

MICHAEL FREEMAN

THE EXPOSURE

FIELD GUIDE



The **essential handbook** to getting the perfect exposure
in photography; any subject, anywhere





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Introduction

Choosing the exposure for a photograph is both alarmingly simple and infinitely complex; in fact, it's one of photography's most absorbing paradoxes.

It is simple because there is ultimately only one dosage of light, controlled as it always has been, since the first view cameras carrying wet plates, by a shutter speed, an aperture, and a film speed. There are no qualifications or subsets, just a fraction of a second, an *f*-stop, and an ISO sensitivity. However much agonizing and philosophizing anyone puts into the equation, choosing the exposure still comes back to the same three simple settings—nothing else.

It is also complex because it affects everything about the image and its effect on those who see it. It reaches deep into what the photographer intended and why the photograph was taken in the first place. There are endless subtleties in the brightness, readability, and mood of every part of every scene, as witnessed by the different exposure decisions that different photographers take.

Understanding how and why exposure works as it does is worth a lot of effort, not only because it helps you to get it “right” at will and with total confidence, but also because it helps you decide what “right” is—and that's much more important in photography.

RICH CONTRAST

Prayers in a Burmese temple, lit by strong afternoon sunlight. The dynamic range is very high, but that's all to the good, because keeping the shadows almost pitch black helps the subject pop out. Overexposure would be the worst thing possible.



FAST-TRACK & FOOLPROOF

When it comes to photography, you should beware of any self-proclaimed “system.” Systems tend to be invented and promoted either by photographers who have a very particular way of working that might suit themselves perfectly but is not necessarily adaptable, or by people who have little experience of the practicalities of shooting.



I write this knowing full well that I'm presenting here what looks suspiciously like just such a creature. The difference is, and my justification also is, that this is a distillation of the ways in which many professionals make exposure decisions. Most professionals, of course, do not use what they would ever themselves call a system, but when you live, breathe, and shoot photographs for a living, day in and day out, you develop and hone ways of working that behave very much like a system. Well, I would say that, wouldn't I?

As usual, my model for this book is the way in which professional photographers do things. "Professional" means someone who shoots on assignment regularly for a living, and I believe this is important. Not that professionals have any special dispensation to take better photographs. That kind of talent can rest innately with anyone, and be improved by anyone, though, of course, successful professionals are exploiting that skill. No, what makes the professional approach worth following is that we do photography all the time, and under pressure to deliver the goods every time.

In a slightly unusual departure from most of my books, I've carved out a short and succinct first chapter that is partly a summary of what follows, and partly a way of stressing the decision flow. After this I'll go into much more detail about individual aspects of exposure, all of which will take much longer to read than to do. Here, for the next few pages, I want to be completely practical and acknowledge that when you are shooting there is usually not much time at all for anything. Exposure decisions normally have

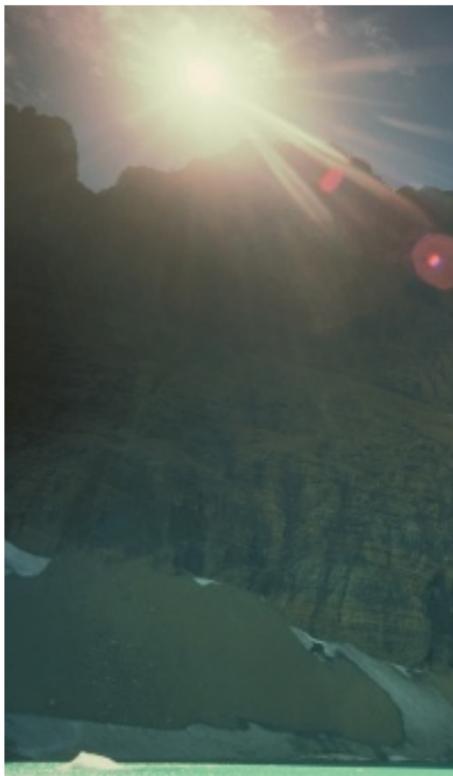
to be made very quickly indeed, often without consciously thinking them through. But the decision flow is still there, however there is a short amount of time for it. This, then, is how it really is...

HOLD THE WHITES

Overall, the different blocks of brightness average out, but it was critical to avoid clipping the highlights on the two foreground shirts in this Bali scene.

GOOD FLARE

Although usually considered a fault, and something that manufacturers try to reduce with lens coatings, breaking the rules can sometimes help mood and composition. A string of flare polygons over a Montana Lake.



The Basic Method

I'm taking a slightly different approach in this book by trying to explain everything at the start, and as concisely as possible.

There are many different aids to exposure, and as many preferences among photographers for choosing camera settings. Camera manufacturers are well aware that this is the crucial issue for most photographers, so they have developed a raft of technical solutions, with each trying to outperform the others. The result is a wonderful choice, but also a chaotic array of methods, many encumbered by jargon.

I plan to cut through this nonsense, and my model is, as always, the way professionals like myself think and work. Being a professional photographer does not mean that the work is any better than that of a dedicated amateur. Actually, often the opposite is the case. What it does mean, though, is constant and realistic attention to shooting on a daily basis.

Let's start with the absolute summary, as concise as I can make it. Yes, there are all kinds of decisions embedded in each of the steps, but I will explain these later in the book. I've also had to allow for the many ways in which a modern digital camera allows the exposure to be set. An important point here is that it is usually less important which method you use than being thoroughly familiar with it.

In time sequence, this looks like the Decision Flow chart (opposite), which is a streamlined version of the full flow shown on the following pages. Follow the sequence and you will get the exposure as good as it possibly can be. The only qualifications are these: the first and last are mechanical, while all the rest require judgment and improve with experience... except number three which can take a lifetime.

Summary

1. SETTINGS

Make sure all the relevant camera settings are as you require them.

2. METERING MODE

Set your preferred metering mode and know how it will perform under the lighting conditions.

3. KNOW WHAT YOU WANT

Imagine in advance how you want the brightness distribution of the image to be.

4. SCAN FOR PROBLEMS

Quickly assess what the issues and likely problems will be, particularly the scene's dynamic range relative to the sensor's capability and if the light levels are low.

5. KEY TONES

Identify the areas of the scene that are the most important for brightness.

6. RISK OF CLIPPING

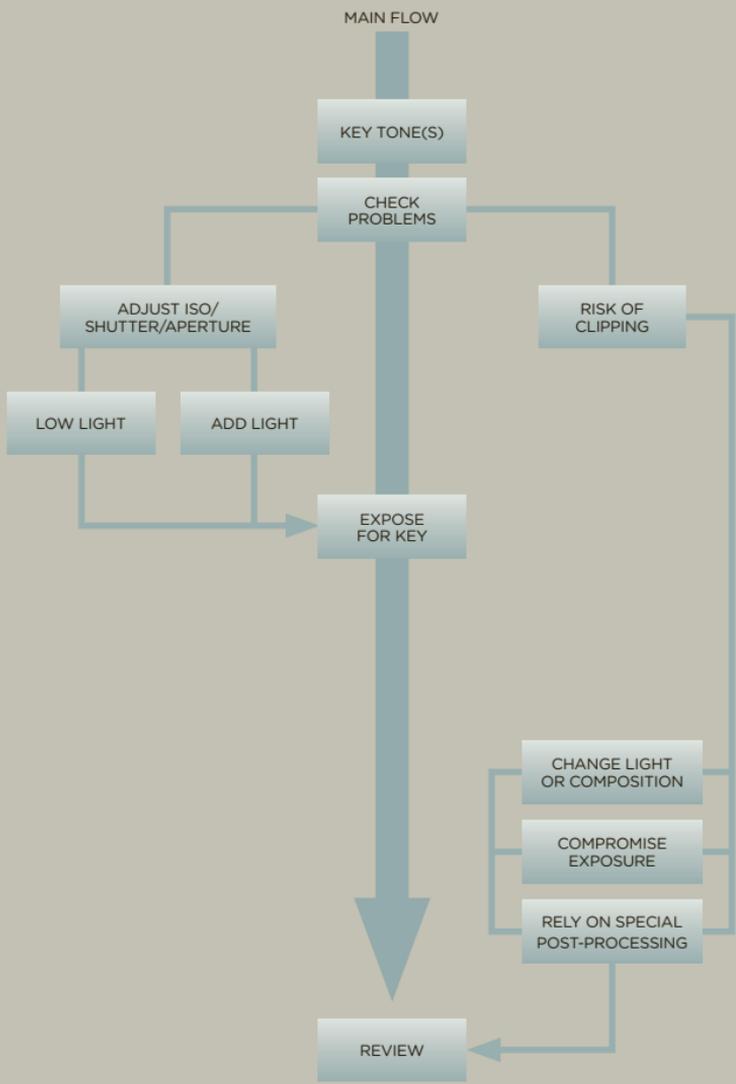
If the scene's dynamic range exceeds the sensor's performance, decide whether to make changes, or to settle for a compromise exposure and/or rely on post-processing.

7. METER & EXPOSE

Use the appropriate metering mode, adjusting up or down if necessary.

8. REVIEW

Review the result on the screen. If it needs improving, re-shoot if appropriate.



The Key Decisions

Let's expand on this bare-bones summary from the last pages.



1. Settings

Before you shoot, have camera settings exactly as you need them:

- Metering mode: Choose between auto

or manual, depending on your preference.

- File format: Raw, TIFF, or JPEG, or a combination such as Raw + JPEG.
- Instant review turned on after each shot (this is just a recommendation).
- Highlight clipping warning: Some people find this distracting, but others value it as a rapid aid to controlling one of digital photography's special exposure problems.
- Histogram readily accessible: With some camera manufacturers this is overlaid on the review image, which is certainly distracting, but it is useful to have available at one click.



2. Metering method

Know exactly how your chosen metering mode behaves. Most cameras offer a choice between, say, average center-

weighted, smart predictive, and spot. Some camera models use very smart methods, such as comparing the distribution of tones with a large bank of previously analyzed images. If you choose to rely on an advanced system, make sure that you know how consistently it behaves for you. If it over- or underexposes for certain kinds of composition and lighting that you favor,

simply be aware, so that you can adjust with confidence. If you use a simple method, still know how it behaves in different situations. You may need to make adjustments at any time, which is why this is returned to at point 7.



3. What do you want?

Know clearly what the photograph is about—what caught your eye, what attracts you about the shot, and what you

want to convey. Have in your mind's eye how bright it should be overall, and how the distribution of brightness should look. Naturally, this is the million-dollar question.



4. Likely problems

Scan the scene for exposure issues. Think about what is in front of the camera before letting the metering

system loose on it. For example, is there a major hotspot that is likely to blow out? Does it matter if it does? Most problems occur because the dynamic range of the scene is greater than the sensor can capture in one exposure.



5. Key tones

Decide on the important subject (or subjects) and how bright it (or they) should be. In a portrait, this is likely

to be the face, but it ultimately depends on your creative judgment. If it is a face, is it Caucasian, or East Asian (which needs to be lighter than mid-tone) or black, (which needs to be darker than mid-tone)? The key tone may be only a part of the key subject, or in some circumstances it may be another part of the scene, such as a background.



6. Is clipping likely? Is there a conflict?

If there's a conflict between points 4 and 5, work out how to resolve it. The choice is

between changing the light or the composition, or accepting either a compromise in the exposure, relying on special post-processing, or both. For example, if a portrait is backlit and the background has to be heavily clipped for the exposure to be right for the face, you might want to add foreground shadow fill, accept a clipped background, or change the composition. As another example, if there is a small bright hotspot doing nothing special for a shot, you might re-frame to crop it out. A compromise exposure means accepting either shadows that are too dark or overexposed highlights, which may be perfectly acceptable, depending on the effect you want (see point 3). The third alternative, which can sometimes

be combined with a compromise exposure, is to rely on special post-processing techniques, such as exposure blending or even HDR (High Dynamic Range), which might in turn call for multiple exposures that can be digitally blended.



7. Apply metering

This depends on your preferred way of working with the camera settings. One method is to use a

dedicated metering technique to measure and set the key tones, such as spot-metering, to measure an area precisely. Another is to decide from experience how much more or less exposure from the default is needed and to set it accordingly, typically by using an exposure compensation button.



8. Review, reshoot

Review on the camera screen, adjust, and re-shoot if necessary—and if there's time. This is all about the kind of

shooting you are doing and the situation you are in. If the action is fast and either continuous or unpredictable, it would be a very bad idea to check the camera screen after each shot. If you are shooting a landscape as the sun slowly sinks and you have plenty of time, you can afford to check everything thoroughly and shoot variations.

Decision Flow

In digital photography there are three areas involved in exposure. These are your shooting technique, your personal style, and post-processing, and the main chapters of this book follow this breakdown.

The last area, post-processing, may at first seem a little odd, given that the whole subject revolves around the moment of exposure. Yet this very digital stage is linked intimately to the moment of shooting in two important ways. One is the practice of shooting in Raw format, which is always recommended and allows, among other things, for the exposure to be revisited. The second is that many of the newer, more advanced processing techniques affect the immediate exposure decisions, allowing you to shoot at a setting that otherwise you might not think worthwhile.

Nevertheless, the straightforward technique, style, then post-processing route is not necessarily the order in which exposure decisions are made. On the previous pages we looked at all the important exposure decisions you need to make, some of them at leisure earlier and some just a fraction of a second before shooting. Here, I've put together the full Decision Flow in what is usually the most logical sequence. If it looks daunting, that's only because I have broken down the process of making an exposure into steps that, in reality, are close to instantaneous.

It begins with having all the camera settings and the metering mode as you need them, and this may vary according to the lighting situation. For instance, if I know that I'm likely to encounter low lighting and I'm shooting handheld, I'll switch the camera's auto ISO on, with an upper-limit shutter speed based on the lens I'm going to need. However, if it's a tripod situation, I'll switch it off.

Then comes the all-important decision of knowing what you want from the scene, which is always personal and could be considered an underlying condition as much as a decision.

Next we have the twin scene-critical decisions that establish everything to follow. I've put them side by side because they are of equal importance, and even if one precedes the other by a fraction they are right next to each other in time sequence. One involves deciding on the most important area of tone (or tones) in the scene. The other is damage control, scanning the scene and situation rapidly for likely problems. A neatly separated issue, at least as far as exposure is concerned, is the quantity of light. Once that is dealt with, the other major issues are to do with dynamic range and the danger of clipping.

In the next chapter we'll look at dynamic range, and the three conditions that determine whether there is likely to be a problem. With a low scene dynamic range, there never is a problem; if the scene dynamic range just fits that of the sensor then there may be no issues, but that depends on where you locate the key tone; if the dynamic range is high, there certainly will be a clipping issue.

So, if there's no conflict between choosing the key tone and clipping, you simply expose for the key. If there is a conflict, there are three solutions. One is to accept a compromise in the exposure and settle for the best that's possible. Another is to make changes, which usually means to the light or to the composition. A third, newly digital, is to anticipate special post-processing techniques, many of which lead to a recovery of tones.

Finally, review the shot if you have time, and if it's less than perfect, adjust and shoot another frame—again, if you have time.

Either dedicated metering or adjust from default

