



**Film Tips**  
Photographic

# Loooooong Exposures

Worth the wait!

*Text and photos by Jack and Sue Drafa*

One of the most popular photo concepts is that photography captures a moment in time. In truth, it may cover many moments in time depending on the duration of the exposure. Although most of the photos taken today are very short exposures, you can also create some dynamic images by capturing many moments in time using long exposures. The problem is that creating images with long exposures can be difficult because many variables come into play. Film and subject matter choice can both make big differences in the results of your final images.

Since most films speeds are targeted to capture brief moments in time, high-speed films have dominated film research and development today. Thanks to technological advancements those films have improved exponentially. In order to work on achieving great long exposures though, we need to put those films away for a while and take a look at the slower films.

With higher-speed films, you may not be able to obtain very long exposure times even when the lens is stopped all the way down. So, the best film-speed range for long exposure is ISO 25–100.

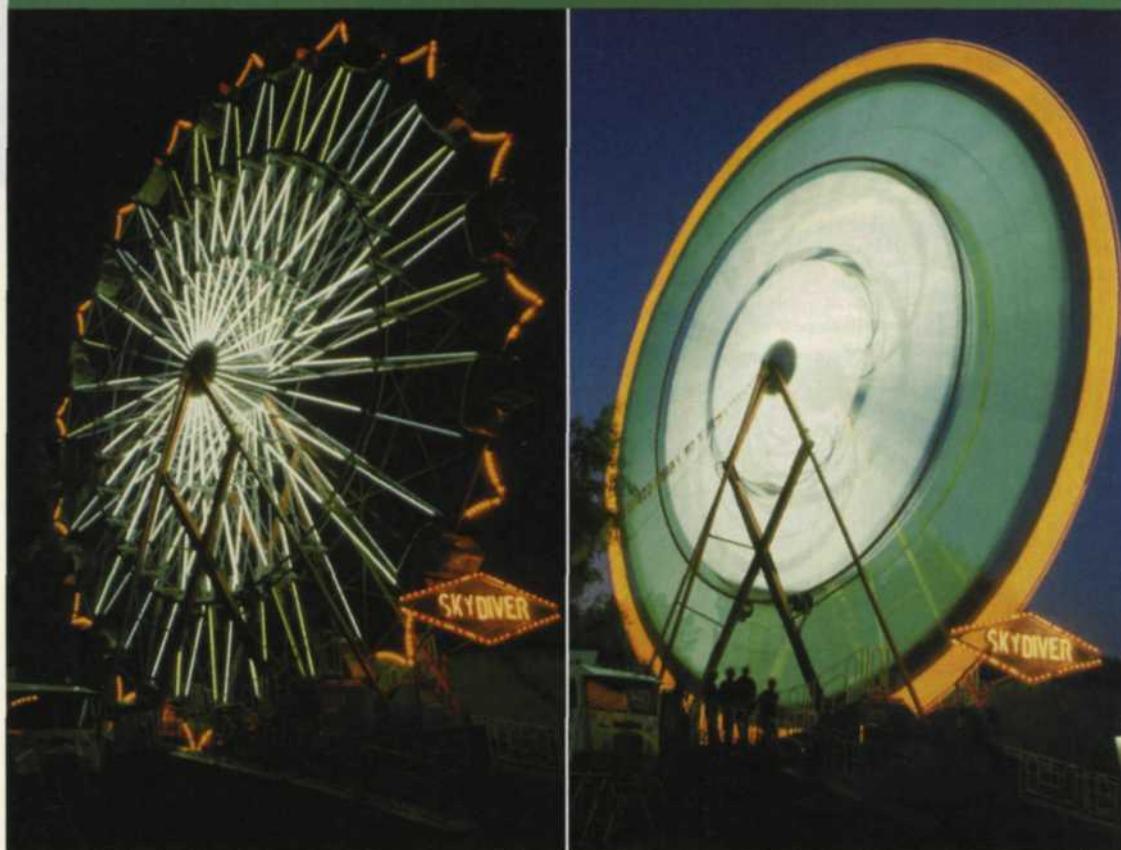
**Top:** ISO 64 film, 10-second exposure, zoomed from 28–85mm after five seconds.  
**Below:** ISO 25 Kodachrome let us make a 2-second exposure at f/16 without ND filters.



One of the laws of photographic physics states that exposure varies uniformly with changes in time or intensity. When these exposure times become very long, this law no longer applies and reciprocity failure occurs. When exposure times are in seconds and minutes, changes in film speed and color balance start to appear. Most films have technical information stating what compensation should be made to counteract the reciprocity failure of a specific film. The problem is that you may find that reciprocity failure can differ from one film batch to the next, so that makes consistency tough. The best solution is to bracket your exposure

using your camera's bracket function, or the exposure compensation ISO setting. Color balance also comes into play with long exposures. Color films have three (four, with some films) emulsion layers, not all of which suffer reciprocity failure

**Below left:** One-second exposure of stopped Ferris wheel at f/5.6 on ISO 64 Ektachrome film. **Below right:** Moving wheel exposed for eight seconds at f/16 on ISO 64 Ektachrome.



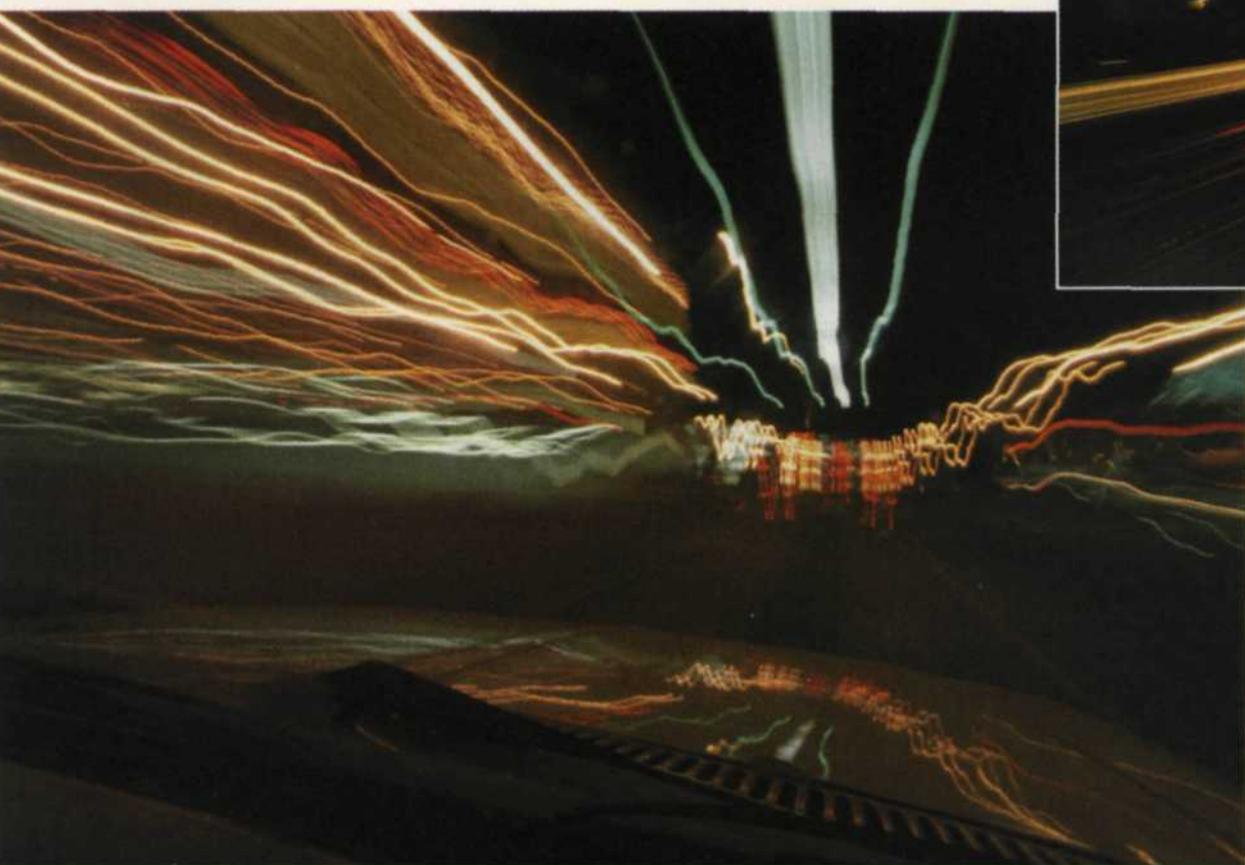
at the same rate. This results in a color shift when long exposures are made. Additionally, in many cases your long exposures will be in deep shade or where blue sky is your light source. Since most films are balanced to sunlight, images taken with reflected blue sky will have a heavy blue overcast look.

Slide shooters can correct this problem by using one of the 81-series correction filters when shooting in the shade, and using the reciprocity-compensating filtration recommended by the film manufacturer (you can generally find reciprocity information in film data sheets available from the manufacturer by mail or on its website). The amber-colored 81-series filters compensate for the blue cast produced by shooting in the shade. They are available with a very mild correction (81A) and increase intensity with the 81B, 81D and 81EF correction filters. The problem comes with knowing exactly which filter to select and often it takes photo experience or testing to solve the problem. If your budget permits, a color-temperature meter will accurately indicate which filter(s) to select.

A second method is to shoot the best possible image on slide film, and then scan the image into your computer. From there you can make any final color corrections using the color-balancing tools in your image editing program.

Color-negative film shooters have it much easier for several reasons. The exposure latitude of color-negative film in slow ISO films is usually at least six stops. If you set your exposure compensation to at least +1 stop, you

**Left:** Camera was mounted on a tripod in deep shade. Exposures were bracketed around eight seconds at f/16 on Ektachrome 100.



Grain Enhancement Management (GEM) found in film scanners that sport the Digital ICE<sup>3</sup> technology from Applied Science Fiction.

When taking long exposures, you will need to use a sturdy tripod to keep the camera from moving. If the exposure is only a few seconds, you might consider pressing your hand down slightly on the top of the camera during the exposure to remove any vibration caused by mirror slap. If the exposure is lengthy, the mirror slap will be such a

**Above:** ISO 100 color-negative film was exposed for one second at f/8 by passenger as driver drove under tunnel. Try different long exposure times and see which you like best.

**Above right:** Tripod-mounted camera on freeway overpass, 30 seconds at f/11 on Kodachrome 25.

should have a good exposure right off the bat. The blue shift and other reciprocity color shifts can be compensated for during the printing or scanning process. We still recommend using the 81-series filters with color-negative film, as they will get you closer during the initial exposure.

A couple of other problems that crop up with long exposures are low contrast and increased grain size. The contrast problem can be reduced by using one of the higher saturation films that are available in both slides and color negative emulsions (for example, Kodak Ektachrome E100VS and Elite Chrome Extra Color 100, Fujichrome Velvia and Provia 100F, and the ISO 100 consumer color-print films such as Kodak Gold, Fujicolor Superia and Agfa Vista). The grain is automatically reduced by the mere fact that you are using low ISO film speeds. It can be reduced even further by scanning your images into the computer and using the

small segment of the total exposure that it will have very little overall effect. Older cameras will have to be activated via cable release, while some of the newer cameras have electronic exposure times up to 30 seconds. If longer exposures are required, you may require the use of an electronic cable release that is usually sold as a camera accessory.

Waterfalls are some of the easiest subjects to photograph with long exposure, and they can provide some dynamic images. Since you will be working near water, you should have a tripod that can handle the outdoor environment. Double check your camera and tripod so that they do not suffer any mishaps during the long exposure. Waterfalls are often found in deep shade, and we have found the 81C or 81EF to be excellent correction filters for both slide and negative films. You can easily vary the effect by using the aperture-priority AE mode and changing the f-stop. As you



**Far left:** Kodachrome 25, 1/25 at f/8 in full sun, no filters.

**Near left:** Six stops' of ND filters allowed exposure of 8 seconds at f/22, the best in a bracketed series.

**Left:** The camera was mounted on the bike with a clampod and fired with a cable release. Exposure was 2 seconds at f/22 on ISO 100 film.



handhold the camera throughout the city to give the blurry feeling of city night life.

Long exposures allow you to capture the feeling of motion. We wanted to create an image of bicycle motion so we loaded a camera with Kodak Ektachrome 64 and mounted it on the bike using a clampod. We then sped down the road clicking off 1–4-second exposures. Even with slow film and small apertures we had to use neutral-density filters to increase the time of the exposure. The parts of the bike remained sharp while the surrounding area moving by became a blur.

Photographs using long exposure aren't as easy to accomplish as one-two-three. Even though we recommend a slow film, you have plenty of choices of film speeds and manufacturers. So which one is the perfect choice? The key is to experiment in order to see which works best to provide your desired results. Try different slow films on a variety of subject matter until you come upon a combination you like. Work to refine your photo techniques to create the best possible images. ■

do, the shutter speed changes, providing different variations during the long exposure. You will find that you can freeze the water's movement or magically turn water into a misty fog.

You can take long exposures of beach scenes during the middle of the day with either heavy neutral-density filters or combinations of polarizing filters. Since you are using the sun for the exposure, you will have little problem with blue color shifts due to skylight illumination, but color shifts due to reciprocity failure may occur. Long exposures late at night along the coastline provide an eerie ghost-like feeling of ocean fog.

Fireworks are another popular subject for long exposures. Contrary to what you may hear, you do not need a tripod for aerial shots of fireworks. When the firework projectile is fired into the air, simply pan with the subject and open the shutter when it explodes. The firework burst will paint itself onto the film during the long exposure. If you decide to shoot the ground displays of fireworks, you will need a tripod to keep the stationary subjects sharp.

The lights of the city are another fun subject to capture on film using long exposures. You can use a tripod to capture the moving lighted activities or



**Above:** Fireworks exposed hand-held for five seconds at f/11 on Ektachrome 100.

**Above right:** Fireworks, reverse-zoomed from tele to wide during a two-second exposure at f/8.