that doesn't have this function built into it, you will need to purchase a "radio or optical trigger". Trigger units range in expense. They allow you to remotely fire an electronic flash that doesn't have built-in Master/Slave functions.

When you begin to understand and control your electronic flash, one of the first things that you will want to do is remove the flash from the camera.

Removing the flash from the camera gives you the option to light your subject from any angle.

There are a number of ways to accomplish off-camera flash. However, one of the first things that you need to recognize and understand are the terms "Master Flash" and "Slave Flash".

The "Master Flash" is the flash that is connected to the camera. It's used to trigger all the other flash units in your setup, which are the "Slave Flash Units".

Master Flash triggers the Slave Flash. Sometimes the Master also provides light to the subject. Often times that function is turned off, and the Master simply sends a signal to the Slave(s) to fire.

Elmo Love
https://www.flickr.com/photos/mycutelife/5170768878/

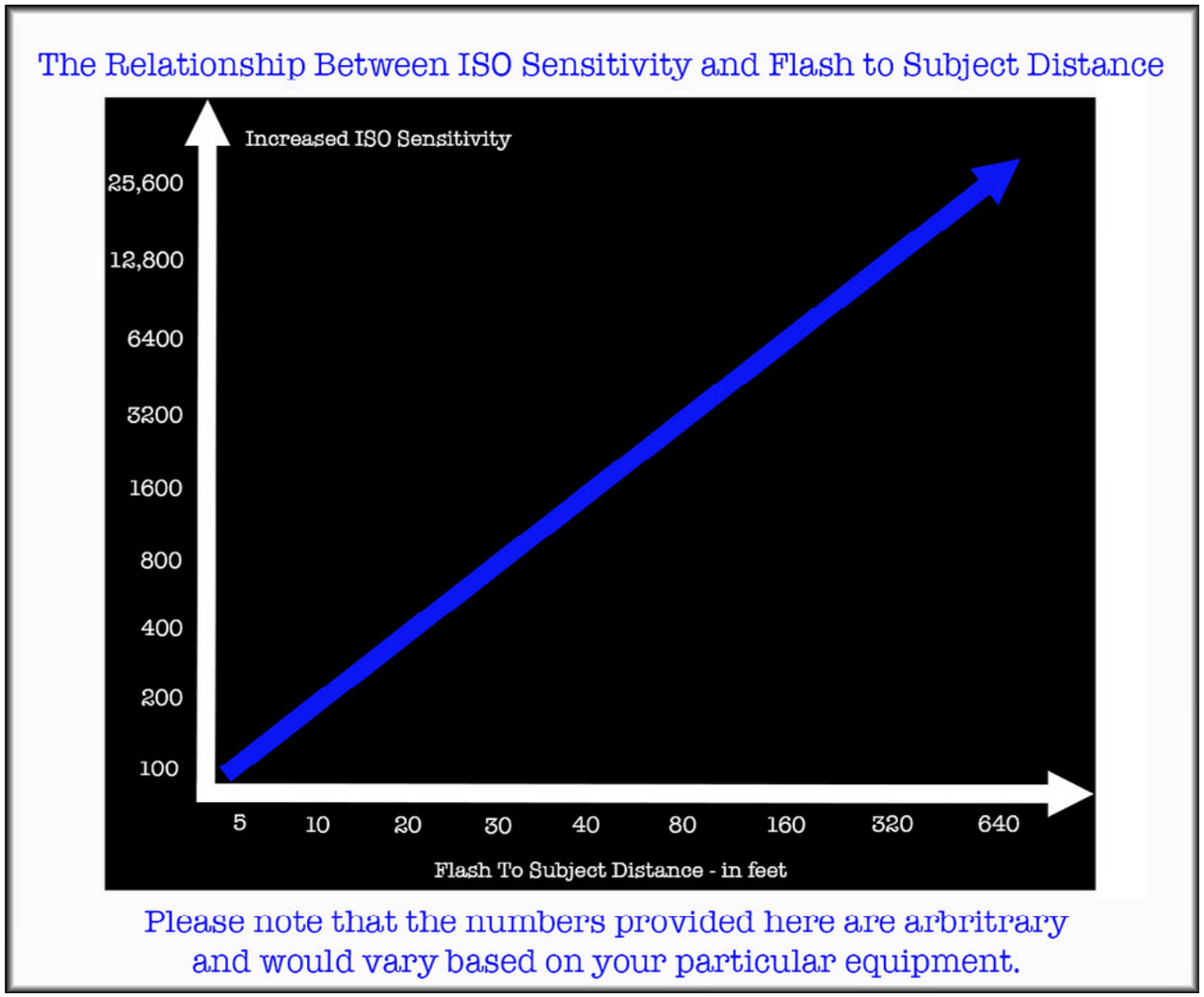
Electronic flash that is fired, untethered, and away from the camera location is what's known as a "Slave" unit. Setting your flash up like this opens up creative options for your lighting. What does tethered mean? It means that your flash isn't on the camera, but it is still connected via a cord. We will talk more about this later.

Kent DuFault
https://www.flickr.com/photos/35449761@N04/16692239613/

Here is an example of what the "Slave"/"Master" settings will look like on a Canon electronic flash unit. This unit has been set up as a Slave. Do you see the #1 under the "CH"? This indicates that the "Slave" is set to "channel 1". Wireless capable flash units, or triggers, usually have 2 to 4 channels built into the system. There are two reasons for this. If you are getting interference, and your flash won't fire, or it's firing on its own without the camera triggering it, you can try a different channel. Secondly, in advanced lighting schemes, you may wish to fire different banks of lights at different times. You can do this by putting them on different channels. Finally, do you see where it says "SLAVE A"? You can designate the Slaves into different groups. This unit is set to GROUP A. Grouping allows you to control the power ratio sent to each Slave from the Master. This is important so that you don't have to walk back and forth from the camera to each flash to change its power output settings. You will need to do a little investigation into how to set this up for your particular equipment.

TIP 21

WHAT IS THE RELATIONSHIP BETWEEN ISO AND FLASH OUTPUT DISTANCE?



Kent DuFault
https://www.flickr.com/photos/35449761@N04/17127745770/

As you can see in this graph, the higher your ISO setting, the further away your subject can be from your electronic flash, and still get a proper exposure.

If you're trying to create a shot using your flash and your image is underexposed, one possible explanation could be your flash-to-subject distance. Light falls off as it travels through the air. All flash units have a maximum distance that they can send their light out to.

There are three cures to increase flash output distance.

1. **Open up your f/stop until you get a proper exposure.**

   This may not be your best alternative. Perhaps you want more depth-of-field. Or, perhaps you've already opened up to your maximum aperture and you're still getting underexposure.

2. **Get closer to your subject.**

   Maybe you don't want to do this. It totally changes the photograph that you wish to create.

3. **Increase your ISO setting!**

   This alternative makes the best sense. In the days of old, this wasn't the best option because of the increase in noise to the photograph. Plus, once you loaded some film and began exposing the film at that ISO you were stuck with it. However, today's cameras can easily change ISO at any time, and many cameras can go as high as ISO 3200 with almost no visible noise.

TIP 22

HOW TO USE STROBOSCOPIC FLASH

Aaron Geller
https://www.flickr.com/photos/aarongeller/371916013/

This shot above used the stroboscopic setting on a Canon flash. It was set to fire the flash four times in 1.5 seconds. The girl moved in between each exposure. Take notice that the lights in the room were off.

You may have heard of stroboscopic flash, or perhaps you saw the icon on your particular flash unit's display, but you really weren't sure what it is or why you would want to use it.

Stroboscopic flash is much like a strobe light. Do you remember the strobe lights at your high school dance parties?

Electronic flash strobing in a dark area will freeze action. A flash, in stroboscopic mode, will freeze multiple points of action on a single frame.

George Amaro
https://www.flickr.com/photos/georgeamaro/17088713417/in/photostream/

In this example, the subject didn't overlap. However, the flash was hitting the ground. With stroboscopic flash, you will get your best results with a completely dark background and no light spilling into unwanted areas.

Stroboscopic flash is a great way to illustrate motion, and capture motion that is invisible to the human eye.

Most modern flash units will have a stroboscopic setting. There are 3 settings that you will use to set up your flash for a stroboscopic shot.

1. The Hertz setting. Hertz is a fancy term for how many times the flash will go off in one second. 10 hertz will be 10 flashes in a second, etc.

2. The next setting is- how many times do you want the flash to fire? On my Canon flash I can set that number to anything from 1 to 60.

3. The third setting is the flash power setting. This is where things get tricky and you may need to experiment a bit. You will need to determine the correct power setting for your particular situation. I would start with 1/16. That's 1/16th full power. If you look at the image above you can see where the flash exposures overlapped on her body. If the power ratio is too high, that part of the image will become grossly overexposed.

Megan Lynnette
https://www.flickr.com/photos/thotmeglynn/4552451243/

Stroboscopic flash is an excellent technique to photograph fast moving objects that are difficult (or impossible) to see with the naked eye.

Your exposure is best determined by experimenting (unless you have a flash meter).

Start with an aperture of f/5.6 – f/8.0.

To determine the shutter speed, divide the number of flashes by the hertz. For example, 10 flashes at 5 hertz would mean that you need a minimum shutter speed length of 2 seconds.

TIP 23

THE MAGIC OF MULTIPLE POPS

Neil Tackaberry
https://www.flickr.com/photos/23629083@N03/8626260902/

When you want a smaller aperture than your flash can supply with a single "pop", you can use multiple pops to "build up" exposure.

Many photographers don't realize this. A pop of light from an electronic flash is just like filling a glass with water.

Let's say you have a glass that holds 8 ounces of water. In your hand, you have a measuring cup that holds 2 ounces of water. You desire to fill that cup to the top. You would fill the 2 ounce cup four times and pour each one into the larger cup to get your desired full 8 ounce cup.

Now, let's put that into photographic terms with an electronic flash.

Let's say you're going to photograph a still life of some fruit in a bowl. You've set up your flash using an umbrella. You don't want any other light influencing your shot; you want just the electronic flash. You set your ISO low and your shutter speed high to minimize the ambient light.

You then determine that the correct aperture is f/8.0 using manual flash mode.

However, f/8.0 doesn't give you enough depth-of-field. You need to be at f/11.0.

You can build up exposure by doing multiple pops of your flash. It's just like filling the 8 ounce cup up 2 ounces at a time.

Let's imagine that we are shooting the image of the apples in the bowl-

Here is how we would set it up using the multiple pop method.

1. We will begin by using the settings discussed earlier.
2. Make sure the electronic flash is set to manual mode.
3. We want to change our aperture from f/8.0 to f/11.0 without any influence of light other than the electronic flash.
4. We set the shutter speed to "Bulb".
5. We attach a cable release.
6. We make sure that the flash is set to manual.
7. We completely darken the room.
8. We lock the shutter open.
9. On the back of the electronic flash we press the test button twice.
10. We close the shutter.

We have now "doubled the exposure" (through two pops of the flash) to give us an exposure aperture of f/11.0.

What if we wanted f/16.0?

Each change in aperture requires "double" the exposure.

- f/8.0 to f/11.0 is two pops
- f/8.0 to f/16.0 is four pops
- f/8.0 to f/22.0 is sixteen pops
- Etc.

I have personally exposed images all the way up to 128 pops.

If your exposure gets above four pops you will start to experience what is known as reciprocity failure.

Reciprocity failure means that each additional pop adds slightly less to the exposure. For example, perhaps you wanted to go from f/8.0 to f/22.0. According to our formula, that should be 16 pops. However, due to reciprocity failure, it may require (this is just an example) 19 pops. You would have to determine the number of pops through trial and error.

The easiest method to deal with reciprocity failure is to begin your exposure utilizing the formula, and then adjust as necessary.

A flash head can become VERY hot if it is popped a number of times quickly.

Here is a fun factoid- this method is a cool way to try some special effects. In the middle of your multiple pops move objects in and out of the frame. This will create ghost images. I've also played with changing the focus on the camera lens during multiple pops for some pretty cool effects.

Words of warning- if your exposure gets above four pops, don't overheat your electronic flash. Take your time. Let it cool a bit between pops. A flash head can become VERY hot if it is popped a number of times quickly.

TIP 24

UNDERSTANDING A FLASH RATIO

When you begin to explore electronic flash as part of your photography, you will hear a lot about flash ratio. This term is thrown about in two different ways. One is the manual power setting of an individual flash unit. The second is the ratio of power settings of multiple flash units to light a scene.

Let's look at the single flash unit description.

- ✓ The term "flash ratio", when discussing a single electronic flash unit, is only applicable when the electronic flash is set to "manual mode".
- ✓ In this application, "flash ratio" means the output (or power) of the flash exposure.

Here is a chart…

Flash ratio is	1:1 –	The output of the flash is full power
	1:2 –	The output of the flash is ½ power: minus one stop
	1:4 –	The output of the flash is ¼ power: minus two stops
	1:16 –	The output of the flash is 1/16th power: minus three stops
	1:32 –	The output of the flash is 1/32nd power: minus four stops
	1:64 –	The output of the flash is 1/64th power: minus five stops
	1:128 –	The output of the flash is 1/128th power: minus 6 stops

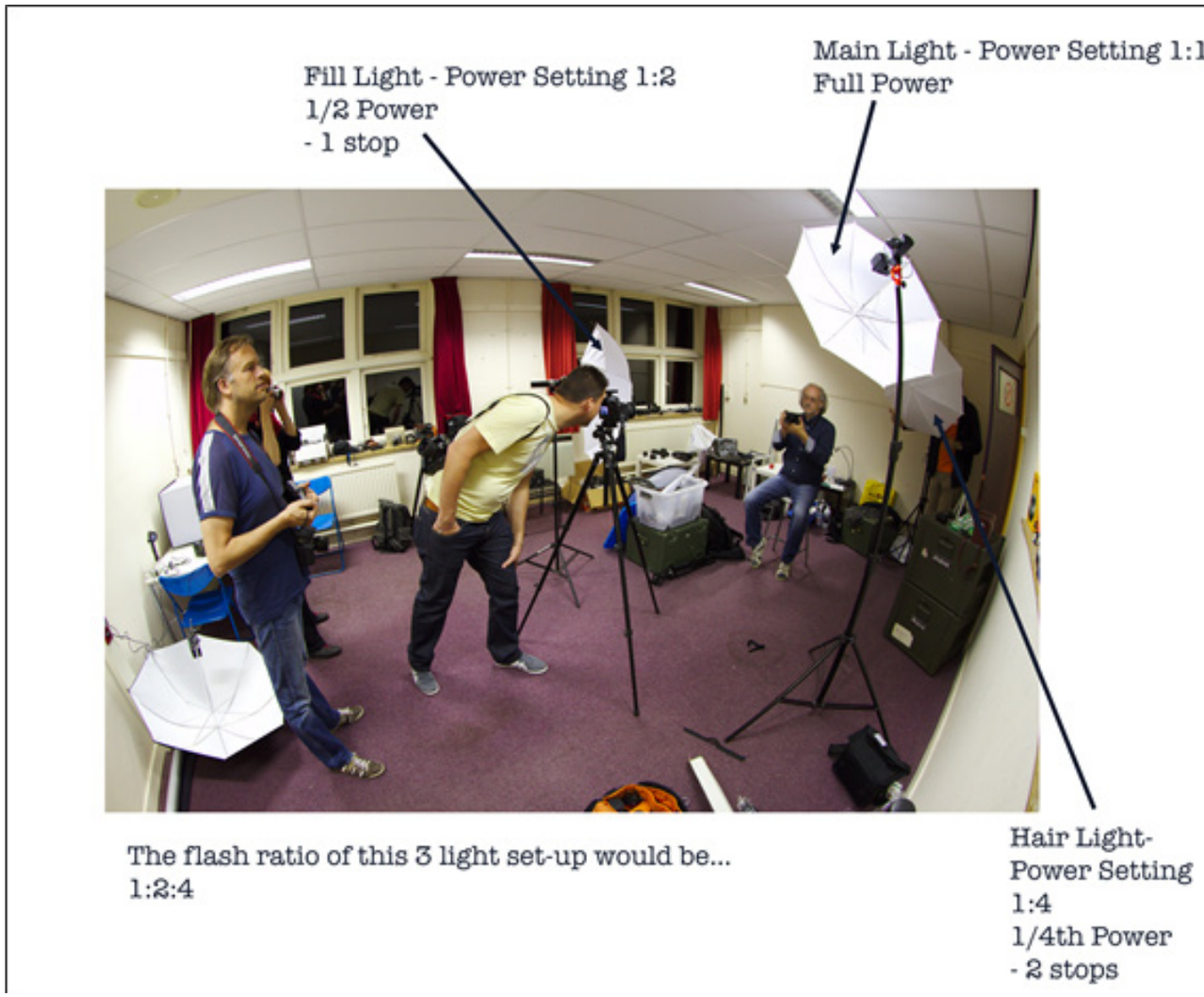
How would you use this information?

Let's say you're shooting a portrait.

Your electronic flash is set to manual and a ratio of 1:1. You then decide to open up your aperture by one stop - let's say you went from f/8.0 to f/5.6. Change the flash ratio to 1:2. This would cut the power in half, thus giving you an f/5.6 exposure setting. Always fire a test shot to make sure that the flash recycles to the appropriate power setting before taking your photo. In other words, you are dumping the full power that was in the capacitor and reloading it with half power.

Now, let's look at the multiple flash unit description of flash ratio.

- ✓ When using multiple flash units, the "flash ratio" refers to the output of each flash unit as it relates to the other units that will fire at the same time.
- ✓ Don't confuse "flash ratio" with "light ratio". Light ratio refers to the amount of light hitting a subject (whether flash or continuous light) as compared to another light source.



Dennis van Zuijlekom
https://www.flickr.com/photos/dvanzuijlekom/7897305382/

In this portrait scenario, the multiple flash ratio is 1:2:4. This means that the main light is at full power, the fill flash is at half power, and the hair light is at quarter power.

How would you use this information?

Again, let's say you're shooting a portrait.

TIP 25

HOW TO READ THE READY LIGHT...

Most portable electronic flash units adhere to these standards.

The ready light on your electronic flash serves multiple purposes. Most portable electronic flash units adhere to these standards.

- ✓ The ready light also serves as a button to manually fire the flash.
- ✓ When using any TTL flash mode you can push the ready light to fire a test flash, and then take note of the color that it illuminates. Green indicates a proper exposure. Red indicates an improper exposure.
- ✓ When you take a flash picture, check the ready light. Green indicates a proper exposure, and red indicates an improper exposure.
- ✓ The lamp indicator colors vary by individual unit. Most ready lights will glow orange when the flash has recycled to 75% power and will turn green at 100% power (check your manual for your particular flash unit). Knowing when the flash has recycled to 75% power allows you to shoot faster when you don't need 100% power.

TIP 26

WHAT IS A GUIDE NUMBER?

The guide number for an electronic flash is a means of quantifying the power level for that unit. Guide numbers have long been a standard for how manufacturers advertise the power of their flash unit.

The problem is that these numbers are somewhat ambiguous depending on the "environment" of the testing area.

For example, let's say that you have two different electronic flash units and each one carries a guide number of 160 per their individual manufacturers. It's possible that one of the units might have a more powerful output than the other based on the testing parameters.

I believe that guide numbers were more important in the past than they are now with all the automation and advanced electronics. Still, it's a number that you will hear so you should understand it.

When calculating a guide number, the general standard is to use ISO 100. If you're thinking of buying a flash, you should check and see if the standard ISO 100 was used. If it wasn't… say ISO 200 was used… it could indicate that the unit is an underpowered flash… or the specs might seem "better" than a comparably priced electronic flash that was tested at ISO 100.

Once you've established that the ISO 100 standard was used for testing, the second standard is the use of 10 feet as a measuring distance. Again, make sure that you know what the distance was to establish the GN (guide number) for a unit that you are looking to purchase.

The guide number formula is: GN = f/stop x distance.

Here's how you can test your flash.

1. Set your flash unit onto the hotshoe of your camera.
2. Set the flash mode to Manual at 1:1.
3. Mount the camera rig to a tripod.
4. Position a subject 10 feet in front of the camera.
5. Fire some test shots until you can determine which aperture provides the best exposure. (Let's say that the best exposure was f/8.0.)

GN = 8 x 10 - Guide Number is 80.

As you can see, the environment could greatly affect the outcome of this test. For accuracy in your own testing, perform the test outdoors, at night, with no walls or other objects nearby that might reflect light into the scene.

TIP 27

HOW YOUR CAMERA-SHOOTING MODE AFFECTS THE PERFORMANCE OF THE FLASH UNIT

Many photographers struggle with this…

The camera shooting modes are-

1. Manual
2. Full Auto
3. Program
4. Aperture Priority
5. Shutter Priority

The function that you choose can drastically affect how the electronic flash and camera function together. Now… use this information as a guideline. You must determine how your own camera system works.

MANUAL – This is the most straightforward method. You set the shutter speed and aperture. The flash fires accordingly (either in manual or TTL mode). In most cases you will want to use ETTL (iTTL) unless you're using multiple flash units, and/or light modification gear like umbrellas.

FULL AUTO – Each manufacturer has their designation for the full auto setting. Canon uses a green box. When you set your camera to full auto, and you have the electronic flash turned on, it will not allow a shutter speed below 1/60th of a second, or above the maximum sync speed for the camera. The camera will determine the settings and set them automatically. The Full Auto mode is the most confining in terms of giving you creative input.

PROGRAM – In Program mode the camera determines the shutter speed between 1/60th and the maximum sync speed. It also determines the aperture. The difference between Program and Full Auto modes is that in Program Mode you can make exposure adjustments via the Flash Exposure Compensation Dial. The exposure compensation is made to the aperture, not the shutter speed. Therefore you cannot do motion blur techniques in this setting.

APERTURE PRIORITY – In this mode you set the aperture and the camera sets the correct shutter speed. The shutter speed will now adjust to any setting. This allows for motion blur techniques. If you wish to adjust the ambient exposure, you accomplish that with the Exposure Compensation Dial. The exposure compensation will be applied to the shutter speed. This can change the ratio of flash exposure to ambient light. If you want to change the ratio of flash to ambient light, you do this with the Flash Exposure Compensation Dial. This probably sounds complicated, and it is to a certain extent, but it allows you a lot of creative adjustment to your exposures. You are basically making two exposure settings: one for ambient light and one for flash power output.

SHUTTER PRIORITY - In this mode you set the shutter speed and the camera sets the correct aperture. The shutter speed can be set to any setting below the maximum flash sync speed, allowing for motion blur techniques. If you wish to adjust the exposure, you accomplish that with the Exposure Compensation Dial. The exposure compensation will be applied to the aperture. If you want to change the power of the flash output, you do this with the Flash Exposure Compensation Dial. The Shutter Priority Mode allows you to take complete control of the shutter speed, thus allowing super sharp images when you want them, and blurry images when you want them.

Kent DuFault

Shutter Priority allows you to control the amount of sharpness in an image when combining slow shutter speeds with electronic flash.

TIP 28

FLASH EXPOSURE COMPENSATION EXPLAINED

This can be super confusing. Your camera has a built-in method for changing exposure when you are using an auto-exposure mode. It is called the “Exposure Compensation Dial”.

If you are using your electronic flash in ETTL (iTTL) mode, changing the Exposure Compensation Dial on your camera will have no effect on the flash unit. The flash unit will always attempt to output the correct amount of light for whatever aperture the camera has chosen.

So, what do you do if you’re not happy with the exposure the electronic flash is giving you?

You have to change the flash output using the “Flash Exposure Compensation Dial”.

I use the term “dial” generically. Both the camera exposure compensation and the flash exposure compensation settings may be menu driven. It depends on your camera.

Important Point: There are TWO exposure compensation changes that can be made. One is controlling your ambient light exposure via the camera, and the other is controlling flash exposure via flash output.

The exposure compensation adjustment that controls the camera will only affect the flash exposure if the flash is in manual mode AND the exposure compensation changes are applied to the aperture – not the shutter speed.

If you are using auto camera mode, and you wish to adjust the “ratio” of light between your electronic flash unit and the ambient light… you may have to adjust ONE, THE OTHER, or BOTH compensation dials.

Let’s look at several example photos and determine how the exposure compensation would be handled.

Chris Sit
https://www.flickr.com/photos/csphoto101/7808478252/

This image is well balanced between the ambient light and the electronic flash lighting the model. However, let's say that we wanted to darken the background, just a little bit more, to make the model stand out even better against the background. We are using Program Mode on the camera and ETTL (iTTL) on the flash. How do we accomplish our task?

Using the camera "Exposure Compensation Dial" we would do the following: we would decrease the background exposure by increasing the shutter speed, or, by closing down ½ stop on the aperture. If we change the shutter speed, we are done, as this will not affect the flash exposure. If we change the aperture, this will affect the flash exposure. So we must go to the "Flash Exposure Compensation Dial" and increase the flash output by ½ stop.

We have now darkened the background while keeping the model at the same exposure.

Andrew Sutherland
https://www.flickr.com/browser/upgrade/?continue=/photos/fishyone1/15185158826/

Let's say in this example we are happy with the background exposure, but we wish to brighten the model. We are using Aperture Priority Mode on the camera and ETTL (iTTL) on the electronic flash. How do we accomplish our task?

Since we are happy with the background exposure we do not need to change the camera's "Exposure Compensation Dial".

Since we are using ETTL (iTTL) on the flash we must brighten the model using the "Flash Exposure Compensation Dial". We would adjust the flash exposure +1 stop and then test our exposure to see if +1 stop was the right setting. Adjust as necessary.

Here is how the same image would look with a one-stop increase in the flash exposure.

Andrew Sutherland
https://www.flickr.com/browser/upgrade/?continue=/photos/fishyone1/15185158826/

TIP 29

UNDERSTANDING HOW FLASH BRACKETING WORKS, AND HOW TO CANCEL IT

Flash bracketing can be very useful if you are interested in HDR techniques.

Electronic flash bracketing works much like camera exposure bracketing. The difference is that camera exposure bracketing physically changes either the shutter speed or the aperture. Electronic flash bracketing changes only the power output of the flash.

Here are a couple of points to remember.

- ✓ Flash bracketing only works when you are in an automatic flash mode such as ETTL (iTTL).
- ✓ Check your equipment manual to see if it automatically cancels the flash bracket after the bracketed exposures have occurred – or - do you need to remember to turn it off manually.

Flash bracketing can be very useful if you are interested in HDR techniques. I have also used it when I needed to shoot rapidly (such as portraits of children outdoors), and I didn't want to spend a lot of time fussing over exposure. With fresh batteries, and a relatively open aperture, you can fire a 3-shot bracket virtually instantaneously.

TIP 30

HOW YOU USE THE FLASH ZOOM FUNCTION ON YOUR ELECTRONIC FLASH UNIT

Many flash units have a zoom function that changes the angle of the flash output to match the angle of view for a given lens. With some units, the flash zoom will change automatically as you zoom the lens in and out. With other, less expensive units you may have to manually change the zoom setting. And, if your unit is like mine, it can be done either way.

Why is it important for the flash to match the angle of view for the lens?

There are a couple of reasons.

- ✓ If you are using a wide-angle lens and the flash output is narrower than the angle of view for your lens, you will get a dark vignette around the edge of your image.
- ✓ If you are using a telephoto lens to photograph a distant object, the zoom function tightens the light pattern emitted from the flash unit. That, in turn, gives the flash range to light a more distant object (remember, flash-to-subject distance).

If you are using a prime lens, you will want to manually set the zoom on the electronic flash to match the focal length of the lens.

You will notice that the zoom function maxes out on both ends of the focal length range. My particular unit zooms back to an angle of view that matches a 28mm lens and zooms out to a maximum focal length of 105mm.

For ultra-wide angle lenses, some flash units have a diffusion screen that will cover the flash head to create a wider scatter of the light. For my flash unit, if I want the flash to disperse wider than the 28mm view, I pull out the diffusion panel and lay it over the flash head. The flash will now cover an angle of view out to a 14mm lens.

Don't worry if you are using a telephoto lens that is longer than the maximum zoom range on your flash unit. As the focal length of a lens gets longer, the angle of view gets smaller. So, as long as the angle of your flash zoom is "less" than the focal length of your lens, the flash will cover the field of view.

For example, the maximum zoom on my flash is 105mm. I could use it at that zoom setting along with a 200mm or a 300mm lens, and the flash will still cover the angle of view. Just remember, your flash has a finite distance that it will cover. If you're using a 300mm lens to photograph a singer that is 150 yards away on a stage, the flash will not reach that far even when set to its maximum zoom setting.

Another reason to manually set the zoom of your flash is for special effects.

Sean McGrath
https://www.flickr.com/photos/mcgraths/5201028593/in/photostream/

By manually setting the zoom of your flash, you can create special effects such as a spotlight effect. In this image, a wide-angle lens was used. The zoom on the flash was set to a "longer" focal length than the lens. This setting created a vignette along the outside of the frame, which in turn created a "spotlight" effect on the model.

TIP 31

WHAT IS A SYNC CORD?

r. nial bradshaw
https://www.flickr.com/photos/zionfiction/13770878044/

When you physically place an electronic flash on top of your camera it is fired by the hotshoe.

What if you want to remove the flash from your camera so that you can change the direction of the light toward the subject?

There are two ways to accomplish that.

1. Wireless firing through a transmitter and receiver (otherwise known as a trigger, which we discussed earlier).

2. Or, the use of a sync cord.

There are two types of sync cords. The type pictured in the photo of the Nikon camera and flash is essentially an extension of the hotshoe. This type of cord is necessary if your camera does not have a "PC" connection point (more on that in a minute); or if your flash unit does not have a "PC" connection point; or if you wish to maintain ETTL (iTTL) connectivity.

dollen
https://www.flickr.com/photos/dollen/423305114/

You may want to consider investing in a sync cord, even if your camera and flash support wireless connectivity. These cords are fairly inexpensive, and they can save the day if for some reason your wireless system won't work.

The other type of sync cord is what is often referred to as a "PC" cord. The PC is merely a designation for a type of plugin connector. We will talk more about that in a minute. There are two main points that you need to understand about this type of cord: 1) these cords can have different types of connectors on either end. Make sure that you get the right cord for your camera and flash unit; 2) these cords do not support TTL functions. They simply fire the flash.

TIP 32

HOW DOES AUTOFOCUS ASSIST WORK?

Autofocus Assist has a useable range of (generally) somewhere between 2 feet and 40 feet.

Have you ever been to a wedding reception and watched the official photographer snapping candids in an almost completely darkened room? Did you notice that just before the flash would interrupt the darkness, a red beam would light up on some innocent soul's face? That red beam is what is known as "Autofocus Assist".

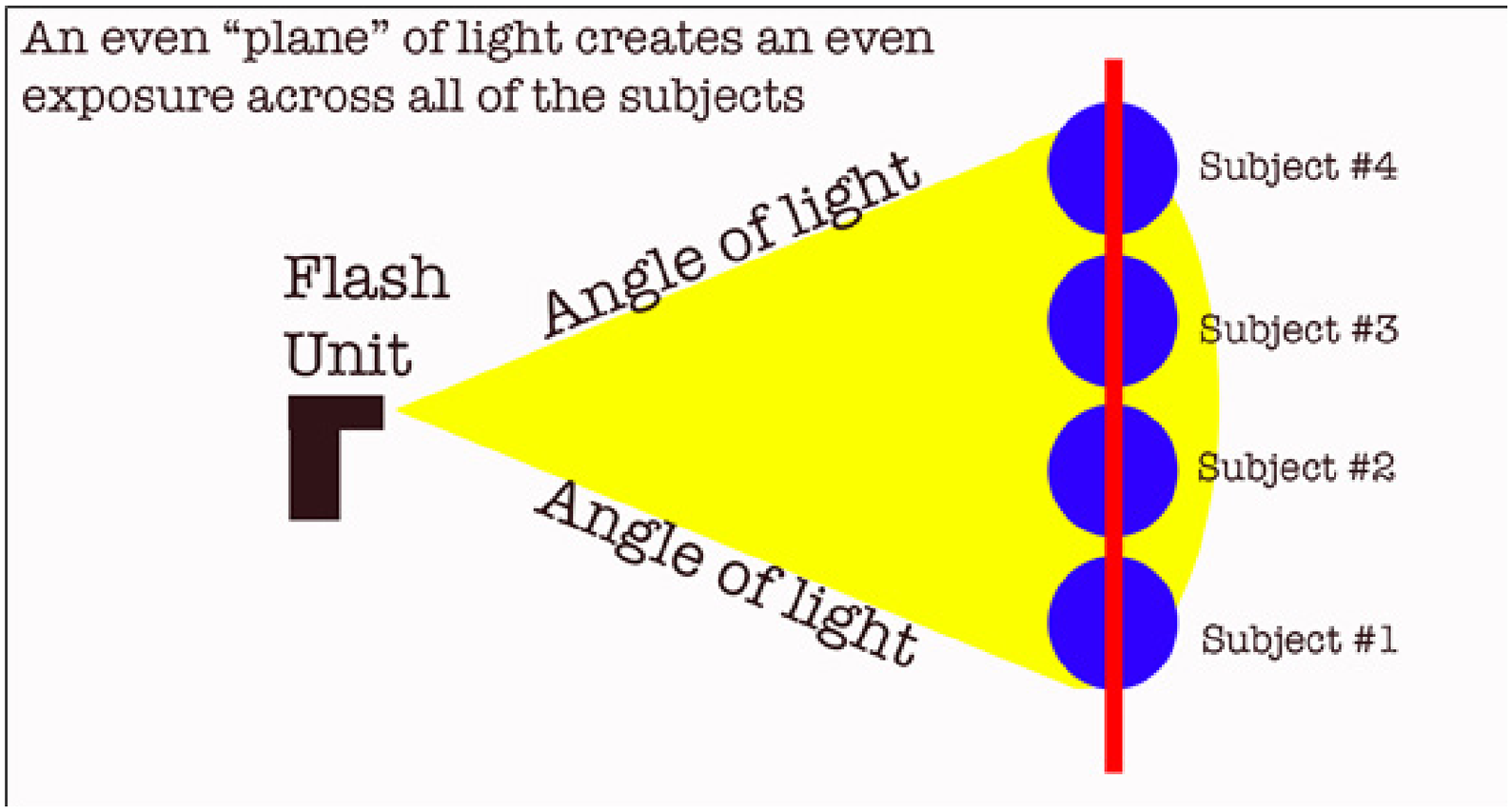
This is a feature that you do not turn on and off. The Autofocus Assist turns on automatically when low light or low contrast conditions are detected by the camera and flash.

When the Autofocus Assist is on, the flash sends out an infrared (red) signal that helps the lens focus on the intended subject. At the moment of exposure, the infrared light is extinguished.

Autofocus Assist has a useable range of (generally) somewhere between 2 feet and 40 feet. You will need to check your equipment manual for exact information.

TIP 33

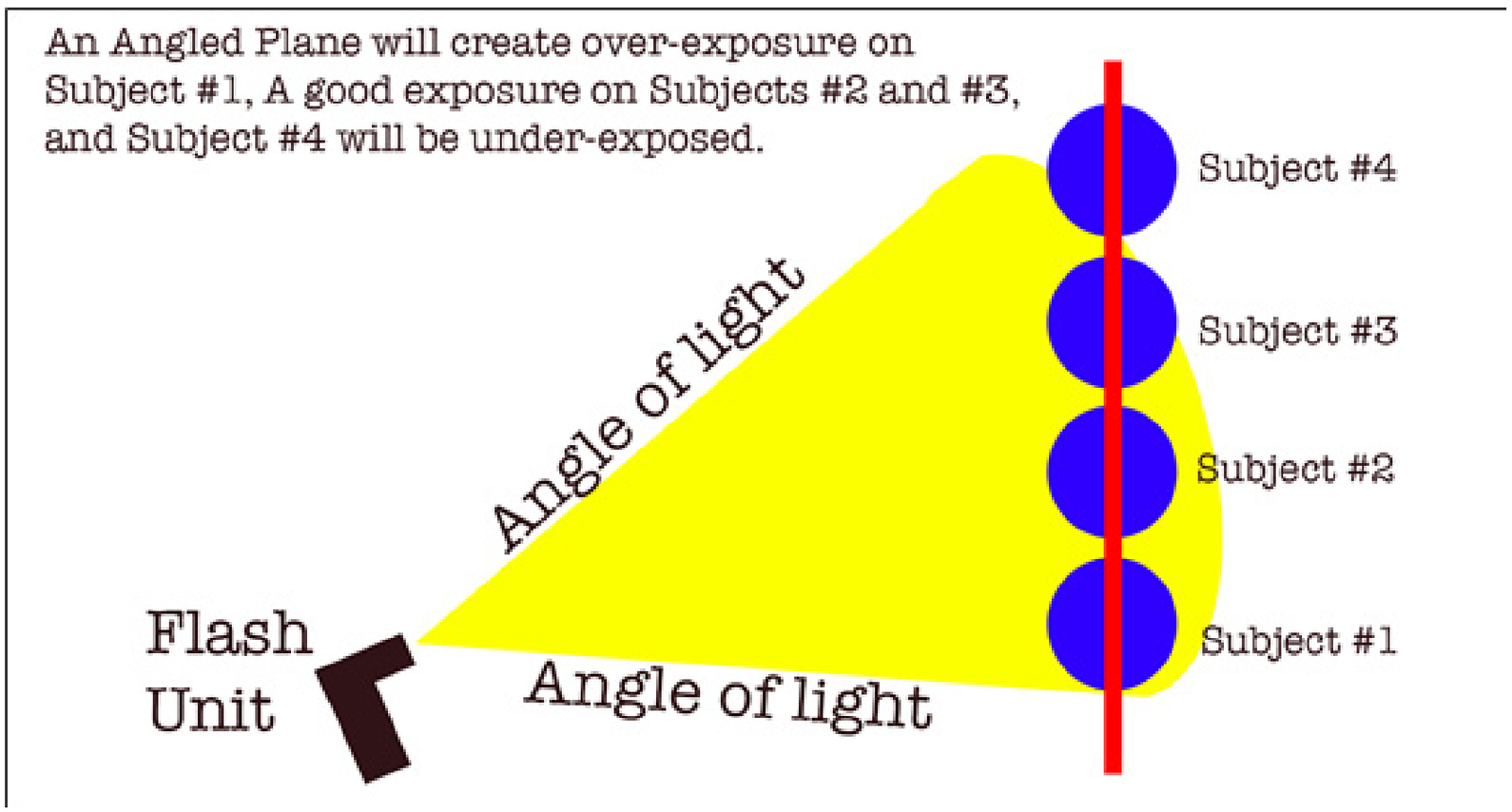
HOW DO YOU LIGHT A GROUP OF SUBJECTS EVENLY WITH YOUR ELECTRONIC FLASH?



Kent DuFault
xxx

When using your flash, draw an imaginary line that runs parallel to the face of your flash. Place your subject(s) in that line to achieve a balanced exposure across all of the subject(s).

Picture this in your mind. The light coming from your flash unit is delivered in the shape of a slice of pie: a triangular shape. The outer crust area of the pie is where your subjects would typically be placed. The point of the pie is where the light leaves the flash before traveling outward toward the subject(s).



Kent DuFault
xxx

If you place your subject(s) at an angle to the flash, your exposure will vary from the subject that is closest to the flash on through to the subject that is furthest away from the flash.

Important point: keep the light emitted from your flash parallel to the subject you are trying to light for an even exposure.

TIP 34

USING THE REMOTE SENSOR TO ESTABLISH EXPOSURE

Kent DuFault
https://www.flickr.com/photos/35449761@N04/19530173505/in/dateposted-public/

This is the location of the remote sensor on a Canon 580 EX II electronic flash unit. Look in the manual for your unit to find its location on your particular flash.

Most of the time you will probably be using your electronic flash in the ETTL (iTTL) mode.

But, what if you want to remove the flash from your camera, and you no longer have a TTL connection?

You can then use the remote sensor for an automatic exposure reading.

If your flash provides TTL exposure metering, you will need to turn on the remote sensor. With my Canon flash, the option is turned on using the C.fn menu. Again, check your manual for the specifics for your flash unit.

Once it's turned on, then what?

Let's lay out a sample scenario.

I'm going to shoot a portrait with a single flash that is off-camera.

Here are my steps…

1. Mount the flash onto a light stand. (There are various methods. In my case, I use a swivel bracket that also mounts an umbrella.)
2. Determine how the camera will fire the flash. (In my case, my camera will send a signal to fire the flash. However, there is no TTL connection.)
3. I place my subject and then I place my flash.
4. I want shallow depth-of-field, so I decide on using f/5.6, and I place my focus on the subject's eyes.
5. I set my camera to manual mode. At ISO 100 and f/5.6, I determine that the background needs a shutter speed of 1/60th of a second for proper exposure.
6. I go to my flash and turn on the remote sensor. This is going to be my key light on the subject. I want the exposure from the key light to be a bit brighter than the rest of the scene. I set the remote sensor to f/8.0.
7. My flash LCD display gives me a distance range at which I can place my flash and it will automatically adjust its output to match f/8.0. (If I'm using an umbrella, it will throw off the reading, unless I set the flash up in a certain fashion, which I will discuss in a second.)
8. I place my flash and take a test shot.
9. Everything looks good, except the light from the flash is quite harsh.
10. I set up a bounce umbrella. Now, this is important. You must swivel the flash head all the way around so that it is pointing toward the LCD display on the back side. This way the remote sensor is still pointed toward the subject and not the umbrella. (See the photo below.)
11. I take another test shot. The flash exposure is a little dark.
12. I then use the Flash Exposure Adjustment menu on the back of the flash to raise the flash exposure by 1 stop. (Take note that on my flash this is NOT the Flash Exposure Compensation setting that we discussed earlier. This is a different menu and setting.)
13. I take another test shot.
14. Perfect! I create my portrait.

Kent DuFault
https://www.flickr.com/photos/35449761@N04/19504768036/in/dateposted-public/

This photograph illustrates the setup for using a remote sensor with an umbrella (or any bounce device). Notice that the sensor points toward the subject and the flash head points toward the umbrella. If you don't set your flash up in this manner, when using the remote sensor you will get bad exposures. How about if you are using a softbox? A softbox, or a shoot-through umbrella, does not work well with the remote sensor because they block its view. If you're using one of those light modifiers, you should set your flash to manual mode instead.

TIP 35

USING ELECTRONIC FLASH IN THE FOG, RAIN, SNOW, OR IN SMOKE

Katie Brady
https://www.flickr.com/photos/cliche/120060969/

Here are a few do’s and don’ts when it comes to electronic flash and fog (or rain, or snow, or smoke).

If you fire your flash at a distant subject, the particles in the air will catch the light and reflect it back toward your camera. This will create a washed-out, noisy image, with little or no definition. An electronic flash doesn’t work well in this circumstance, unless you’re trying to create a special effect.

Karl-Ludwig Poggemann
https://www.flickr.com/photos/hinkelstone/6330233720/

A flash can be useful in the fog, when it is directed at something close-up. In this photo of the leaves and foggy forest, the flash was close and directed down toward the ground.

DualD FlipFlop
https://www.flickr.com/photos/duald/7231829044/

An electronic flash can be extremely useful in the fog to brighten up a subject, as well as adding color and clarity. This works best when the flash is NOT on the camera (such as in this photograph of the man standing). By removing the flash, and placing it off to the side of the camera, any light reflecting off of the fog is being reflected back at that flash and not at the camera.

Tim Sackton
https://www.flickr.com/photos/sackton/4017489680/

This photograph is a great example where the use of a flash would have helped bring out the color and detail in the signpost. In this case, the signpost was very close to the camera, which means MAYBE the flash could have been fired from the camera position. But, consider this. The light doesn't stop there. It continues on past the sign. That spilling light would most likely create an unflattering effect behind the sign. Again, removing the flash from the camera and placing it off to the side of the camera would have been the best option.

TIP 36

USE A FLASH TO TURN DAY INTO NIGHT

Sean McGrath
https://www.flickr.com/photos/mcgraths/5557930999/

This technique might take some practice. But once you understand the concept, you can create some really nifty photographs.

The concept is this. You are going to under-expose the background (lit by ambient available light) so that it appears dark (like night). You are then going to light the subject with a flash that is bright enough to create a proper exposure. You can add to the effect by playing with your color balance on the camera and/or adding colored gels to the flash unit.

The reason that this effect takes some practice is that you're balancing a number of different factors. It's a lot of fun learning this technique, though. Give it a try, and you will learn a lot about how your electronic flash and ambient light mix together in a photograph.

When trying this technique you will want to use a low ISO setting. You will want to set your maximum shutter sync speed (with most cameras, that speed is 1/250th of a second). If you still can't underexpose the background enough, you can try adding neutral density filters to the lens. Once you establish the proper exposure for your dark background, you can adjust the white balance setting to create a blue color shift. This adds to the feeling of it being night. Remember, if you shift the color balance on the camera toward blue, you must compensate for that by adding warming gels to the flash. Generally, one of these filters will do the trick on your flash: ½ CTS, ¾ CTS, or 1 CTS. If you are unsure what a CTS filter is, everything you need to know is right here: Roscolux.

TIP 37

BEWARE OF OLDER ELECTRONIC FLASH UNITS

Jussi
https://goo.gl/1yJ9Jk

It can be tempting to buy an older flash unit to save money.

However, before you do that, you should consider how you want to use that flash.

Are you going to strictly mount it to the hotshoe on the camera?

Do you want to explore off-camera flash?

Do you want to take advantage of the sophistication that is built into your modern DSLR camera?

Are you aware that an older flash could possibly damage a modern DSLR?

How easy do you want your life to be?

I recently completed a wedding assignment using a Canon 6D camera and two Canon 580 EX II flash units.

Years ago, when I was shooting weddings all the time, it would have taken 100lbs. of gear to accomplish what I was able to accomplish with the three Canon products listed above.

There are legitimate reasons why you might want to buy an older flash unit.

The Vivitar 283 and Vivitar 285 flash units were considered the "Professional Workhorse" flash unit for decades.

These two units can be purchased today for less than $25.00 a piece on eBay.

So, why would you want to purchase an older flash unit?

Because you want to do multiple flash lighting schemes without breaking your bank account.

Think about it, you could buy four Vivitar units for less cost than one used Canon 580!

Things to consider if you buy older flash units…

DO NOT attach them to the hotshoe of your modern DSLR camera! The higher voltage running through an older flash unit can pulverize the electronics of your DSLR.

Only use them as remote flash units.

Make sure that the unit you are buying has a PC (wired) connection port. The camera will not be able to “fire” older flash units without help. So, they will have to be fired through the use of a wireless or optical slave trigger, or through a PC cord (or possibly both in multi-flash lighting schemes).

Make sure that the unit you are buying has a manual mode. For example, the Vivitar units (mentioned above) have a manual setting and built-in auto modes. The auto modes were never very accurate. I would only use an older flash in manual mode. That way the output will be consistent.

TIP 38

USING A SYNC JACK

Kent DuFault
https://www.flickr.com/photos/35449761@N04/19554703405/in/dateposted-public/

Here is what the sync jack terminal looks like on my Canon 580 EX II flash unit. Be aware that different flash manufacturers use different types of connectors. The PC style (which is pictured here) is the most common. But, it's not a given that your particular flash or camera will have this particular type of terminal. Check your manuals.

Earlier, we talked about the sync cord (aka a PC cord). However, you must also be aware of the sync jack.

The sync jack is the connection point for the sync cord between the camera and the electronic flash unit (also known as the PC connection port).

The reason it's important to know about this is that not all cameras have this jack, and not all flash units have this jack.

So, why is the sync jack important?

- ✓ It provides a way to fire an electronic flash unit without the use of the hotshoe. Why would you want to bypass the hotshoe? Maybe you have one unit mounted to the hotshoe but you wish to fire another unit at the same time through the use of a PC cord?
- ✓ Many studio type electronic flash units are fired via a sync cord.
- ✓ Not all flash units provide a sync jack. This is especially true of the newer portable flash units and lower cost amateur models.
- ✓ Not all cameras provide a sync jack. The sync jack allows another way to fire the flash via a PC cord. This could be important if you are taking on photography assignments.

TIP 39

DEALING WITH ELECTRONIC FLASH AND EYEGLASSES

Paul Stevenson
https://goo.gl/NuDCOR

In this example above, the flash was moved a fair distance off of the camera. The reflection is largely due to the fact that the photographer used an umbrella. The umbrella created a broader light source, which created a bigger reflection. Is there anything that the photographer could have done to help with the reflection? Yes. They could have had the subject turn their face slightly to camera right (subject's left). That action would have removed the reflection completely from one lens, and made it easier to retouch on the other.

Nothing is more annoying than a bright reflection in your subject's glasses from your flash unit.

These reflections seem to always place themselves right over the eyeballs, which makes them extremely difficult to retouch.

The best alternative is to not get them in the first place.

This tip is all about positioning the flash, and/or the subject's head.

If you can get the flash off of the camera, that's your best option.

However, if you can't, then direct the subject to turn their chin to one side of the camera or the other and slightly lower their chin. If this doesn't eliminate the reflection, it will at least get the reflection off of their eyeballs for easier retouching.

When removing the flash from the camera, the further away from the camera the better. However, moving the flash off of the camera even a foot or so will certainly help.

Here is an example of a flash bracket. The further you can raise that flash up, or bounce the light from a different direction, the fewer issues that you will have with reflections in eyeglasses.

Vox Efx
https://www.flickr.com/photos/vox_efx/2399288164/

TIP 40

WHAT IS THE DIFFERENCE BETWEEN “RING FLASH” AND “REGULAR FLASH”?

Darron Birgenheler
https://www.flickr.com/photos/darronb/2730202244/

This is a "true" ring flash. The first thing that you will notice is that the flash head mounts to the front of the lens.

Let's begin this discussion by looking at the physical difference between these two very different types of electronic flash units.

We all know what a standard, traditional, shoe mount, portable electronic flash looks like. Right? Think of my Canon 580 EX II.

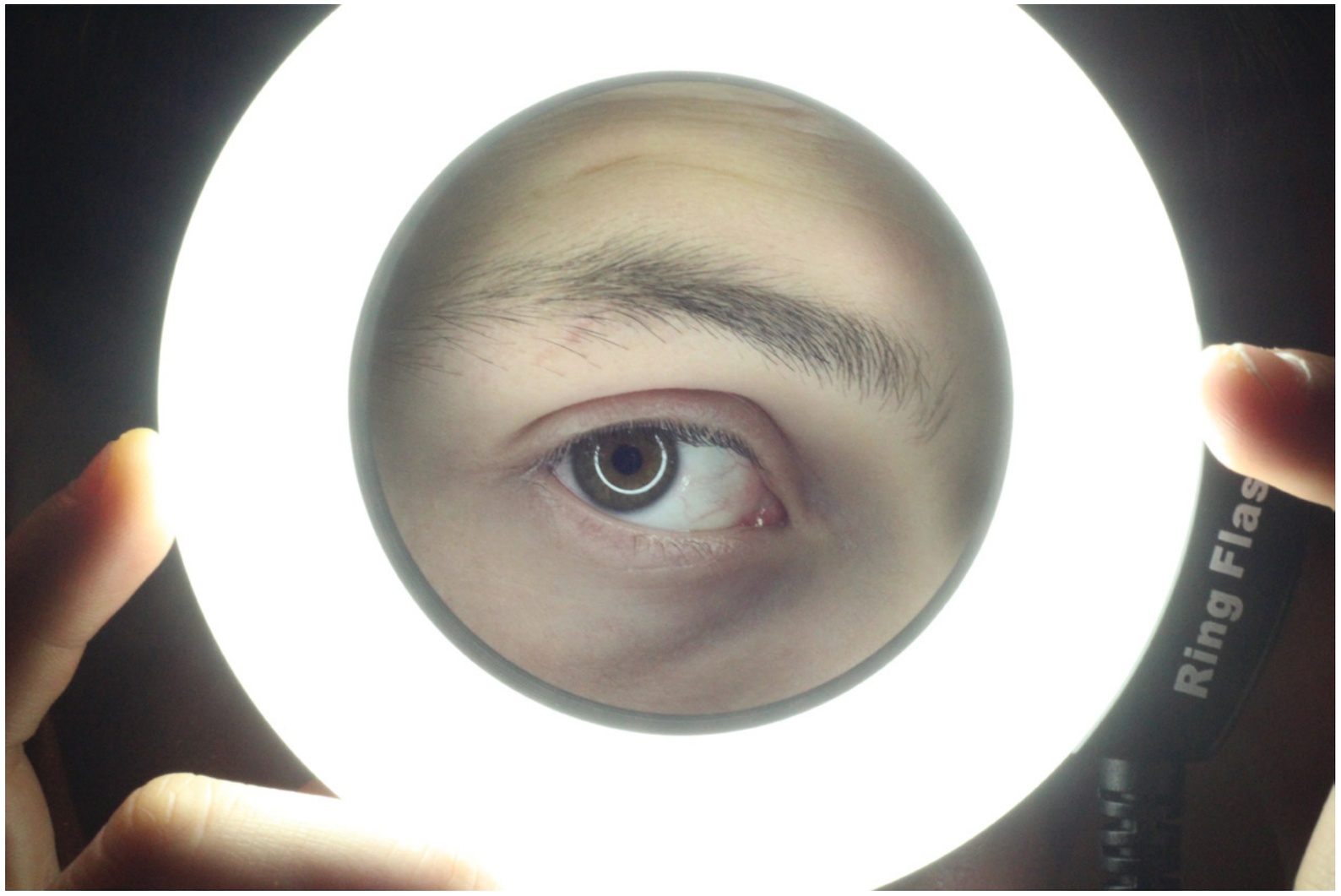
Here is what a "ring flash" looks like:

Evertvr
https://www.flickr.com/photos/evertvr/2652138307/

You may see references online to this type of unit being a ring flash. This is not a true ring flash, and it will not produce the same results. A true ring flash must mount around the front of the lens. What is the difference? The unit that isn't mounted around the lens will produce a circular highlight in the eyes. That mimics a true ring flash. However, it cannot produce the shadow-less lighting that a true ring flash produces.

Conor Ogle
https://www.flickr.com/photos/cmogle/3088427454/

This is a ring flash modifier. It takes a traditional electronic flash unit and turns it into a true ring flash. Take notice that it is still positioned around the lens. The disadvantage to this type of setup is that it is much bulkier and difficult to move around with. The advantages are that is generally less expensive, and you can use it on an OEM hotshoe flash unit, thereby taking advantage of the electronics.

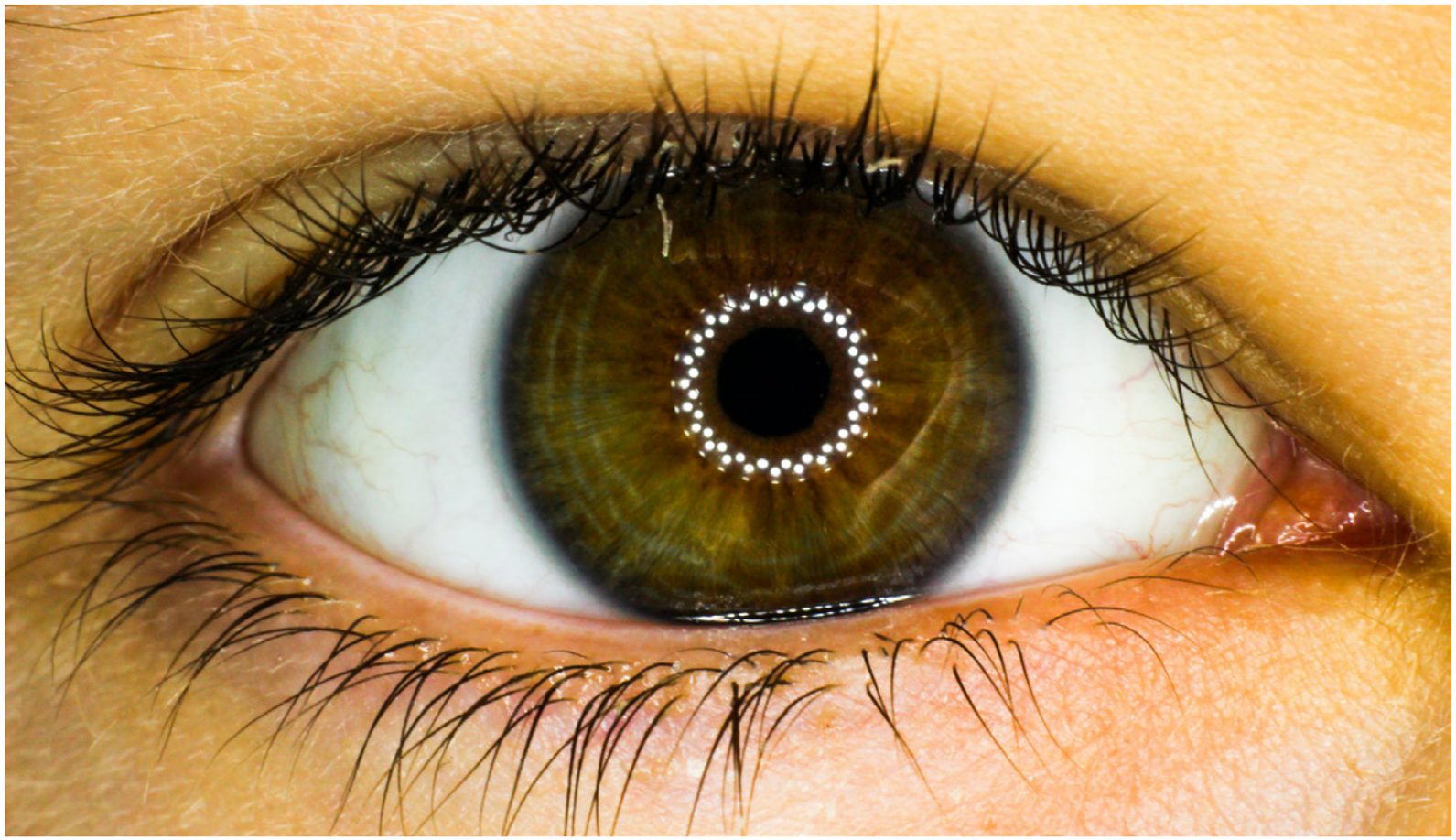


Axel Naud
https://www.flickr.com/photos/axelnaud/14440184479/

When studying the photographic works of other photographers, you can determine if a ring flash was used by studying the highlights in the subject's eyes: if you see a ring, then a ring flash was used.

What does a ring flash do?

It produces soft, even, flat, shadow-less lighting that is particularly useful for fashion photography, portrait photography, and macro photography.



Axel Naud
https://www.flickr.com/photos/axelnaud/14660281111/

The unusual circular highlights reflecting in the eyes of the subject are one of the features of a ring light. There are different types of ring lights that produce different highlights. The ring light used in this close-up of the eye was an LED model.

Jim H.
https://www.flickr.com/photos/greyloch/17594964791/

The benefit of a ring light is soft shadowless lighting. The circular highlight in the eyes is smaller (in the photo of the girl in the hat) because the camera and flash were much further away from the subject.

TIP 41

FLASH MODIFIERS - WHAT THEY ARE AND HOW THEY WORK

http://goo.gl/HYczXH

Earlier in the guide, we talked about making a simple bounce card. A commercially made bounce card (pictured above) has a distinct advantage. It can be "shaped" to control how much light goes in a certain direction.

In the world of portable electronic flash, there are essentially three different styles of light modifiers. They are the bounce card, the dome, and the soft box.

Let's take a look at all three and discuss their benefits and/or pitfalls.

These are the advantages of the bounce card over the other two options.

- ✓ It has the least impact on the power output of the flash.
- ✓ It offers the most flexibility for softening light that is still directional and specular.
- ✓ It gives the photographer the opportunity to create a dual light setup; one light source being the bounce card itself, and the other source being a wall or ceiling that the "spill" bounces off of.
- ✓ The device is compact, lightweight, and folds flat for easy storage in a camera bag.

http://goo.gl/f3tUrC

The dome is my second favorite light modifier for a portable flash. There are many types of domes out there on the market, and they do many different jobs. But their primary job is to soften the light, and they do that very effectively: sometimes almost too effectively.

The disadvantages of the bounce card are… there really is only one.

- ✓ The larger the bounce card is, the better light it will produce. Unfortunately that means you could have a large unwieldy object hanging off of the top of your camera. I carry three bounce cards: a small, a medium, and a large. That way I can use the large one at a wedding where I have complete control around me, and I can use the small one at a crowded event where people are pushing and shoving. The medium comes in handy for all those times in between…

http://goo.gl/qhUzBz

The soft box modifier is my least favorite of the options. It does soften the light, but there are significant ramifications in using this option.

The advantages of the dome are-

- ✓ It softens the light significantly.
- ✓ They are small and compact on top of the camera.
- ✓ There are many types of domes and accessories for them that can alter the light source in many different ways.

The disadvantages of the dome are…

- ✓ They generally create a higher amount of light loss (power output) than the bounce card method.
- ✓ Under certain shooting conditions the light can actually become too soft (in my opinion) and non-directional, leading to lackluster lighting on a subject.
- ✓ They don't fold flat, so they take up more room in a camera bag.

The advantages of the softbox modifier are...

The advantages of the softbox modifier are-

- ✓ They tend do be very inexpensive.
- ✓ Some models do offer light control options such as filters or baffles.
- ✓ They fold flat for easy storage in a camera bag.
- ✓ The light is soft but directional.

The disadvantages of the softbox are…

- ✓ All of the models that I have tested significantly reduced the power output of the flash unit far more than the other two options.
- ✓ If you get a softbox model that is too small, the softening effect is minimal. If you get one that is too large it is very unwieldy on top of the camera and it can block the infrared and remote sensors on the flash.
- ✓ While the softbox does provide soft, directional light, it only comes from one direction, making it less versatile than a bounce card.

TIP 42

HOW TO CREATE A SPOTLIGHT EFFECT WITH YOUR FLASH UNIT

Kent DuFault
https://goo.gl/ze5vRi

Using a homemade "tube" constructed of 5 sheets of printer paper taped around the head of my electronic flash, I created the spotlight effect in this photograph of my cat.

When you discover that using an electronic flash is so much fun, it truly opens up an entirely new world to your photography.

Figuring out how to make it work, and then figuring out how to change what it does, will change your photographic outlook.

This tip is so simple. But the results can be amazing.

You simply insert a tube over your flash head and turn it into a spotlight!

I call this my “Cheap Spot”. It was used to create the spotlight effect in the Siamese cat photograph above.

Kent DuFault
https://goo.gl/c6u7Xa

You can also buy a commercially made spotlight wrap for under $20.00 USD.

http://goo.gl/TEro6I

Nadia Martinez
https://www.flickr.com/photos/pinkpotatochips/8268706014/

If you use a spotlight tube on an off-camera flash, you can create some dramatic lighting effects!

TIP 43

THE STOPPING POWER OF FLASH DURATION

Joe Stump
https://www.flickr.com/photos/joestump/4991274626/

Flash duration can be a valuable tool when you want to stop some action and you don't have enough light for a fast shutter speed.

We are all aware that a fast shutter speed stops action.

But flash duration can stop even faster action! The flash duration of an electronic flash has even been used to stop the action of a bullet that had been fired from a gun.

Flash duration can be anywhere from 1/1000 of a second all the way up to 1/10,000th of a second. That's pretty fast!

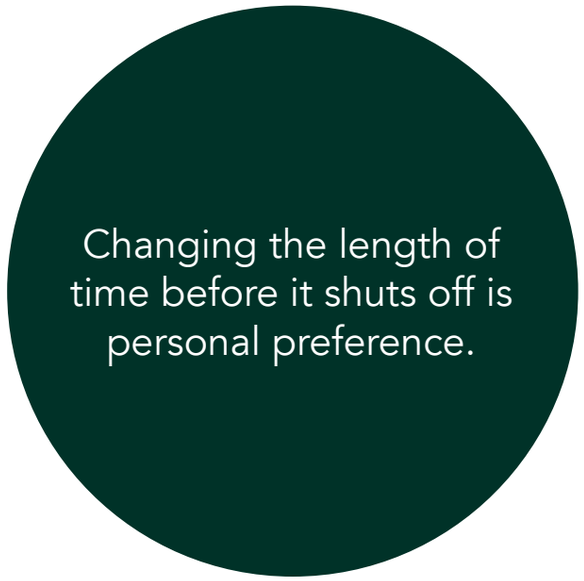
There isn't much that you need to remember about flash duration. In most cases it will be plenty fast to freeze whatever you're trying to photograph.

But let's say it isn't freezing the action. Is there a way to speed up the flash duration?

Yes, you can speed up the flash duration by lowering the power output of the flash. The lower the power output, the faster the flash duration is.

TIP 44

AUTO POWER OFF – USE IT OR NOT?



Most modern electronic flash units have an “Auto Power Off” setting. What this setting does is turn the flash off when it hasn’t been fired within a certain length of time.

Now, depending on the quality level of your electronic flash unit, you most likely have the option to turn this feature off, or set it to different lengths of time before the unit shuts itself off.

The shut-off feature is pretty self-explanatory; it saves on battery life.

Changing the length of time before it shuts off is personal preference.

But why would you want to turn the feature off? That’s Tip #44…

If you are using your flash off-camera, and you don’t turn the feature off, you will find yourself constantly having to walk over to the flash to turn it back on.

This happened to me recently. Believe me, it’s annoying. I was using a new flash that I wasn’t familiar with, and I didn’t know how to turn the feature off!

Make sure you check your manual before you find yourself in a situation like I did.

TIP 45

WHAT IS THE DIFFERENCE BETWEEN A HANDLE MOUNT FLASH AND A SHOE MOUNT FLASH?

http://goo.gl/JVYwf0

The Metz brand is one of the most recognized handle mount electronic flash units. Other known brands include Sunpak and Quantum.

I'm sure you know what a shoe mount flash is. It's the type of flash that we are all used to - similar to my Canon 580 EX II flash.

A handle mount flash does not sit on the camera's hot shoe. It mounts to the side of the camera and serves as a handle.

What are the differences between these two types of electronic flash units?

Handle mount flash units tend to be more powerful than their shoe mount cousins.

Handle mount units generally recycle faster because they have larger capacitors.

Handle mount units are heavier and bulkier. That can make a big difference on your back if you're hauling them around all day.

Handle mount units are more difficult to mount and dismount to the camera than a hotshoe flash.

Handle mount units move the flash head away from the lens thus reducing the possibility of red eye and without the need for a flash bracket.

Bottom line: if you think you might turn pro, you may wish to look at the handle mount options.

If you're not considering the professional path, you're probably better off with an OEM shoe mount unit.

You now have 45 flash tips all located in one handy location.

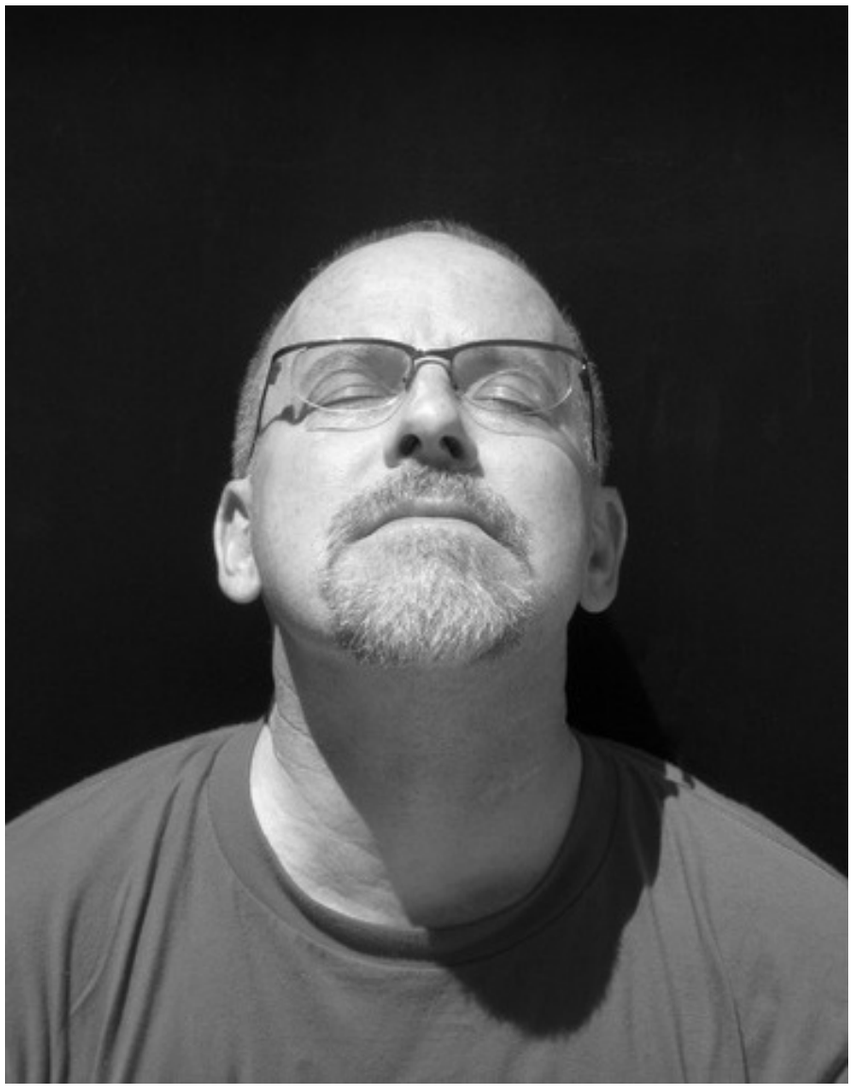
I hope you've enjoyed reading this guide, and that you learned something new to implement into your photography.

I tried my hardest to cover every question someone might have regarding portable flash photography. However, maybe I missed something.

As part of your purchase, and support for Photzy.com, I would like to try and help you with any questions that you might have regarding portable electronic flash photography. If you have a question that wasn't answered in this guide, post it onto the Photzy Facebook page with #photoflash. I will do my best to answer your question for you there on Facebook.

P.S. Here is a bonus tip. If you have a built-in flash unit on your DSLR camera, that unit is virtually worthless for any distance over 10 to 12 feet at ISO 400 or less.

About the Author



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