

for
Mac
Users

The Color MAC[®]

Production Techniques
Second Edition

The definitive
source on color
imaging.

Marc D. Miller
Randy Zaucha

The Color Mac

Second Edition

Marc D. Miller and Randy Zaucha



Hayden
Books

The Color Mac, Second Edition

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Dedication

To Richard and Fiora Miller
(a.k.a. Dad and Mom)

Miss Kimberly Eckardt,
and to All Artisans of Color

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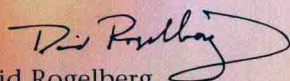
To Our Readers

Dear Friend,

Thank you on behalf of everyone at Hayden Books for choosing *The Color Mac, Second Edition* to enable you to learn about the exciting world of color on the Macintosh. We think you'll enjoy the examples in this book, while getting a true understanding of the conceptual nature of color.

What you think of this book is important to our ability to better serve you in the future. If you have any comments, no matter how great or small, we'd appreciate your taking the time to send us email or a note by snail mail. Of course, we'd love to hear your book ideas.

Sincerely yours,



David Rogelberg
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Foreword

As one involved with training graphic arts professionals, I have seen intimidation and frustration on the faces of those persons seeking to understand the new tools and technology surrounding them. Yet there are few sights more rewarding than the change in people's countenances and the subsequent "ah haaaa!" when they grasp a concept that was once foreign to them.

Color reproduction is similar to mathematics because if you put the word theory after either of these words you immediately get a sour or frightened look from the person to whom you are talking. Try it. Say "mathematical theory." What comes to mind? Long equations with symbols that look like they were made from a bowl of noodles. Then try "color theory." Same complex equations with references to neutral gray compensation or limited gamut. Yuk! I can understand why people would roll their eyes and think that color theory is beyond them and best left to technicians locked away in color laboratories. Vendors offering simple solutions will often characterize color reproduction—like higher math—as too complex for the average person.

Truth is, not everyone needs to work with complex math to use a calculator, but everyone who uses a calculator better know the basic building blocks of addition, subtraction, multiplication, and division. The calculator does not understand what you want to add or subtract, but it can perform the function very fast for you. It is the same with color reproduction. If you simply want to create an image, you don't need to know the wave lengths of the colors or complex equations. But to create the colors you want, it helps to know a little about the basic building blocks of color reproduction.

The ability to perform digital color imagery is more than plugging software into your computer and pushing buttons. It involves understanding the theory behind color, how images are properly captured (or scanned), the capabilities and limitations of the processes utilized, and the final output of images. For many years these operations have been performed manually by highly skilled craftspeople. Now the tools for performing these operations are readily accessible on the desktops of many. But the common mistake comes from believing that just because one purchases the mechanic's tools, one instantly becomes a master mechanic. Ownership of tools and technology does not make a person a master of the craft.

Few practitioners understand this better than the authors Marc and Randy. Both are craftsmen who have many years of experience in the traditional aspects of reproducing color. And, by the school of hard knocks and the fire of the production arena, they have mastered the world of digital color. We at the Graphic Arts Institute have been fortunate to have both authors teach courses at our training facility. Their practical articulation of complex and difficult concepts in the training laboratories is mirrored in the chapters of this book. I have observed them teach the beginner as well as the journey person in this new electronic arena, and they have received many well deserved “ah ha’s” from both camps.

This book covers every important area of managing color on your computer. If you apply the principals and techniques presented, you will develop the skills necessary to maximize the capabilities of your computer system. Your careful attention to the information in this book will make the difference between “push button color” and the creation of high-quality, crafted color reproductions.

We at GAI, like most educators, emphasize the basics of the trade or craft being taught. “Learn the fundamentals!” they say. Similarly, the best approach to working with color is to bone up on the basics, rather than becoming overwhelmed by programs or the production process. By learning the basics, you can establish a foundation from which all color reproduction flows, regardless of which tool you use or the method of output that you choose.

After establishing some core concepts, moving into more complicated areas won’t be as difficult.

After you read even a few pages, I’m sure that you’ll discover your control over digital color has increased. Although there is only *One* who is omnipresent, even I can foresee and hear the “ah haaas!” from those reading and putting into practice the information found in this book.

Stephen Whaley, Director
Graphic Arts Institute
San Francisco, CA

About the Authors

Marc D. Miller

Marc D. Miller is a digital imaging artisan. He has been in the art, printing, and prepress world for more than 15 years in what he likes to call the "imaging profession." He lectures frequently on the changing traditions of print production, color theory, and image manipulation. He emphasizes the importance of developing the instinct of craft, especially in the constantly changing world of digital imaging.

Working as a consultant for printing and prepress companies, Marc bridges the gap between digital imaging and traditional printing technology. His skills and background in photography, graphic design, and photo retouching add dimension and depth to the issues of professional printing and color reproduction. Marc concentrates on developing methods of fine art reproduction, mixing modern digital tools with traditional manual techniques. He currently works with the Arellanes Company, a traditional fine art serigraph printer, and is also a contributing writer for *International Designers Network (IDN) Magazine* based in Hong Kong.

Marc earned a degree in Commerce & Engineering from Drexel University in Philadelphia, where he concentrated on computer technology and mechanical engineering. Marc is based in San Francisco, consults abroad and is considered one of the finest retouching cooks around—when not producing digital color for his company, Creative Endeavours.

Randy Zaucha

Randy Zaucha's eight years of graphic arts schooling started in high school and continued through undergraduate school at Illinois State University and graduate school at Rochester Institute of Technology. Since college, he has accumulated 18 years in the printing trade in various positions. Randy is a journeyman color scanner operator with both time "on the bench" and positions as a color scanner trainer, demonstrator, and troubleshooter for two major scanner/pagination system manufacturers. He has more than five years of pagination and image retouching experience.

Randy also wrote and published *The Scanner Book for Color Imaging*, describing how to color-separate various types of original copy brought in for reproduction. Currently, Randy works as a freelance color consultant and gives seminars and classes on color in the field and at The Graphic Arts Institute of Northern California.

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Acknowledgments

During the course of writing this book, we discovered that apart from its computer graphics definition, the word pixelated means "somewhat strange and mischievous or mentally unbalanced." An interesting discovery, since we spend much of our time swimming in the wonderful world of color and pixels where the term means something quite different. But many times during the course of this journey we have encountered the nongraphics definition of pixelated. Our trip was by no means undertaken alone, in fact, during our travel, we encountered many crafts people with whom we shared our mission. To those persons who helped us through those pixelated moments, we thank you. Although this is not intentional we probably may miss mentioning someone. We would like to mention specifically the following persons for aiding in our endeavour.

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Additionally we'd like to add a specific thanks to Marta Partington and Meshell Dinn of Hayden Books for their superior efforts in guiding us through the creation of this book. Thank you for your help.

Marc D. Miller & Randy Zaucha

San Francisco, CA

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Introduction

If you want to hit the mark you need to aim a little above the target; [because] every arrow that flies feels the pull of earth.

—Henry David Thoreau

We wrote this book with the hope that more people would realize how accessible color is to them. Ever since the digital tools hit the scene, people have been blasted with the idea that color reproduction theories are too hard to learn, and they should simply let the software take care of everything for them. Many people have felt it necessary to foster the idea that color reproduction is so complicated that it's beyond their reach.

This book attempts to dispel that perception.

With this book, we are offering a small glimpse into the world of color reproduction. We are fond of quoting the German sculptor Mo Edago who says, "Everyone is able. But not everyone is capable. Capability comes from exercise." To learn the intricacies of color reproduction you must exercise. And that exercise will strengthen your ability to work and play with color. The immediate rewards may not be readily apparent, but elevating one's self to a level where work becomes play may be reward enough.

We have tried to make the material as accessible and straightforward as possible. Remember—you don't get better at something by knowing less about it, and we think you should know the following:

■ Color theory is not beyond your grasp.

Knowing the basics of color is the first step in controlling color reproduction. Make no mistake—learning color theory takes time to master, but it provides a more comprehensive approach when added to automatic features.

■ Knowing the basics provides insight into all areas of digital imaging.

Digital imaging for all its wonder and innovation still relies on the basic principals of pixels—tone and color. Sure, there are new ways to analyze and manipulate it, but the essence of color stays the same, regardless of the tools you use to create images. We believe the consistency of color is an excellent place to build a solid base of knowledge.

■ **Automation can limit your understanding of how to control color.**

The best programs are those that allow you to turn off features and replace automated values with your own input. The capability to switch to manual override is a true measure of a program's power and usefulness. Remember, on *Star Trek* Scotty or LaForge always switches to manual override when the computer doesn't offer the proper solutions.

■ **The tools you use are not nearly as important as what you do with those tools.**

The future of digital imaging is not learning and relearning individual software programs, but understanding the basis of the systems that you work with. Often lost in the onslaught of technical marvels are many proven methods of image reproduction that many traditional artisans bring to the digital medium. The software tools are truly only as powerful as the experience and knowledge of the person using the software.

It is important to point out that our material by no means exhausts the discussion on image reproduction. If you use color to communicate, the more you know about color, the more you can say. We sincerely hope you enjoy your exploration and benefit during the process.

Marc Miller

Randy Zaucha

November 1994

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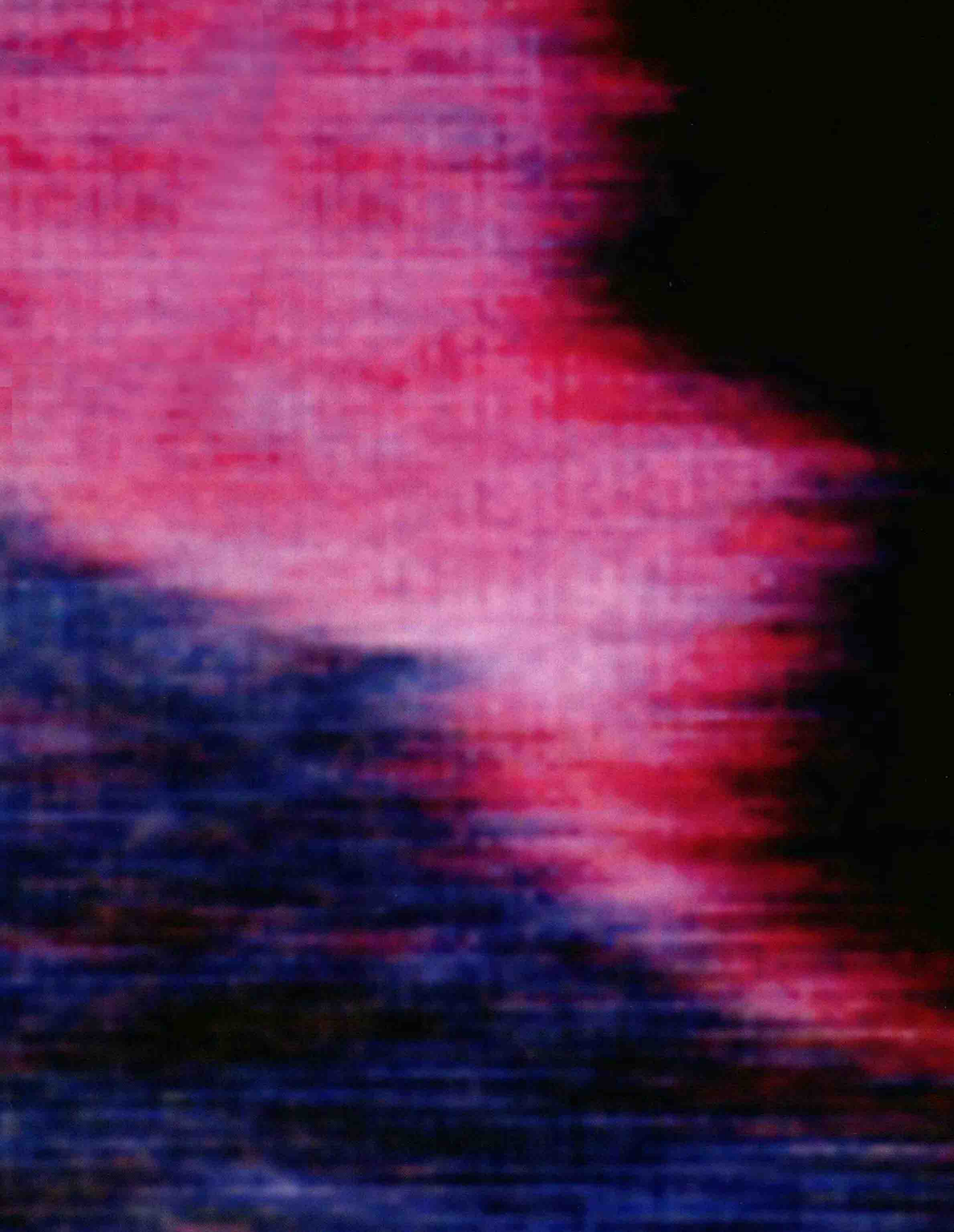
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The Basics