The "simplest" special effect - matte box photography

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In general we assume that photographs are truthful representations of reality. This is a characteristic of photography that has been associated with it since its invention. One of the factors that supports this perception of photographs as witnesses of time is the shuttering mechanism of cameras and the nomenclature associated with its operation. The letter "I" was stamped next to the shutter release lever on many early cameras. This was understood to stand for "instantaneous" and by implication suggested that the camera would capture an instantaneous "slice of time" and that this would result in a "snapshot" view of the scene.

That the general public perceives photographs in this manner has colored our perception regarding photographs. Our very strong belief in the view that photographs are instantaneous records of time eventually makes possible what we call special effects, falsifications and, in today's digital world, post-exposure image manipulation procedures that truly jeopardize the perceived truthfulness of photographic records.

Don't worry though, most of society still believes that family snapshots are truthful records and when sharing travel photographs with friends and family hardly nobody questions the truthfulness of the photographs displayed by a traveler showing photographs of sights seen and events experienced in far off lands and exotic locations.

Deception through the photographic medium is, however, nothing new. It is almost as old as photography itself and one of the simplest methods of making a startling photographic record is to recognize some validity to the premise and statements mentioned above and purposefully making a photograph of a scene in a sequential, piecemeal, manner instead of an instantaneous one. These sequentially-made images are then viewed by an audience instantaneously. As you are viewing the photograph on the right right now.

Because of this discrepancy between the production step and the perceptual experience the audience tends to be amazed and/or confused when viewing the final product, a "special effect". Several techniques exploit this concept. In this case we are concerned with what is called a "matte box".

Matte boxes in photography are devices that exploit the possibilities of making a negative by exposing its various parts at different times and under different conditions. Matte boxes are generally used at the photography stage although a variation of the approach can be used at the printing stage. Matte-boxes are devices placed in front of the camera lens.
The basic idea behind matte box photography is that if a dark, featureless, subject is placed in front of a camera, the film will receive no exposure where the image of this subject is located. If, without moving the film, another exposure is made of a similar dark subject but one such that it is the exact opposite of the first one in terms of area that it covers, then the second exposure will seamlessly blend into the areas that were unexposed by the first exposure. These obstructions placed in front of the camera lens are called masks. One mask is called a positive mask, the other a negative mask.

The simplest example of how one might use such a set of masks is the making of a photograph where one individual appears in two or more locations in the same scene. This is what will be described below.

One can make a "matte-box" out of a rigid lens shade and then sequentially covering one side during the first exposure, and then the other, for the second exposure, with some black photographic tape. Commercial matte boxes are also available and "compendium shades" sold by several manufacturers can also be adapted to perform as such. Or, one can make one's own matte-box following the directions given below and shown in the accompanying illustrations.

The box is made out of black, 1/4 inch foam core board. This is a very good material to use because it is rigid and easy to cut and glue. The building process starts out with making a rectangular "tube" with walls about 4 inches or so deep. This is fashioned easily from an 18 strip of foam core 4 inches wide with cuts at 4, 10, 14 inches that do not extend all the way through but which allow the board to bent at sharp right angles. The free edges are glued together so the fourth edge resembles the other three formed by bending.

At the rear of the tube is glued a rectangular cover into which a circular opening is cut in the center, somewhat smaller in diameter than the outside diameter of a metal step-up ring that is attached to the outside of the back wall of the tube with tape. The step-up ring should be a generous one in terms of being bigger than the filter thread size of the camera.

The step-up ring can also be press fitted (not advisable) or glued. Good thing about taping it is that the matte-box can be detached from the ring in case this might be needed to align the box for special orientations or for other lenses that the box was originally designed for and which might have a different filter thread orientation.

The "front" end of the tube is fitted with a "C" channel made of foamcore on the box side and stiff, black, cardboard on the other side. The foamcore board about 5 by 10 inches in size, has an opening cut into it about the size of the front of the box or 4x6 inches. Two guiderails, about 1/4 by 10 inches wide, made of the same black cardboard that will be used for the "side masks" are glued to the top and bottom edges of this front cover. Then a very thin piece of paper is glued on top of these rails and a front piece about 1/2 by 10
inches is glued on top of the thinner pieces. This essentially makes a channel, resembling
the figure "C", into which a couple of black masks, about 4 1/2 inches by 8 inches or so,
can be slid in, one from each side as shown in the illustrations.

This "C" channel is glued to the front end of the matte box and the finished product might
look something like this:

![Image of the matte box](image)

Including an image of one person in two places on a negative can be done in several ways
and an easy way to do this is to photograph the person against a black background using
either multiple exposures with the camera shutter or keeping the shutter open for a time
and then operating a flash twice (or more) while the shutter is open. This results in two or
more images of a subject on the same piece of film but the background is not very
"interesting".

On the other hand, the use of a matte box allows a single person to be included in a
photograph against a normal background. This is what ultimately makes the photograph
more believable, or unbelievable, as the case may be.

When a location for your photograph has been identified, the camera is placed on a sturdy
tripod and your subject placed on one side of the scene. It is easy to see that if both black
masks of the matte box are inserted in the channel so that they touch in the middle of the
front opening of the box and an exposure is made, no image will be recorded.

Now the mask corresponding to that side of the scene where the subject is located is
pulled away from the front opening of the box and in the viewfinder of the camera the
side where the subject is located will be seen. The other side will be dark. In the middle
of the frame there will be a line, gradually going from clear to dark. The degree of
sharpness of this edge is a function of the lens aperture, focal length and distance the lens
is focused on. It is advisable to preview the location of the edge of the mask using the
camera lens in the stop-down mode instead of leaving the lens wide open. With the lens
wide open the edge may be very soft and in some cases will be hard to see its location
clearly.

Then the first exposure is made and the shutter is recocked. It is easiest to
use cameras that have multiple exposure capability such as some SLR's or
large format view cameras.

![Image of multiple exposures](image)
The mask that uncovered the scene is now gently pushed over so that it again touches the edge of the other mask and then that mask is pulled back, revealing the scene on the other side of the viewfinder. Your subject now takes up a position in that area and your second exposure is now made.

Because the dark edge in the second photograph is exactly the opposite in sense to that of the first the exposure along the central seam will perfectly even out and the result will be a uniform exposure across the negative. The results should be much better than what can be accomplished with a computer by cutting a figure out of one photograph and pasting that figure into another one already containing a record of a given subject. In the matte box photograph the lighting, the perspective, the edges and other factors will be automatically recorded properly. It is very difficult to do this correctly with a computer. Besides, a matte box is much cheaper.

In all fairness, if one were to simply take two or more photographs of a subject in different parts of a scene, digitize the images and then cut the pictures and paste the backgrounds (carrying the figure in different locations) together, rather than trying to cut out a person's figure and repositioning it in different places, the computer assembled result would outstrip what can be done with a matte box. On the other hand a matte box is still cheaper than a computer, the software necessary or the making of output materials such as film negatives or "digital" prints.

Some parting thoughts on this process: problems that photographers do need to consider include the fact that there must be no movement across the delimiting boundaries of the "masks", the camera must remain locked in position and the film must remain stationary between the two (or more) exposures. Of course this is only if technical perfection is sought. For creative applications other "rules" apply.

The matte box also allows photographers to combine two or more different, unrelated, scenes together on one piece of film by using two or more masks that are complements of each other placed sequentially in front of the camera. The outline of the mask edge sometimes becomes visible when this process is practiced but when used successfully this can be made to actually contribute to the final product's visual appeal.

By the way, if you want to read about a variation of the matte box and see what a slit-scan matte box can do in terms of producing unusual depictions of our "instantaneous" world go to an article entitled Slit Scan Photography.