

# Films for Long-Lens Photography

Text and Photos by Jack & Sue Drafa

How to get sharp shots when conditions conspire against you



Here, Ektachrome 100 was pushed a stop to EI 200, for an exposure of  $\frac{1}{500}$  at f/5.6 with a 300mm lens indoors with overcast lighting.

Photographers often find that one of the most exciting types of photography is also one of the most difficult. Taking pictures with telephoto lenses is really tough because the laws of photographic physics are against you. With a long-focal-length lens, the magnification is great while the angle of view is very narrow, which makes it difficult to keep the image from becoming blurred or unsharp. The rule of thumb is that when hand-holding a camera and lens, you must use a shutter speed that is equal to, or greater than the numeric value of your focal length to maintain sharp images. For example, a 300mm lens requires a shutter speed of at least  $\frac{1}{300}$  to maintain the sharpness equivalent to using a 100mm lens at  $\frac{1}{100}$ .

Fortunately, over the years manufacturers have recognized these problems and have worked to create innovations to help you better record your telephoto images. The first area of improvement is in lens design. Thanks to computer-aided design, new lenses with improved optical technologies have made great strides toward improving image quality.

When the lighting conditions are optimum, you have a fast lens, and you use a tripod, the lower ISO films are your best choice. We find that in these somewhat rare instances, we can use film as slow as ISO 100 and achieve great results. These fine-grain films provide the best image quality and allow for extreme enlargements. Fujichrome Provia 100F and Astia 100, and Kodak Ektachrome E100S and E100VS do a great job when all the conditions are right. In the color-negative arena, Agfa Vista 100 and Optima Prestige 100, Kodak Professional Supra 100, and Fujicolor Superia 100 and Reala provide an exposure latitude that gives you an edge.



**Above:** A 500mm mirror lens, ISO 400 slide film, a stationary subject and a tripod produce great sharpness.

**Above left:** In good light, EI 320 was enough for this 300mm-lens shot.



**Far left:** With a tripod and stationary subject, you can use slower films (ISO 125 here).

**Near left:** A tripod will give sharper results with faster films (ISO 400 here), too, if the subject doesn't move.

But even the best of lenses will have trouble when the light level drops or the action increases. It's just a matter of photographic physics. You can minimize the movement with sturdy tripods and stabilization lenses, but eventually you will run out of f-stop and shutter-speed combinations needed to provide a sharp image. So what do you do then?

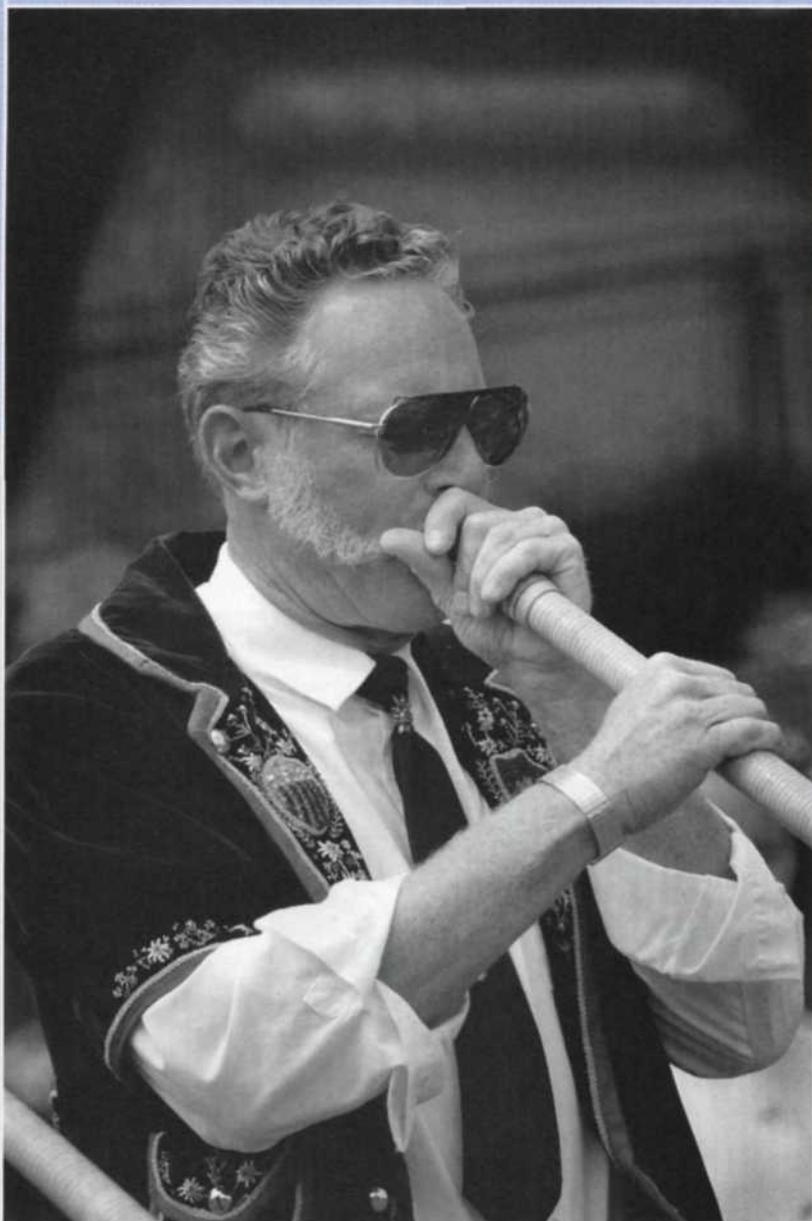
Well, we switch to faster films. For years, the majority of long-lens shooters used slide film as their main recording medium. ISO 200 seemed to be their film of choice as it had moderate grain, but it had high contrast and often it was just not fast enough to provide the sharpest results. These problems were often exaggerated when photographers pushed their film in an attempt to use their telephoto lenses in low-light situations and to stop the increased action.

This prompted film manufacturers to expand their research into faster films that also featured improve image quality. Today, we have slide films up to ISO 1600 that have better grain, color, and image sharpness than those ISO 200 films of a few years ago.

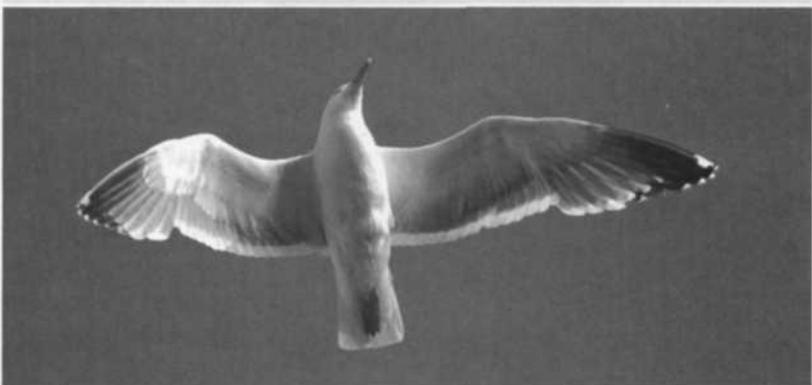
Photographers who prefer slide film for stock images, slide shows, or for publication can pick from several good ones from Fuji and Kodak. Good choices for best image quality include Fujichrome Provia 400F and its

consumer-film counterpart Fujichrome Sensia 400, and Kodak's Ektachrome E200 Professional (which can be pushed to EI 400 with excellent results, and to EI 800 with very good results). If we have to venture beyond EI 800, the field is limited to Kodak Ektachrome P1600. Although this film has increased grain and contrast, there are ways around that, which we will discuss later.

At the same time that slide films were improving, major technological advancements were being made in the world of color-negative films. It wasn't long before ISO 400 became a standard for color-negative shooters. Eventually, ISO 800, 1600, and even 3200 color-negative films were introduced, providing the long-lens shooter even more options.



Both chromogenic (top left and bottom right) and conventional ISO 400 black-and-white films (top right and bottom left) work very well with hand-held 300mm lenses.



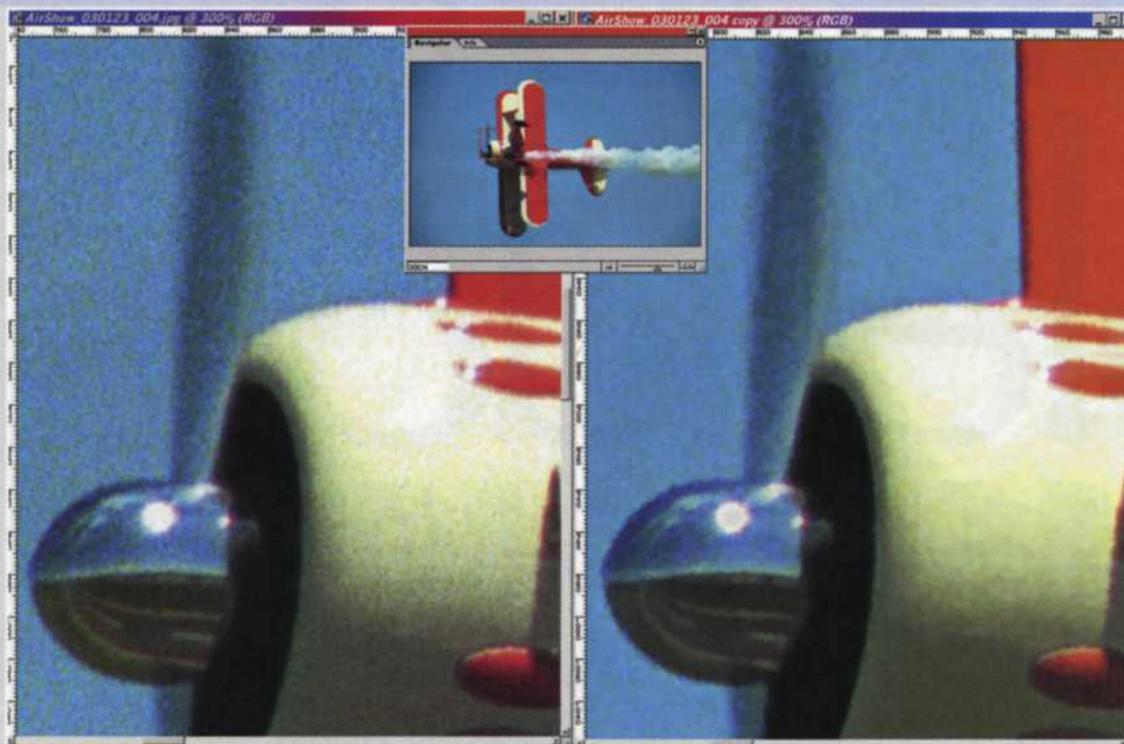
Over time, more and more professional photographers like us recognized that color-negative film with its wide exposure latitude and improved image quality is a great tool. It's common for us to use ISO 800 or 1600 color-negative films for professional applications, including the use of long lenses. Although the higher-speed films have some shortcomings, when push comes to shove, we would rather have the shot than not. When the light level drops so low that even the fastest available lens still yields low shutter speeds, we would rather grab a high-speed film than miss the shot. We can deal with any increased grain later, after we have the great shot of the egret feeding at sunset.

Color-negative shooters have many more good high-speed

film options for use with their long lenses. We have been very impressed with every ISO 400 color-negative film that has been introduced in the last couple years, regardless of the manufacturer. So, if you have a favorite film manufacturer, you can't go wrong with its ISO 400 offering(s). Our favorites include Agfa Vista 400, Fuji Superia X-TRA 400, and Kodak Professional Supra 400. All three have a very fine grain, accurate ISO ratings, and a wide exposure latitude. Although we do experience some increased grain and contrast, if we need to go to higher speeds, we use Agfa Vista 800, Kodak Professional Supra

and-white—you can increase film speed either by increasing processing time, or by just underexposing the image and then getting it back in the printing process. The drawbacks to pushing are the added contrast, decrease in shadow detail, and increased grain. Although you have the increased film speed needed when using long lenses in low light, you will definitely have a visible grain increase in out-of-focus background areas or blue skies. (Push film speed only when you need to, because doing so does decrease image quality.)

That used to be the end of the story, but now digital provides a new twist to the film world. You can now scan your



The new Digital GEM software was used to reduce grain in this image. A zoomed section of the original image is at left, the GEM-ed version is at right.

film images and give them a hand with editing software.

The first really big break for film users came with the introduction of Digital ICE from Applied Science Fiction. This scanner technology removed scratches as the image was scanned. They later added another technology called Digital ROC which restored

800 (rated from 800–1600), and Fuji Superia 1600 (rated from 1600–3200) with its 4th-layer technology. [Editor's note: We also find Fuji's ISO 800 color-print films to be excellent, NPZ 800 being our favorite.]

Black-and-white photographers have two directions to go. If you are a full traditional photographer, you will probably want to use Kodak 400TMax or Ilford HP5 Plus. Both films are rated at a speed of 400, but have considerable flexibility for higher ISO speeds with increased processing. [Editor's note: You also might want to try Ilford's Delta 400, which is finer-grained than HP5 Plus, and the venerable and pushable (but grainy) Kodak Tri-X, recently redubbed 400TX.] Extreme high-speed black-and-white ISO speeds can also be accomplished with Ilford Delta 3200, Fuji Neopan 1600 and Kodak P3200TMax. These should only be used when the light level is extremely low, or when you desire the effect of increased grain in your final image.

Chromogenic black-and-white films are processed in C-41 color-negative chemistry. Almost all brands are rated at ISO 400, but you can use them at EI 800 with only a slight grain increase. When we shoot black-and-white film, we prefer the chromogenic films, especially Ilford XP2 Super 400 and Kodak T400 CN, because of their fine grain structure which gives us the potential for extreme enlargements.

With all three types—slide, color negative, and black-

faded color and a third called Digital GEM. This Digital GEM dramatically reduces the grain structure while maintaining the image sharpness. Originally these technologies were only found in film scanners, but ASF recently released Adobe Photoshop-compatible plug-ins for Digital ROC and Digital GEM. This helps alleviate problems with increased grain and any color balance issues found with your film images.

The next problem to address is the loss of detail in the shadows due to film pushing or the use of a higher ISO film. That can be partially fixed in your favorite image-editing program. In Adobe Photoshop, you just use the Levels editor to adjust the film curve like you have never been able to do before. When you select this function, pick the midtone slider on the histogram chart and move it to the left until you visually see that the image has the desired midtone detail.

Although slower films produce the best image quality, a higher film speed is often a necessity. Everyone has a different perception of image quality, and various uses for the final images. That's why there are so many different films available today. With improved lens design, great high-speed films, and the additional help from image-editing software, you can now use the required f-stops and shutter speeds without sacrificing image quality. Getting great shots on film with telephoto lenses just got a whole lot easier. ■