LIGHT METERS

An Introduction:

A *light meter* measures light and translates that measurement into a workable set of f-stop and shutter-speed combinations, appropriate to the lighting conditions of the subject. As such, it is a guide to using the three exposure controls: lens opening, shutter speed, and film speed.

Meters have a light-sensitive cell to register a reading. These cells in modern meters are battery operated. Make sure your camera has a fresh battery! The battery is usually located in a round compartment in the bottom of your camera (open with a coin).

For use, the meter must **first** be set for the ASA/ISO rating of the film being used (in our case: 400).

The light meter works by pointing it in the direction of the subject (for cameras with a built-in meter, this means pointing the lens). The meter reads the light *reflecting* back off the subject. Once the meter reads the light, it indicates an appropriate f-stop and shutter-speed combination. Some types of meter indicate a variety of choices, while others indicate only one. Remember that several combinations are possible. Some light meters may also measure the light reflecting *onto* the subject (incident light).

Your Camera's Light Meter:

All cameras can be classified as manual, semiautomatic, or automatic. Your camera for this class will be either fully manual, or semiautomatic & manual. ALWAYS SET YOUR CAMERA FOR MANUAL (M) IF IT HAS A SEMIAUTOMATIC OPTION! THIS ALLOWS MAXIMUM EXPOSURE CONTROL. GOOD EXPOSURE=GOOD PRINT.

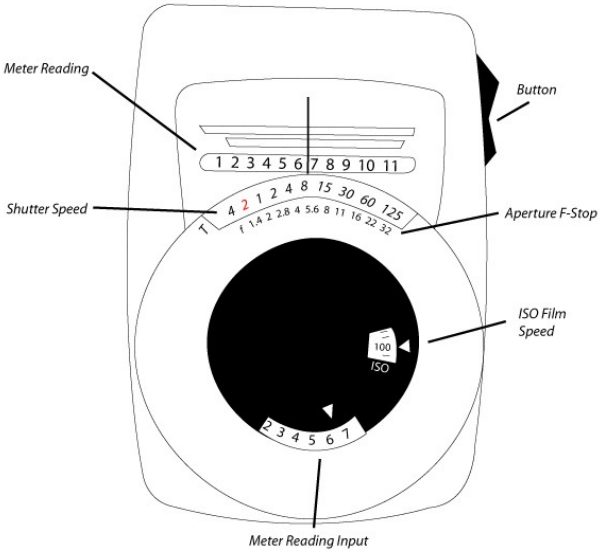
Manual cameras
Both the f-stop and the shutter speed must be chosen and set manually with the aid of a built-in or a separate light meter.

Semiautomatic cameras
Either the f-stop or shutter speed is chosen and set, and the camera automatically sets the other control. In 'shutter-priority' modes (S or Tv), the photographer chooses the shutter speed and the camera automatically sets the f-stop; in 'aperture-priority' mode (A or Av), the photographer chooses the f-stop and the camera sets the shutter speed.

Automatic cameras
Once the film speed is set, the camera chooses the f-stop and shutter speed automatically when pointed at the subject (this is how a 'point-and-shoot' camera works).

Light Meter Types:

- Hand-held light meter.
- Through-the-lens light meter: *built into the camera*
  (this includes 'Matching needle', 'Single needle', and 'Electronic diodes')



HAND-HELD LIGHT METER

Light meters read either *reflected* or *incident light*; many meters read both.

Reflected light
The light that reflects off the subject and bounces back to the meter. The meter is pointed directly at the subject.

Incident light
The light that falls onto the subject. Meters that read incident light have a diffuser attached over their light-sensitive cell. The meter is brought to the subject, and pointed back towards the camera position for a reading.

Light Meter Limitations:

Why bother with light meters? Why not simply aim the camera, switch to an automatic mode, and shoot? First of all, light-meter readings are not always accurate. Meters are only machines and are dependent on the information fed to them. Sometimes that information must be interpreted and adjustments made. Meters do not discriminate among different subject matter. *They are calibrated only to average the light*:

Meters read for a 'middle gray'

This means that meters average whatever light they read, whether from a dark, light, or gray subject. The average represents the gray, that is, halfway between black and white. Usually, this reading works well enough, since most subjects have approximately equal amounts of dark and light areas. However, when the subject is primarily either dark or light, the meter reading will be inaccurate.

For example, metering for light outside on a bright, sunny day in a snow-covered field will yield a reading on the high end of the light scale, indicating *a lot of light* reflecting back. This will lead to the light meter providing an f-stop and shutter speed combination geared to compensate by *allowing less light to reach the film*. The reading will <u>over-compensate</u>. How can <u>you</u> compensate for this? <u>Add more light</u> by the equivalent of one f-stop or more than the meter suggests. (Either open up the aperture or slow down the shutter speed). If the meter reading is f 16 at 1/500, try f 11 at 1/500 or f 16 at 1/250 (or even more in such a bright, reflective setting!).

Predominantly Light Subject = Allow MORE light into camera than meter suggests

The opposite would be true for predominantly dark subjects: <u>cut back on the light</u> the meter suggests by closing down the aperture or make the shutter speed faster. For example, if the meter reading of a very dark sweater is f 4 at 1/60, instead try f 5.6 at 1/60 or f 4 at 1/123.

Predominantly Dark Subject = Allow LESS light into camera than meter suggests