

## NEGATIVES

Technically, a good negative is a combination of sharpness of rendition plus the right degree of density and contrast.

### CONTRAST AND DENSITY

If a normally exposed negative is:

thin and contrastless = under-developed  
dense and contrasty = over-developed

If a normally developed negative is:

thin and contrasty = under-exposed  
dense and contrastless = over-exposed

Most of the time, the high or low contrast in a negative is a product of the degree of contrast in the subject matter and is unrelated to the above deviations from normal exposure and development.

Too short a time of either development or exposure makes a thin negative.  
Too long a time of either development or exposure makes a dense negative.

**Grain** is a technical term that is used often in making aesthetic judgments. The light sensitive silver salts that compose the emulsion of a film are transformed into tiny grains of metallic silver if exposed to light and then developed. The more the silver salts are exposed to light, the denser is the layer of metallic silver grains, and the darker that portion of the negative. The unexposed silver salts are washed away and become the thin portion of the negative.

Graininess is an inherent quality of an emulsion, with faster films having more grain than slow films.

Additional factors increasing graininess when printing a negative:

1. overexposure;
2. developers that produce coarse grain negatives;
3. overdevelopment;
4. over agitation;
5. high degree of enlargement; and
6. contrasty (harder) gradation of printing paper.

In the case of an extremely contrasty subject matter, it might be desirable to decrease contrast of a negative while retaining normal density. The procedure would be to overexpose and underdevelop.

### FILM ISO (synonymous with ASA/DIN)

International Standards Association rating combines ASA and DIN (i.e. ISO 400/27). Film rating may include only the ASA abbreviation listing ISO 400.

**ASA speed:** American Standard Association: A rating of a film's sensitivity to light.  
DIN (Deutsche Industrie Normen) is the European equivalent to our ASA rating but using a different number system. The higher the ISO rating or film speed number then the faster the film.

**Emulsion:** The film generally in use today has a flexible cellulose type backing upon which is coated a light sensitive emulsion. The emulsion side of the film faces outward toward the light when in the camera. A developed exposure on film is a negative (or a positive if slide film is used). The film and negative always curl toward the emulsion side. **The emulsion side of the negative is the dull side.**

## FILM PROPERTIES:

**grain:** All film has grain. The emulsion's light sensitive silver particles are grains. The way these grains clump together makes one film grainier than another. Slow speed film has finer grain than fast speed film and so is less discernible in an enlarged print or image projection.

**contrast:** Contrast varies in accordance with the intensity of the light striking the emulsion, but the tendency to more or less contrast is also inherent in the film. Slow film has more inherent contrast than fast film.

### low ISO

finer grain, more contrast  
ample light  
or tripod required

### high ISO

more grain, less contrast  
low light

## ALTERING ISO / film speed and camera meter settings

**Metering:** Most manual cameras employ center-weighted metering systems. Automatic cameras may permit use of matrix metering, center-weighted metering, or spot metering systems. For difficult lighting situations, such as back lighting, spot metering can be used along with Auto Exposure Lock to meter off of a specific value (light, dark, or grey/middle value) in the composition.

## BRACKETING METHODS:

### Manual Cameras:

Expose one frame normally. **With a manual camera simply alter the aperture or shutter speed setting to increase the amount of light entering the camera, usually by one stop.** The camera meter will indicate that there is too much light for your exposure. Expose a second frame with this increase in exposure.

**Exposure override:** Many cameras have a dial with +1, +2, -1, -2 settings. Expose one frame normally. Expose a second frame with this increase in exposure by setting the dial to +1.

### Automatic Cameras:

With an automatic camera you will have some options. Check your manual to determine your camera's features.

**Manual Exposure Mode:** Expose one frame normally. Then alter the aperture or shutter speed setting to increase the amount of light entering the camera. The camera meter will indicate that there is too much light for a given exposure. Expose a second frame with this increase in exposure. Usually the automatic exposure compensation feature will not work in manual mode.

**Aperture Priority or Shutter Priority or Program Modes:** Expose one frame normally. **Press the plus/minus button** that permits **Exposure Compensation** for an individual exposure. **Choose the +1/2 or +1 setting in the LCD to overexpose one frame.** Expose a second frame with this increase in exposure.

## Auto Exposure Bracketing in Aperture Priority or Shutter Priority or Program Modes

Automatic cameras will allow you to create two or three exposures at once, with varying amounts of exposure. An ideal setting allows for two exposures, one at normal exposure and the second exposure at either + 1/2 or + 1 stop. Many cameras provide only a general autoexposure mode, which produces normal, -1 stop, and + 1 stop exposures. In any case, this feature, coupled with a setting for continuous shooting, can be helpful when photographing scenes that require some spontaneity, as in moving subjects, candid shots, or portraiture.

### **Black and White negative film or Color negative film:**

**Bracketing toward overexposure when using negative film** is a common method used to gain practice in determining the correct exposure. Shadow detail is retained and colors tend to be more saturated when negative film is overexposed by 1/2 stop or 1 full stop. Overexposure may cause highlights to become blocked. Negative films have greater latitude than slide films so there is some leeway in exposure. Overexposure permits more information to be recorded on the film. This bracketing method is also preferred for digital photography.

### **PUSHING FILM to increase film speed:**

One can use TMAX 400, DELTA 400, or TMAX 3200, faster films that work well in low light. These films can be "pushed" to increase their speed and to permit work under very low lighting conditions, with or without a tripod.

### **The entire roll is underexposed one stop, cutting exposure in half. TMAX 400 is rated at ISO 800, for example.**

The film then must be "push-processed" during development. The processing affects the entire roll of film.

Given that the film has been underexposed one stop (rated at ISO 800), **the film must be pushed one stop, or overdeveloped.** Charts in the lab provide an indication of appropriate times for push-processing films; consult with your instructor. Pushing film results in increased graininess.

### **Color reversal film (slide film, transparency film, positive film)**

**Bracketing modestly toward underexposure** is the practice when using transparency film.

Colors tend to be more saturated and highlight detail is favored when positive film is slightly underexposed by 1/3 or 1/2 stop. Transparency film has no latitude so film exposure must be as accurate as possible. An underexposed transparency can produce muddy color and loss of shadow detail whereas an overexposed transparency can produce blown-out highlights and anemic colors.

### **FILM:**

Black and white film is .005 inches thick. As seen in the diagram below, there are several layers included, each for a different purpose. The surface is a thin coat of a protective substance to prevent scratches. Under this layer is the emulsion, where the image is registered. The emulsion is approximately 60% gelatin and 40% light sensitive crystals. Next is an adhesive to hold the emulsion onto the next and thickest layer, a flexible plastic serving as a support. Then another adhesive binds an anti-halation coating. This coating keeps light from bouncing back through the emulsion, reducing the presence of halos around bright parts of an image.

