Photoshop® CS3 Restoration and Retouching Bible

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To my wife, and best friend, Julia,
who has always given me her unconditional support.

About the Author

Mark Fitzgerald is a Photoshop teacher and consultant who specializes in helping professional photographers thrive in the digital age. He has taught hundreds of photographers how to smooth out their workflow and get the most from their important images—through private training, classes, and workshops. Mark is an Adobe Certified Photoshop Expert and an Adobe Certified Photoshop Instructor. He and his wife Julia (with their two dogs, Ruby and Hazel) live in Portland, Oregon, where Mark owns a consulting business called The Digital Darkroom.

Credits

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Preface

Y ou may be asking why the topics of photo restoration and retouching are being covered together in the same book. That's a reasonable question, considering that on the surface the goals of these two processes seem quite different. The goal of restoration with just about anything — old cars, antique furniture, and so on — is to repair and refurbish something until it resembles mint condition. In the case of old photos, the goal is to erase the years and return the photos to what they looked like when they were new.

The goal of retouching, on the other hand, is to take the original image to a higher level by enhancing its positive aspects and reducing or removing the distracting elements. The finished product becomes something more valuable than the original image because of those enhancements.

Though these two goals seem at odds, the truth is many of the same Photoshop tools and techniques are used to achieve both goals. So it doesn't make sense to discuss one of these subjects without discussing the other. It also doesn't make sense for you, as a student of Photoshop, to learn to use these tools and techniques for only restoration or retouching. You never know when you may want to try something new. If you take the time to learn everything in this book now, you'll be ready to handle just about any image editing challenge you're likely to encounter.

What's in This Book?

This book is divided into four main parts. Part I deals with the fundamentals as they apply to restoration and retouching. This is where I show you how to create a solid foundation that supports all of the subsequent work that's done with an image file.

Part II concentrates on the Photoshop tools and techniques that are used in the restoration and retouching processes. We focus on what are called Photoshop's retouching tools, comparing and contrasting them. As we work with these tools and techniques together, I offer conceptual insight into why one way of doing things is often better than another.

In Part III, we focus on applying everything you learned in Parts I and II to the subject of photo restoration. I begin by showing you how to get the most from your scanner. Then I show you how to repair typical problems and add finishing touches to an image. We finish up with a hands-on restoration project that we do together — from beginning to end so that you can experience the entire workflow. By the end of this section, you'll know everything you need to know to begin restoring your own old photos.

Part IV is all about retouching. This is where I put all the pieces together from the preceding three parts and show you how to use Photoshop to take your images to the next level. I discuss some of the conceptual issues surrounding retouching, including workflow. Then I show you how to solve some special retouching problems like glass-glares and skin smoothing. We finish off this part with two hands-on retouching projects where we work side-by-side from beginning to end with sample files. The first one is a typical portrait retouching project. The second is an architectural retouching project. By the end of Part IV, you'll have all the tools you need to do just about anything to fine-tune an image.

As we explore these subjects together, I make every attempt to explain the theory behind the things I show you. In some cases, I demonstrate the practical applications of that theory with real-world images and step-by-step examples. In other cases, we work together on sample files that can be downloaded from the Web site. In these hands-on projects, you have the opportunity to follow along with me, working with the same files I used to create the book. You can find the sample files at www.wiley.com/go/restoration.

Who Should Read This Book?

Photoshop CS3 Restoration and Retouching Bible is intended for anyone who wants to know how to restore old photos and/or retouch new ones. You don't have to be an accomplished Photoshop user, but it is helpful if you have some experience with the software. With that said, even a beginner benefits from reading this book. It just may take a little longer to get up to speed with the basics.

This book is not intended as a comprehensive guide to all things Photoshop. My intention is to give you the things you need to accomplish these processes, without distracting you with what you don't need. There are times when I'd like to go into deeper detail, but I can't because those details are outside the scope of the book. If I don't cover some topic in detail and you want to know more about it, find a resource to help you explore it. Wiley publishes a book titled *Photoshop CS3 Bible* by Laurie Ulrich Fuller and Robert C. Fuller. It's an excellent Photoshop reference book. It goes into many of the details I can't cover here. Another useful resource is Photoshop's Help menu.

How to Use This Book

To get the most from this book, start at the beginning and go through it sequentially. This allows you to experience this learning process in the way I envision it. In many cases, ideas in one chapter build on information introduced in previous chapters. This amplification process won't make as much sense if experienced out of order. Also, take the time to read each chapter, even if you think you already understand its subject. You never know when you'll turn up a nugget that will completely change the way you work with your images.

Download all the sample files from the Web site. Most of them are fairly small files. If you have a slow Internet connection, borrow a friend's connection and download them all at once. After we go through a hands-on process together, take the time to explore those new processes with some of your own photos. I know from my own experience that working with personal files makes a big difference in the learning process. This is where you'll find the time to go as deep as you need to go while exploring the content of this book.

After you've been through the book from front to back, you can use it as a reference guide to help you solve your own restoration and retouching problems. When a specific issue pops up, find the relevant references in the book and review them as needed.

Conventions Used in This Book

I'm big on using keyboard shortcuts in my own workflow, but I won't be stressing them much here because there are potentially hundreds of shortcuts in Photoshop and I don't want to confuse you with them. The other thing is that I think it's more important that you know where to find a command in the menus, rather than the fastest way to execute it.

With that said, I do think you should begin getting used to the idea of keyboard shortcuts. So I will share some of the more useful shortcuts. When I first introduce the most common tools and commands, I give you their keyboard shortcuts in parentheses like this: the Lasso tool (L).

NOTE **If you want to know all the keyboard shortcuts, choose Edit ⇨ Keyboard Shortcuts and click the Summarize button.**

Because this book was written on two Macs, all the screenshots are from the Mac version of Photoshop CS3. That shouldn't make much difference, because almost everything is the same in the Mac and Windows versions of the software. If you're using a Windows machine, the only real differences are the keyboard modifier keys.

Macs use the Option (Alt) key and the Command (Apple) key as modifiers, and Windows machines use the Alt key and the Ctrl key for the same functions. (This is all the more confusing because a standard Mac keyboard has a Control key on it that has a completely different function!)

- Mac Option (Alt) key = Windows Alt key
- Mac Command (Apple) key = Windows Ctrl key

Because every modern Mac keyboard I've seen has an Alt label on the Option key, I refer to this key as Alt, which should be straightforward. When I need to mention the other set of modifier keys, I say Command/Ctrl. The only reason I'm putting the Mac command first is to be consistent with the screenshots.

Should You Use a Mac or Windows Machine?

This is a question many people, especially photographers, ask themselves. Back in the olden days of digital photography, the answer to this question would have had a serious impact on a photographer's ability to do what he or she needed to do. At that time, the Mac was a superior platform to Windows primarily because of its more intelligent way of dealing with color. However, that difference disappeared long ago. When it comes to Photoshop CS3, a modern version of either platform works quite well.

I've used personal computers since their earliest days. Many of the computers I used during that time were Windows-based machines. For the last few years, I've used Macs because I work with many professional photographers who use the platform. I switched to it so that I would be more comfortable in their environment. (I would say that my current client base is split 50/50 on the platforms.) I have both types of machines in my office, and I commonly use both Mac and Windows machines during a typical day. I like some things about each platform. In a perfect world, I could combine all those things to create the perfect operating system.

The subject of Mac versus Windows comes up in my seminars and training quite often. When it does, I explain it like this: Deciding between Mac and Windows is like choosing Canon or Nikon, (or any other camera system). Both systems are great. If you buy a quality system from either manufacturer, you should be happy. Your decision as to which to buy should be based on how you like a particular system. Does it feel good in your hands? Are the controls easy to understand? Is it the same system your friends are using so that they can help you when you have questions? After you make a choice and begin buying lenses for one of those camera systems, you'll probably want to stay with it for a while. This is the same as software. After you spend a few thousand dollars on software for one platform, it's not likely that you'll want to switch anytime soon, because you'll have to buy all new software

No matter which computer system you decide to go with, be sure that the system is up to snuff. If your system is more than five years old, you may be disappointed in the performance of Photoshop CS3, especially when we begin doing some of the things we're going to do in this book. Ideally you should have a machine with a fairly fast processor. A dual processor is even better because Photoshop is designed to take advantage of two processors. Photoshop is a real RAM hog, so you'll want to have at the very least 1GB of system memory and preferably 2. If you have both these bases covered, then it won't matter if you're running a Mac or a Windows machine.

New Features in Photoshop CS3

Adobe has upped the ante with the release of Photoshop CS3. Several useful new tools and commands have been introduced that affect the restoration and retouching processes. I point out those new features along the way.

Adobe also made a couple of major changes to the Photoshop interface. For one thing, a new system for minimizing the palettes allows for stacking and hiding palettes so the screen real estate is maximized. Another interface change relates to the toolbar. Now it's possible to change the customary double-column toolbar into a single-column toolbar. Again, this provides slightly more viewing area. It also brings the toolbar into line with the way it appears in other Adobe applications. Throughout this book, I reference the single-column toolbar. To switch your toolbar to single-column, simply click the small double arrows at the top of the toolbar.

Another major change was the introduction of two editions of Photoshop: Photoshop CS3 and Photoshop CS3 Extended. The Extended version has some added capabilities that allow people like architects, engineers, and medical researchers to analyze images. Many of these features are in a menu called Analysis. Because I used Photoshop CS3 Extended to write this book, you may notice the Analysis menu in some screenshots. Don't worry if you don't have it. Most of the photographers I know don't need the added features of the Extended version, so I usually recommend that they save money and purchase the standard version.

Products Mentioned in this Book

On several occasions I recommend products I use or like. I want you to know that I do not have relationships with any of the companies that sell these products. These companies do not sponsor me. The only reason I endorse these products is that I think knowing about them will make your Photoshop experience more enjoyable.

One Last Thing

I tried very hard to make sure everything in this book is 100 percent accurate. However, I may have missed something. If you notice any errors or omissions, please let me know by e-mailing me at `books@ddroom.com`. That way, I can fix them in future editions.

Acknowledgments

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- Dan Christopher, Dan Christopher Photography: `danchristopherphotography.com`
- David Hitchcock, Hitchcock Creative Photography
- John McAnulty, Inner Focus Photography: `pro.corbis.com` (search for John McAnulty)
- Ted Miller Jr.: `mrmontana.blogspot.com`
- Carl Murray, Seattle Photography, Inc.: `seattlephotography.com`
- Denyce Weiler, Something Blue Photography: `somethingbluephotography.com`

This book would have been difficult to write without the sample images these photographers so generously provided. Please visit their Web sites to see more of their work.

A special thank-you goes to Denyce Weiler's assistant, Beverly Gray, for "volunteering" to come to work on her birthday to pose for some of the special samples I needed for this book. (Thank you, Denyce, for shooting those samples.)

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Part I

Digital Image Fundamentals

Before we jump into learning how to use Photoshop to solve interesting restoration and retouching problems, we need to consider the fundamental issues that affect every image.

On the most basic level we're talking about brightness, contrast, and color. No image can be edited seriously until these three variables have been evaluated and adjusted, if necessary.

The type of file you're working on can have a significant effect on the outcome of brightness, contrast, and color adjustments. Some image files, *high-bit* files, contain a great deal more data that is used to record the image. This extra information can come in quite handy when you're forced to do some heavy lifting in Photoshop.

The concept of multiple image layers is extremely important in restoration and retouching. When editing complex images, every important image adjustment is done on a separate layer, creating a great deal of flexibility and control.

Another fundamental issue that affects the entire workflow is organization. A digital workflow without a clean organizational methodology invites wasted time and effort. What's the use of working your magic on a special image if you can't find the file later? If you take time in the beginning to establish organizational rules and procedures that you'll use consistently, you'll always be able to find what you want when you want it.

Chapter 1

Adjusting Image Brightness and Contrast

The foundation of a solid digital image begins with the tonal qualities of the file — the brightness and contrast. If these are not adjusted correctly, the rest of the process suffers. That's why our workflow begins here. Even if you already feel comfortable adjusting the tones in your images with these tools, you may want to look at this chapter. In addition to covering the basics, I show you some cool things that are new in Photoshop CS3.

Understanding Histograms

The primary tool that's used to evaluate the tones in a digital image is the *histogram*. A histogram is a graphical representation of the distribution of the tones in an image. It consists of a graph that ranges from pure black on the left to pure white on the right. In between are all the shades of gray from almost black to almost white.

Imagine 256 side-by-side columns, one for each of the individual tonal value that a histogram represents. The columns start with black (0) on the left and end with white (255) on the right. In between are 254 other columns representing all the shades of gray between black and white. Together these 256 levels equal the sum total of the tones in an image.

The height of a column is governed by the number of pixels in the image having that particular tone. If the image includes lots of neutral tones, then the columns around the middle of the histogram are taller. Because these columns are standing right next to each other, they form a graph when viewed as a group. This graph is our histogram, as shown in Figure 1.1.

FIGURE 1.1

The range of tones in an image is represented in the histogram. All tonal ranges are represented, from black (0) on the left to white (255) on the right. (For the sake of this discussion, we don't care about the statistics that appear below the graph.)
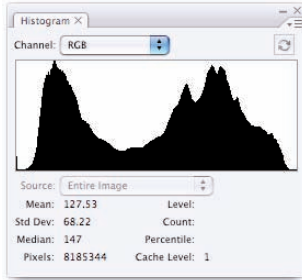

Figure 1.1 is the expanded view of the Histogram palette. The view can be changed in the Histogram Palette Menu that is accessed by clicking the three horizontal bars just below the "X" at the top right. A palette's menu is always the place to go to modify the palette or to find hidden commands. (It's also where you can turn off the statistics that show below the histogram by unchecking Show Statistics.)

To see the Histogram palette, go to Window ⇨ Histogram. If you leave this palette open, you'll be able to see the histogram for any open image. This is handy when making adjustments because the display in the Histogram palette updates as you move the sliders in the adjustment tools, allowing you to monitor changes as you make them.

The shape of the histogram's middle region doesn't matter as much as what's going on at its ends. If an image has full tonal range with detail in the shadows and highlights, the graph covers most of the space between 0 and 255, as shown in the first set of images in Figure 1.2. Each end comes to a stop before hitting the end. If an image is underexposed, then all the tones move to the left and all the tones that used to describe the dark shadows are *clipped* off the end forcing them to pure black, as show in the second set of images in Figure 1.2. If an image is overexposed, the opposite happens. The histogram moves to the right. All the tones describing bright highlights get clipped and become pure white, losing all detail, as shown in the third set of images in Figure 1.2.

FIGURE 1.2

When checking exposure, always pay attention to the endpoints of the histogram. A normal exposure provides a full range of midtones, as shown in the first set of images. An underexposure shifts the histogram to the left, clipping shadows, as shown in the second set of images. An overexposure shifts the histogram to the right, clipping highlights as shown in the last set of images.
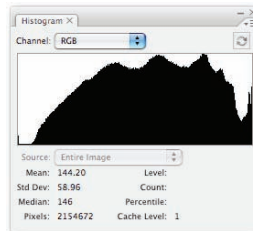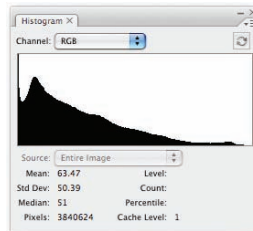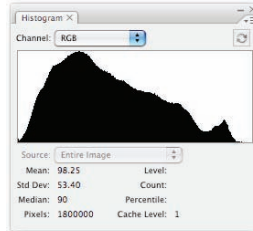
Photos by Denyce Weiler

Whether you're using a digital SLR camera or a scanner, you need to pay attention to histograms. Many DSLR cameras have a feature that you can turn on to display a histogram every time you take a photo. This can be a great way to evaluate an exposure as soon as you shoot it. You don't even need to see the image preview to know whether your exposure is good. All you need to see is the histogram—which is great on a bright day when it's hard to see the image preview on the camera.

Not all scanner software provides a live histogram, but it's pretty easy to look at the histogram in Photoshop after the scan is done. In either case, if you see clipping in the shadows or highlights, you can make immediate adjustments and rescan.

One more thing to consider when evaluating a histogram is the tonal key of the image. When an image is a bright scene (high-key) or a dark scene (low-key), the histogram can fool us. Figure 1.3 shows two photos and their accompanying histograms. At first glance, the histogram for the top set of images appears normal, and the histogram for the darker, bottom set of images appears to be underexposed. The first clue to indicate this isn't the case is that we don't see any shadow clipping in the second histogram.

In fact, both of these images were made with exactly the same exposure. The difference in the histograms is from the differences in subject matter. The second portrait contains more dark tones while the first portrait contains mostly medium tones. I can prove they were exposed the same by drawing a similar selection around the same areas of both faces. When I do that, the histogram displays information only about the tones inside the selections. (We take a close look at selections in Chapter 7.)

Figure 1.4 shows a closeup of the selections and their resulting histograms. Now we can be sure that these two images have the same exposure. The dark tones were throwing off the histogram. This technique is useful any time you want to evaluate the main subject tones in an image.

TIP **You may be asking "What's up with that little exclamation icon in the Histogram palette?" I get that question often. What it means is that the currently displayed histogram is being created with cached information—not the latest info. Click the icon, and the histogram updates so it's using the most current information.**

Even with the best exposure, the scene may not contain the darkest and brightest tones we would like to see. In these cases, it becomes necessary to adjust the histogram of the image. You can do this in a couple of ways: using the Levels command and using the Curves command.