

## BURNING and DODGING

There are times when areas of your picture will just not be the way you want them. Several tricks can be used to selectively alter these sections of your prints. In one case extra light is added to the print. In the other, light is kept from hitting the print.

### BURNING IN adding light

It is possible to expose certain areas of a print to more light, making them darker:

- determine which areas need more light
  - remember, the darkest areas of the negative will be the highlights
- expose the entire print as usual, according to the exposure determined with test strips
- reset the timer for the amount of additional time you think is needed
- start the timer with your hand under the lens, blocking all light
- while making a second exposure -
- allow extra light to hit the parts of the print you want darker
  - while blocking the rest of the light striking the satisfactory parts of the print
- use opaque paper or your hands as a mask
- wiggle the mask so that no definite boundary line is made
- process the print as usual and check the results under white light

Notes: You will probably have to make several attempts to get the extra exposure and placement just the way you want it.

Overly light areas, like bright sky, can take several more stops of light than the overall print. You can also contrast change filters when burning to give different effects to different areas.

### DODGING blocking light

It is possible to keep certain areas of a print from getting as much exposure as the rest of the print. These areas will come out lighter:

- determine which areas need less exposure than the rest of the print
  - remember, the brightest areas of the negative will be the shadows
- make the initial exposure and -
- use opaque paper or your hands as a mask to keep light from hitting selected areas
  - opaque paper or cardboard on a wire is a common masking tool
- **wiggle the mask** so that no definite boundary line is made
- process the print and check the results under white light

Notes:

It is easier to dodge when exposure times are longer. Closing the lens down one stop and doubling your exposure time will give you the same amount of light hitting the photo paper.

Sometimes it takes a combination of burning and dodging to make the image come out satisfactory. It is a matter of experience knowing just how long to burn or dodge.

Different contrast filters can be used during different burns and dodges on the same print. Completely different images can be combined if you become very proficient with these techniques.

## SPLIT FILTRATION

Variable contrast paper has two layers of emulsion. The top high-contrast emulsion is sensitive to magenta light and handles the tonalities in the shadows. The other low-contrast layer is sensitive to yellow light and carries the information in the highlights to middle tones of the photo. The color of the multi-contrast filters alters the balance between the two layers to adjust the overall contrast and definition in the print.

It is possible to expose these layers separately to achieve a print with more apparent tonalities. The trick is to make two separate exposures onto a single piece of photo paper, each through a different filter. The first low-contrast exposure compresses the tonal range and renders the highlights as normal, the midtones lighter than normal, and pulls the shadow information into the lower midrange. The high-contrast then re-renders the shadow details where they should be as well as some of the midtones. The result is some areas of the negative are printed twice and overlaid at different densities.

### PROCEDURE

- Make a normal Test Strip to determine the proper Exposure Time for the highlights  
Use the #0 filter.
- Find the exposure time that gives the best rendition of the highlight details.  
The brightest white should be just below paper white.  
Don't let the tonality of the shadows fool you into misreading the exposure time.  
With a #0 filter there will be no dark blacks, let alone dark shadow tones.
- Use that time value to expose a second test sheet.
- Replace the low-contrast #0 filter with a high-contrast #5 filter.
- Make a series of second exposures onto the Test Strip.  
Systematically vary the time of exposure with the #5 filter to determine the best exposure time for the shadows.  
The optimum exposure is the one that produces the best shadow detail without falling into the void of maximum black.
- Make a final print exposing the low-contrast emulsion layer first with the #0 filter, and then exposing the high-contrast layer with a #5 filter.
- Write down the results of the tests so the print can be reproduced.

### VARIATIONS

Subtle adjustments can be made by altering the balance between the two exposures. A reduced exposure with one filter should be met with a change of equal proportion of the exposure with the other filter:

e.g. a -5% reduction of the #5 filter exposure should be balanced by an increase in exposure time of +5%.

An initial starting point is somewhere around a 2:1 ratio of high to low-contrast..

e.g. a 15 second print with a #2 filter will usually work with a 3 seconds with a #0 filter (20% low-contrast) followed by 12 seconds with a #5 filter at the same aperture (80% high-contrast / 2).

(Remember that a high-contrast filter (#4-#5) requires opening the lens up one stop. This means the 20%:80% time factor is really a 20%:40% exposure ratio, which is the same as 2:1).

## FLASHING and MOONING

### FLASHING

The technique known as Flashing is used to solve problems of overexposure in the top highlights that usually happens with a bright sky or other reflective surface.

A sheet of paper is exposed with an amount of light that is just less than what it takes to make the paper turn grey. When a print is then exposed onto the paper, the small amount of light that comes through the highlights combines with the 'flashed' exposure and the highlights gain just the right amount of tonality to give them a good appearance.

#### Determine the Flash Time

take the negative out \_\_\_\_\_ of the enlarger (or use an adjacent enlarger)  
keep the same filter \_\_\_\_\_ that was used for the print  
make a text strip \_\_\_\_\_ for the highlights  
    use increments of 1 second, starting at 1 second  
find the first time slice \_\_\_\_\_ that makes the paper just barely turn grey  
    this is the 'threshold time'  
use one second less \_\_\_\_\_ than the threshold time as the 'flash exposure time'  
    this time may change if you print at some other enlarger on some other day

#### Use the Flashing Technique

get your exposure right \_\_\_\_\_ for the majority of the print  
    excluding the problem hottest highlights  
expose the print \_\_\_\_\_ at that exposure  
take the negative out \_\_\_\_\_ of the enlarger (or use an adjacent enlarger)  
expose the print again \_\_\_\_\_ for the predetermined 'flash exposure time'  
process the print as usual \_\_\_\_\_

### MOONING

This technique, named by Natalie Pellegrini in Spring 2012, is used to solve problems where the bottom tonal range is compressed and separation in the deepest shadow tones is lost.

The bottom tones are lightened by reducing the filter. Then a #5 filter is put into the enlarger and the print is hit with extra light to enhance the deepest shadows.

#### Determine the Moon Time

leave the negative in \_\_\_\_\_ the enlarger  
put a #5 filter in \_\_\_\_\_ the enlarger  
make a text strip \_\_\_\_\_ for the shadows  
    use increments of 1 second, starting at 1 second  
find the first time slice \_\_\_\_\_ that makes the shadows just barely turn appear  
    this is the 'threshold time'  
use the threshold time \_\_\_\_\_ as the 'moon exposure time'  
    this time may change if you print at some other enlarger on some other day

#### Use the Mooning Technique

get your exposure right \_\_\_\_\_ for the majority of the print  
reduce the exposure \_\_\_\_\_ in the shadows using a filter that is a ½ step lower  
put a #5 filter in \_\_\_\_\_ the enlarger  
expose the print again \_\_\_\_\_ for the predetermined 'moon exposure time'  
process the print as usual \_\_\_\_\_

## PUSH and PULL PRINTING

In the Film Developing Lecture we examined the principles of underexposure and overdevelopment, commonly called Pushing film, and conversely, overexposure and underdevelopment, less commonly called Pulling Film. The silver on photo enlarging paper is the same as the silver that is on film, so the same principles can be applied to printing. The actual process is somewhat different, however.

The first step with either technique is to get a normal print that meets the definition of a good print; a full tonal range with detail in the highest highlights and deepest shadows.

### PUSH PRINTING

The act of underexposing the photo paper will expose less silver than normal. Developing it longer can then enlarge the grain enough to get a readable image. Increased grain size will render a colder print tonality. And produce a more textural print with higher contrast. Be careful to not lose too much detail in the shadows.

For a cool-tone print 1 stop underexposed and extend the developing time until the image is satisfactory. Write down the print time so you can try it with other prints.

For a more extreme look, a good starting point would be a 2-stop underexposure with twice the developing time.

### PULL PRINTING

Overexposing the photo paper will let a lot more light hit the paper causing more silver grain to be exposed. Then by developing not only for less time but actually in weaker developer for a longer time, an interesting textural look can be achieved. Finer grain will render a warmer print with greater detail.

For a somewhat warm-tone print try overexposing by 1 stop and develop in half-strength developer.

A good starting point for a more extreme look would be a 2-stop overexposure with development in half-strength developer. Even weaker developer, mixed one-quarter strength or less, can be used with even longer developing times to extend the effect. Just be careful to avoid fogging the paper during longer developing times. Close down the safelight to be sure.

Remember that bleaching and toning can still be used to modify the final print from these techniques; with bleaching used to lighten the highlights and selenium toning used to darken the shadows.

### Variations:

Develop the paper in Film Developer that is weaker than Paper Developer.

Develop in Lith Developer to render a very different effect.

Lith Developing is the overexposure of certain silver-rich papers followed by development in a dilute high-energy Lith Developer that produces large-grain cool-tone shadows with fine-grain warm-tone highlights.

See the [Lith Printing](#) handout.

## MULTIPLE PRINTS

It is sometimes desirable to print more than one image on a single sheet of photo paper to establish a set of relationships for the viewer to contemplate. In this case it is usually important to position these images in specific locations. To do this it is easiest to draw a master template on a single sheet of paper and then size and align the negatives to this guide. The procedure is similar to that used to size and position single images to a personal standard as described in the Photo I Handbook. see: Standard Printing Sizes page. There are a couple of extra tricks, however. This procedure also assumes that you have already figured out exactly how to print each negative at this size enlargement so that it will complement all the other prints. This includes knowing all time and aperture settings, filter selection, and burning and dodging.

### PROCEDURE

draw rectangles \_\_\_\_\_ on your master template sheet use a sheet the same size as your final photo paper draw the rectangles to a standard 2:3 aspect ratio  
tape the template \_\_\_\_\_ to the easel along the bottom edge only this allows you to flip the template out of the way easily without losing exact alignment and registration  
set up to print \_\_\_\_\_ in the darkroom as usual flip the template \_\_\_\_\_ out of the way  
tape the photo paper \_\_\_\_\_ to the easel at all four corners use drafting tape that is not too sticky,  
or use regular masking tape and stick it to your jeans to make it less sticky  
flip the template \_\_\_\_\_ back over on top of the photo paper  
install a red filter \_\_\_\_\_ using either the unnumbered Red filter in the multigrade filter sets  
place the negative \_\_\_\_\_ into the enlarger  
align the image \_\_\_\_\_ with the appropriate rectangle on your master template turn enlarger light off \_\_\_\_\_ putting it in expose mode rather than focus mode  
flip the template \_\_\_\_\_ out of the way expose the photo paper \_\_\_\_\_  
  
replace the template \_\_\_\_\_  
replace the red filter \_\_\_\_\_  
set up the next negative and align and print as described above

If you are making more than one copy, you may want to expose several sheets for each negative setup. If the darkroom is not too busy you may want to set up two negatives in separate adjacent enlargers.

### MATTING

You should consider how you are going to mat these multiple prints when you are calculating just where and how far apart you are going to place them on the photo paper. Be careful to consider the sizes of the borders (rarely less than 3") and the overall proportions (usually to some integer relationship).

A similar effect may be had by matting several individual prints in an oversize mat. see: other pages on split frames and multiple imaging