

THE APERTURE or *f* STOP

The aperture is an adjustable iris or opening in the lens system which is usually infinitely variable in its opening size, though even at its smallest aperture it cannot be closed. Its purpose is to control the **quantity** of light allowed into the camera and eventually to expose the film.

The *f* stop numbers on the ring that controls the aperture size are arrived at through a mathematical formula based on the focal length of the lens and its maximum effective aperture. The larger the aperture number the smaller the aperture. Opening the aperture a full stop results in **doubling** the quantity of light from the previous stop. Closing the aperture one stop, of course, results in **halving** the quantity of light from the previous setting.

Most aperture or *f* stop rings have detentes at the full stop points (some at half stop points as well). Again, the quantity of light is either halved or doubled when the aperture ring is moved one full stop respectively.

THE SHUTTER

The shutter may be considered a door that can be opened and closed for a selected period of time thereby allowing the light to expose the film. The shutter controls the duration of the exposure. Generally the shutter controls are located on top of the camera body. The times are incremented in fractions of a second. A change from one shutter speed to the next effects a halving or doubling of the duration of the exposure. On more recent camera models finer divisions of shutter speeds are possible.

On 35mm SLR cameras the shutter is located at the focal plane, hence they are called Focal Plane Shutters.

THESE TWO CONTROLS, THE APERTURE AND THE SHUTTER, ARE THE ONLY TWO CONTROLS THAT ACTUALLY AFFECT EXPOSURE.

FILM SPEED

Film speed is the manufacturer's rating of the level of sensitivity a film has to light.

Films that react quickly to light, or need very little light for correct exposure are known as **fast films**. Films that react slowly to light, or need more light for correct exposure are known as **slow films**.

The **speed of the film** is determined and assigned by the manufacturer and predetermines how much light is required for correct exposure of the film. Correct exposure is arrived at by using appropriate apertures and shutter speeds, in keeping with the sensitivity of the film. The selection of correct aperture and shutter speed settings for a given light situation may be arrived at by trial and error. Fortunately manufacturers have gone through this tedious process for us and their recommendations can be found on the instruction sheets packed with the film.

As well, we can make use of our metering systems to give us more accurate settings.

Once an aperture and shutter speed is found to be correct we can pick other combinations that will give us exactly the same exposure but different shutter speeds and *f* stops.

