

# Using Slide Projectors for Studio Effects

by John Siskin

*You may already own what I consider the most useful special-purpose light ever seen inside a photo studio. I'll bet it's sitting on a shelf somewhere, unused and unappreciated. It's called the Kodak Carousel Slide Projector. Capable of throwing a spot 2mm across, creating a background for a piece of glassware or adding textured light to a bunch of flowers, this is the most flexible light you'll ever own. A projector will let you place light where you want it, with the color you want, the contrast you want and the pattern you want. It's a truly wonderful light. I've been using this projector with clients and my classes for more than 10 years, and I don't think I've done it all yet.*

In these few pages, I hope to show some of the magic you can perform with a projector.

Projector light is balanced to match tungsten film. At least with most recent Kodak projectors—I've found that other projectors tend to go green. Another advantage of the Kodak Carousel is that it keeps the slide cooler, which is important during long exposures.

## Projecting images onto a subject

Figure 1 looks like a mask, but it's actually a picture of a chicken egg, plus some projector magic. I started with a photograph of a rock carving of a Rastafarian cut into a sandstone boulder. I used to live near this carving. I kept shooting it, but only got boring images because the rock was monochromatic and always in the shade (figure 2). I don't throw anything away, so these slides went into my files until I started to experiment with shooting eggs. I was attempting to add shape to flat images by projecting them onto curved surfaces. Eggs don't add color and they have a smooth surface. I thought they would be excellent surfaces for projection.

I first saw this method of using a projector many years ago, employed by a photographer named Moses Spark who projected images of landscapes and animals onto human faces and bodies. I thought that his choices of projected images and subjects were particularly effective. In one image, a woman's face served as the screen for the image of a lion. I have seen this technique used since then with less concern for the relationship between the projected image and the underlying form.

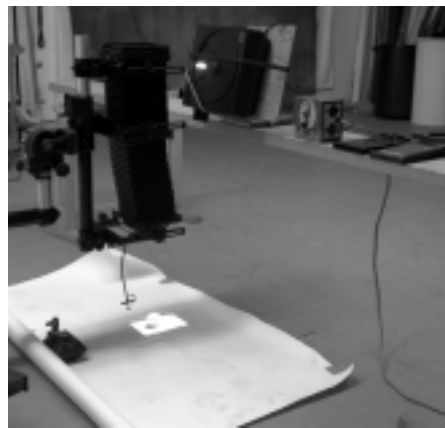
I was hoping for something of that relationship between image and form in my egg shot. Its set up was difficult because the projector needed to be pointed straight down (figure 3). I used a bungee cord



**Figure 1.** Egg/Mask was made by projecting a slide of a rock carving onto an egg.



**Figure 2.** The original image that was projected onto the egg.



**Figure 3.** This image shows how the camera and projector were put together for the egg/mask shot.

to mount the projector onto a piece of plywood to which I had attached a tripod-sized socket ( $\frac{1}{4} \times 20$  T-Nut) in the center. I then attached the board to a tripod head and the tripod head to another, bigger, board, that was parallel to the floor. This would have been easier with a camera stand or very large tripod, but my camera stand already held my camera.

I placed the camera lens very close to the subject. On  $4 \times 5$  film this image is a little larger than life, so I needed a bellows extension for macro focus. The extremely long bellows cut the light by two f-stops, so at  $f/16$  I actually was getting the light of  $f/32$ . To regulate exposure, I plugged the projector into an enlarging timer. That way I was able to repeat the exposure. The final exposure was 60 seconds at  $f/16$  using a Fujinon 210  $f/5.6$  lens.

## Projector as specific light source

Figure 4 integrates projector light into a shot of flowers wrapped in newsprint. I wanted a magical glowing light on just the flowers. To do this, I set up the camera over the flowers on the camera stand, so I could shoot straight down. I put a classic soft-focus lens, which can take sharp or soft images, depending on the aperture, on my  $4 \times 5$  camera. I used a Smith-Victor 770 quartz light and an umbrella to light the overall subject. Because I wanted this light to be low value in the shot, I set the exposure at one stop under what my incident light meter read. If I had set this light for full exposure, the light from the projector would have overexposed my final image. The actual exposure for this light was three seconds at  $f/22$ . Figure 5 illustrates how the light was set up.

I now faced a difficult task with the projector. I wanted the light to be mottled, as if coming through moving leaves. Further, I wanted the light to illuminate only the flowers, not the background or the newspaper. If I could get the projector to do all that, the shot would be beautiful; otherwise it would be ordinary. I didn't have any other light that would do this job.

Producing the mottled light called for a special slide. I created it by taking texture shots using my Nikon and Kodak Technical Pan film. I used Tech Pan because its base has no color. Most black-and-white films have a purplish hue—not what I wanted to project. I also used Tech Pan because its contrast is very high. A low-contrast image has less effect on lighting, and a contrasty image can be softened, if necessary, by placing it out of focus. The image I used here was of the asphalt surface of a parking lot (an ironic source for a magical light!). I simply put the negative into a slide mount; I had no reason to make a positive.

## Masking slides

I then had to mask the part of the slide that would otherwise illuminate the background and newspaper. I first set up the projector—I needed to see where the light was going in order to mask it effectively—and used silver Mylar tape as the mask. I put the projector on a Ries tripod (model B) with a Burke & James head. I had to pull the slide out and move the tape several times to get the pattern I wanted (figure 6). The Mylar tape is removable, which makes this easy, but don't do this with a slide you want to keep.

Next, I had to determine the exposure. The aperture needed to be  $f/5.6$  to get the desired soft-focus effect from the lens I was using. (Adding a soft-focus

filter to a camera lens would have created a similar effect.) I used an incident meter to check the brightest areas of the projected light. If the exposure was set for these areas, they would be very bright in the finished piece because the light from the projector (exposed normally) is added to the light from the umbrella (one-stop underexposed). I used a Polaroid to check that the lighting was as I had visualized before shooting the final film. For the final exposure, the projector was on for 1.5 seconds and the camera was at  $f/5.6$ .

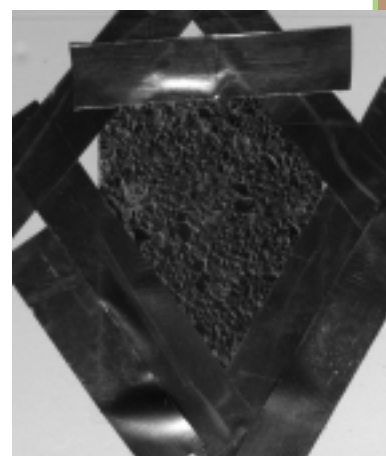
The final exposure was in two parts. First the umbrella light (Smith-Victor 600w quartz light) was on for three seconds. I then opened the lens to  $f/5.6$ —generally it's easier to fully open a lens in the dark than to stop down. The second part of the exposure was done at  $f/5.6$  for 1.5 seconds.



**Figure 4.** *Flowers in Newsprint.* The flowers were lit by a projected slide of gravel.



**Figure 5.** This image shows how the camera and projector and light were put together for the *Flowers in Newsprint* shot.



**Figure 6.** This slide is actually a negative on Technical Pan film. Masking is done with Mylar tape.



**Figure 7.** Waterford Bowl uses three projectors: one for the background, two as spotlights.

## Multiple projectors

The photo in figure 7 uses three projectors. Two are used to light the glass, while a final projector creates the background. I lit the overall scene with a large, diffused light source that I created by placing a SmithVictor quartz light in an umbrella. This light was then filtered through a sheet of rip-stop nylon mounted on a frame. I determined exposure with a spot-meter. I placed the sand on which I had set the bowl just below middle gray (an exposure of eight seconds).

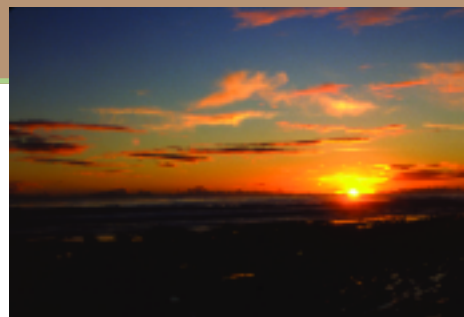
Unfortunately glass looks flat when lit by only a diffused light source—reflections make glass look alive. To create reflections, I put spotlights into the Waterford bowl and the clear glass fragments. The bowl had a circular spot projected into it. I did this by putting Cine foil (black aluminum foil) into a slide mount, then cutting out the shape I needed. You can also use regular aluminum or brass foil. Just make sure to use a product that isn't flammable.

You can project any shape you can cut. You can also put two slides into the projector, simultaneously creating shape image and color. Another trick is to glue an empty filter ring to the lens of the projector, giving you another place to control the light.

I metered the projectors with a spot meter. Intending to evaluate the brightest areas of the glass bowl and the fragments, I placed them three stops over middle gray. Not higher, because most of the light they received was from the projector. I thought that the light from the background projector and a diffused light source in front would bring the highlight up to a bright white. A Polaroid test confirmed this. I gave the Waterford bowl 27 seconds of exposure, the glass fragments 20 seconds.

## Projected backgrounds

The difficulty with projected backgrounds is that the background light can't mix with the rest of the shot. I wanted a vivid, realistic sunset behind the bowl (figure 8). First, because projections can't illuminate empty air, I had to create somewhere to



**Figure 8.** Sunset in Isla Vista. This is the slide used for the background of the bowl.

project the sunset image. In this case, I used a large piece of translucent plastic, but tracing paper also works well, and I often use it.

If light from the large diffuser had fallen on the front of the plastic sheeting used for the background, it would have reflected back into the camera, causing a white haze over the projected image. So I needed a sheet of deep black material in front of the plastic—even seamless black paper

reflects too much light. In this shot, I used a material called Velveteen from Savage, which resembles black velvet. Black velvet and Duvateen, a material used in filmmaking, also work. During the portion of the shot when light is falling on the foreground, the Velveteen had to be pulled down in front of the translucent plastic. Once the two projectors and the large diffuser were used, the Velveteen went back up and the background projector went on. So I was rather busy in the dark!

The background exposure also was worked out with the spot meter. The process resembles outdoor shooting. The idea is to choose an important area of the background, meter it, and expose based on that area. Since we have the black material up during the rest of the shot, nothing else will affect the background. Of course this exposure will be much longer than an outdoor shot.

To make the final image, I first stopped down to  $f/22$ , turned off the room lights and opened the shutter. The background was exposed for 90 seconds. I lowered the black velveteen in front of the translucent plastic and turned on the three lights for the glass: the large diffuse for eight seconds, the oval spot on the glass fragments for 20 seconds and the round spot on the bowl for 27 seconds. (I couldn't do this without timers.)

The great thing about this technique is that the background image ends up perfectly integrated into the foreground. In this image, the light from the background comes through the glass in a natural way—the background can be seen through the glass. If we had used an opaque object, it would have masked itself from the background, without the cutout feeling often seen in Photoshop work.

I hope the examples I've offered illustrate why I find projectors one of the most useful lights available in the studio. Their possibilities are just about endless. ■

*John Siskin is a commercial and fine-art photographer who specializes in product images as well as portraiture and macro and architectural photographs. He has taught photography for more than 20 years. He is currently teaching studio lighting at Learning Tree University in Chatsworth, California, and black-and-white photography at Los Angeles Mission College. His studio is in Reseda, California, and his web site is [www.siskinphoto.com](http://www.siskinphoto.com).*