

Brian's Crash Course into Photography

Created for the dummy in us all!

Okay. Here it goes.

Photography- it's Latin for "writing with light".

The Camera:

To start off you have the camera which consists of many parts:

- the body of the camera is the area with the mirror and all of the controls for the amount of light that will be hitting the film. It's the places where the film is stored, the picture is taken, and where it is determined by you as to just how much light will hit the film.

-the lens is the eye of the camera. This helps you control the focus and aperture (the thing with numbers like 2.8, 4, 5.6, 8, 11, etc. that controls how wide the opening inside the lens will be.

-the flash, this controls how much light will be given in the picture and should also contain a scale on the back to tell you what shutter speed and aperture opening you should have to expose your film to its correct settings.

-power drive (optional), this allows you to be able to advance your film without manually operating it and some models let you take a certain number of pictures within the second. (The new Canon Eos 1N RS, allow the photographer to take 10 frames per second, but in this case the power drive is built in. expensive!)

The Exposure:

So now that you know what a camera is its time to figure out just how to MANUALLY control the amount of light that will help your film to come out right instead of learning that you wasted your time because your film is over or under exposed. (that's a mouth full.) There are three determinants of how much light will affect your exposure on your negative(s): film speed, aperture opening, and shutter speed.

-**Film Speed**- this is actually an understatement, because it is actually the film sensitivity to light and how fast the silver halite's inside the negative are exposed.

General Rules: 1- the higher the films number the more grains it is going to be and the less civilized it will look after blowing it up to really big sizes.

2. the lower the number means that your film will be less sensitive to light and the longer your exposure will be to expose your film to the correct setting. If your speed is low like ASA 25 to ASA 200, you will be able to make large quality sized prints without the worry of graininess, but this film can only be used during the day or in brightly lit conditions. The **higher** the number the more sensitive it will be resulting in really grainy pictures and really offensive enlargements!

3. **The** most obvious rule would be this: use high speed film for any type of sports event, at night use a flash with it. Use medium speed film (ASA 200 or 400) inside in a brightly lit room, or in the evening or morning- not in blazing sun. Use Low speed films for outside, brightly scorching sun.

-Aperture Settings- After determining what type of film speed you are going to use you need to know what to set the aperture at **-after setting your film speed dial**. The aperture, as mentioned earlier, is used as the control for how large or small of an opening there is going to be inside of your lens. With an aperture of 2.8, you are going to have a full opening which means that your pictures borders are going to be somewhat hazy, this is called the depth of field. The **depth of field** is the area of the picture in front and in back of the subject that is in focus. So with a wide opening such as $f/ 2.8$, this is going to have a shallow area in focus, a shallow depth of field. With a small opening such as $f/11$, $f/ 22$, or $f/32$, the depth of field is going to remain deep or very sharp, and not blurry. This is because it is almost as large as a pin hole and allows greater characteristics to be placed on the undeveloped negative.

-Shutter Speed- The shutter speed determines how fast the picture will be exposed to the film, after the light has gone through the small or large opening. With speeds from $1/60$ sec., $1/125$ sec., and up, there will not be a blur when the photo is exposed, but with slower speeds ($1/30$ sec., $1/ 15$ sec., and slower, the negative is going to have more of a blurred effect. If shooting a football or basketball game the speed used should be that of $1/500$, $1/1000$, or $1/2000$ so that the action is frozen and causes the action to freeze on the negative.

Now that you should have a faint understanding of what it takes to compose the photograph, you are going to learn an easy way to correctly expose your negative. The average shutter speed for any outdoor, around the house, family type shot is set at $1/125$ or even $1/250$, usually. Use this chart below:

f/1.4	1/5000
f/2.8	1/2000
f/4	1/1000
f/5.6	1/500
f/8	1/250
f/11	1/125
f/16	1/60
f/22	1/30
f/32	1/15

If your camera suggests that you need to have an aperture of f/8 because you have set your shutter speed at 1/125, then you are in the okay (you can tell by what exposure the camera suggests by looking in the viewfinder at the exposure meter). After deciding this you will be able to take the same picture by changing your f/ stop and shutter speed. If you open your aperture by one stop (or click), this is allowing more light to hit the negative, to keep the same exposure as previous, you will need to raise your shutter speed to keep control of the length of the exposure. Otherwise, you will have a negative that has been overexposed because of too much light hitting the negative. If you needed to close your aperture by one stop or then you will raise your shutter speed by one to compensate for the loss of light. So in other words, the picture you took at f/8 @ 125 will be the same as f/5.6 @ 250, f/16 @ 1/30, or f/1.4 @ 1/5000.

Developing Your Negatives-

So you've taken your pictures and you think you've got some really great shots. Well see. The next step in photography after you have taken your pictures is to develop them. This process is a timely process and should not be done in a rush or in a "no- sleep-the-night-before morning".

Here are the basics to developing:

There are many chemicals when dealing with photography and the processes. Each chemical serves a purpose and allows you to do only a certain function in the processes:

Developers: These are the chemicals in which form the image that shows up on your negative or final print. When dealing with developing your negatives, we use **TMAX**. TMAX is a chemical in which doesn't really have a smell to it and you should only use this chemical once. It takes the silver halides and changes them into a transparent image to be used as the negative.

In printing we use a chemical called **Dektol** as our developer. This allows you to form the image onto the paper, while using a red-light (located on the top of the ceiling). The basic reason for developers is that without them, you couldn't do anything because you couldn't see your image, in a nutshell.

Neutralizers: This is a generic term for it, but oh well, I'm the author of this course. These neutralizers are actually one neutralizer called **STOP BATH**. Stop bath allows the developer to stop changing the silver inside the negative or paper and it allows the film to prepare for the next chemical without having any trace of developer left.

Fixers: This really hard term in which allows your film to be exposed to light AFTER you have used this chemical for a certain length of time is called **FIXER**. Fixer allows you to see your negatives in regular room light without having your masterpiece destroyed in front of your eyes and making you feel useless. Fixer, just like stop bath, is used in both printing and developing.

Cleasers: This is just like what it says. There is water, which is what we use to drink, shower, drive with, and use in photographic processing. The other chemical is **Photoflo** which is used during developing your negatives, after the fixer to cleanse the negatives and leave them with a thin coat of dust protectant.

Okay, you've been introduced to the chemicals and even though some of them smell like rotten eggs, and other smell like last week's dinner mom made, while still some smell like lemon scented Dawn. Now we are going to learn HOW to develop your negatives. You will notice if you open one of the cabinets in the back how that there are many plastic pieces there. The big round "cup-looking" thing is called the **tank**. The small "skinny-tube" looking thing is the **spool**, while the "white-circular-object" is termed as the **reel**. The "funnel-looking-thing" is called the **top**, while the "lid- looking-thing" is called the **lid**, duh!

NOTE: THE FOLLOWING FILM PROCESSING STEPS ARE TO BE COMPLETED IN THE DARK. ANY LIGHT WHICH REACHES YOUR FILM AFTER OPENING THE CARTRIDGE WILL DESTROY YOUR FILM!!!

The spool is to go into the tank. Load the reel with your film that you have taken out of your film cartridge, cut at the spool, and start loading it on the reel. After loading it on the reel you will need to take the reel and push it all the way to the bottom of the spool. Place the top on the top of the tank and twist it until the lid locks down (you will hear a click or snap). This ensures that the tank

is light tight and that your film will not be exposed to light until you open it in the end of this processing processes.

Now that you have loaded your film, you will need to learn how to develop your film with the chemicals. As we stated before there are four chemicals to be used in developing (in order): TMAX, stop bath, fixer, and photoflo, with some use of water. If you are using Kodak TMAX 400 speed film you are going to be using the TMAX for 7 1/2 minutes at 68° F. This means that for every minute, you will shake your canister lightly for 10 sec. out of each minute, for 7 minutes (*the extra 30 seconds you shake at the beginning of processing*). **FOR EACH REEL YOU HAVE LOADED INTO YOUR CANISTER YOU NEED TO HAVE 10 OZ. OF THE SELECT CHEMICAL IN FOR EACH.** After you have done the time for the developer, you will need to use the stop bath: 10 oz. for 30 sec. of continuous agitation. After stop bath the fixer is going to be used just the same way that the developer was used, except you will only need to use it for 6 minutes: 10 oz. of fixer for 6 minutes at 68°, 10 sec. of each minute.

After your fixer you will need to rinse the film twice with water by filling the container with water twice to eliminate the fixers presence. After rinsing, you may then use the photoflo for 30 sec.- continuous agitation, and then you can rinse it out with water to get rid of the annoying bubbles!!! Squeegee off and you're done. Hang to dry and that's it!!!

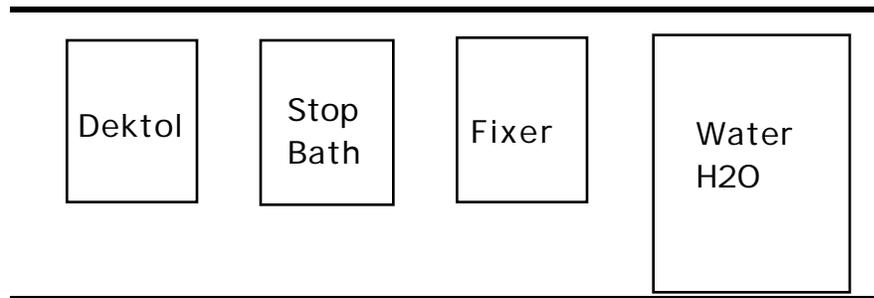
Rule: The only factor or time that will ever change in the developing process is the time for the developer. (This is because when you have a certain number of grains in the negative, the times change as to how long the developer will need to make the image on the negative. All other times are the same! stop bath- 30 sec., Fixer 6 minutes, photoflo- 30 sec.).

Printing a Contact Sheet:

And you thought photography was a foreign language! Well, now that we have mastered the art of developing our negatives it's about time to learn the final steps to actually getting your picture. This process is called printing, and it's not that hard to do. Light is the controlling factor in printing as well as taking a picture. Figuring out how much or how little light you are going to need depends on how dark your negatives are. If you look at your negatives you are actually seeing an opposite of what your print will look like on the photographic paper. All

the area on a negative in which are light will come out dark, the area's that are dark will come out light. It is like this because you are using an enlarger, which will pass light through the negative and get the opposite from what is on the negative. If I've lost you, just trust me cause it gets easier to understand through trial and error.

In printing we only use three chemicals instead of four like in developing. In setting up the chemicals, we use trays to keep the chemicals from spilling or draining. Setup is as follows:



You should only fill the trays about 3/4" to 1" deep with the appropriate chemical, and make sure that each tray has at least two paddle tongs. (This will eliminate the confusion). Make sure that each tong stays in the tray that it was designated to, to terminate the possibility of contamination of the chemicals which could lead to ruining countless numbers of prints.

Exposing Your Negative on the Paper :

Make sure before you turn out the white light and turn on the red light before attempting to see your negative. **Never open any photographic paper unless the white light is completely out and the red light is on.** *This is because the paper is sensitive to light just as the undeveloped negatives are. Don't do it, the papers expensive!* Turn on the enlarger and raise the enlarger as far up as it will go. After doing so, open the aperture (which is controlled by the same principle as a camera's aperture ring) so that it is fully open, 2.8 or somewhere thereabouts, and focus the light so that the apparent light borders are sharp and in focus.

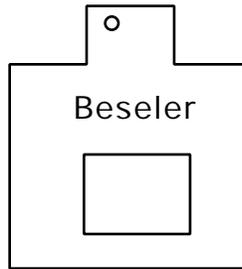
Take a sheet of glass... provided free of charge by your lovely journalism department, and lay it flat on the enlarger table. Turn off the white light from the enlarger, and set your timer at 8 seconds if your negatives are light, or 12 seconds if your negatives are dark (if you can't tell the difference between light and dark go back to kinder). Take a sheet of photographic paper and place the

paper, shiny side up, underneath your negatives. Place underneath the glass and turn on your timer, it will stop on it's own.. Take the exposed paper and place it in the Dektol, and leave it there for about 1 1/2 minutes or 2. Move the paper over to the stop bath and leave it there for 30 sec. After this move your print into the fixer. It is only in the fixer and water that you can turn on the white light, Leave the print in the fixer for five minutes, and then transfer the print to water for about ten minutes. **Keep the white light off until the print is out of the Dektol and Stop Bath!** So there you go, you've printed. If your print was too dark go back and take a few seconds off, or if they were too light the add some time to it. That's Contact Sheet Printing!!! (my hands are tired!)

The Real Printing:

Just like printing a contact sheet, when you are printing a individual picture you need to determine what time and aperture you need to maintain an adequate exposure of your picture on the paper. To determine this we do what we call a **test print**. In dealing with any kind of individual prints, there is a few setup rules to follow. The chemicals are in the same order as they were when you were doing a contact sheet. The only difference is learning how to place and control how your negative is going to turn out.

If you look on the enlarger, there is a little tray placed between two metal pieces on the enlarger (it looks something like this):



Place your negative in the carrier, so that it is **facing UPSIDE DOWN, but don't flip it over on its back!** Place your negative carrier back into the enlarger and raise or lower the enlarger head to the desired picture size. Focus the enlarger so that it is sharp and then close it a few apertures. Add about 8 seconds to the clock and expose a cut piece of paper that is only big enough to fit into the desired size. Develop the paper so that you can tell if it is too dark or too light. Use the same dark/light rule that you used in the contact sheet printing. After determining the appropriate settings make a final print and develop the paper accordingly.

Conclusion:

So there you have it! Brian's quick, easy, and painless approach to the wild world of photography. If you have any questions, look up the answer! Photography is based on an individual perspective. Each person has different interests, goals, and gifts when it comes to photography. Only you can expand photography in your head, and only you know how much you know, or need to know.