B&H
PHOTO - VIDEO - PRO AUDIO

The **Professional Lighting** SourceBook
for **Photo, Video, Cine & Theatrical**

# Section 14
Books and Lessons

LIGHTING BOOKS

Basic Lighting Worktext for Film and Video
by Richard K. Ferncase
Covers the fundamentals of light science for anyone needing to know more about film and video lighting. Includes film and exposure, light setups, color temperature shifts, etc. Includes line illustrations and diagrams. Softbound. 8½ x 11˝. 109 pp.

*Item # FOBLWTFV*............**44.95**
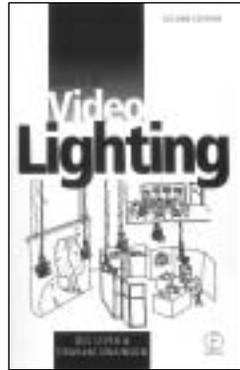
Basics of Video Lighting 2nd Edition
by Des Lyver, Graham Swainson
This fully updated edition is a primer for anyone wishing to learn about lighting a video production. Includes line illustrations and diagrams, plus a glossary. Softbound. 5½ x 8½˝. 149 pp.

Item # FOBVL....................**24.95**
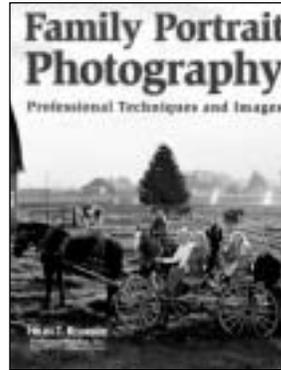
Family Portrait Photography
by Helen T. Boursier
Take great family portraits and market your work. Includes: posing, lighting, working with clients, shooting on location, attracting business, running promotions and presenting your portraits effectively. Softbound. 8½ x 11˝. 128 pp. 100 phtographs.

Item # AMFPP....................**29.95**
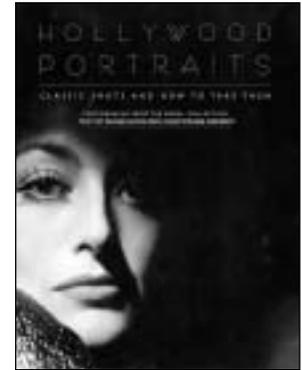
Hollywood Portraits Classic Shots and How to Take Them
by Roger Hicks and Christopher Nisperos
Hollywood-style portraits of their own. Included are sections on equipment, processing, lighting and modern-day equivalents, plus a decade-by-decade gallery featuring vintage portraits of the stars. 144 pages, 8½x11½. 120 color and 50 line drawings. Softbound.

Item # AMHP....................**24.95**

How to Operate a Successful Photo Portrait Studio
by John Giolas
John Giolas gives you all the information you need to get started and succeed in the rewarding world of portrait photography.
8.5 x 11˝, 110p, over 100 color and b&w photos, index, glossary. Softbound.

*Item # AMHOSPPS* **29.95**
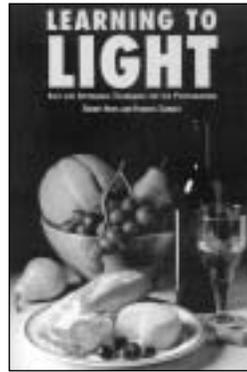
Learning to Light
by Roger Hicks & Frances Schultz
A practical guide for all amateur photographers who want to master the basics of photographic lighting. The 200+ photographs and 75 easy-to-follow diagrams of lighting set-ups, takes you step by step from choosing equipment and setting up a studio, to applying even the most subtle lighting techniques. 160 pp, 10⁵/₁₆ x 6¾˝. Softbound.

Item # AMLL......................**24.95**

The Lighting Cookbook
Foolproof recipes for Perfect Glamour, Portrait, Still-life and Corporate Photographs
by Jenni Bidner
Includes photos by top pros specializing in major areas of studio work, including: fashion, boudoir and Hollywood, jewelry and food, automobile, children's portraits and pet portraits. 144 pages, 8¼ x 11˝. 160 color & 250 B&W illustrations. Softbound.

Item # AMLCB...................**24.95**
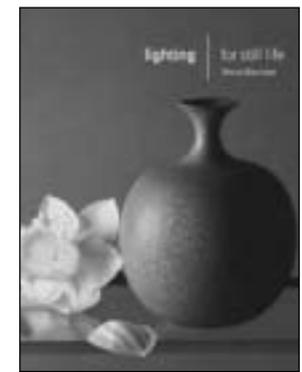
Lighting for Still Life
by Steve Bavister
Filled with information and inspiration, this beautiful guide is an invaluable resource for the aspiring still life photographer. Fully illustrated in color and B&W. Softbound. 9 x 11". 160 pp.
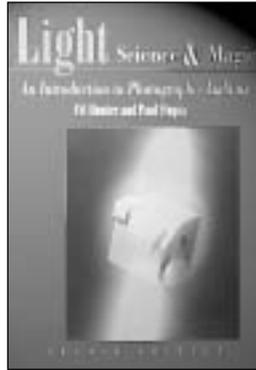
*Item # BOLSL*....................**34.95**

LIGHTING BOOKS

Lighting for Video, 3rd Edition
by Gerald Millerson
Solutions to everyday lighting problems whether in amateur or professional video production. Illustrated in B & W. Softbound. 5½ x 8½˝. 154 pp.

*Item # BOLV* **29.95**

Light Science and Magic
by Paul Fuqua and Fil Hunter
This highly respected text, now in paperback, has been thoroughly updated and revised. Numerous photographs and illustrations provide clear examples of the theories delineated within the text, while sidebars highlight special lighting questions. Softbound. 7 x 10˝. 384 pp.

Item # FOLSM....................**39.95**
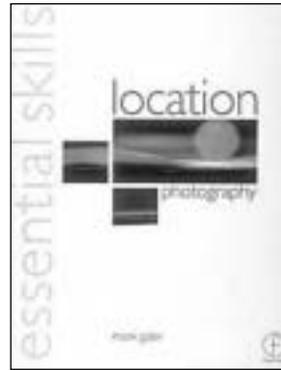
Location Photography (Essential Skills)
by Mark Galer M.Ed.
Covers all the fundamental skills required for location photography when using Digital, 35mm SLR and medium format cameras working with both existing light sources and introduced light. Softbound. 7½ x 9¾˝. 192 pp. 8 page color plate section.

Item # FOLP........................**29.95**
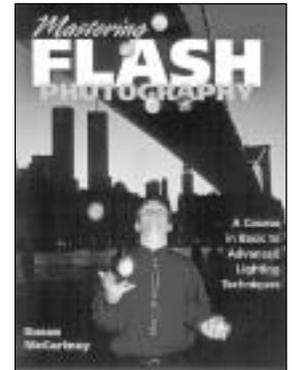
Mastering Flash Photography
A Course in Basic to Advanced Lighting Techniques
by Susan McCartney
Vitally important to all photographers, lighting is thoroughly explored in this first fully color-illustrated guide to flash techniques, from point-and-shoot to studio work. 144 pages, 8-1/2x11. 160 color & 50 B/W illustrations. Softbound.

Item # AMMFP **24.95**
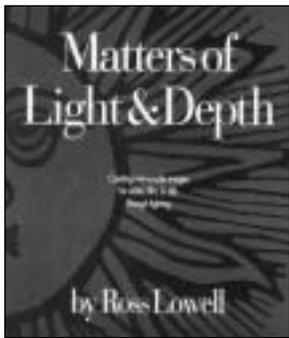
Matters of Light and Depth
by Ross Lowel
Called "essentially practical and praticaly essential", Ross Lowell's critically acclaimed Matters of Light and Depth is being published by Lowe-Light. Filled with photographs, illustrations, and decades of real world experience. 26 color and 115 B&W photos, 12 paintings.224 pages, 9 x 9˝. Softbound.
Item # LOBMLD **28.95**

The Photographer's Guide to Using Light
by Ted Schwarz & Brian Stoppee with photographs by Mike Pocklington & Scott Sheffield
Learn to apply theory to reality. A wide range of situations are illust-rated, from scenics, to portraits, to still life setups, with equal attention given to both simple and complex lighting techniques. 120 color illust. & 50 Lighting diagrams. 144 pp. 8¼ x 11. paper.
Item # AMPGUL **19.95**
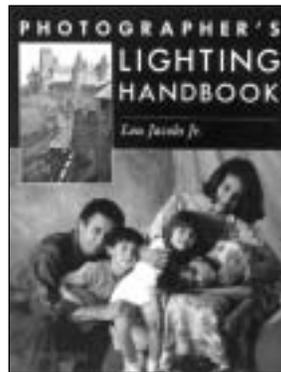
Photographer's Lighting Handbook
by Lou Jacobs Jr.
Learn how light affects every subject that you photograph, and how to use light to create stunning images. From landscapes made in nature's light to portraits created with the man-made kind, the techniques detailed in this book will help readers produce stunning images of special places and important moments. 128 pp. 8½ x 11˝. 130 color photographs.
Item # AMPLHB **29.95**
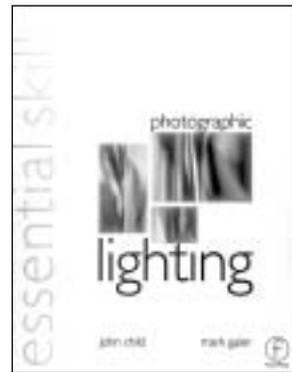
Photographic Lighting (Essential Skills)
by Mark Galer, John Child
Covers the essential information for photographers to understand and work with light. Each technique is illustrated with the work of student photographers. Illustrated in color and B & W, plus 25 line illustrations and a glossary of terms. Softbound. 8¼ x 11¾˝. 148 pp.
Item # FOPL.......................**29.95**

LIGHTING BOOKS

Photographic Lighting Simplified
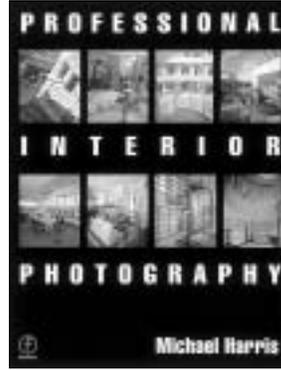*by Susan McCartney*
For aspiring photographers ready to transform their work from average to expert, here is the ultimate guide to lighting any subject & space effectively. The book addresses digital camars, is non-technical & easy to understand. 192 pages, 6-3/4x9-7/8". 130 B&W and color illustrations. Softbound.
*Item # AMPLS*.....................**19.95**

The Portrait
Professional photographers discuss the art and practice of portrait photography. Experts, including Denis Reggie, Frank Cricchio, and Don Blair, offer guidance on equipment, lighting, exposure, weddings, specialty portraits, and more. Over 150 illustrations. Softbound. 8-1/2 x 11". 120 pp.

Check out the excerpts on pages 843-851

Item # KOBP.......................**24.95**

Professional Interior Photography
by Michael Harris
This book covers all types of interior, from residential to industrial, outlines practical solutions to typical problems, and includes a unique insight into the work of three leading interior photographers. Illustrated with stunning color and B & W photographs. Softbound. 7½ x 9¾˝. 184 pp.
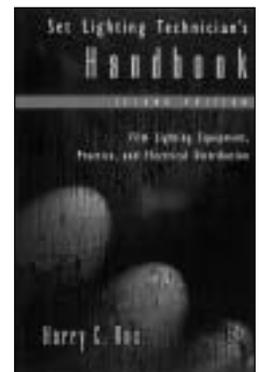*Item # FOPIP* **34.95**

Professional Portraiture
by Annabel Williams
Learn the secrets of capturing outstanding professional-style portraits. Fully illustrated in color and B&W. Deluxe softbound cover. 9 x 10". 144 pp.

Item # SAPPQ **29.95**
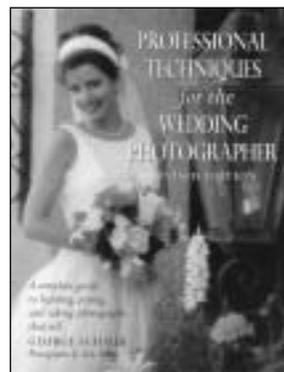
Professional Secrets for Photographing Children
by Douglas Allen Box
Featuring lighting diagrams for every image, this book covers everything you need to create memorable images of children of all ages. Included are: working with kids, posing, equipment selection, and special event photography. Softbound. 128 pages. 8-1/2 x 11". 70 color photographs.

Check out the excerpts on pages 830-834

Item # AMPSPCQ..............**29.95**

Professional Techniques for the Wedding Photographer
by George Schaub
This completely new edition, is the picture-taker's "bible" to lighting, posing, and taking gorgeous photographs that will increase sales and profits. This book details the latest trends in wedding photography, including photojournalism and B&W wedding photography. 144 pp. 150 color & 50 B&W illus. 8¼ x 11".
Item # AMPTWP **24.95**

Secrets of Lighting on Location
A Photographer's Guide to Professional Lighting Techniques
by Bob Krist
Bob Krist explains how to overcome the challenges that shooting outside the studio poses. So, whether your assignment is routine or difficult, you'll be able to deliver extraordinary photos. 144 pages, 9 x 11˝. 175 color illustrations and 30 diagrams. Paper.

Check out the excerpts on pages 835-842

Item # AMSLL....................**24.95**

Set Lighting Technician's Handbook, **2nd Edition**
Film Lighting Equipment, Practice, & Electrical Distribution
by Harry C. Box
This handbook provides students and beginning professionals with practical, hands-on information about the day-to-day practices, equipment, and tricks of the trade essential to the motion-picture set lighting technician. Illustrated in B & W. Softbound. 6 x 9˝. 432 pp
Item # FOSLTHB...............**44.95**

LIGHTING BOOKS, CDs, DVD & VIDEO

Studio and Commercial Photography
byJack Reznicki
One of New York's top illustration photographers, Jack Reznicki tells how to bring a client's concepts to life in the studio. Illustrated with over 125 color and B & W photographs. Deluxe softbound cover. 8-1/2 x 11". 160 pp.
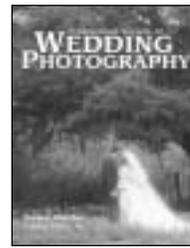
Item # KOBSCP **29.95**

Wedding Photography: Creative Techniques for Lighting & Posing Second Edition *by Rick Ferro*
There is more to shooting a strong model portfolio than simply taking great pictures of people. Photographers will also learn the basic lighting setups and techniques that will lead to great photos, and how to highlight a model's best features. Softbound. 128 pages. 75 color. 8½ x11˝
Item # AMWPCLP.............**29.95**

50 Portrait Lighting Techniques for Pictures That Sell
by John Hart
Item # AM50PLT
24.95

High School Senior Portrait Photography
by Ellie Vayo (Paperback)
Item # AMHSSPP
29.95

Profitable Portrait Photography
by Roger Berg
Item # AMPPPQ
29.95

Professional Secrets of Wedding Photography
by Douglas Allen Box (Paperback)
 # AMPSWP
29.95

Studio Portrait Photography of Children & Babies
by Marilyn Sholin
 # AMSPPCB
29.95

Storytelling Wedding Photography
by Barbara Box
Item # AMSTWP
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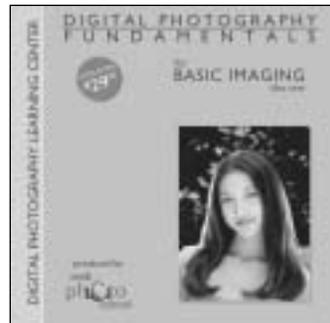
Digital Photography Fundamentals for Basic Imaging, Disc One
Digital Photography Learning Center CD Series
The DPLC™ Advantage
Digital Photography Learning Center (DPLC) is a breakthrough CD-ROM series that contains lessons taught by professional photographers at WebPhotoSchool, www.webphotoschool.com. Learn from great lessons that show setups and results in a fun, simple format. Disc One of the DPLC is available for purchase now and subsequent volumes on product and portrait photography are currently in production.
Through comprehensive lessons, you will learn how to use a digital camera to:
• Email your photos
• Prepare images for the Web
• Do portrait photography
• Do product photography
• Do close-up photography
If you're looking for the easiest way to learn about the modern photographic process in an easy-to-follow, step-by-step strategy, DPLC is your best and most exciting opportunity.
Item # PHCD......................**14.95**

Additional CDs coming soon!

Shoot Smarter "Color Controls"
Get in control of your color! In this 51 minute DVD you can see first hand how to:
Command neutral, warmer or cooler skin tone reproduction,
Perfectly correct out the green shift from fluorescent lights,
Adjust the color temperature of your strobes within 50K,
Use CT and CC filters and gels like a pro,
Take the mystery out of color meters,
Either on film or digital capture, Will Crockett is widely considered a master of lighting control from his 20 years of creating client pleasing images, his international seminar tours and by his expert testing, consulting and product testing for Fujifilm, Gossen and Sekonic.
Here's what's inside this DVD title:
Chapter 1 - Intro.
Chapter 2 - Controlling Color Temperature.
Chapter 3 - Neutral Color Temperature.
Chapter 4 - Using Filters.
Chapter 5 - Using Gels.
Chapter 6 - Using Gel Strips.
Chapter 7 - Measuring Color Temperature.
Chapter 8 - Filters & Gels on Assignment.
Chapter 9 - Color Control Secrets
Item # SHCC...................**44.95**

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PHOTOFLEX
LIGHTING LESSONS

Techniques for Shooting Jewelry

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There are many photographers who absolutely dread the thought of shooting jewelry. After all, jewelry is often highly reflective, very small in size, and can be difficult to work with in creating a composition.

However, anyone armed with a few basic lighting tools and a rudimentary understanding of camera and lighting methods can truly work wonders. Thanks to many improvements in camera and lighting technology, the cost of producing professional-quality images has become remarkably inexpensive.

Topics Covered:

• Creating a custom shooting set
• Tips on shooting with a high end digital camera
• Using a macro lens attachment for close-up work
• Shooting with soft light to create interesting shapes
• Using light modifiers to control light spill & contrast
• Precision lighting with a focusing light
• Basic retouching using Adobe Photoshop Elements

Equipment Used:

Camera/ Media
• Olympus E-10 digital camera **Item # OLE10**
• Olympus Macro Conversion Lens **Item # 200694**
• Lexar 160MB CompactFlash card (replaced by 256MB **Item # LECFJS12X256**)
• Olympus 3040 digital camera (for set-up shots) (repl. by the 4000 **Item # OLC4000**)
• Lexar 64MB SmartMedia card **Item # LESM64MB**
• Lexar USB CompactFlash reader **Item # LERCFU**
• Lexar USB SmartMedia reader **Item # LERSMU**
• Manfrotto 3443 Carbon Fiber tripod **Item # BO3443**

Lighting Equipment
• 3 Photoflex Small Starlite kits **Item # PHSISDSK**
• 2 Photoflex Small Grids **Item # PHGS**
• Photoflex Boom **Item # PH3SB**
• Photoflex Boom Stand **Item # PHBS78**
• Photoflex Litedisc Holder **Item # PHLDHT**
• Photoflex LS-2218 Litestand **Item # PHLS2218**
• Dedolight focusing light **Item # DEDLHM** (or LTM Pepper 100 **Item # LTP100**)
• Photoflex LS-2212 Litestand **Item # PHLS2212**
• Tin foil **Item # 100112**

Background/ Miscellaneous
• Rings and ring stands
• Foam core **Item # GBFCB810**
• 3x4´ sheet of aluminum
• Product shooting table **Item # SMTST18**

Figure 1

For a modern jewelry look, we decided to shoot these tension rings against a sheet of brushed aluminum. We picked out two different sizes and secured them upright on gray ring stands. We placed the smaller one in front so that it would appear similar in size to the rear one from the camera's point of view (fig. 1).

Figure 2

We set up our first light source, a Small (16x24˝) Photoflex Starlite Kit, and positioned it over the set to illuminate the tops of the rings and sheet of aluminum Notice how we propped up the sheet of aluminum by clamping a Photoflex Litedisc Holder to the edges and securing it to a Litestand (figure 2).

I mounted an Olympus E-10 digital camera to a tripod and zoomed all the way out on the lens to keep the rings proportionally sized to each other. I set the aperture down to f/11 to maintain a large depth of field, set the shutter speed to 1/30th of a second and took a shot (figure 3).

Figure 3

Looking at the image playback on the LCD, I realized that we needed to be able to come in closer. Fortunately, Olympus makes an optional macro lens attachment for the E-10 for situations like this. I attached the lens, came in a little tighter, and took another shot (figures 4 & 5).

Figure 4

Figure 5

In this result shot, notice how

TECHNIQUES FOR SHOOTING JEWELRY

the attachment lens helped our composition by minimizing the relative size difference between the rings. Even though the light from the overhead soft box had lit the top and bottom of the rings nicely, the sides of the rings appeared dark and flat.
To add more dimension to the shot, we set up another small Starlite kit, positioned it off to the left hand side and took another shot (figures 6 & 7).

Figure 6

Figure 7

The result shot shows a big improvement. The transition between light and dark is smooth, and interesting shapes are formed by the addition of this second soft box.
Next, we decided to add another Starlite Kit to the right side to balance the reflections of the ring. Without changing the camera settings, I took another shot (figures 8 & 9).

Although this third light source filled in the dark areas and balanced the reflections, it still maintained a good

Figure 8

Figure 9

contrast level to the shot and a sense of dimension to the rings.

The addition of both side lights, however, brightened the background considerably.
To keep the light solely on the rings, we attached grids to each of the side soft boxes, a set of louvers to the top soft

Figure 10

Figure 11

box and took another shot. Notice how the background has darkened, and yet the light and reflections on the rings have not changed (figures 10 & 11).

The result shot shows a significant difference in contrast and overall feel to the shot, as the rings now pop forward from the background. Finally, we decided to adjust the amount of focus on the rear ring. We wanted it to be recognizable, but not so much that it would draw attention away from the front ring.
I opened the aperture up to f/4.5, adjusted the shutter speed to accommodate for the correct exposure and took a shot (figure 12).

After the shoot, we opened the final image in Adobe Photoshop and used the Rubber Stamp tool to erase the metal clips that held up the rings. We also boosted the contrast a little more to make

Figure 12

the background appear even farther away (figure 13).

Additional lessons available at, www.bhphotovideo.com and on the Private section of the www.webphotoschool.com has even more and extended lessons.

Techniques for Shooting Jewelry

Figure 13

PHOTOFLEX

LIGHTING LESSONS

Product Photography for Business and the Web

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Taking professional-looking pictures for posters, catalogs or websites can be broken down to a few key elements: lighting equipment and technique, camera quality, subject matter, and an adventurous spirit. As with everything, the more you practice, the better you get. But thanks to improved and more affordable camera and lighting equipment, there has never been a better time to learn how to take professional photographs.

Topics Covered:

• How to light an object to naturally drop out the background
• Guidelines for capturing pro-quality digital images
• How to use basic computer imaging tools for cleaning up an image
• How and why to take detail shots of a product

Equipment Used:

Camera/ Digital
• Olympus E-10 digital camera **Item # OLE10**
• Lexar 160MB CompactFlash card (replaced by 256MB **Item # LECFJS12X256**)
• Olympus 3040 digital camera (for set-up shots) (repl. by the 4000 **Item # OLC4000**)
• Lexar 64MB SmartMedia card **Item # LESM64MB**

• Lexar USB CompactFlash reader **Item # LERCFU**
• Lexar USB SmartMedia reader **Item # LERSMU**
• Manfrotto 3443 Carbon Fiber tripod **Item # BO3443**
• Adobe Photoshop **Item # ADPS7M**
• Apple G4, 1Ghz computer **Item # APG41Z**

Lighting
• XL Photoflex SilverDome **Item # PHSDXL**
• Photoflex Starlite connector **Item # PHSR800SL**
• Starlite tungsten head w/1000-watt lamp **Item # PHLSL1000**
• 4- Photoflex Starlite Kits **Item # PHSLSDLK**
• Photoflex Litedisc Holder **Item # PHLDHT**
• Photoflex LS-K0054 Litestand **Item # PHLSASII**

Background
• 9-foot Superior white seamless background paper
• Gaffer's tape

LIGHTING
In product photography, lighting is the most important aspect of a great image. You may be shooting something very beautiful, but unless you take the time to light it well, its beauty may not be captured in the final image.

Figure 1

To illustrate, we decided to photograph this state-of-the-art mountain bike. Because of its size and reflective qualities, the bike presents some photographic challenges. Since we wanted the bike to be on a white background for greater layout flexibility, we set up a 9-foot white seamless paper background and taped the front edges to the floor with gaffer's tape. We propped the bike up by positioning the end of a Photoflex Litedisc Holder under the saddle of the bike. In order to create the necessary tension to keep the bike upright, we put a weight bag on the opposite end of the Litedisc Holder (figure 1).

Figure 2

Next, we lowered an extra-large Photoflex SilverDome soft box that we keep suspended by ropes from the ceiling (the ropes run through eyehooks in the ceiling and are tied off to nautical cleats mounted on the walls.) We then set up two large SilverDomes and positioned them on either side of the bike. Each soft box was lit up by a Photoflex Starlite lamp (continuous, tungsten balanced) with a 1000-watt bulb (figure 2).

I attached an Olympus E-10 digital camera to a tripod, set the White Balance to match the color temperature of the lights, and took a few shots until I had adjusted the exposure just right.

Figure 3

Although the exposure of the bicycle is good, the background, because it is not lit separately from the bike, is too dark. Also, the left hand soft box needs to be inched out of the shot (figure 3).

To brighten the background, we set up two more SilverDomes and positioned them behind the first two. We angled the direction of light so that each soft box would throw light on the background but not on the bike (figure 4).

Figure 4

Once the lights were positioned, I checked through the viewfinder to make sure the soft boxes were out of the frame. Before I took another shot, I reviewed the previous shot in the Playback mode and noticed that the foreground area of the seamless paper was not quite white - more of a light gray. I opened up my

PRODUCT PHOTOGRAPHY FOR BUSINESS AND THE WEB

aperture half a stop and took another shot.

The result was much better. The background and foreground were now white except for the shadows under the tires, and the bike was still at a good exposure. The only thing to do now was to digitally remove the Litedisc Holder from the shot.

I removed the SmartMedia card from the camera and transferred the images to my computer. I opened the image up in Adobe Photoshop and zoomed in on the area where the saddle and Litedisc Holder met. Since the background was all white and not textured, I opted to use the Paintbrush tool instead of the Rubber Stamp tool to paint over the Litedisc Holder. I set my foreground color to white and with a sharp-edged brush painted over the Litedisc Holder (figure 5).
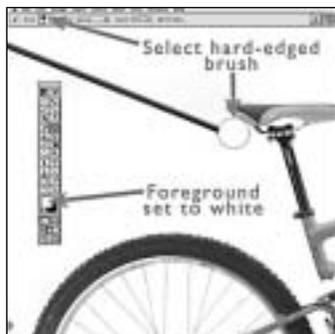
Figure 5

The overall shot of the bike was now ready to be printed, posted to a Web page, or e-mailed. Because the background of the shot is completely white, it makes it easier and cleaner to drop into a white page for layout (figure 6).

Figure 6

COMMERCIAL TIP
We now have a clean, well-lit image of the entire bike. However, the most impressive aspect of this bike is really in its details. Its front fork is not really a fork at all. Instead, it has a single shock absorbing connection to the front wheel to allow a greater distance for the shock to travel. It also has a rear shock system that can be adjusted to the level of grade you are riding, and both shocks can be manually switched off. It has disc brakes on both wheels and an indicator on the handlebars to let you know what gear you're in. It's a top-of-the-line racing mountain bike and costs about $4,000.

Unless you had seen this bike in person, it would be pretty tough to make out all of these details from just this one image. If you were in the business of selling items like this on the Web or in catalogs, it would obviously make sense to include some detail shots. Simply put, the more visual information you supply, the more value you will convey to a potential customer.

THE DETAILS
To create some interesting detail shots, we decided to use the floor as our background for a relatively industrial look.

And since these shots would be taken close up, there would be no need to create a natural dropout of the background. We took down the background paper, steadied the bike next to a weighted Litestand, and positioned two large soft boxes in close to create a soft light in the reflections of each shot (figures 7-11).

By using diffused lighting to highlight each detail, we were better able to convey the superior quality of the bike.

Additional lessons available at, www.bhphotovideo.com and on the Private section of the www.webphotoschool.com has even more & extended lessons.
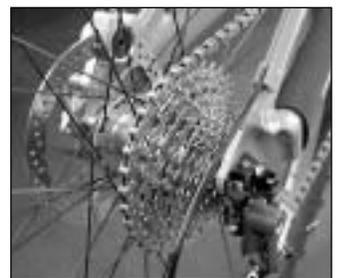
Figure 7

Figure 10

Figure 8

Figure 9

Figure 11

PHOTOFLEX
LIGHTING LESSONS

Creating Special Effects in Product Photography

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The car above is a BMW 700 series sedan, but you can't drive it because it's only 8 inches long! With the help of a good digital camera, some basic lighting equipment, and a little photo editing, this photograph comes very close to looking like the real thing.

Product photography can not only be a great selling tool for your small business or auction items, but it can also be a lot of fun. This lesson walks through the steps taken to create this image and also demonstrates how to create dynamic detail shots using depth of field.

Topics Covered:

• Creating a smooth shooting surface
• Controlling light reflections
• The importance of using diffused light
• Experimenting with depth of field
• Creating eye-catching detail shots

Equipment Used:

Digital Camera and Media
• Olympus C-5050 Zoom camera **Item # OLC5050**
• SanDisk 128MB SmartMedia card **Item # SASM128MB**
• USB Olympus SmartMedia reader **Item # 200803**
• Sturdy tripod **Item # BO3443**

Lighting Equipment
• Photoflex Small Starlite Kit **Item # PHSLSDXSK**
• Photoflex Medium Starlite Kit **Item # PHSLSDMK**
• Photoflex Boom **Item # PH3SB**
• Photoflex Boom Stand **Item # PHBS78**
• Shooting table **Item # SMTST18**
• White background paper

Before we began building the shot, we activated the built in flash of the camera and took a snap shot similar to what you might find up on eBay. Built-in flashes can work well in low light situations or to serve as a fill light outdoors, but rarely

Figure 1

Figure 2

does this type of lighting lend itself to studio photography, as it tends to render objects as flat and dimensionless. To compare the difference between this result and our final result, we've placed the two here side by side (figures 1 & 2).

Figure 3

Figure 4

As you can see, the effect of each image is very different: one looks like a cheap model car while the other looks as though it could be a shot from a real car ad.

To start, we first rolled a 4-foot wide sheet of white background paper onto a curved shooting table and placed the car at a slight angle. We set up a Photoflex Medium Starlite Kit and positioned it 3/4 overhead to render a soft shadow under the car.

We then mounted the camera to a tripod, set the exposure and focusing modes to

manual, set the White Balance to Tungsten (light bulb symbol). For a closer look at these processes, check out the lessons on this CD entitled, "Controlling Depth Of Field in Product Photography" and "How To Set Your White Balance Indoors".
We set the aperture to f/2.4 to create a limited depth of field, focused on the front of the car and took a shot (figures 3 & 4).

Notice how the f/2.4 aperture setting has made the back half of the car in out of focus. This helps to draw the focus to the front of the car. Reviewing the result, however, we realized that the car still looked like a model car because our perspective was different from how we would normally view a real car.

So, we lowered the camera angle to a more even level, refocused, and took another shot (figures 5 & 6).

Figure 5

Figure 6

CREATING SPECIAL EFFECTS IN PRODUCT PHOTOGRAPHY

Figure 7

Figure 8

The result was better, but now we wanted to make changes to the lighting. We wanted the background to be much darker to create more contrast to the shot. We wanted the car to "pop" forward so that it would look more three-dimensional.

So we took the SilverDome soft box off the LiteStand and placed it on a Photoflex Boom Stand so that it would be directly overhead, and angled it slightly forward to keep the light off the background.

Without making changes to the camera, we took another shot (figures 7 & 8).

Figure 9

The result was greatly improved as now it had a much greater sense of depth. Notice how the windshield is much more apparent than before. This is due to the reflection of the soft box overhead.

The shot was very close now, but the left side of the car seemed a little dark. So we set up a Small Starlite Kit and positioned it to the left side of the set and again, angled it slightly away from the background (figure 9).

Figure 10

Figure 11

This time we took two shots. We wanted to compare different depths of field, so we took two exposures: the first at f/2.4 @ 160th of a second and the second at f/10 @ 1/25th of a second (figures 10 & 11).

The results reveal a different look to each. Figure 10 brings the attention to the front of the car, while figure 11 renders the entire car in sharp focus. Remember, there is no "correct" shot here, only alternatives to different looks. At this point the car looked

Figure 12

pretty real. To enhance the image a little more, we copied the f/10 version to the computer, opened it up in Adobe Photoshop, and digitally "turned on" the lights. For a more in-depth look at this and other digital processes, visit www.webphotoschool.com (figure 12).

THE DETAILS
Next, we decided to create some detail shots to more effectively demonstrate the fine craftsmanship of this model car. We pulled the Small Starlite Kit out of the set and moved the camera in closer toward the car. We opened the hood, focused on the engine and took two shots: the first at f/10 @ 1/25th of a second and the second at f/2.4 @ 160th of a second (figures 13, 14 & 15).

Figure 13

Figure 14

Figure 15

Notice that everything in figure 14 is in focus, whereas in figure 15 your attention is drawn straight to the engine. This technique is particularly effective when you are trying to draw your viewer's attention to a particular detail. Next we spun the car around, closed the hood, opened the trunk ,and took two more shots at the same settings (figures 16 & 17).

Figure 16

Figure 17

As a small business owner or auction seller, these tools and techniques can be very valuable to you, particularly on the web. For instance, there are many more details and features to this model car: the car doors also open, the steering wheel moves the front wheels, and there are even odometer and rpm gauges. The more you demonstrate on the web, the more interest you will receive.

Remember to experiment with these techniques and most importantly, have fun!

Additional lessons available at, www.bhphotovideo.com and on the Private section of the www.webphotoschool.com for even more and extended lessons.

PHOTOFLEX
LIGHTING LESSONS

Senior Portraits: Using Litediscs Outside

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Most people assume that professional portraiture requires expensive camera strobes for good results. Strobes can work beautifully with portraits, particularly when used with soft boxes, but they are not necessary in many situations. Armed with equipment to modify sunlight, you can achieve fantastic results.

Topics Covered:

• The importance of using a stylist
• Choosing the right background
• Diffusing sunlight using Litediscs
• Using a Litedisc to create a fill light
• Using Litediscs to create a hair light
• Setting up a portable, digital workstation
• Transporting equipment

Equipment Used:

Camera/ Media
• Olympus E-10 digital camera **Item # OLE10**
• 2 Olympus 3040 digital cameras (for set-up shots) (replaced by the 4000 **Item # OLC4000**)
• Lexar 160MB CompactFlash card (replaced by 256MB **Item # LECFJS12X256**)
• 2 Lexar 64MB SmartMedia cards **Item # LESM64MB**

• Lexar USB CompactFlash reader **Item # LERCFU**
• Lexar USB SmartMedia reader **Item # LERSMU**
• Manfrotto 3443 Carbon Fiber tripod **Item # BO3443**

Software
• Adobe Photoshop Elements **Item # ADPE2**

Lighting Equipment
• 52˝ Photoflex White Translucent Litedisc **Item # PHLD52WT**
• 42˝ Photoflex Soft Gold/White Litedisc **Item # PHLD42WG**
• 2-22˝ Photoflex White/Silver Litediscs **Item # PHLD22WS**
• Photoflex Litedisc Attaché **Item # PHACLD**
• 4- Photoflex Litedisc Holders **Item # PHLDHT**
• 5- Photoflex LS-2218 Litestands **Item # PHLS2218**
• Photoflex Multiclamp **Item # PHMCUSM**
• Photoflex ADW Umbrella
• 4- Photoflex Weight Bags **Item # PHWB**
• Photoflex Navigator Transpac case **Item # PHMKB**

Miscellaneous
• Foldable wooden table
• Foldable wooden chair

In preparation for this lesson, we brought Gwen, our hair/ makeup stylist, on location to

Figure 1

give Angela, our 15 year-old model, an elegant look. While Gwen worked on making Angela's clothing, hair and makeup, we scouted nearby for a location with a good background (figure 1).

We found a large hedge and decided to shoot into the shadow side so that our model would stand out from the background. I set up the tripod and mounted an

Figure 2

Olympus E-10 digital camera to it in the vertical position. Once Angela was prepped, our stylist brought her out to the location. It was near noon once we started and the sun cast short, high-contrast shadows on our subject (figure 2).

As a starting point, I took a shot without any light modification. I minimized the camera's aperture to f/11 to ensure that both the model and background would be in sharp focus and set the shutter speed to 1/60th of a second. I took a shot, set the camera to playback, and reviewed the exposure in the Playback

Figure 3

screen (figure 3). (One of the great things about shooting digitally is that you can adjust your exposure on the spot thanks to the Playback feature.)

Although the exposure was good, the contrast between the shadows and highlights was too great.

To reduce the contrast, I decided to set up a Photoflex translucent Litedisc overhead to diffuse the sunlight. Since there was a slight breeze blowing, I wanted to stabilize our Litedisc setup. Our

Figure 4

SENIOR PORTRAITS: USING LITEDISCS OUTSIDE

assistant, Ross, grabbed a 52˝ translucent Litedisc, attached it to a Photoflex Litedisc Holder, and secured it to a Litestand with an attached weight bag. Then he positioned the Disc so that it was over Angela's head and shoulders (figure 4).

Figure 5

I opened the aperture a half stop and fired off another shot (figure 5).

The resulting shot was greatly improved. The Litedisc had minimized the contrast, yet still revealed the direction of the sun. As a photographer, you could stop at this point and have a great end result. To illustrate additional light modification, we went on to develop the shot further.

Next, we wanted to add a

Figure 6

reflective Litedisc to bounce light into the shadows of Angela's face and create a catch-light in her eyes. Ross pulled out a 42˝ soft gold/white Litedisc and positioned it so that the white side was reflecting. As I looked through the lens, I let Ross know where the Disc should be positioned. Once we found the right spot, Ross secured the Litedisc Holder to a Litestand weighted with another weight bag and stood to the side where he could make minor adjustments (figure 6).

Figure 7

Since the Litedisc brightened the overall shot, I closed down the aperture half a stop to accommodate and took another shot (figure 7).

Notice how the shadows under Angela's eyes have been greatly minimized, and the reflection of the Litedisc shows up in her eyes.

Figure 8

Next we wanted to separate her hair from the background, while giving the shot a sunnier look. So we set up two 22˝ silver/white Litediscs on Holders and Stands, and positioned them in the rear so that the silver side of the Discs reflected hard light into both sides of Angela's hair (figure 8).

Figure 9

The reflectors helped to give separation from the background nicely, but the hard light revealed the stray strands to the point where they were a little distracting. Gwen came in and worked on her hair while I adjusted the camera settings. I wanted to create even more separation by softening the focus on the background, so I opened the aperture up all the way to f/4, set the shutter speed to accommodate the proper exposure and took a shot (figure 9).

Notice how the combination of the brightly lit hair and the soft focus of the background help to create a greater sense of depth to the shot.

Although the shot looked

Figure 10

something seemed to be missing. The tonal range of the subject was much more dynamic than that of the relatively static background. So we decided to move to the other side of the hedge where the direct sun gave it more contrast. After previewing the background through the camera lens, we brought the gear over to the other side and set up the same lighting scenario (figure 10).

Figure 11

With no change to the camera settings, the result showed that the background was nicely out of focus, but now it seemed to tie in better with Angela's look (figure 11).

Additional lessons available at, www.bhphotovideo.com and on the Private section of the www.webphotoschool.com has even more & extended lessons.

S T U D I O   I M A G E S
L I G H T I N G   L E S S O N S

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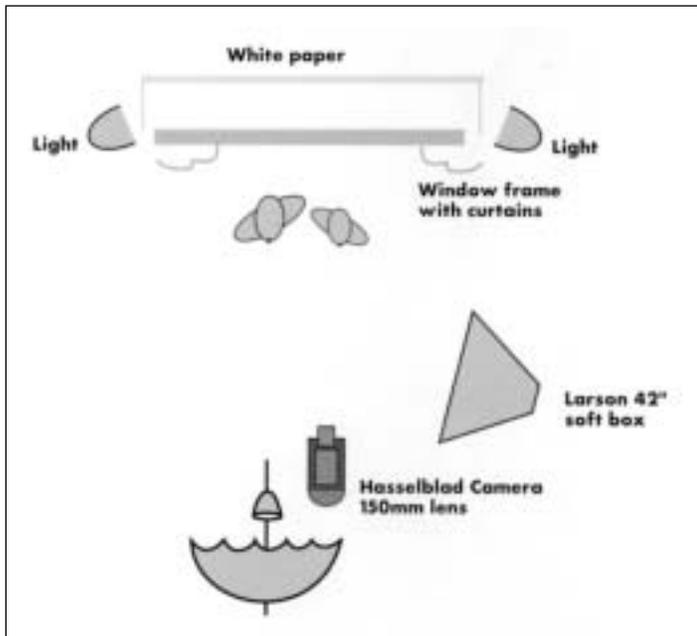
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Sisters
Page 12

POSE. This is the basic dance pose. I like to use it when I'm working with children, and in prom or engagement sessions.

As you can see, using this pose here resulted in a full face of the little girl and a 2/3 view of the older girl. When I set up this pose, I had to decide whether to raise the small girl up to the older girl's height to bring their heads together, or to keep them at their real heights. I chose the latter.

PROPS. The girls had their dresses and hairpieces for a special party. They make for a nice feel in the portrait.

BACKGROUND. To make this window, I purchased a set of frames used for double-glazed windows. I built a frame for them to rest in using 1"x 6" boards. A set of sheers were hung in front of the frames. I then hung curtains to create the appearance of a real window.

PHOTOGRAPHY. This is one of the few photographs in this book that uses a fill light. Most of the time I use a reflector for fill. I used it this time to help lighten the curtains. The problem most people have with a fill light is that they use too much power. This causes the photograph to be overfilled, giving a flat look to the faces. I set the full light two stops below the main light. The film used was Kodak VPS.

PSYCHOLOGY. Often it is best to have a parent in the room while a child is being photographed, but it can also be detrimental. I like to make that determination when I meet the child. Whatever my decision, I ask the parents to cooperate with me. One of the benefits of having a parent in the rooms is that they can watch for little things like a misplaced strand of hair, or a wrinkle in the clothing. If a parent is watching the session, I ask him to move out of the child's sight. This keeps the child's concentration on me, yet allows the parent to see the way I work with their child.

THE PROBLEM MOST PEOPLE HAVE WITH A FILL LIGHT IS THAT THEY USE TOO MUCH POWER.

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You Should Have Seen the Other Guy!
Page 14

POSE. This is my youngest son. When he fell and bumped his eye on a table and got a black eye, I saw an opportunity to create a fun photograph. I set up this little boxing ring using yellow cording purchased at a fabric store. The cords were simply tied to light stands in front of the high-key background.

PROPS. I borrowed theses boxing gloves from a friend and put my son in his red bathing suit. I did series of photographs including several poses with his older brother. One was an "action" shot. I let the older boy put on one glove and hold it pressed against his brother's cheek like he was hitting him. The hardest part was keeping them from really socking each other.
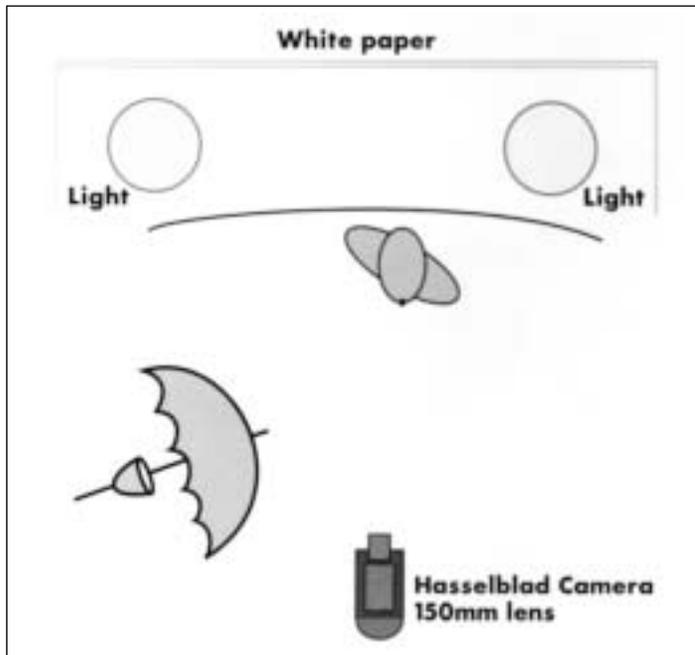
BACKGROUND. Creating this background was really simple. I used white paper and yellow ropes.

PHOTOGRAPHY. I mounted two small Photogenic Flash Master light heads from the ceiling and pointed the lights about halfway down on the background. The light then evenly illuminated the white paper background. The main light was the umbrella with the light through it. The film used was Kodak VPS.

PSYCHOLOGY. When working with your own children, an extra measure of patience is required, at least it is for me. I don't know why I expect my children to be more cooperative than my client's children. In fact, I should expect less since they know me and know what they can get away with. I have decided to make the sessions fun and not just an opportunity to try out a new set or technique. My best advice is this: make a game out of the session. This particular session was both fun and easy to set up, a formula that always makes for great images.

I SET UP THIS LITTLE BOXING RING USING YELLOW CORDING PURCHASED AT A FABRIC STORE.

White paper

Light   Light

Hasselblad Camera
150mm lens

STUDIO IMAGES
LIGHTING LESSONS

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Sit Like This?
Page 23

POSE. I placed a small pillow in the seat and asked the mom to place her daughter in the chair. Then, I had the mom call the girl's name. When she turned, I took the photograph.

PROP. I think half of the children in my area under the age of ten have been photographed in this chair. It is the greatest prop I have ever used. It works because it is small and the seat tips down in the back. I have photographed children as young as two months in it!

BACKGROUND. The background in this image is simply white paper. I brought the paper down to the floor at the back of the room and taped it down using clear packing tape. When I took this image, I used white fur on the floor. I don't use this anymore, because it doesn't go white enough. As I mentioned earlier, I've found that a concrete floor painted white works best. A commercial photographer once offered me some great advice: Buy your paint in a five gallon bucket. After you paint the floor with a roller, store the roller in the paint, in the bucket; this way, you won't need to clean the roller every time you use it.

PHOTOGRPAHY. I decided to include this image, an older photo, because it shows the wrong way to light high key. Notice the shadows and dark shading around the chair. I had pointed the background lights too far down, preventing the light from bouncing to the foreground.

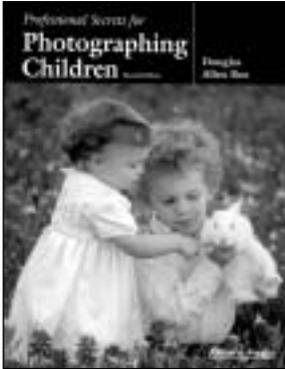The way I meter the high-key background is to have one stop of light more on the background than on the subject. Using an incident light meter, if the light on the subject is f-8, I adjust the background light to read f-11. I like the lights to be high-mounted on the ceiling, or on tall light-stands. I have found good results if the lights are 2'-3' from the background, pointing down about halfway. The light hits the paper and bounces toward the floor where the subject is standing. This keeps the floor white around the subject. Even though the lighting here is not perfect, it is still a very nice image of a very sweet young lady.

THE LIGHT HITS THE PAPER AND BOUNCES TOWARD THE FLOOR WHERE THE SUBJECT IS STANDING.
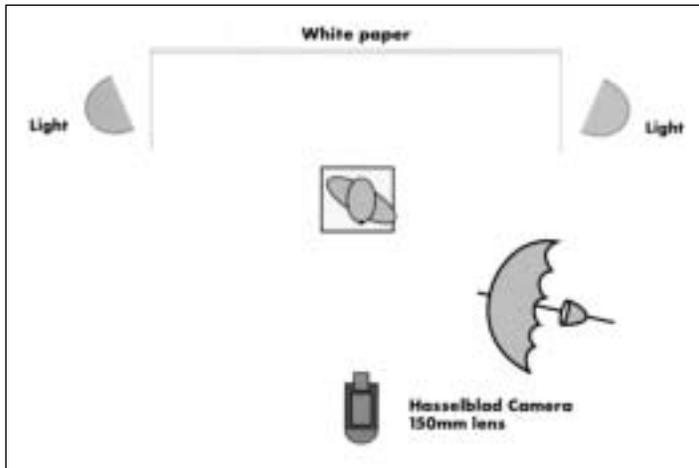
White paper

Light

Light

Hasselblad Camera 150mm lens

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Tough Guys
Page 26

POSE. Posing brothers together this closely can sometimes be challenging. I usually start with them further apart and slowly, as the session proceeds, bring them together. The slight tilt of their heads gives a feeling of caring and closeness. These little guys may not care for each other right now; but someday they will.

PROPS. Jean jackets with no shirts make for a simple photograph. This focuses all of the attention on their faces.

BACKGROUND. The background is a gray blotchy muslin background from Les Brant (see the resources section in the back of this book). I placed it about eight feet behind the boys to throw it out of focus.

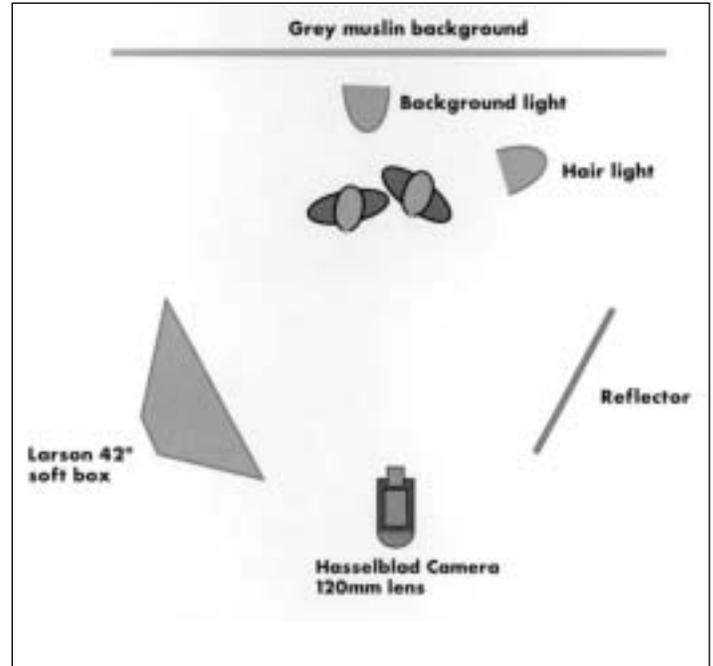**PHOTOGRAPHY.** The lighting used in the image is a modified butterfly lighting. Butterfly lighting is achieved by placing the light over the camera, and in the area between the camera and the subject. The lights used were Photogenic Flash Masters, which are reasonably priced and very versatile. I've used them for almost fifteen years and have had almost no problems. The Larson 42" soft box was placed above and to the left of the camera. The reflector is placed low and to the right of the camera; I tilted it back and forth to visually fill in the shadow area. A hair light, placed high to the right, and a background light separates the subjects from the background. A coken 083 soft focus filter was held in front of the lens. Exposure was 1/60 second at f-8; the film used was Kodak T-Max 400, rated at 200.

PSYCHOLOGY. Both of these brothers were in a good mood for this session. However, if siblings don't want to cooperate, I quickly get their minds off the photography session by talking about sports, fishing, school-or anything that will take their minds off what we are doing.

THESE LITTLE GUYS MAY NOT CARE FOR EACH OTHER RIGHT NOW, BUT SOMEDAY THEY WILL.

Excerpted from "PROFESSIONAL SECRETS FOR PHOTOGRAPHING CHILDREN" by Douglas Allen Box

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Simple in White

Page 29

POSE. Several things can be learned from the simple portrait. The posing is very basic. The child's weight was placed on her back foot, her shoulders were turned away from the light, and her face was turned back toward light. It is classic feminine posing, with the back shoulder slightly dropped and the forward foot pointed toward the camera.

PROP. Adding the bear, doll, and book creates the look of a girl's room. I kept the light off of these props to prevent them from becoming too prominent. The white dress and bare feet complete this simple look.

BACKGROUND. The white room seen here appears in other images in this book. To personalize it, I propped up paneling against the fake window and added the window seat. (You can also see the painted floor that I mentioned earlier!)

PHOTOGRAPHY. Notice the placement of the umbrella and reflector. I usually place my light source in just this position, with the back side of the apparatus slightly in front of and feathered past the subject. This way the main intensity of the light goes past the person and hits the reflector. I place the reflector on the other side of the subject in the same position. Carefully turn the reflector until you see that it gives you the maximum light return.
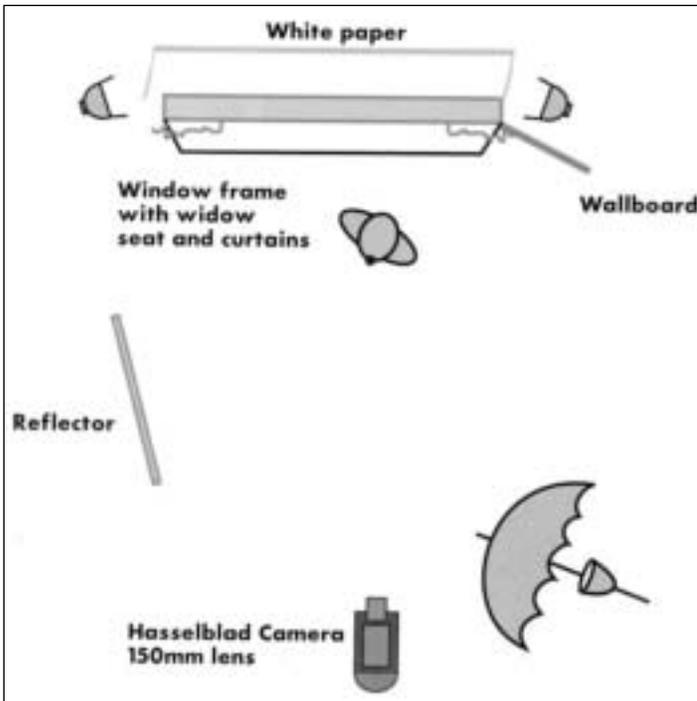
CLOTHING. A book of "proper" clothing samples is an indispensable tool for any photographer. Proper clothing selection is critical to the final quality of the image and a point where clients often need guidance. It is best to ask a client to bring several outfits ranging from causal to formal. Ask your clients to bring several items that they would like to have included in the portrait so that you can tell them which of the items will photograph best.

Diagram labels: White paper · Window frame with widow seat and curtains · Wallboard · Reflector · Hasselblad Camera 150mm lens

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Tennis Coach
Page 56

Long Island, New York. Nikon FE2, Nikkor 105mm telephoto lens, Kodachrome 64 exposures for 1/125 sec. at f/11.

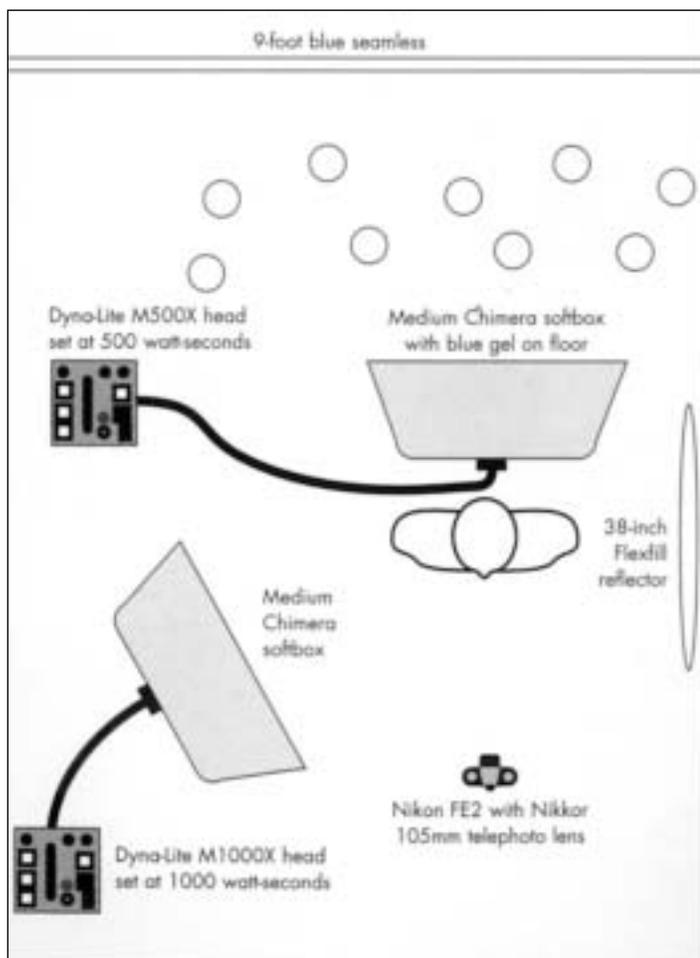I photographed Tony Palafox, a famous tennis coach who has worked with John McEnroe and other players for a cover profile in Boys' Life magazine. Since the story was to include a series of how-to sequence shots as well, I had to do the shoot at Palafox's home, which had a tennis court. I set up the cover shot in his garage, using a 9-foot wide roll of blue seamless paper as a backdrop. I then positioned a medium Chimera softbox with a Dyna-Lite 500 watt-second head covered with a blue gel on the floor behind my subject. I aimed this assembly up at the background. Another medium Chimera, with a Dyna-Lite 1000 watt-second head, provided the main light from the left of the camera. A 38-inch Flexfill on the opposite side of the subject provided some bounce fill. I suspended the tennis balls from the garage rafters with clear, monofilament fishing line.

Tennis Coach

9-foot blue seamless

Dyna-Lite M500X head set at 500 watt-seconds

Medium Chimera softbox with blue gel on floor

38-inch Flexfill reflector

Medium Chimera softbox

Nikon FE2 with Nikkor 105mm telephoto lens

Dyna-Lite M1000X head set at 1000 watt-seconds

ON LOCATION

LIGHTING LESSONS

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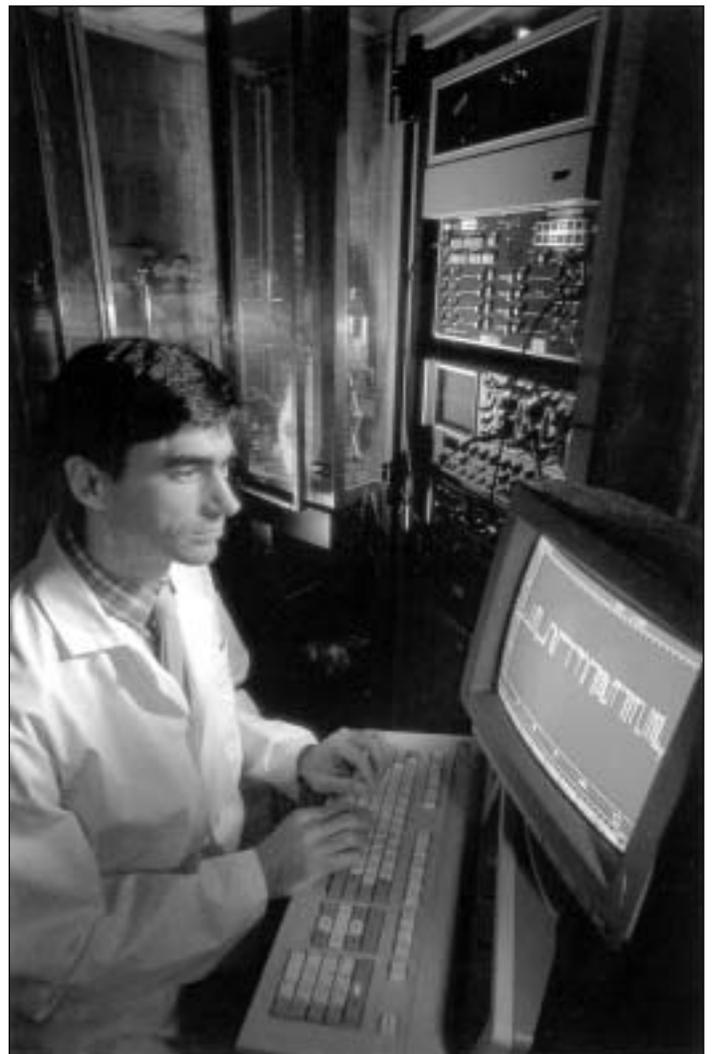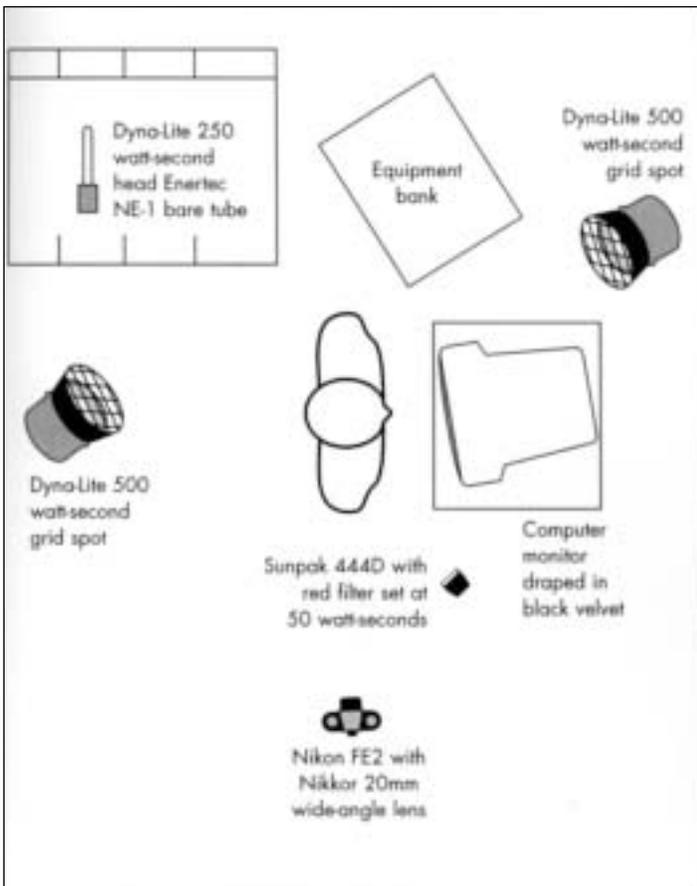
Pharmaceutical Lab
Page 63

West Point, Pennsylvania. Nikon FE2, Nikkor20mm wide-angle lens, tripod, Kodachrome 64 exposed for 1/2 sec. at f/8.

The key here was to isolate the elements of the scene, each with its own light, rather than to produce a wash of light (right). After turning off the overhead fluorescents, I aimed a Dyna-Lite head with a grid spot at the scientist and covered the white computer monitor with black velvet so that it wouldn't burn out (below). Next, I highlighted the machine behind him with another Dyna-Lite head with a grid spot. I then placed an Enertec NE-1 bare-tube head connected to a Dyna-Lite powerpack and covered with a blue gel inside the cage-like structure behind the scientist's head. Its omnidirectional illumination highlights several different areas of the cage. Finally, a small, low-powered, red-gelled Sunpack 444D lights the computer keyboard, simulating the glow from the screen.

Pharmaceutical Lab

Dyna-Lite 250 watt-second head Enertec NE-1 bare tube

Equipment bank

Dyna-Lite 500 watt-second grid spot

Dyna-Lite 500 watt-second grid spot

Sunpak 444D with red filter set at 50 watt-seconds

Computer monitor draped in black velvet

Nikon FE2 with Nikkor 20mm wide-angle lens

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Battery-Powered Flash Units
Pages 68-69

Once you find yourself headed on the road to multiple-flash ownership and use, you have to make several decisions. First, you have to choose between battery-powered and alternating-current (AC) flash units. Naturally, both types have useful features, and in truth, you'll eventually end up needing some of each for a complete lighting kit.

The primary advantage to working with battery-powered strobes is the independence they afford you when it comes to power sources. You don't have to worry about the availability or the voltage of the power; you simply set up your units and fire away. In addition, battery-powered units are generally smaller and cheaper than their AC-powered counterparts. Many photographers' battery-powered systems consist of two or three of their favorite shoe-mount flash units, along with some high-voltage battery packs for quick recycling times. This is the length of time that the batteries need to return to full power after being discharged. Waiting for four AA batteries to recycle your lights in multiple-flash setups is like watching grass grow.

Unfortunately, you must pay a hefty price for the independence of battery-powered flashes. They are generally less powerful and slower to recycle than AC units. Fast flash recycling is important when you're photographing people and you need to catch fleeting expressions and/or interactions. Nothing is more frustrating than seeing a great moment in the viewfinder before the flash has finished recycling.

Most battery-operated units run in the 100 to 400 watt-second range, although a few systems are more powerful (and more expensive). When you work with high-power battery units, like the 1200 watt-second units, you get only about 50 full-power shots from a battery with a multi-second recycle time. (This is the manufacturer's estimate. I've never owned a battery-powered strobe that delivered much more than about 50 percent of the manufacturer's claims about the number of shots a fully charged battery will provide in the real world of actual use. This isn't to say the companies are dishonest; they are just incredibly lucky when they run their tests!) So unless you carry a bagful of heavy and expensive spare batteries, you may find yourself out of juice by the time you finish `taking readings, tweaking lights, and shooting Polaroids.

Another important point to consider is the type of battery your strobe systems use. Although nickelcadmium (Nicad) batteries have been greatly improved during the last few years, the typical Nicad rechargeable battery is subject to the effects of memory. These batteries must be fully discharged before you charge them. If you routinely use only a portion of the battery's power, say half, before recharging, soon the battery will deliver one half of its power. The term "memory" describes this tendency.

You can combat battery-memory effects two ways. One approach is to use batteries that aren't subject to memory effects, such as gel cells; these are sealed lead acid batteries. The batteries I use to power the HS 350 High-Voltage modules, which run both my Armatar 300 and my Nikon strobes, are gel cells, and I find them convenient to use. I don't have to worry about the discharge cycle; I simply recharge and go on to the next location. Your other option is to use a conditioning charger with your Nicads, which fully discharges a battery before beginning the recharging cycle. Unfortunately, not every battery manufacturer offers a conditioning charger, so photographers are left to their devices to find ways to fully discharge their batteries.

Nevertheless, I know many working professionals who use nothing but battery-powered strobes are quite happy with the arrangement. Ian Lloyd, who is based in Asia, is often called upon to shoot in out-of-the-way locations like logging camps and remote villages, as well as in more mundane locations like offices and factories. Danny Turner is a medium-format, location-portrait specialist. He carries several 1200 watt-second battery units and does most of his work with one 4 x 6-foot softbox. He rarely makes more than 50 exposures per sitting, so the battery capacity is fine. And he never has to worry about extension cords, portable generators, or inverters when he wants to shoot out of range of AC power.

If you want to bounce or diffuse your lights and shoot at f/8 or higher on a medium-speed film, you'll be out of luck with most battery systems. The high-voltage battery packs required to run even 100 to 400 watt-second strobes are heavy, especially when you consider the weight of the battery chargers you must carry in order to recharge them. A bag of battery-powered strobes, with rechargers and spare batteries, can easily outweigh an AC system that has the capacity for far greater light output.

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Casino Penthouse
Page 68

Atlantic City, New Jersey. Nikon FE2, Nikkor 24mm wide-angle lens, Kodachrome 64 exposed for 1/125 sec. at f/5.6.
Plenty of light poured into the windows of the high-rollers' penthouse at Trump Casino when I was shooting a story Travel and Leisure magazine. Naturally, the farther I moved away from the windows, the more the light dropped off. So I decided to supplement but not overpower the window light. I bounced three Dyna-Lite 500 watt-second heads, two from a M1000x powerpack and one from a M500x powerpack, off the ceiling to fill this huge room.
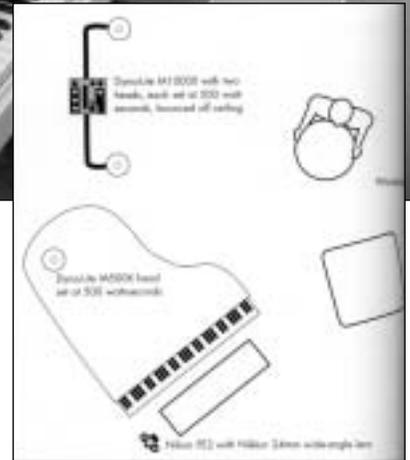
Professor with Student
Page 69

Massachusetts. Nikon 8008S, Nikkor 80-200mm zoom lens, tripod, Kodachrome 64 exposed for 1/8 sec. at f/4.

Initially, I set up two Dyan Lite heads bounced into umbrellas to illuminate this scene in the faculty lounge of Williams College. While I used the modeling lights to focus, I noticed what a nice quality they had. Because Kodachrome 64 has an appealing golden glow when exposed under tungsten lights, I decided to shoot using only the available light from the windows, lamps, & modeling lights. The professor and the student were engrossed in their conversation, so I was able to shoot a fair amount of film. I knew that I would lose some frames to lack of sharpness due to movement; but I didn't want to interrupt my subjects' interaction by popping off the strobes.

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AC-Powered Flash Units
Page 70

The most compelling reason to use an AC-powered unit is the unlimited number of flashes available-once you locate a power source and connect the unit to it. If you're shooting 15 to 20 rolls of film a day on location assignments, an AC-powered system will probably be the better choice for you. This also holds true if you like to diffuse your lights, shoot at apertures of f/8 or smaller, or shoot with medium-format film, which requires small apertures for sufficient depth of field.

Another advantage of AC strobes is their modeling lights. These built-in, continuous lights give you a preview of what the flash itself will look like in the final photographs. Modeling lights come in handy when you want to check for reflections but no Polaroid testing is possible. These lights also increase the general available-light level, which, in turn, makes focusing easier.

Although the lights sound great on paper, a couple of real-world considerations make modeling lights less useful than you would initially think. First, in all but the darkest locations, there is usually enough available light to make it difficult to see the effects of the modeling lights. So in the end, you can't be completely sure of what the flash will look like unless you shoot a Polaroid. Also, the heat that the modeling lights generate can cause problems in enclosed diffusion devices, such as softboxes. And if you're blending flash and available light, you should turn off the modeling lights off unless you specifically need them. If you don't, the modeling lights will affect your reading since you're using a slow enough shutter speed to register the ambient light. Despite their shortcomings, however, modeling lights are good to have.

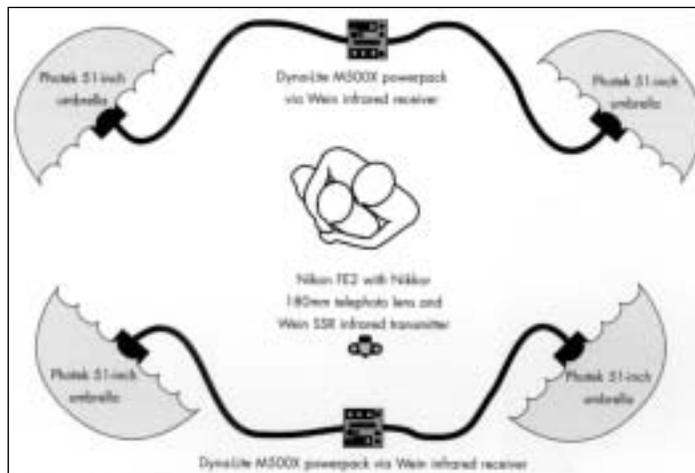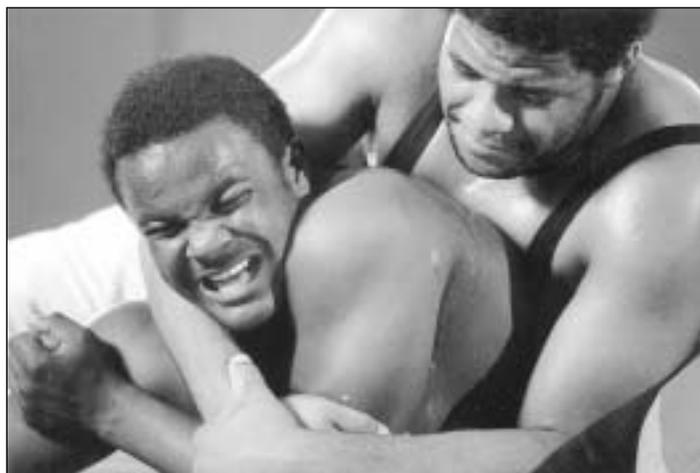## Heavyweight Wrestlers
Page 70

Indianapolis, Indiana. Nikon FE2, Nikkor 180mm ED telephoto lens, Kodachrome 64 exposed for 1/125 sec. at f/4.

I made this shot of two teenage scouts wrestling while photographing the Explorer Olympics for Boys' Life magazine. I need a great deal of flash power that could recycle quickly in order to catch the action. I set up four Dyna-Lite heads, one in each corner of the mat, and bounced each one into a Photek 51-inch white umbrella. I ran two heads, each with 250 watt-seconds of power, off one Dyna-Lite M500x pack, and another two heads with 252 watt-seconds of power each off another. This broad-lighting arrangement enabled me to shoot the action from any side of the mat with main, fill, and background lights. Using a long ED lens made out of extra-low-dispersion glass toned down the flare from the backlights. To minimize the number of wires, I used a Wein SSR infrared transmitter to trip the built-in slave eyes of the Dyna-Lite M500x powerpacks.

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ON LOCATION
LIGHTING LESSONS

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Plaza Athenée Lobby
Page 76

New York City. Nikon FE2 Nikkor 24mm wide-angle lens, tripod, Kodachrome 64 exposed for 1/4 sec. at f/5.6.

I shot this lobby while working on an article about small, elegant New York City hotels for Travel & Leisure magazine. I wanted a broad, open light that simulated the weak daylight coming in from the windows off to the left. To achieve this effect, I bounced three Dyna-Lite heads, one M1000x and two M500x powerpacks set at 500 watt-seconds, into three Photek 51-inch umbrellas. I positioned one unit off to the right of the camera. I then arranged for another Dyna-Lite to come in from the left, aiming it at the concierge and bellhop. Finally, I set up the third unit in the far rear of the lobby so that it too came in from the left. I used a long shutter speed to burn in the ambient light.
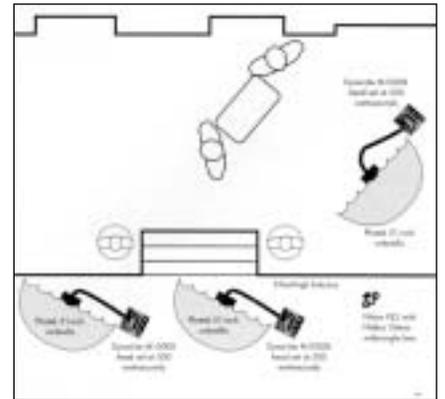
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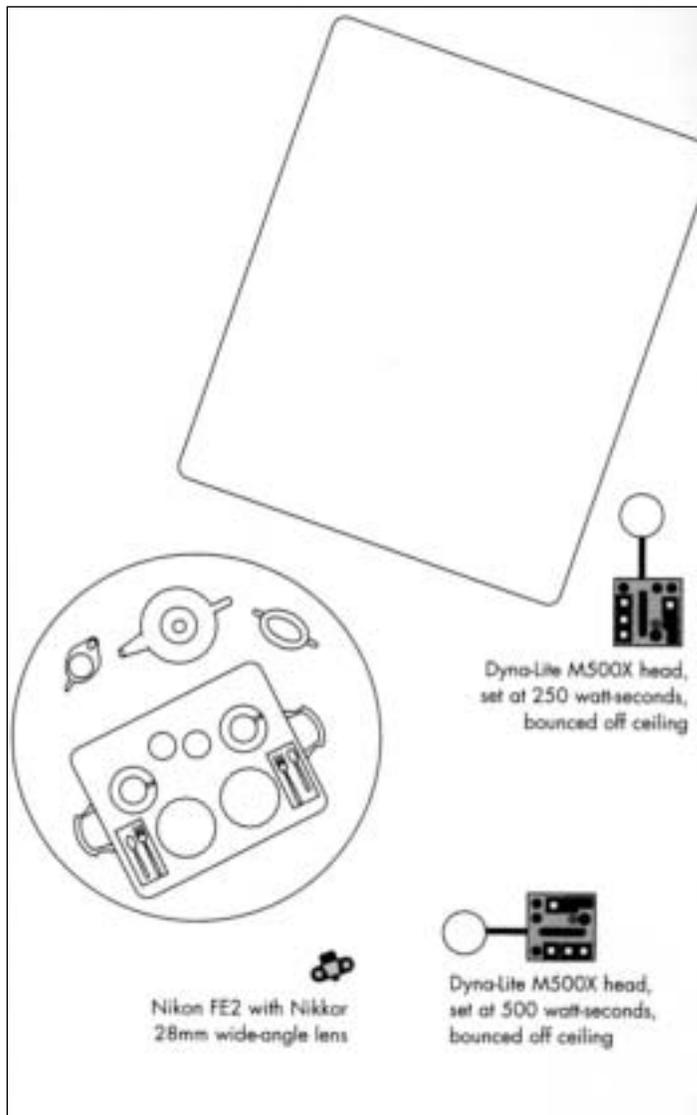
Barksdale House Inn

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Charleston, South Carolina. Nikon FE2, Nikkor 28mm wide-angle lens, tripod, Kodachrome 64 exposed for 1/4 sec. at f/8.
I photographed this bed and breakfast as part of a story about Charleston for Travel & Leisure magazine. The little available light coming into the room had to be boosted. I wanted to mimic the open quality of ambient illumination, so I placed on Dyna-Lite head with 500 watt-seconds of power to the right of the camera and bounced it off the white ceiling. Next, I bounced a second Dyna-Lite head off the ceiling near the bed with only 250 watt-seconds of power because I wanted the light to drop off slightly.

Dyna-Lite M500X head, set at 250 watt-seconds, bounced off ceiling

Nikon FE2 with Nikkor 28mm wide-angle lens

Dyna-Lite M500X head, set at 500 watt-seconds, bounced off ceiling

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Moonlights Versus Pack-and-Head Systems
Page 78

AC strobe systems come in two basic incarnations. With monolights, the generator and the head are contained in the same housing which sits on top of the lightstand and gets plugged into the wall. Pack-and-head systems feature generator packs that are separate from the flash heads. The generators are plugged into the wall, and the heads are plugged into the generator. Both systems have advantages and drawbacks.

Self-contained monolights eliminate the need to carry a lot of head extension cords. You can place them far away from each other without worrying about having to connect them to one another. If you have three or four monolights with you and one of them develops a problem, the others will continue to function unaffected.

One disadvantage of monolights is weight placement. Since they contain both the generator and the head, they tend to be heavier than regular flash heads. So having 5 to 10 pounds, plus an umbrella or softbox, sitting on top of an 8-foot lightstand isn't the most stable arrangement. The other disadvantage is power distribution. Even if you need only a small, low-powered pop of flash in a certain area of your setup, you must still dedicate an entire monolight to do the job.

Pack-and-head systems provide a little more flexibility than monolights in terms of power distribution. You can run three or four heads off one powerpack, sending different power levels to each head if necessary, or sending all the power through just one head. Flash heads tend to be smaller than monologhts and are more stable on a lightstand.

In terms of the disadvantages of pack-and-head systems, a failure in a power generator can severely affect your ability to finish a job. This is especially troublesome if you're running multiple heads off one pack. In addition, since all of the flash heads must be connected to the packs, you need long extension cables if you want to place the heads far away from one another and the powerpack.

Young Boy with Blocks
Page 78

Ridgewood, New Jersey. Nikon 8008S, Nikkor 80-200mm AF zoom lens,

Fujichrome 100 exposed for 1/125 sec. at f/8.

For a story about the importance of fantasy in children's play for Working Mothers magazine, I photographed Jonathan, my youngest son, playing with his blocks. To light him, I set up a Dyna-Lite head in a medium Chimera softbox with 250 watt-seconds coming from a Dyna-Lite M500x powerpack to the right of my camera. I wanted to keep a high-key feeling, so I bounced another head from another Dyna-Lite M500x powerpack set at full power off the ceiling behind Jon. Because this was 1 to 1 1/2 stops brighter than the main light, it provided an appealing rimlight and hairlight on my son, as well as effectively illuminated the background.
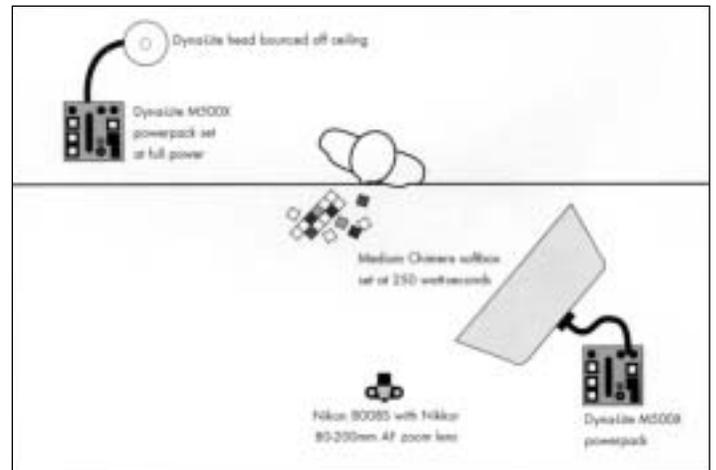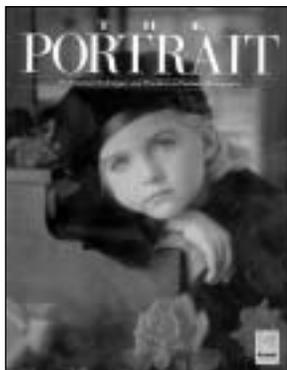
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Lighting Equipment
Pages 21-25

Electronic Flash

The primary type of lighting used in portrait studios is electronic flash. Flash has three major advantages: it's extremely powerful, it produces almost no noticeable heat, and it is balanced for daylight films. Also, the short duration of a flash exposure is good at stopping motion, which is helpful in glamour or fashion portraits where you may want the models to swirl or twirl, but you don't want them to appear blurred in the picture. One disadvantage, of flash is that you have to judge your lighting effects from the relatively dim light of the modeling lamps.

Though there are many brands and models of studio flash from which to choose, they are divided into two broad categories: modular power packs in which a single power supply provides power to a number of different flash heads, and monolights in which the powers source and light head are housed in a single self-contained unit.

Power Packs: In this type of system, each of the heads is connected to central power supply by a cable. The camera must be also connected to pack (via a PC cord) so that the flash heads will fire when you press the shutter release. Alternatively, some power packs work with an infrared transmitter that attaches to the camera. The advantage of a remote triggering system is obvious: it lets you move about the studio without being tied to (or tripping over) a PC cord.

Flash power packs are available in a wide variety of power outputs, ranging from a few hundred to several thousand watt/seconds. If you plan on working with two or more heads from a single pack, you will probably need a power supply that produces somewhere between 400 and 2000 watt-seconds. Anything less powerful won't produce the power you need, particularly of you're diffusing the light on working with large-format cameras; more power is always nice, but increases in power do not come cheaply.

Perhaps the greatest advantage of using a power-pack flash system is the versatility with which you can adjust the power that each one of the flash heads is getting. In turn, you can alter the lighting ratios or manipulate lighting effects. Most power packs offer a choice of either "symmetrical" (each head gets the same amount of flash power) or "asymmetrical" (each head can be given a different amount of flash power) power distribution. Many offer a choice of distribution modes. The benefit of using an asymmetrical arrangement is that you can adjust the lighting intensity of each head individually. This enables you to maintain a constant amount of light to a give head (by turning the power up or down), even if you change the light-to-subject distance, or if you add or subtract filtration, etc. For even greater control, many packs also offer a feature called a "power variator" that enables you to adjust the total output of power to all heads simultaneously while maintaining the exact distribution.

The chief drawback of a power pack system is the lack of portability for location work. Even if you know you're only going to need one flash head, you must still bring along the power pack and cables. Also, many packs have higher voltage requirements and cannot be safely plugged into just any electrical outlet, so for example, you may not be able to use your pack for a family portrait on location using household current.

Monolights: Nearly anything that can be done with a power pack and heads can also be done with several monolights. The only difference is that you have to adjust each light individually. If you get to the point of using three or four lights in your lighting set-ups, carrying that many monolights will be a heavier proposition than bringing one pack and several flash heads.

Most monolights are comparatively inexpensive. You can buy one light to start and then add additional

Portable reflectors for studio or location work come in many styles, shapes and colors.

Gary Whelpley

P O R T R A I T S

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lights as you need or can afford them. Also, since they aren't connected to a central power pack, monolights can be placed anywhere on a set and at any distance from one another: if you have an outlet (or an extension cord), you can put the light anywhere at all. And virtually all monolights are safe for plugging into a household or office outlets, which enhances their location appeal.

Finally, if you are using monolights and one light burns out, you still have the others. If a power pack fails, it is unlikely that you will have a backup power pack.

Accessories for Electronic Flash

Most flash heads come standard with a polished parabolic reflector, which creates very intense, but high contrast lighting which is not particularly flattering for portraits. A number different types of light-modifiers can be used to soften this light, including umbrellas, softboxes, and fabric frames.

Umbrellas are available in reflective and shoot through varieties. Reflective umbrellas, in which the light is aimed into the umbrellas and away from the subject, are used to spread and soften the light. Shoot-through umbrellas, in which the light is aimed at the subject through the fabric of the umbrella, creates a similar, but slightly more directional lighting with a central "hot" spot.

Soft boxes are available in a wide-range of sizes and shapes to create the softest lighting effects. Some let you aim the head through the front diffusion panel directly or bounce off of an interior reflective surface.

Fabric frames are collapsible plastic frame and fabric panel sets which are popular and versatile. One frame can be covered with a variety of interchangeable fabrics for reflecting, absorbing, or diffusing light.

Hot Lights

Continuous-source artificial light or "hot" lights use either tungsten or quartz-halogen type lamps and have color temperature of 3200-degrees K, which means you either have to use a tungsten-balanced film or filter up to a daylight color temperature (at the expense of about one stop in light output). Tungsten lamps and fixtures are available in a variety of powers, with the most popular being 500, 750, 1000 and 2000 watts.

One nice aspect of using hot lights is that what you see is what you get. Because you're viewing your subject under fill light, you are less likely to find any lighting surprises in the final image. Also, since there is no sudden burst of light, your models won't blink or flinch as many people do with flash. A single hot light when combined with flash is also useful for a pleasing creative effect. For example, you may wish to create a warm fill or edge light.

The chief disadvantage of hot lights is that…well, they are hot. In order to get the amount of light you need to light a portrait (particularly a group portrait), you will need several lamps. These many lights will have your models wilting and the brightness may cause them to squint.

Accessories for Hot Lights

Several companies make soft boxes and umbrellas that are safe for use with hot lights. But because of the heat produced by hot lights, most of the light-modifying devices used with strobes cannot be safely used. Be certain that you're using diffusion materials intended for use with hot lights.

On Location

For a lot of location work, one or more portable flash units will provide all the lighting power that you need. There are basically two types of portable strobes available: automatic flash and dedicated flash units. *Automatic flash units* use a flash-mounted light sensor to control the flash output. *Dedicated flash units* share exposure information with compatible cameras, and flash output is monitored and controlled from the film plane by the camera's electronics. Dedicated flash systems are very accurate. In choosing a portable unit, here are some features to consider:

Power: The more, the better. Choose a unit with a guide number of about 110 or higher. Lower power units will provide enough power for direct-flash photos, but very often you'll be bouncing or diffusing the flash which uses up light.

Power Selection: The ability to adjust the output of the flash makes it much more versatile. In fill-in flash shots, you will want the ability to turn down the power of the flash.

Aperture Selection: Pick a unit that offers a choice of at least four automatic apertures so that you can control depth of field.

Tilt and Swivel: The ability to tilt and swivel your flash simultaneously means that you can bounce the flash off of a reflector or wall whether you're shooting a horizontal or vertical composition.

Gary Whelpley

Fill light from the reflector opened the shadows on the left side of the subject's face.

Filters

Filters come in an array of styles and a rainbow of colors to perform all manner of technical and creative tasks. The three basic styles of filters are gelatin squares, glass or resin drop-in filters, and glass screw-in filters.

Gelatin Squares

KODAK WRATTEN Filters are sold in gelatin squares in a wide variety of styles, including color correction, neutral density, color conversion, etc. These filters are designed for use in individual filter frames that attach to the lens with a filter-frame holder. Wratten filters have a uniform thickness of about 0.1mm and provide superb optical quality.

Glass or Resin Drop-in Filters

These filters are typically sold in either three-or four-inch squares and are designed for a special filter holder that attaches to the front of the lens or onto a "compendium-style" lens shades (see photo). The best quality filters are those made of either glass or optical resin.

Glass Screw-in Filters

These filters thread onto the front of the lens. They are very rugged and good ones have excellent optical qualities. However, if your lenses have different front diameters, you have to buy duplicate filters or adapters to fit those different lenses.

Filters for Portraits

For most portrait situations, the two groups of filters that you will probably use on a frequent basis are soft focus and light balancing filters.

Soft Focus: There are dozens of different styled of soft focus filters on the market. Manufacturers use all sorts of optical tricks to create their diffusion effects including frosted plastic, black or white netting, glass dimples, and etched surfaces. Each of these styles is usually also available in a variety of intensities. The only way to know which filters work for you is to try several brands and styles.

Light Balancing: One of the technical challenges of outdoor portraiture is that the color of sunlight isn't constant; it can change with the weather and the time of the day. The best way to cope with these changes is by using light-balancing filters. There are two series of light-balancing filters. The 81 series are yellowish in color and are designed to warm up colors by lowering the color temperature of cool daylight (with daylight films). The 82 series filters are bluish in color and are designed to raise the color temperature of existing light.

Backgrounds

Painted muslin, splattered canvas, metalized fabrics, seamless paper, rear projected scenes-if there's one thing there s no shortage of in portraiture, it is a choice of creative background materials. And the backgrounds that you use can have a powerful influence on the mood and impact of your portraits. The color, texture, and style of the background are all factors that must be matched to your subject.

Seamless Paper

This is the most basic of photographic backgrounds and it comes in a wide variety of solid colors. It makes an excellent choice when you need a plain background to color the scene, without distracting from the subject. One of the nice qualities about seamless is that when the background gets dirty or crinkled from use, you can simply unroll a fresh supply and cut away the old.

Muslin and Canvas

These are the most popular portrait backgrounds in use today. They are typically either painted or dyed and feature an eclectic array of patterns, ranging from a "marbelized" look to "streaked" and "splattered" designs. Both muslin and canvas backgrounds are sold in hand-painted and mass-produced versions (and are priced accordingly). Many companies also give you the option of special-ordering a particular blend of colors, or specifying a certain design.

Muslin is a much lighter fabric than canvas. One of its main advantages is that it can be "covered" or "shaped" to fit around props or models. Canvas backgrounds are considerably stiffer and are designed primarily for creating vertical or evenly sloped backgrounds. If most of your portraits are done on location, muslin makes a better choice because its light weight means you can roll it up and pack it in a carry sack.

Projection

Still another type of background system that is used successfully by portrait photographers is front or rear projection. Projection systems allow you to project an almost infinite variety of scenic backgrounds or other images behind your subject.

Doug Hoffman

Selecting the right props is vital to creating the desired mood & feeling. The studio even supplied the white outfit for this tender portrait.

P O R T R A I T S
L I G H T I N G   L E S S O N S
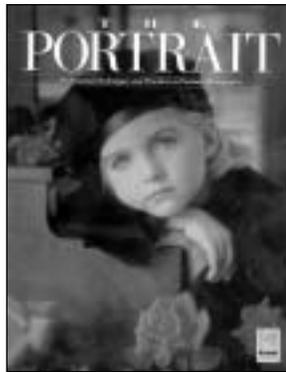
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Item # KOBP **24.95**

Exposure and Lighting Techniques
Pages 28-36

The more you know about the tools and photographic materials you use, the greater will be your ability to create the pictorial quality you want. No matter how imaginative or delicate your portrait lighting may be, it will not carry over into the print unless you understand the key factors which influence quality. The following six steps are vital to creating top-quality images when using color negative film:

1. Select the appropriate equipment for the desired lighting effects.
2. Determine the main, fill, and background light intensities for a desired lighting ratio.
3. Establish a working exposure index (film speed) for your standard lighting condition.
4. Determine exposure indexes for other lighting conditions.
5. Modify your lighting

David Ziser

Low-contrast lighting produces a soft shadow edge and vreates a gentler mood.

Photogenic Skylighter

Bounce System

Umbrella System

Strobasol Soft Box

These are some of the popular equipment options that are available when you require a low-contrast light source.

techniques, as needed, for consistent, professional portrait results.
6. Establish appropriate lighting techniques for portraiture.

Step 1: Select the Equipment
The lighting equipment you select will determine the quality of your photographs. You will need a fill light, a main light, a background light, and a hair light. Always keep the contrast of the photographic light in mind when selecting lighting equipment. Diffused reflectors, umbrellas, and bounce lights are considered low-contrast, soft-light sources because they produce a soft shadow edge of the subject's features. Spots and parabolics are considered hard-light sources. The hard-light sources produce a more defined shadow edge, giving more shape to the subject's features than low-contrast, diffused light sources.
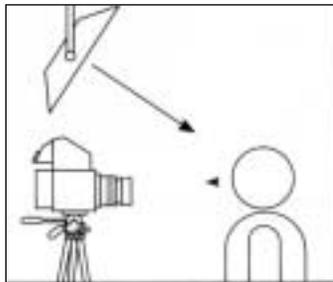
Fill Light
The fill light illuminates the shadows of a photographic subject and is the only light that photographically registers the shadow on film. It also raises the illumination level in all areas of the subject.
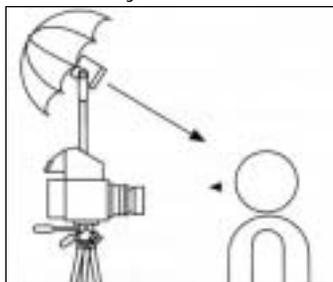
The fill light pattern should be soft and expansive in nature and should create an even wall of light at the photographic plane. It should illuminate a single subject evenly from head to toe and be wide enough to cover a large group completely.

The fill light should not be evident in the final photograph; therefore, it should be a low-contrast light source, as nonspecular and nondirectional as possible.
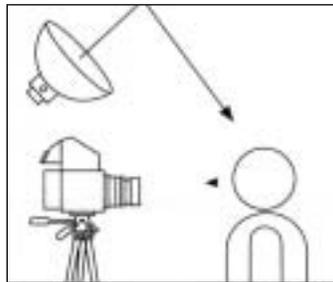
Main Light

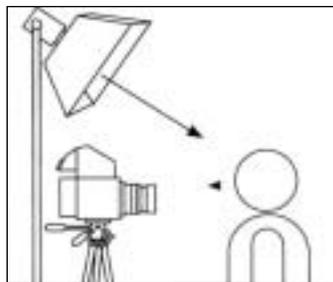The main light has two functions, one mechanical and one aesthetics: Its mechanical function is to establish the contrast quality of the light and the lighting ratio. Its aesthetic function is to illuminate the subject's eyes and to shape the face to its best likeness.

The main light should be a directional light source that produces more contrast than the fill light. It determines the mood of the photograph by its contrast quality. The higher the contrast, the stronger the statement about the subject's features. The lower the contrast, the softer the statement and gentler the mood portrayed.

Feathering the Main Light: Photography "masters" prefer main-light reflectors designed to create a light pattern that is brighter in the center with light gradually falling off in intensity toward the edges. This quality enables the photographer to adjust the light by "feathering" which is the technique of using "penumbra" of the light source to achieve even illumination across the facial plane with soft specular high-lights. The photographer strives for good gradation of tones and smoothness between the highlights and shadows of the subject's features.

Feathering cannot be achieved with the principal light source aimed straight at the subject's face. This would illuminate the face with the brighter center spot (the "umbra") of the main light pattern. The effect is achieved with the soft, feathered portion of the main light pattern (the "penumbra"), also referred to as the edge of the light.

To find the correct placement of the pattern of light so that the face is properly illuminated, move the main light pattern up and down until the intensity of light on the forehead and chin are the same. The intensity of light must also be the same in the highlights on the shadowed side of the face

Parabolic Reflector
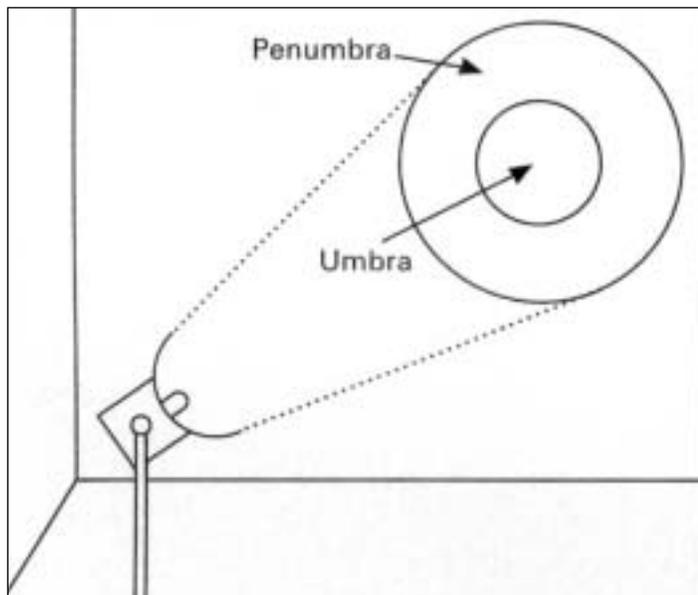
The penumbra, the soft edge of the circular light pattern, allows you to feather the main light.

Knowing how to properly rate and expose your film will help you achieve the optimum negative under every type of condition

and on the cheeks. Do this by swinging the reflector from side to side until specular highlights can be seen and the five planes of the face are illuminated evenly.

When properly positioned, the main light should produce the desired scene contrast from shadow to highlight without the need for "barn doors," "scrims," or "gobos." In portraiture, the main light should act as a modeling light to project the specular highlights, gradating the tones from specular to diffused to subtly illuminated shadows. Barn doors or diffusers are not recommended on the main light. Barn doors diminish the feathered edge of the light pattern, and diffusers change the quality of the modeling light into a broad flood light.

Guide Point: *To achieve the "masters touch" of feathering light, the main light should produce a circular pattern that is brighter at the center and gradually falls off toward the edge. At two feet from the umbra (the bright center of the pattern), the light should be a halfstop less in intensity.*

Illuminating the Five Planes of the Face: The position of the main light determines the aesthetic effect of the light on the subject. Once you position the main light at the necessary distance, you can adjust it to render the desired aesthetic effects. The highlights created by the main light should illuminate the five planes of the face (forehead, left and right cheeks, nose, and chin), defining the facial contours and creating the effect of dimension.

Illuminating the Eyes: To light the eyes properly, lower the main light until a specular highlight is reflected in the subject's eyes, then continue to lower it until you illuminate the color of the eyes. When the main light is adjusted properly, the eyes will have highlights and a crystalline appearance and the coloring will be clearly visible.

P O R T R A I T S
L I G H T I N G   L E S S O N S

Illuminating the Nose: The main light also shapes the subject's nose. Position the light so that a nose shadow is cast onto the shadow side of the face. When the shadow is smooth in tone, the light is in the right position. To check this, move the main light until the shadow of the bridge of the nose just touches the white of the eye on the shadow side of the face. Stop at this precise point. If the shadow from the bridge of the nose moves into the white of the eye, the eye will become dull and begin to appeal smaller.

Guide Point: *If the subject has one eye that is larger than the other, you can take advantage of this phenomenon by placing the shadow from the bridge of the nose into the white of the larger eye.*

Main-Light Patterns

You can position the main light to create four distinct lighting patterns for portraiture.

Butterfly: The principal light is pointed down at a 45-degree angle directly into the frontal plane of the face. This type of lighting is used to enhance the glamour of a subject with high cheekbones and a beautiful face.

Open Loop: The principal light is pointed down at a 45-degree angle and off to the side of the nose, forming a loop-type shadow from the nose. This type of lighting brings out brilliance in the coloring of the eyes more successfully than closed-loop lighting.

Closed Loop: This type of lighting is also known as short, Rembrandt, or triangle lighting. It is normally used with low-key lighting. The principal light is pointed down at a 45-degree angle and 45 degrees one side of the face, with the shadow side of the face toward the camera.

Broad Lighting: This style of lighting alters the facial features the least and does the least amount of correction. Broad lighting places three quarters of the face in

The hair light should produce a soft glow that just picks up and illuminates the hair on the shadow side where the main light leaves off.

highlights. A low-contrast, broad main-light source works best for this type of lighting. Broad lighting is normally used with high-key lighting setups.

When in doubt, use either closed-or open-loop lighting. They are the most effective lighting techniques for giving texture and depth to the photograph.

Guide Point: *When using open and closed-loop lighting, both sides of the nose should not be illuminated. The side of the nose nearest the camera should be completely shadowed. The shadow from the bridge of the nose cast into the eye determines whether you use open-or closed-loop lighting. The main light should not cast a shadow of the bridge of the nose into the opposite eye.*

Background Light

The background light, like the main light, has an aesthetic function. It separates the subject from the background to keep the subject from appearing as a cutout image pasted onto the background. When the background light is positioned correctly, the result should be soft glow of background illumination appearing between the subject's ears and shoulders, thereby achieving an effect of dimension. Dimension can also be created by aiming the background light toward the camera from behind the subject to rim the subject completely with highlights.

In this high-key portrait, strong background lighting provided maximum seperation for the subject. The low-contrast main-light softly illuminated the face.

Guide Point: *The glow should not show above the subject's head or down around the waist. It should be brighter on the main-light side than on the shadow side of the subject. The result will be a light trap (a glow completely surrounded by shadows), which is undesirable by today's photographic standards. If any glow shows on the shadow side, try to minimize it.*

Hair Light

The hair light should be a glow of light that matches the main light in contrast quality. It should produce the appearance than it is a continuation of light from the same direction as the main light, giving highlight and detail to the chair. You can use a low-watt second main light instead of the usual spot-type hair light to pick up and illuminate the hair on the shadow side.

The effect of the hair light should be a soft glow and not an attention- getting type of light. The eye will always be drawn to a bright highlight surrounded by shadow because it is a high-contrast area. The brightest area of a photograph will not always pull the eye to that spot because it is possible to have a large, bright area without high contrast. Keep this in mind when you place your hair light. Remember, a hair light should not call attention to itself in classical portraiture.

Step 2: Determine the Correct Exposure

Maintaining consistent illumination and light placement are essential in establishing the correct color-negative exposure. The following procedure for establishing correct exposure is based on using KODAK VERICOLOR III Professional Film (VPS). You can adapt this procedure to other color negative films as well.

In the following density tests, you will photograph the KODAK Gray Scale next to your subject's head and use the 1.90 reflective reference patch on the scale to measure shadow density. The 1.90 reflective reference patch represents the blackest black that will have detail in the final photograph.

You will achieve the correct density aim points by first getting a D-min (minimum density) reading of a clear piece of processed film. You are actually reading the density of the orange-magneta mask of the film. This requires a color transmission densitometer set on the Status M red filter setting. If you don't have a densitometer, your local professional color lab should be able to help you.

The D-min reading of processed VERICOLOR III Film will run from approximately 0.12 to 0.20 density units. Your goal during these tests is to produce a shadow density of 0.10 to 0.20 units above the film-base D-min for a total density 0.22 to 0.38 (or 0.30 plus or minus 0.08 units).

Guide Points: *The purpose of determining the main-light and fill-light intensities is to establish a lighting ratio that gives you a density difference of 1.00 from black with texture to white with texture. This will enable all detail in your negative image to be recorded*
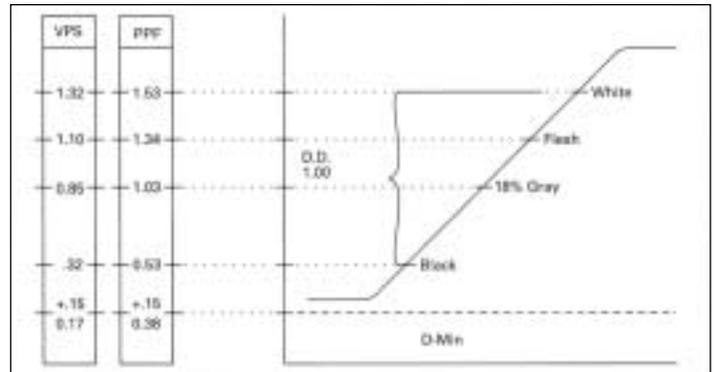
Density aim points for Kodak Vericolor III (VPS) and Pro 400 (PPF) Film are indicated on the H & D curve for a full-range print.

when the image is printed on photographic paper.

Fill-Light Density Test

Use only the fill light in this test. A soft, nondirectional, non-specular, nonevident type of light source such as one 800-watt second Photogenic Skylighter or the equivalent in umbrella, softbox, or bounce light(s) is recommended.

The bottom edge of the fill light should be 6 feet from the floor and 12 feet from the subject. The subject should be seated 6 to 9 feet in front of the background, and the camera should be moved in and focused for a tight close-up. Ask your subject to hold a KODAK Gray Scale and a KODAK Gray Card (18% reflectance) angled slightly to avoid picking up reflections. The black square on the scale should have an image on the negative of at least 1/4-inch across to enable an accurate reading on a transmission densitometer.
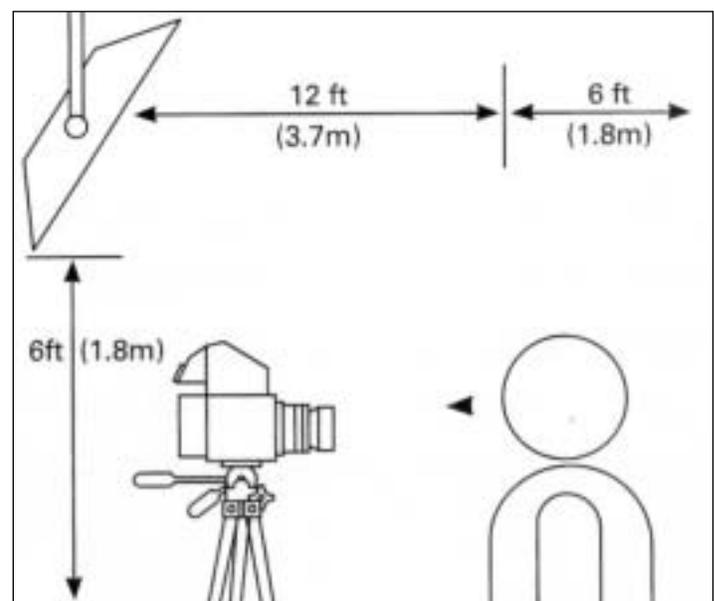
The setup for the fill-light test.

Beginning at *f*/5.6, make a series of exposures at each half *f*-stop. An information card indicating the *f*-stop used in each exposure should be included in the picture area. Have the film processed and make densitometer readings of the densities of the 18% gray card and the black square on the scale (the lightest square on the negative) before making the second test. The exposure that gives you a Status "M" red filter transmission density of 0.30 unit from the black square on the gray scale is the *f*-stop you should use to make your main-light test photographs. This correlates with a density of 0.65 from the gray card. With these readings, you should have enough density to see detail in the shadows of your image.

Guide Point: The gray-card density in the fill-light test is only 0.65. The gray-card density with illumination

from both the main light and the fill light will read 0.85. It is important to remember that when set correctly exposure meters will read exposures to give a 0.85 gray-card density. Therefore, do not use a procedure that meters only the fill light for your exposure.

In some situations, you may prefer to work with a larger or smaller *f*-stop. You can then achieve the same results by increasing or decreasing the intensity of the fill light(s). If you double the fill-light intensity to 1,600 watt-seconds, close the lens aperture by one full *f*-stop. If you halve the fill light to 400 watt-seconds, open the lens by one full *f*-stop. Be sure to test this method before you attempt to make a photograph.

Main-Light Density Test
After adding the main light, the scene brightness point to strive for (aim point) should be a difference

of 1.00 unit of density from highlight to shadow. The density difference should never exceed 1.00 unit, which is the contrast range limit of color paper. This 1.00 unit of density difference represents the difference between the previously determined fill-light shadow density of 0.30 and a soft diffused-highlight density of 1.0 produces on the white references of the step scale by both the main light and the fill light. While a white card would probably register as high as 1.90 density units on the negative, remember that when color negative density values go below 0.30 or above 1.30, exceeding a density difference of greater than 1.00, this detail will not be recorded on color paper.

For a head and shoulders test of an average subject with medium skin tones, place the subject 6 feet from the background. Keep the 800 watt-second fill light in the same position as in the fill-light test. Ask your subject to hold the gray scale and gray card. Use the same *f*-stop that rendered the 0.30 unit reading of shadow density during the fill-light test. Again include an information card in each exposure, noting the light units used, the power setting, and the distance from the main-light flash tube to the subject's chin.

Before making the test, be sure that the inside of the reflector is clean and free of dust, dirt, and grime by wiping it with a clean cloth. If your main light is a Photogenic Studio Master II

unit, place it so the flash is in a feathered position 45 inches from the subject's chin. This will model the subject's face properly. Make test exposures at 25, 50, 100, and 200 watt-seconds.

If your main light has a fixed output, you may adjust its intensity by moving it back to various predetermined distances. The distances should be 35, 45, 63, 95, and 125 inches. The idea is to reduce the intensity of the light by half each time you move the unit. If your equipment is not efficient at these suggested distances, make your first test at the distance at which your light functions best. Then multiply this distance by 1.4 to find the next distance to position your main light in order to cut your light intensity in half. For example, if your first test is at 10 feet, your next test would be at 14 feet (10 feet x 1.4), and the third test would be at 19.6 feet (14 feet x 1.4).

Note: *This system does not work for expansive lightsource equipment such as umbrellas.*

In the main-light test, your lights should be set up exactly as they will be for making portraits. If the main light is feathered in the test, it should be feathered when making portraits.
When you have your test roll of film processed, ask the lab to read and record the following densities for each exposure:
• *Diffused highlight of the flesh.*
• *The white references step.*
• *18% gray-card references.*

12 ft (3.7m)

#3 position

45 in. (114 cm)
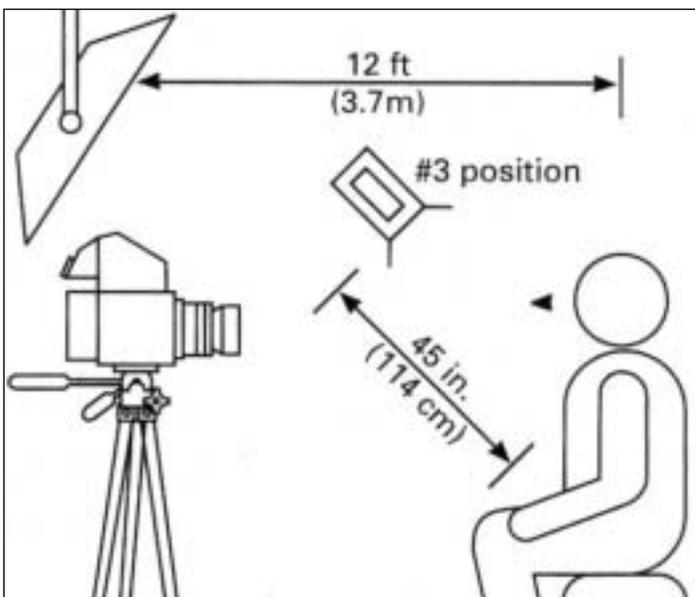
The setup for the main light test.

This will tell you which of the main-light intensity settings or distances register a diffused flesh highlight density of 1.10 n the subject's forehead. The gray side of the KODAK Gray Card that receives the same illumination as the subject should read 0.85 density. The white reference step should read 1.30.

When the 0.30 shadow density in the fill-light test is subtracted from the 1.30 diffused highlight density of the main-light test, the remaining 1.00 density difference is the scene brightness. This density difference can now produce color negatives that will print with full detail in both the shadow and highlight ends of the exposure scale. The 1.00-unit density difference between highlights and shadows assures that the negative matches the color-paper scale which, as noted

previously, can handle a 1.00-unit density spread.

Guide Point: *This 1.00-unit density difference is achieved with a 4:1 lighting ratio. In a 4:1 lighting ratio, with a fixed fill light behind the camera, the main light is 1 1/2 stops brighter than the fill light. If you want or need less density in the highlight areas of the print, the lighting ratio can be lowered by using less light from the main light. Do not reduce the fill light.*

Adjustments for Skin Tones: When photographing a black person, it is not necessary to increase the *f*-stop exposure, since the exposure was based on a 1.90 reflective black, which is darker than the skin tones.

Note 1: *All densities are transmission Status M red filter densities.*
Note 2: *Black densities are*

referenced from a 1.90 reflective black, using a KODAK Q14 Gray Scale.
Note 3: *Diffused highlight flesh is referenced from forehead above nose. Diffused flesh is (White Density) – (green gamma x .30).*
Note 4: *Aim point for black is based on +0.10 to +0.20 above base fog (D-min).*
Note 5: *White density is +1.00 above black.*
Note 6: *Gray Card = Black with texture +1/2 distance to white.*
Note 7: *Subtract 0.04 from normal values for films coated on ESTAR Support (i.e., VERICOLOR III Film).*

Background-Light Density Test
The fill light and main light should both be operating with

the watt-second settings and at distances found to be correct in the fill- and main-light tests. The *f*-stop setting should be *f*/11, as determined by the first test. Again make a test with the background light at 25, 50, 100, and 200 watt-seconds and include and information card for each setting. When the film is processed, ask for 4 x 5-inch prints with equal density in the diffused highlights of the face. This test will identify the correct watt-second setting for the desired background light glow, enabling you to match the subject's clothing tones to the background tones.

Once you have completed these tests, you will have calibrated your equipment and all photographic variables so that you will know exactly the effect that these methods will produce in low-key and high-key portrait photography.

Frank Cricchio

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The goal of these tests is to establish the conditions under which you can consistently produce negatives that will print a full range of subject tones.