



# The darkroom

## for black and white film processing & printing

### This article deals with a traditional **film** darkroom.

If, like most photographers these days, you take pictures using a **digital** camera, you will need to "process" them in the *digital darkroom* - on your computer, or have a photo lab do it for you.

Click [here](#) for information, tips and hints on editing digital images.

Many black and white film photographers (*yes, there still are some*) rely upon commercial film labs to do their processing for them, while others feel they get the results they want by handling the job themselves. Discounting the time required, it is less expensive to develop and print your own film. In order to do this, you need a darkroom.

Some black & white films like Kodak's T400 CN film or Ilford's XP2, can be color-processed when you don't have the time to develop and print them yourself. *Color-process black-and-white film* is developed in a standard color processor, like the one at any one-hour photo shop, if there is one remaining in your town, but the resulting negatives are black-and-white. You can print them like regular negatives. They can also be printed by your color shop, but you should expect some unusual (but not always unpleasant) tones in your images, from sepia to blue-gray, unless the technician doing the printing is experienced in color-correcting with this type of film and takes the time to suppress the overall color tones so your images show true shades of gray.

### DARKROOM ESSENTIALS

**Darkness** - The ideal darkroom is pitch black, but total darkness is sometimes difficult to achieve in the home, especially if you have commandeered a room that also serves other purposes, such as a bathroom or kitchen. Here's a good rule of thumb for the minimum amount of darkness required - if you don't see any light in the room over a period of five minutes, it's dark enough for normal usage.

It's surprising, but the room that appears to be totally blackened for the first five minutes may reveal a number of dim light leaks after you've been in it for twenty or thirty minutes. Note where light seems to be coming in, usually around the door, windows, around ceiling tiles and even through electrical outlets. Block all light leaks. Sometimes this means simply placing a towel along the base of the door. Use cardboard, cut to size, to seal a window, taping it in place for peace of mind.

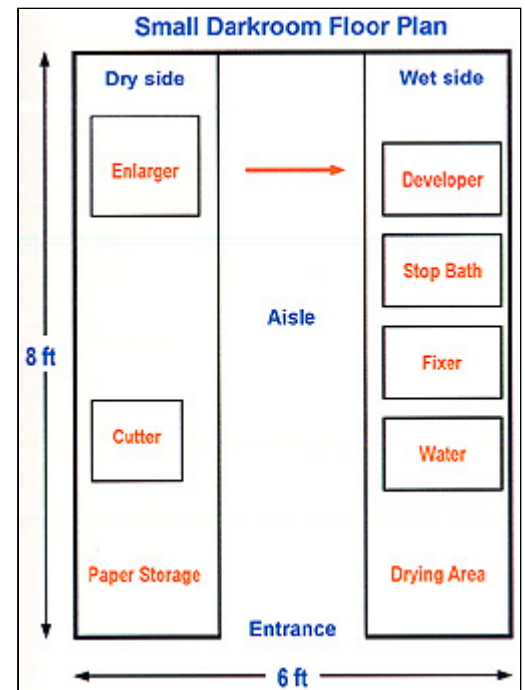
If, for some reason, you just can't block a dim light leak (one that you first observe only *after* you have been in the darkened room for five minutes) and are concerned that it might fog fast film, you can create a simple light barrier by opening the film cartridge inside a cardboard or wooden box that faces away from the trace of light. Added insurance is achieved if the interior of the box is spray-painted with matte black paint and has a heavy, black velvet curtain over its opening.

**Two separate work areas - one dry, one wet** - One practical darkroom design has a table or countertop along one wall for the enlarger, trimming board and paper supplies (the dry side), and another countertop or table along the opposite wall for print processing trays and, preferably, a sink (the wet side). This separation is effective in preventing damage to the enlarger, timer, film and paper supplies from splashed or spilled liquids.

When space is at a premium, you do what you can, and keep wet and dry materials separated as much as possible. If your darkroom has only one working surface, build a small partition between the wet and dry areas to keep the liquids on their proper side.

The work surface on the dry side must at least be large enough to hold the enlarger and a paper trimmer. The area of the wet side's work surface is dependent upon the largest size of enlargement you plan to make. Why? Because you will need space for four processing trays, each of which can

fully contain your biggest enlargements. If you are not going to make any prints larger than 8" X 10", you need far less work area than if you are going to produce, say, 20" X 24" enlargements.



**Water** - And lots of it - both hot and cold, ideally with a mixing control that maintains a constant, selected water flow temperature. Such controls can be quite expensive. Most amateur darkroom enthusiasts rely instead upon a simple thermometer and their own attentiveness to temperature variations. (In a pinch, when you don't have a darkroom sink, you can haul water in and out in pails - an activity you'll probably soon tire of.)



A light-tight fresh air inlet on the dry side and an extractor fan located above the wet side ensure a continuous supply of fresh air.

**Ventilation** - A darkroom should have a continuous supply of fresh air. One problem that can occur by zealously sealing off light leakage cracks and crannies is that you also seal off entrances for fresh air. The answer is a light-tight air entry, which can be achieved in a number of ways. One way to do it is to cut a hole in the outside of a wall at one height, preferably about a foot above the floor, and another hole on the inside of the same wall at another height, ideally above shoulder height. Like a chimney, air can get in; light cannot. The air enters the lower wall opening, travels up through the wall space and goes into the room through the upper wall opening.

The darkroom should be equipped with an extractor fan that pulls air from the room, causing fresh air to be drawn through the light-tight air entry. It is important to locate the extractor fan above the wet side and to locate the fresh air intake on the dry side. This way, fumes from the liquid chemicals are not drawn across the work area, but are instead extracted away from you. The extractor fan can be an ordinary bathroom fan, a multi-speed fan or a special darkroom fan. The fan should be exhausted to the outside, which may require a duct. The bonus in having a duct for the exhaust is that it usually must be bent and turned to direct the exhaust outside, thereby creating an effective seal against light.

*A few words of caution* about air flow and dust. If your darkroom's intake vent brings in air from a dusty room - where there is a furnace, for example, or from outside in a city environment - you would be wise to place an air filter in the vent to trap particles that can settle on your film or printing paper. Don't sweep the floor or dust your darkroom before you begin to work in it, because you'll find that airborne particles can stay suspended for just long enough to settle on and ruin your work.

**Room height** - You never know how high you may need to raise your enlarger head when cropping or making a super-sized enlargement, so be sure that there is sufficient headroom for your enlarger to be extended to its full height. Sometimes, this can be achieved by removing the ceiling tile directly above the enlarger, if you have a suspended tile ceiling. Can't raise the enlarger? Lower its base. When you just don't have the ceiling height, you can often build a drop-base - a paper support that can be set at different heights beneath the enlarger. (We've even made enlargements with the paper on the floor.)

**Four kinds of lighting** - (1) white light, (2) safelights, (3) enlarger light and (4) no light at all.

**No light** - Film must be handled in total darkness. Keep in mind that it is so sensitive to light that exposures of 1/8000 sec can be used to take pictures, so film that encounters the slightest amount of light in a darkroom can be irretrievably destroyed. Panchromatic black and white film is also sensitive to all colors of the spectrum, so it cannot even be exposed to a safe light without damage.



Don't locate your safe light switch close to the room's main white light switch to avoid accidentally turning on the wrong light.

**White light** - You will be amazed how frequently you will need ordinary, bright room lighting in a darkroom. You use it for negative selection, mixing chemicals, cleaning up, inspecting finished prints, and so on. Just be sure to turn it off when handling unexposed film and paper.

**Safe light** - Photographic paper, unlike film, is designed to be handled under certain colored, dim lights, known as safe lights, without adversely affecting the paper. Nonetheless, printing paper should be kept in the dark as much as possible, and should not be brought nearer to safe lights than is absolutely necessary. Make sure you are familiar with the manufacturers recommendations for safe distances, and never use a bulb that is brighter than recommended to avoid "fogging" the paper.

**Enlarger light** - When you turn on its light to focus the enlarger or to expose printing paper and make a print, that is preferably the only light that is on in the darkroom at the time. However, many darkroom technicians are comfortable with also having a safe light on at the same time. The advantage of having only the enlarger light on is that you are able to clearly see the resulting projection on the enlarging base or paper, without the influence of the safe light.

**Room temperature** - You don't want to work in a room that is too cold or too hot, and your photographs don't like such conditions, either. If the temperature of the air in the darkroom is between 65 and 80 degrees F., you and your images will both be all right. Any colder or hotter, and you will not enjoy your darkroom experience.