WHITE BALANCE

White balance is not a direct component of exposure in the same manner as ISO, shutter speed, or aperture. Yet, it is a critical part of making a digital capture. And, like ISO, shutter speed, and aperture, white balance settings can be changed intentionally for creative purposes. (See Chapter 20, *Gelling For Effect*, for details.)

To start, know that human vision has the remarkable ability to see white as white under many different sources of light. Digital sensors are not so versatile. You must either tell the camera what kind of light you are shooting under or you can let the camera try to figure it out with Automatic White Balance.

SPEEDLITER'S TIP

—Shoot In RAW—

For maximum control and safety, shoot in RAW. This gives you the ability to use the full data file created by the camera during the exposure. With Adobe's Lightroom or Apple's Aperture, you can make precise changes to settings like white balance, brightness, and contrast.

If you make a huge mistake, like shooting an entire outdoor event under Tungsten white balance, you can easily correct the color cast from the RAW files. Color-correcting JPEG files is possible, but not to the extent that it is possible with RAW.

If you shoot in JPEG only, I have two suggestions: start shooting in RAW, and pay close attention to your white balance settings until you do. JPEG is the favorite of amateurs because the camera makes decisions about important settings–like white balance, brightness, and contrast. The camera then throws the rest of the data away to make the file smaller. While it is possible to color-correct a JPEG file, I prefer to keep my options open by shooting in RAW. Memory cards and drives are cheap, and programs like Lightroom make quick work of post-capture adjustments to RAW files.

RAW will also come to the rescue on underexposed shots. As you can see on pages 330–331, for the *Flying High After Sunset* shoot, I was able to salvage the shot quite nicely after the motocross jumper flew beyond the range of my Speedlites. If it had been a JPEG, the shot would have been lost.

Here's a great resource for learning the whys and hows of the RAW workflow: *Real World Camera Raw* by Bruce Fraser and Jeff Schewe (Peachpit Press).

White Balance Settings

Here's a quick look at the white balance settings available on most Canon DSLRs.

- **Auto:** An easy way to start. I often leave my camera set to AWB.
- **Daylight:** Often used when shooting with gels during the day. 5200° K
- **Shade:** Adds a warm cast. 7000° K
- **Cloudy:** Adds a slight warm cast. A good setting for portraits with ungelled Speedlites. 6000° K
- **Tungsten:** The setting to use for old-school lightbulbs. 3200° K
- **White Fluorescent:** Office and home fluorescents are tough to balance. This is a best-guess. 4000° K
- **Flash:** 6000° K
- **Custom:** Create a white balance by shooting a white target.
- **Specific:** Allows you to set a specific color temperature, used by pros.

White Balance In Action

If the white balance in the camera does not match the color temperature of the light being photographed, you will see a color cast. Here is the X-Rite ColorChecker photographed under full sun in different white balance settings.

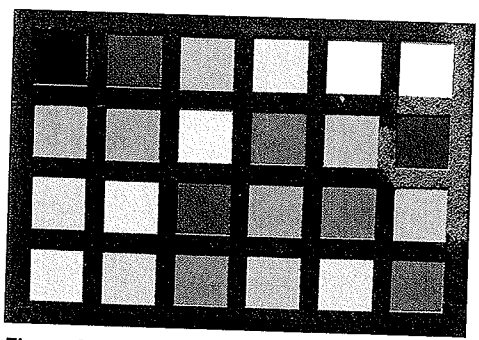
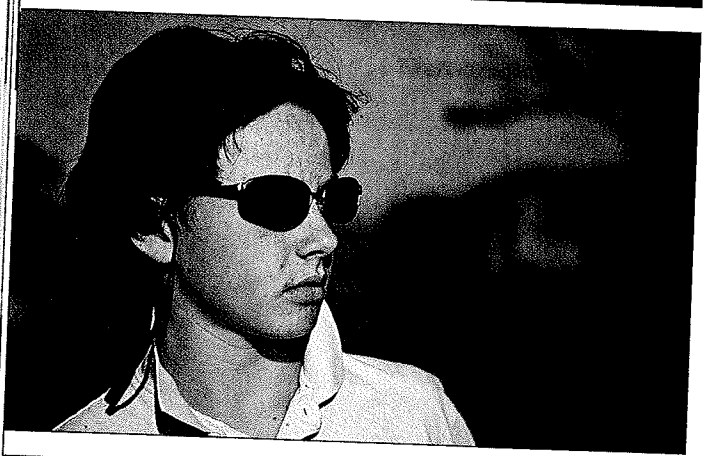


Figure 2.21 Daylight white balance in daylight.



So aperture has a direct effect on the amount of flash hitting the sensor. If you are at full power and still need more flash, open the aperture by a stop or two. Then, to keep the ambient light the same, speed up the shutter speed by the same number of stops. Just remember, you can't exceed the sync speed for your camera without using high-speed sync.

Why Shutter Speed Controls Ambient Exposure

You already know that if you switch your shutter speed from 1/250″ to 1/500″, you've just reduced the amount of sunlight getting to the sensor by half—you have reduced the amount of ambient exposure by half.

It does not matter if the ambient light is sunlight, room lights, or firelight—the shutter controls how much of it gets through the camera.

Now don't get hung up on the fact that the aperture also affects the ambient exposure. The thinking here is that if the aperture is set to control the flash exposure, you can adjust the shutter to control the ambient exposure.

As Speedliters, we will typically want to change the amount of ambient light in one of two ways:

- In brightly lit scenes, we will want to reduce the amount of ambient so as to make the subject (lit by flash) more prominent.
- In dimly lit scenes, we will want to collect more of the ambient light from the background so that the subject (lit by flash) is not standing against a black background.

underexposing the ambient light

Let's take a detailed look at each of these scenarios. In the first series, you can see that changing the shutter speed in this outdoor shot has helped saturate the sky and increase the separation between Tony (son #3) and the

1/3200″

Figure 4.5 *The baseline shot at f/9, 1/200″, ISO 100.*

Figure 4.6 *f/2.8, 1/1600″—2/3 stops darker than 4.5.*

Figure 4.7 *f/2.8, 1/6400″—1 2/3 stops darker than 4.5.*

Figure 4.8 *f/9, 1/1600″—3 stops darker than 4.5.*

background. Note in each of these photos that the power of the Speedlite, its distance to the subject, and the aperture have stayed the same. The only thing changing is the shutter speed.

Now we'll look at a series of shots made 45 minutes after sunset. Here, I've locked the camera down on a tripod to facilitate longer exposures. At 1/15" it's definitely a night shot.

SPEEDLITER'S JARGON

—Sync Speed—

The sync speed is the fastest shutter speed at which your camera can normally make a flash exposure. The shutter in an SLR camera—digital or film—has two curtains. The sync speed is the fastest shutter speed on your camera where the first curtain opens completely before the second curtain begins to close. At faster shutter speeds, there is never a point where the film plane or digital sensor is completely exposed because the second curtain begins to close before the first shutter is completely open. Shooting faster than your sync speed results in a dark bar across one edge of the photograph.

As we'll discuss more in Chapter 21, *Slicing Time With High Speed Sync*, this is important to Speedliters because it is the fastest shutter speed that can be used without switching our Speedlites into a special flash mode known as high-speed sync.

SPEEDLITER'S JARGON

—Dragging The Shutter—

If your subject is lit primarily by flash, you can use a slow shutter speed to collect more ambient light from the background. This is called "dragging the shutter." You will find that your subject is sharply defined even when handholding your camera at relatively long shutter speeds, like 1/2", because it is being lit by the quick burst of flash rather than the ambient light.

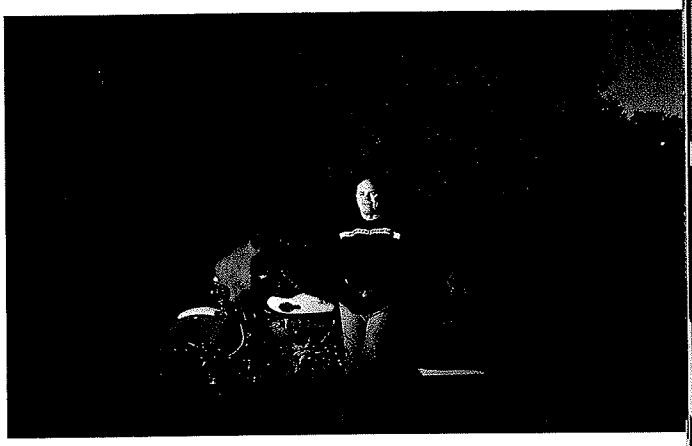


Figure 4.9 *1/15"—definitely a night shot.*

Figure 4.10 *1/2"—3 stops more ambient than 4.9.*

Figure 4.11 *2"—5 stops more ambient than 4.9.*

Figure 4.12 *8"—7 stops more ambient than 4.9*

GROUPS: ASSIGNING SPECIFIC JOBS TO SPECIFIC SPEEDLITES

One of the benefits of shooting Canon's wireless system is that you can control multiple Speedlites at different power levels. For instance, you can use Speedlites in two different groups so that you can adjust the amount of key and fill light wirelessly from your camera. In another situation, you might want to adjust the power levels separately for the key light hitting your subject and the background light.

Any time that you want Speedlites to operate at different power levels, you assign them to different groups. Canon officially calls them slave ID groups. Everyone else just calls them groups.

The Canon system has three groups: A, B, and C. By default, the master is always a member of group A (so you'll never set a group on a master). Slaves can be in A, B, or C...but don't stop reading right here.

Canon's method of controlling an E-TTL group C is a bit of a workaround. I recommend that, when shooting E-TTL, you use groups A and B and avoid a group C. When shooting all the Speedlites wirelessly in Manual, then group C is as easy to run as groups A and B.

SPEEDLITER'S TIP

—Group C In E-TTL Is A Brain Bender—

I've never really been able to get my head around Canon's approach to controlling an E-TTL group C as an amount of Flash Exposure Compensation relative to the A:B output.

My workaround is to take any Speedlites that are not in group A or B and put them individually into wireless manual (by holding down the Mode button for three seconds and then setting the power level by hand). Now these Speedlites will fire at the power levels that I set at the same time that all the E-TTL Speedlites in groups A and B fire.

Since the power on each wireless manual Speedlite must be set individually, I can actually have a whole alphabet of extra groups. Sure, it can be a pain to change the non-A:B Speedlites by hand. But this is not as hard as I find trying to wrap my head around the idea of controlling group C as an amount of FEC relative to the combined output of A and B.

Selecting A Slave ID (Group) On The 580EX II Via Speedlite LCD Panel

1. Confirm that the 580EX II is in slave mode. If not, follow the appropriate instructions as listed on page 133.
2. Repeatedly press the Zoom button to cycle through until A, B, or C blinks to the right of SLAVE.
3. Turn the Select Dial to choose the desired group.
4. Press the Set button to confirm your choice.

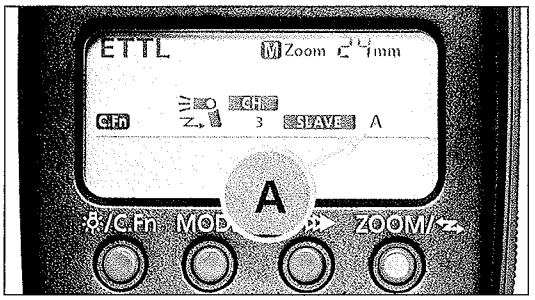


Figure 11.18 Pressing the Zoom button will cycle through the wireless control options. When the A, B, or C next to Slave blinks, turn the Select Dial to choose another ~~channel~~ group, then hit the Set button to confirm your choice.

Note: If you have a Speedlite attached to a camera, the camera assumes that it is a master. So, in order to set the group on a slave, it should be removed from the camera.

Selecting A Group On The 580EX

1. Confirm that the switch under the Select Dial is set to Slave.
2. Repeatedly press the Zoom button to cycle through until SLAVE blinks.
3. Turn the Select Dial to change to A, B, or C.
4. Press the Set button to confirm your choice.

Selecting A Group On The 430EX II Via Speedlite LCD Panel

1. Confirm that the 430EX II is in slave mode. If not, follow the appropriate instructions as listed on page 133.
2. Repeatedly press the Zoom button to cycle through until A, B, or C blinks to the right of SLAVE.
3. Press the left or right Select button to choose the desired group.
4. Press the Set button to confirm your choice.

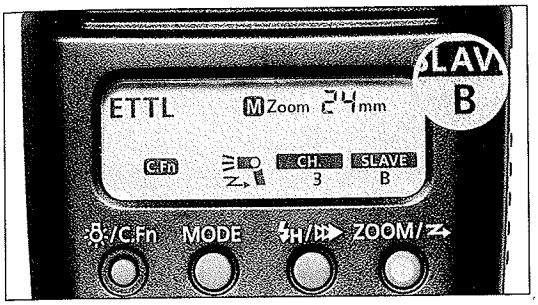


Figure 11.19 *Pressing the Zoom button will cycle through the wireless control options. When the A, B, or C next to Slave blinks, turn the Select Wheel to choose another channel, then hit the Set button to confirm your choice.*

Note: It is not possible to set slave function via a camera LCD monitor as the camera will always assume that the connected Speedlite is the master.

Selecting A Group On The 430EX

1. Confirm that the switch under the Select Dial is set to Slave.
2. Repeatedly press the Zoom button to cycle through until SLAVE blinks.
3. Press the left or right Select button to choose A, B, or C.
4. Press the Set button to confirm your choice.

GETTING RATIONAL ABOUT RATIOS

The whole point of assigning Speedlites to different groups is so that you can fire them off at different power levels. If you are shooting E-TTL, the way to automatically adjust the power levels of your different groups is by a ratio. Essentially, you establish the relationships between the groups and then E-TTL drives the whole power level up or down as needed.

Note: Ratios are E-TTL only. If you are shooting in Manual mode, you adjust the power level of each group individually. See pages 146–147 for details.

In A Simple, Balanced World Where Cats And Penguins Rule

Canon's brief coverage of ratios in the various Speedlite user manuals shows two Speedlites placed symmetrically and equidistant from the subject (originally a cat and later a penguin). The diagrams show two Speedlites the same distance from the subject about 40° left and right of the camera.

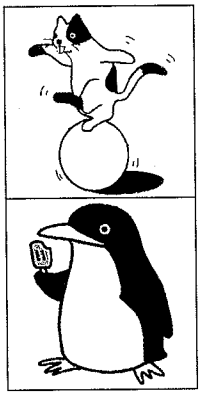


Figure 11.20 *The original Canon wireless cat, circa 1995, and the first-generation Canon wireless penguin, circa 2000.*

I have no problem with this, provided that the exploration of ratios does not stop there. Unfortunately, in the Canon manuals, it does.

Canon's explanations and tutorials are based on the assumption that the Groups A and B are always between the camera and the subject.

As you've likely guessed already, I routinely break these guidelines. So, pay attention to the lighting diagrams for the shoots throughout the *Handbook*. You will see that I often put the slave(s) to the side, or behind me, or behind the subject.

SHOOT: COLORING THE NIGHT

My friend Mark Krajnak is a fanatic about film noir and the many novelists who feed the genre. (To see what I mean, visit his blog *JerseyStylePhotography.com*.) When I decided that I must make his portrait, there was no question about what he would wear and how I would light it.

Hide The Ambient Light

Our set was an abandoned storefront. We found it just after the sun had set. As you can see in Figure 20.22, in Av the camera is more than happy to stay open long enough (3.2″) to create a photo by the light of a single street lamp. Switching the camera into Manual at 1/60″ sucked out every bit of the sodium-vapor light.

Daylight, Two Gels, A Flag, and A Grid

For consistency when gelling, it's important to set the white balance of the camera to something other than auto (AWB). For this shot, I used Daylight WB.

At camera left, I gelled the flash with medium red and flagged the light from the camera with the large Rogue FlashBender. The role of this light was to light the steel door.

At camera right, I gelled the flash with a half-cut of CTO and gridded with the Flashpoint Q 1/8″ grid. The half-CTO warms the light on Mark just a bit. The grid makes the light very directional. You can see the effect quite easily in the opening shot on page 280.

Be Open To "Accidents"

I came to this shoot with a preconceived idea of the light that I wanted to create. About halfway through, I fired the camera before the second slave had recycled. I then realized from this "accident" that I had other options for the light. You can see two of them in Figures 20.23 and 20.24. If you learn from every shot, then new options will open up for you.

Lighting Details

Environment: neglected urban street
Time of Day: 30–90 minutes after sunset
Ambient: sodium-vapor street light overhead
Speedlites: 580EX II on-camera as master, two more as wireless slaves
Metering Mode: Manual
Power Levels: left slave: 1/8, right slave: 1/4
Zoom / Pan: both slaves zoomed to 24mm
Gel: left slave: Medium Red, right slave: half-CTO
Modifier: right slave: Flashpoint Q 1/8 grid
Distance: left slave: 6′, right slave: 4′
Height: left slave: 8′, right slave: 3–4′
Trigger: Canon's built-in wireless system

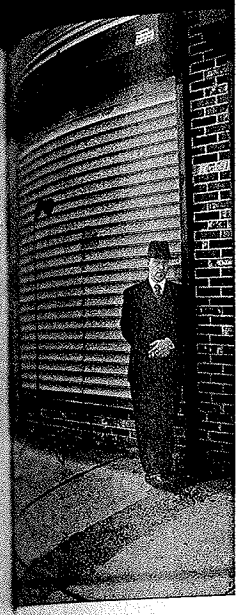
Camera Details

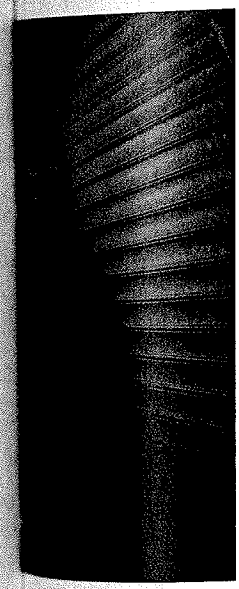
Camera: 5D Mark II
Lens: 24–70mm f/2.8L
Distance to Subject: ranged from 2′ to 8′
Exposure Mode: Manual
Exposure: 1/60″, f/11, ISO 400 (5+ stops under ambient)
White Balance: Daylight

SPEEDLITER'S TIP

Color Intensity With Gels

If you're firing through a colored gel and need to get more color, you need to turn the power of the flash down. I know that seems like the opposite of what you should do. Turning the power up actually makes the color thinner rather than more saturated. To keep the power dialed up, you'll have to layer on additional gels until you get the intensity of color that you desire.





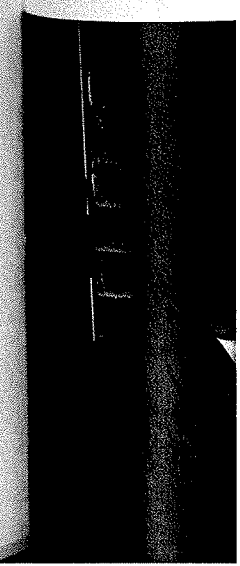


Figure 20.22 (top left) Our set was a vacant storefront. We started about 20 minutes after sunset.

Figure 20.23 (center left) Be open to "accidents." Here the left (red) Speedlite fired without the right.

Figure 20.24 (bottom left) Later, I intentionally fired the right (half-CTO) Speedlite without the left.

Figure 20.25 (top right) Remember that there are no boundaries for what you can do with colored gels.

Figure 20.26 (bottom right) The lighting diagram.

OPTIONS FOR DIMMING THE SUN

The first step in dimming the sun is to underexpose the daylight to give it the quality that you want. Perhaps you want a slightly more saturated sky. Perhaps you need the effect of a full moon (which won't come again for two weeks). Perhaps you're after a pitch-black night. All are possible—even under a noon sun. Of course, there are many solutions for doing this.

Why Not Just Use A Small Aperture And Sync Normally?

When teaching new Speedliters how to dim the sun with High-Speed Sync, the question is often, "Why not just shoot at the normal sync speed with a really small aperture so that you can use regular flash?" My response is, "You should go out and try." (This answer, by the way, also applies to all types of flash that won't work with your camera in High-Speed Sync: third-party speedlights, monolights, and location/studio strobes.)

If you want to stay in normal flash mode, your shutter speed is limited to the sync speed. On my 5D Mark II, that's 1/200″. If your shutter speed is capped by the sync speed, you can only dim the ambient light via the aperture. Okay, so how dark will it be if I shoot at 1/200″ and f/22? Let's head outside at high noon and see what it looks like.

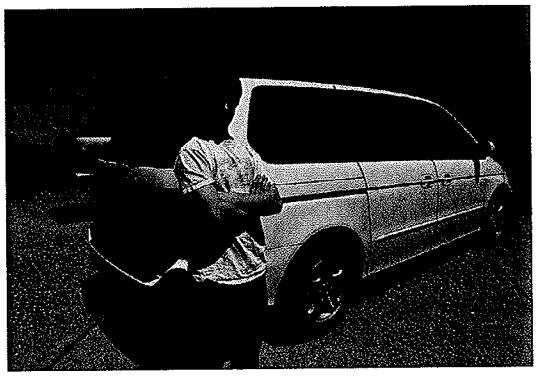


Figure 22.2 *As dark as my 5D Mark II gets at noon: ISO 100, 1/200″, f/22. No one is going to accept this as a good substitute for night.*

SPEEDLITER'S TIP

—Shooting Night At Noon...Why?—

This is a very fair question—why not just wait until it gets dark to photograph a night shot? I can think of a couple strong reasons:

***Creativity*: When it's night, it's night. You cannot control the amount of night that surrounds you. If you learn to dim the sun, you can create dusk or twilight or midnight for as long as you need to shoot.**

***Financial*: If your ability to make a photo is what feeds your family, then being able to deliver is what keeps the phone ringing. Let's say a photo editor calls at the last minute and says that a famous mystery writer is in town signing books. If you can get a night shot, you get the cover of the next edition. The thing is...the writer will only be available to you from noon to 12:15 p.m. As a Speedliter, consider this to be a great opportunity to do a shoot that will shut down other photographers.**

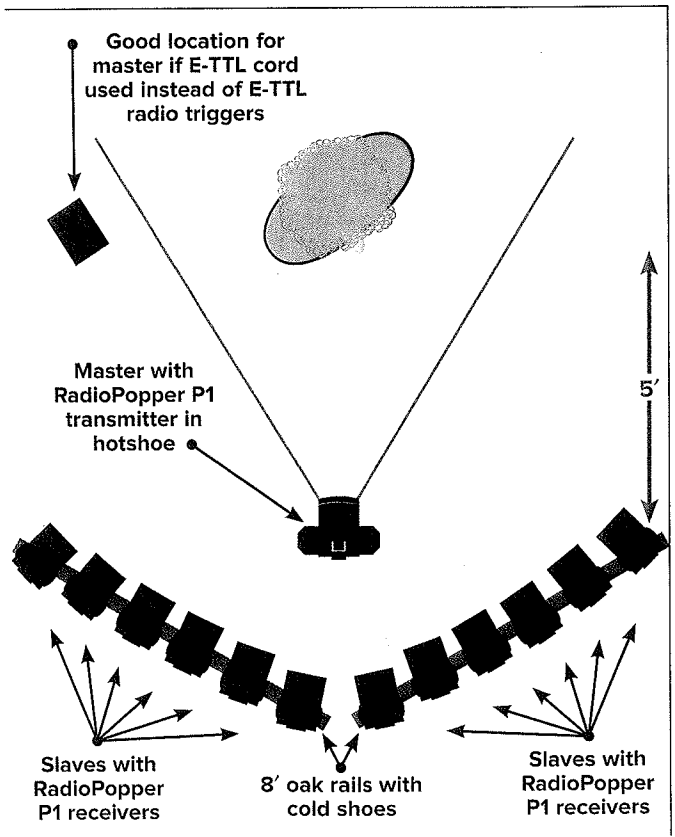
How About A Neutral Density Filter?

A neutral density filter is like a pair of sunglasses for your camera. It will reduce the light without creating a color shift. Using one or more neutral density filters is certainly another way to dim the ambient. The problem, as I see it (bad pun), is that I can't see through the neutral density filter to focus or compose.

High-Speed Sync To The Rescue

In my opinion, High-Speed Sync is the perfect solution for dimming the sun. I can still focus and compose as I normally do, and I can use a shutter speed and aperture that give me the look I'm after.

For aesthetic reasons, as well as optical reasons, I typically try to stay under f/11. So, if I liked the look of the photo at left (which I already said that I didn't, but let's run with it for now), then an equivalent exposure to 1/200″ at f/22 would be 1/1600″ at f/8. So, to shoot at my desired aperture, my shutter is well into High-Speed Sync territory. I'd rather have the creative freedom to control the ambient with my shutter than to accept the limitations imposed by a sync speed of 1/200″.



Changing The Weather With High-Speed Sync

You can change the weather with High-Speed Sync. Figure 23.10 shows how the camera wanted to record the ambient light. I thought that the amount of sunlight coming through the clouds was too distracting. So I dialed the ambient exposure down via Exposure Compensation—eventually settling at –2 EV for the hero shot. As you can see, this underexposure helped add drama to the storm-filled sky.

Lighting Details

Environment: outdoors
Time of Day: early afternoon
Ambient: scattered clouds, overcast
Speedlites: 12 580EX II slaves on rail and 580EX on-camera as master
Metering Mode: E-TTL
FEC: +2
Zoom/Pan: slaves zoomed to 80mm
Gel: none
Modifier: none
Distance: about 6′–8′
Height: rail about 6′ above ground
Trigger: RadioPopper P1

Camera Details

Camera: 5D
Lens: 24–70 f/2.8L
Distance to Subject: 5′
Exposure Mode: Aperture Priority
Exposure Compensation: –2 EV
Exposure: 1/4000″, f/5.6, ISO 400
White Balance: AWB (Auto)

Figure 23.10 The ambient light as the camera wanted to see it—Aperture Priority, f/8, 1/100″.

Figure 23.11 Another great shot—there were loads of almost-got-it shots. This type of shoot requires many "takes" to assure that you get a hero or two.

Figure 23.12 The lighting diagram.

Figure 23.13 (opposite) You never know which shot will become iconic. I started out doing a shoot to test RadioPoppers. I came away with gang lighting as a new approach to Speedliting.

SHOOT: PADEREWSKI FESTIVAL

My adopted hometown, Paso Robles, was also the adopted hometown of Ignacy Paderewski (1860–1941)—a Polish pianist whose diplomatic work in the US during and after World War I on behalf of Poland's independence earned him a state funeral at Arlington National Cemetery. Today, his musical legacy is celebrated each fall with a festival of performances held at local wineries (*paderewskifest.com*).

A Pro Bono Shoot

This is a classic case of a shoot where I will shoot for free—because all of the event organizers are volunteers. Again, make your decision on whether you work for free based on your relationship with the cause and not on the promise of a photo credit.

My assignment was to shoot pictures for publicity (such as the magazine feature shown on page 335) and as souvenirs for VIPs.

Running The Ezybox Around

In a shoot like this, I'm moving around and my subjects are moving around. So my preferred rig is to mount a Lastolite Ezybox on a pole and have an assistant (like one of my sons) carry it around for me. E-TTL is a must as the subject-to-flash distance is changing constantly. I used FEC to make fine adjustments to the flash power on the fly.

To fire the slave, I pointed the on-camera master to the left and twisted the body of the slave to the right (see Figure 24.13). If you do a lot of this kind of work, then a set of radio E-TTL triggers, likes RadioPopper P1s or PocketWizard's Mini/Flex, will be a huge help.

Gelling For Warmth

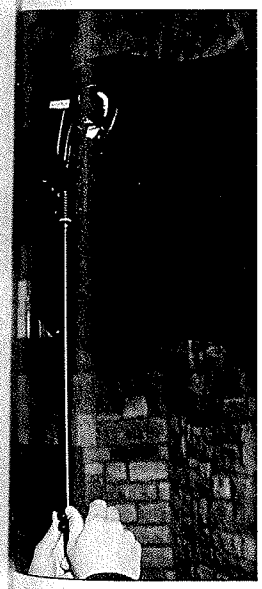
The ambient light was all incandescent. So I gelled the slave with a full-cut of CTO. Rather than set the white balance to Tungsten, I shot in Auto (AWB), which gave a nice warmth to the skin tones...or maybe it was the wine and music that warmed everyone up.

Lighting Details

Environment: winery
Time of Day: evening
Ambient: incandescent
Speedlites: two 580EXs, one as master (disabled), one as slave
Metering Mode: E-TTL
FEC: +1
Zoom / Pan: master zoomed to 105mm and panned towards slave
Gel: full-cut CTO on slave
Modifier: slave shot into Lastolite Ezybox hot shoe
Distance: 4′–15′
Height: held overhead, but varied
Trigger: Canon built-in wireless system

Camera Details

Camera: 5D
Lens: 24–70 f/2.8L
Distance to Subject: 3′–12′
Exposure Mode: Aperture Priority
Exposure Compensation: +1 EV
Exposure: 1/160″, f/4, ISO 1000
White Balance: Auto



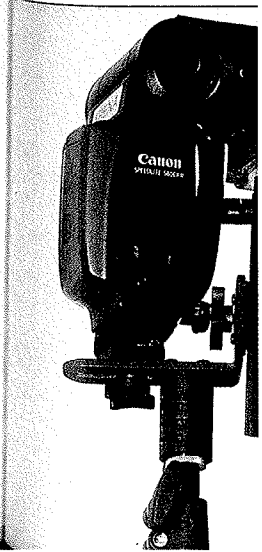


Figure 24.11 (top left) One of the interesting aspects of concert photography is that the event lighting may be enough for your needs. This shot was made with only ambient light.

Figure 24.12 (center left) The Lastolite Ezybox rigged on a pole was carried by my son Tom.

Figure 24.13 (bottom left) The slave must be twisted on the back of the Ezybox so that its slave eye can see the master's signal. This means that the softbox must stay to my left. E-TTL radio triggers would have freed me of this restriction.

Figure 24.14 (top right) When held at a distance, the Ezybox becomes a hard light source (notice the edges of the nose and chin shadows). The light in this image works because the Ezybox was aligned with the Joel's nose—so there's no significant shadow across his face.

Figure 24.15 (bottom right) The lighting diagram.

SHOOT: FESTIVAL OF THE ARTS

So what do you do when a 10′ tall stilt-walking dragonfly strolls past during a local arts festival? You start shooting. This is run-and-gun paparazzo shooting—camera and Speedlite held overhead at arm's length.

Shooting Solo In A Crowd

As a favor to our local arts organization in Paso Robles, I photograph the annual Festival of the Arts each Memorial Day weekend. Here's a situation where I connected the Speedlite to my camera with a short, coiled off-camera E-TTL cord. For the hero shot at right, I literally held both the Speedlite and the camera over my head. This is a case when Live View on the 5D Mark II is a great help for composing the frame when the camera is overhead.

Whoa...Syl Used Auto-Zoom?

Given the number of times throughout the *Handbook* I've said, "I zoomed the Speedlite to this or that," I know you'll find it surprising to learn that I did this shot with the Speedlite in Auto-Zoom. Why? At an event, I'm generally not trying to create dramatic light—especially when I'm running in and out of the shade at mid-day. All I wanted was a gentle fill flash.

Now, if you'll look closely at Figure 24.24, you will see that the flash indeed falls off in the lower half of the image. So what's going on—if the Speedlite is in Auto-Zoom, then it is supposed to match the view of the lens. Well...with the Speedlite held high overhead, sometimes my aim is a bit off. In this case, the vignette works to send your eye up to the face.

This Was Straight Flash

The Speedlite is providing much-needed fill flash. If you look at the detail of my subject's face in Figure 24.23, you can see that the flash created nice catchlights and hard shadows. This photo would be useless without them.

Lighting Details

Environment: outdoors, dappled shade
Time of Day: mid-afternoon
Ambient: backlit, deep shade
Speedlites: 580EX
Metering Mode: E-TTL
FEC: 0
Zoom / Pan: auto zoom
Gel: none
Modifier: none
Distance: 10′–12′
Height: held overhead, about 6.5′
Trigger: Speedlite connected to camera with OC-E2 cord

Camera Details

Camera: 5D Mark II
Lens: 24–70 f/2.8L
Distance to Subject: 12′
Exposure Mode: Aperture Priority
Exposure Compensation: +⅔ EV
Exposure: 1/250″, f/4, ISO 200
White Balance: Auto

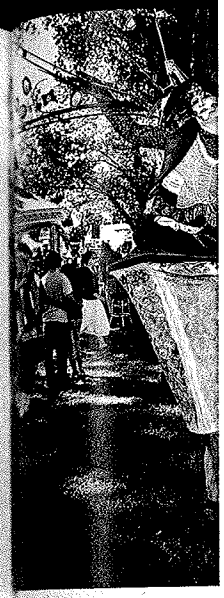


Figure 24.21 (top left) *This shot was made by the fill flash. Without it, the lighting on the subject would have been dappled shade.*

Figure 24.22 (center left) *The shadows above the eyebrow show that this was straight flash.*

Figure 24.23 (bottom left) *Getting the angle on a 10′ tall stilt-walker meant that I had to hold both the camera and Speedlite high over my head.*

Figure 24.24 (top right) *This shot is now used widely to promote the Paso Robles Festival of the Arts.*

Figure 24.25 (bottom right) *The lighting diagram.*

SHOOT: BACKYARD SOCCER CHAMPION

As the father of three sons, I've coached a lot of soccer teams. That's very handy when it comes to developing concepts for self-assignments. For Backyard Soccer Champion, I was looking to create the image for a full-page ad on soccer balls.

Camera Angle And Lighting Create A Unique View

To create the perspective, I was lying on my stomach with my wide-angle lens literally 4″ from the ball. I had two goals for my exposure: to throw Tony out of focus to emphasize the ball, and to dim the ambient so that the Speedlites would create the look of direct sunlight.

Do you know the old axiom—the wider the lens, the deeper the depth-of-field? So, at 17mm, I had no coice but to shoot the lens wide open. That was the easy part.

To achieve my second goal—the dimming of the ambient so that I could create my own daylight—I dialed in –2 stops of Exposure Compensation and shot at 1/4000″. So consider this—if I had been limited to my sync speed of 1/200″—I would have had to shoot at f/19. At that aperture, everything would have appeared sharp.

To create a pool of light, I angled an 8′ rail with a dozen Speedlites parked at 6″ intervals. The idea behind the angle was that it would reach slightly around Tony and the ball. The Speedlites were triggered with RadioPoppers (only because I was testing them).

Unlike the Smashing Pumpkins shoot, were I was literally standing under the light rail, there was enough separation between me and the lights on this shoot that geometry would not have been an issue. Had I not been testing the RadioPoppers—which worked brilliantly—I could have pointed my on-camera master at the rail and triggered the slaves directly.

Lighting Details

Environment: outdoors

Time of Day: late afternoon, sun behind subject

Ambient: open shade

Speedlites: 12 580EX/EX IIs slaves on rails and 580EX on-camera as master

Metering Mode: E-TTL

FEC: +2

Zoom / Pan: zoomed to 80mm

Gel: none

Modifier: none

Distance: 8′ to subject

Height: 2′ to 6′ above ground, rail angled

Trigger: RadioPopper P1 on each Speedlite

Camera Details

Camera: 5D

Lens: 17–40mm f/4L

Distance to Subject: 4″ to ball

Exposure Mode: Shutter Priority

Exposure Compensation: –2 EV

Exposure: 1/4000″, f/4.5, ISO 400

White Balance: AWB (Auto)

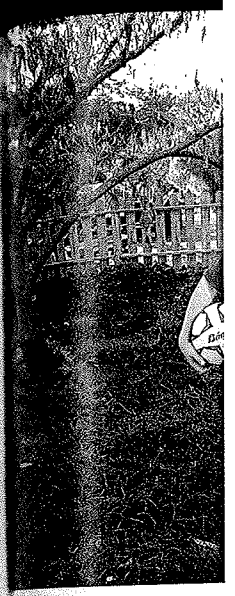


Figure 23.17 (top left) *The shoot happened in late afternoon. As you can tell from this ambient shot, Tony was in complete shadow.*

Figure 23.18 (center left) *I angled the rail to wrap the light around Tony and the ball.*

Figure 23.19 (bottom left) *You can get a sense of what my –2 EV underexposure did to the ambient and also a sense of the power of the flash by comparing these two shots.*

Figure 23.20 (top right) *Overall the effect of the gang light made the image look as if it was lit with sunlight. Now that you've read that and nodded, check out the shadows in the background—they're going the other way. Oh well, it's still great light.*

Figure 23.21 (bottom right) *The lighting diagram.*

E-TTL Is A Must For Events

You know from Chapter 9, *E Is For Evaluative,* that I shoot in E-TTL whenever the distance between the flash and the Speedlite(s) is dynamic. For events, I always shoot in E-TTL and use FEC to dial the flash power up and down.

I have two exceptions to the always-in-E-TTL rule. Both are used in situations where I have the time to set up before the event and determine the proper exposure:

- A set where attendees step into position—such as souvenir photos with a celebrity. Using Manual flash will avoid the problem of fast blinkers having their eyes closed by an E-TTL pre-flash.
- A shoot where people routinely pass through a predefined spot. If you're shooting an event like a race where lots of runners cross a finish line, Manual flash will provide a slight advantage over E-TTL in that the lack of a pre-flash means that your batteries will last longer.

GEEK SPEAK

—Associations For Event Photographers—

Society of Sport & Event Photographers—*SEPSociety.com*

Professional Photographers of America—*PPA.com*

SPEEDLITER'S TIP

—Think Of The Speedlite As Supplemental Event Light—

As I said at the outset of the chapter, I see my role as an event shooter to create memories for those at the event. This means that I'm not looking to create dramatic light. I want the look and feel of the ambient light to remain in the shots.

So, unless I am shooting an event that is in a dimly lit room, I use my Speedlite(s) as fill flash. I want my subject to be well lit, but not overlit.

Jumping Between Wireless And Normal Flash At Events

When shooting wireless at an event, I often use a 580EX as my master because it has an external switch for the wireless system. So, under the pressure of a photo-worthy opportunity that's happening right in front of me, I can go from wireless (where I typically have the master disabled) to normal flash in a split second. With the 580EX II I have to go through the camera menus to make the change. By the time I've done that, the opportunity to catch the mother of the bride falling into the swimming pool will be long gone.

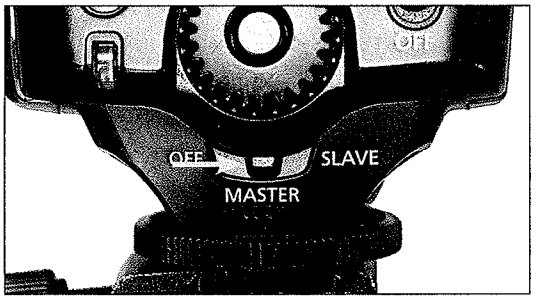


Figure 24.5 *The external switch on the 580EX is a fast way to jump between normal and wireless flash.*

The downside to using the original 580EX as a master is that it cannot be controlled via the camera's LCD. So you have to be really good at navigating the wireless system via the Speedlite's LCD—which, if you do it often enough, you will be.

In the future, hopefully Canon will re-engineer the Camera User Settings (C1, C2... on the mode knob) so that I could do the following:

- C1 = Speedlite in E-TTL, wireless off
- C2 = Speedlite in E-TTL, wireless on, master disabled
- C3 = Speedlite in E-TTL, wireless on, master enabled

Actually, a better approach would be to give me these three options right on the power switch. Maybe, maybe. I'm sure we'll get an EX III someday.

SHOOT: FESTIVAL OF THE ARTS

So what do you do when a 10′ tall stilt-walking dragonfly strolls past during a local arts festival? You start shooting. This is run-and-gun paparazzo shooting—camera and Speedlite held overhead at arm's length.

Shooting Solo In A Crowd

As a favor to our local arts organization in Paso Robles, I photograph the annual Festival of the Arts each Memorial Day weekend. Here's a situation where I connected the Speedlite to my camera with a short, coiled off-camera E-TTL cord. For the hero shot at right, I literally held both the Speedlite and the camera over my head. This is a case when Live View on the 5D Mark II is a great help for composing the frame when the camera is overhead.

Whoa...Syl Used Auto-Zoom?

Given the number of times throughout the *Handbook* I've said, "I zoomed the Speedlite to this or that," I know you'll find it surprising to learn that I did this shot with the Speedlite in Auto-Zoom. Why? At an event, I'm generally not trying to create dramatic light—especially when I'm running in and out of the shade at mid-day. All I wanted was a gentle fill flash.

Now, if you'll look closely at Figure 24.24, you will see that the flash indeed falls off in the lower half of the image. So what's going on—if the Speedlite is in Auto-Zoom, then it is supposed to match the view of the lens. Well...with the Speedlite held high overhead, sometimes my aim is a bit off. In this case, the vignette works to send your eye up to the face.

This Was Straight Flash

The Speedlite is providing much-needed fill flash. If you look at the detail of my subject's face in Figure 24.23, you can see that the flash created nice catchlights and hard shadows. This photo would be useless without them.

Lighting Details

Environment: outdoors, dappled shade
Time of Day: mid-afternoon
Ambient: backlit, deep shade
Speedlites: 580EX
Metering Mode: E-TTL
FEC: 0
Zoom / Pan: auto zoom
Gel: none
Modifier: none
Distance: 10′–12′
Height: held overhead, about 6.5′
Trigger: Speedlite connected to camera with OC-E2 cord

Camera Details

Camera: 5D Mark II
Lens: 24–70 f/2.8L
Distance to Subject: 12′
Exposure Mode: Aperture Priority
Exposure Compensation: +⅔ EV
Exposure: 1/250″, f/4, ISO 200
White Balance: Auto

Figure 24.21 (top left) *This shot was made by the fill flash. Without it, the lighting on the subject would have been dappled shade.*

Figure 24.22 (center left) *The shadows above the eyebrow show that this was straight flash.*

Figure 24.23 (bottom left) *Getting the angle on a 10′ tall stilt-walker meant that I had to hold both the camera and Speedlite high over my head.*

Figure 24.24 (top right) *This shot is now used widely to promote the Paso Robles Festival of the Arts.*

Figure 24.25 (bottom right) *The lighting diagram.*

Maximum Number Of Flashes

When shooting stroboscopic, there is the risk that you can overheat your Speedlite and cause permanent damage. There are two mechanisms built into the Canon system to prevent overheating: a thermal circuit (580EX II only) and the programming of the Speedlite. In the latter case, the Speedlite will limit the number of flashes to the following quantities.

Flashes Per Second • Hertz (Hz)	Power Level On Speedlite					
	1/4	1/8	1/16	1/32	1/64	1/128
1	7	14	30	60	90	100
2	6	14	30	60	90	100
3	5	12	30	60	90	100
4	4	10	20	50	80	100
5	4	8	20	50	80	100
6–7	3	6	20	40	70	90
8–9	3	5	10	30	60	80
10	2	4	8	20	50	70
11	2	4	8	20	50	70
12–14	2	4	8	20	40	60
15–19	2	4	8	18	35	50
20–50	2	4	8	16	30	40
60–199	2	4	8	12	20	40

Figure 25.2 *The maximum number of flashes that a Speedlite will allow in Multi mode is based on the power level and the frequency of the flashes. This table shows the data for the 580EX II.*

Setting The Hertz

I think it is best to have an experimenter's attitude when working in stroboscopic. The best advice I can give you on setting the Hertz is to guess and then do a test shot. That's exactly how I did the opening shot for this chapter—I just fiddled around until I got an image that I liked. Here's an alternate shot—the Hertz was set at 3Hz rather than the 6Hz used in the opener.

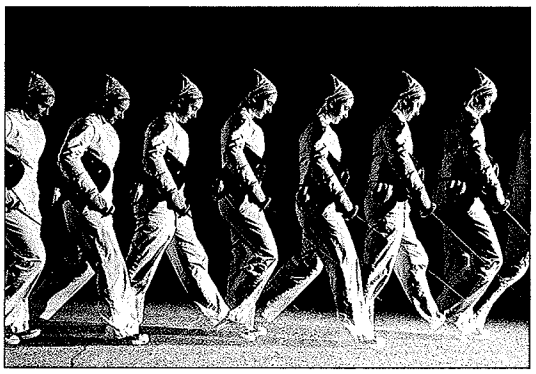


Figure 25.3 *Compare this photo to Figure 25.1. For this shot the Hertz was lowered from 6Hz to 3Hz.*

Power Level

There is no such thing as metering in Multi mode. You have to dial the power level in on the Speedlite. Like the Hz, it always starts with a guess and a test shot. As when working in Manual mode, if you don't know, then dial the power to 1/8 and see what happens.

Shutter Speed

Your minimum shutter speed needs to be long enough to capture all your flashes. So, if you have set your Speedlite to fire 12 pops at 4 Hz, your exposure needs to be at least 3″ long—12 pops divided by 4 per second equals 3″.

If you are shooting on a black set (one with no ambient light), you can use extremely long exposures. Most Canon DSLRs have shutters speeds as long as 30″. If you need a longer exposure, switch your camera into Bulb mode—and be sure to use a shutter release cable.