KODAK EKTACHROME 400X

It Arrived in a Plain Manila Envelope!

by Jack and Sue Drafahl

PHOTOGRAPHIC'S USER REPORT

Kodak's recent film improvements have been with the Ektachrome slide films. First Kodak introduced 64X. Then, 100X closely followed, so it seemed logical that the next introduction would be an even higher-speed "X" Ektachrome. Sure enough, just recently a new 400X film arrived on our doorstep.

This new film is the first E-6 film that utilizes Kodak's infamous T-grain technology. The 400X emulsion is designed to benefit photographers who work in low-light conditions, or need extremely high shutter speeds. Kodak introduced this film at this time, so photographers covering the 1992 Winter Olympics would be able to take advantage of its new high-speed technology.

NEW KODAK COLOR-SLIDE TECHNOLOGY

Improvements to the 64X and 100X films were restricted to a color-balance change—from cool to warmer image tones. Ektachrome 400X, however, underwent a massive overhaul. First and foremost is the inclusion of T-grain technology in a slide film. Kodak's high-tech grain technology effectively reduces the size of the overall grain structure of the 400X film, especially in the green layer.

A new, patented solid-particle yellow dye dispersion has replaced the yellow filter dye. This new innovation protects the red and green layers from blue light, resulting in cleaner, more saturated blue colors. Additional improvements have been made to the magenta filter dye that keeps the greens purer and more saturated.

The stability of the film itself has been improved with new sensitizers in all the color layers. These new sensitizers give cleaner whites, and work to brighten the greens in the emulsion.

Finally, the color balance of the film has shifted to warmer tones, like its 64X and 100X cousins. The end result from this new technology is a finer-grain, warmer, brilliantly colored, high-speed ISO 400 color-slide film.

STANDARD FIELD TESTS

Since Ektachrome 400X was designed for low-light situations or for situations requiring high shutter speeds, we concentrated our field tests on action shots, and indoor low-light situations. Our first stop was a local soccer field, were we found several teams setting up for an afternoon game. The lighting was bright overcast, which helped us in contrast control, but lowered our usable shutter speed. We loaded up with a fresh roll of 400X, attached a 200mm f/2.8 telephoto to the camera, and headed out for our first tests. We were happy to see the shutter-speed indicator bouncing from 1/4000 up to 1/8000 in most of the situations we encountered.

After taking a couple of rolls with this combination, we switched to a 100–300mm zoom lens to see how the film functioned with a slower, more versatile lens. The shutter speed dropped to 1/1000, but we still felt we were stopping the bulk of the action. After a few more rolls, we set the exposure compensation to –1, so we could see how well the film reacted to being push-processed. The shutter speed jumped back up to 1/2000, making us feel more comfortable that we were controlling the action at this film speed.

For the final action test, we decided to attach a mirror lens and push the film one stop. With this combination, we were still able to get shutter speeds shorter than 1/1000, which is acceptable for most sports-action shots. Processing the film would tell the story. On the way back to the lab, we decided to stop off at a shopping mall for some interior shots to demonstrate how well the film worked in low-light conditions.

Not only was the light level low, but the scene-brightness range was extreme—perfect for a film test. We ran a bracketed series of each scene to test the actual film speed and exposure latitude, as well as to test the color balance under mixed lighting. At the standard ISO rating of 400, we found most exposures to be between 1/30 and 1/125 at f/2.8 with a 20mm f/2.8 lens. This allowed us to handhold all the shots, a preferred method, as many indoor locations prohibit the use of tripods. After all of the indoor film tests were made, we moved on to several other locations before heading back to process the film and verify our results.

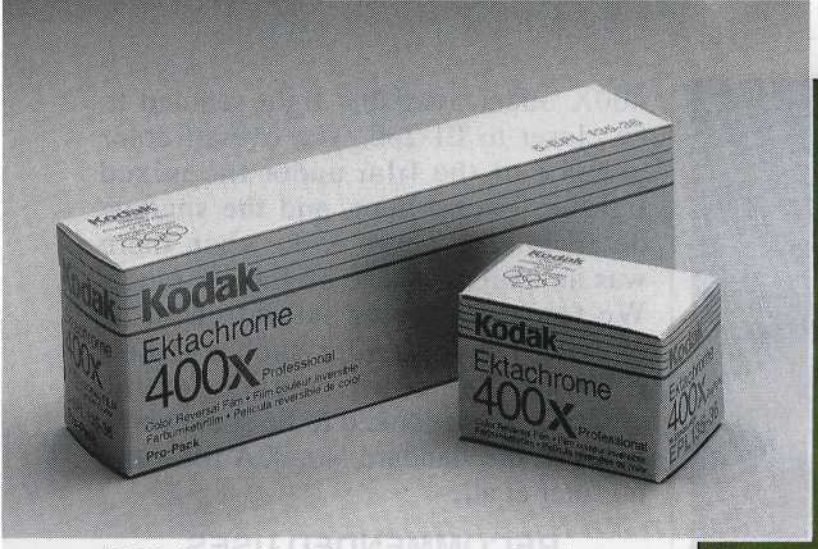
PHOTO LAB RESULTS

All of our E-6 film was processed in a computer-controlled Wing-Lynch Model 5 processor. Each processing run used new chemistry, and was monitored throughout the process for any variance in time or temperature, to ensure the most accurate film processing. We first processed the normally exposed film from the soccer game, and laid the rolls out on the light box. We noticed a general increase in contrast over the 64X and 100X films, but it still seemed to be able to hold the entire scene-brightness range. Grain structure is much better than previous Ektachrome 400 slide films. Also, the grain pattern itself seems to be dimensionally more consistent.

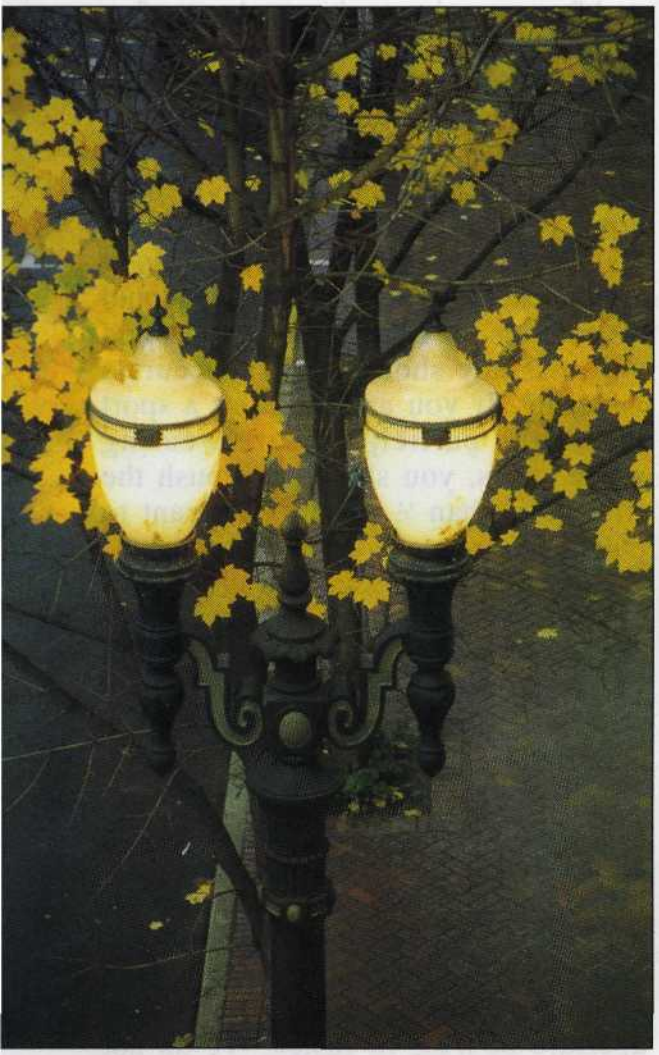
Our tests indicated that sharpness and color saturation are excellent. The whites are very clean, and the overall color balance is somewhat warmer than previous versions of the Ektachrome 400 emulsion. We also noticed that the D-max (maximum black) of the film tends to be a little warmer than other X films, but is only noticeable where the scene was mostly black. The exposure latitude worked out be about ±⅔ stop when exposed normally. We found that that range could vary considerably with an increase or decrease of scene contrast.

We reset the processor for a one-stop push and processed the remaining soccer rolls. The results of this test showed a marked change from the normally processed film. The contrast increased considerably, and the overall image picked up a very slight shift towards yellow. The exposure latitude dropped to less than ±⅓ stop, and the contrast exceeded the scene-brightness range when the scenes included pure whites and dark shadows. We also found that the size of the grain increased very little in the pushed images, and the overall sharpness remained about the same.

The remainder of the rolls from the interior tests were processed normally and laid out on the lightbox. Looking at the bracket test, we were able to determine that the true speed of Ektachrome



400X doesn't yet have new packaging.



Normal ISO shot at 1/500 at f/8.

Kid playing in the mud at a soccer game; 200mm lens, normal ISO, 1/4000 at f/4.

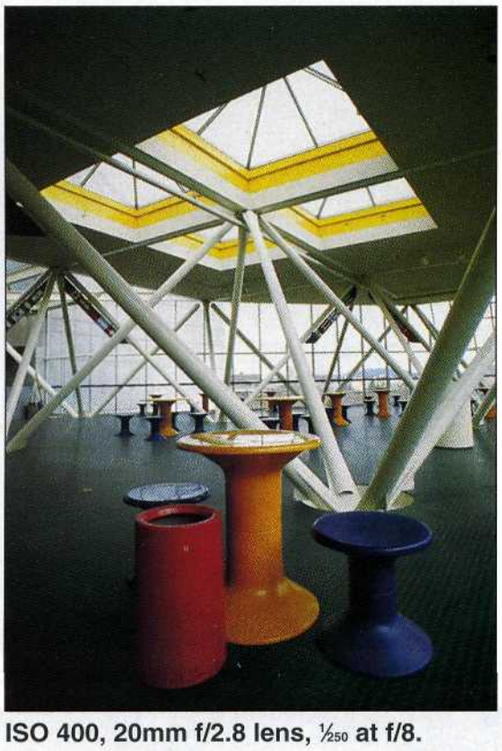
Soccer action: 100–300mm lens, exposed at EI 800 (+1-stop push) for 1/8000 at f/4.

Mixed lighting; normal ISO, 1/500 at f/8.

ALL PHOTOS BY THE AUTHORS

A berry bush near a wooden fence; 100–300mm lens, ISO 400, 1/1000 at f/8.

200mm lens, EI 800, 1/50 at f/5.6.



ISO 400, 20mm f/2.8 lens, 1/250 at f/8.

A sidewalk rain cover; normal ISO under heavy overcast, 28mm lens, 1/500 at f/8.

400X under available light seemed to be closer to EI 200. The overall color balance of the film under the mixed lighting is excellent, and the shadow detail is very good, even when there was an extreme scene-brightness range. We found the color saturation to be excellent, even under such difficult lighting. The color balance for the indoor lighting looked to be somewhere between the standard No. 80A filter and no filter at all.

RECOMMENDED USES

After extensive testing we have a few suggestions for using Ektachrome 400X. In normal-contrast situations, such as sunlight, you should use the film at its standard ISO of 400. When the contrast and the light level both drop, you can increase its speed to EI 800, with very little loss of quality. If you bracket your exposures, you should set controls for ±1 stop, and you should not miss any shots due to inaccurate metering. If you are shooting a sport where the participants are wearing white shirts, you should not push the film more than ½ stop if you want to pull the entire scene-brightness range.

This film is an excellent choice for outdoor wildlife photographers using extremely long lenses in low lighting. These lenses have lower contrast, which will be complemented by the higher contrast of Ektachrome 400X film.

Using 400X indoors or under tungsten lighting should be done with the film rated between EI 200 and 400. Filtration can be with a slight bluish filter, or no filter at all. In most situations, you can handhold the camera, when using lenses with a wide maximum aperture of f/2.8 or faster. We do not recommend pushing 400X under tungsten lighting, unless you don't mind losing some detail in the highlights or shadows.

At press time we had no further information on reciprocity failure or filtration, but would assume that it would be close to the specifications of the 64X and 100X films. Ektachrome 400X film will be available in 135-36 and 120 formats.

It has become obvious that Kodak's master plan is to concentrate its efforts and improve a specific film group, with all its ISOs, and then move on to another film group. With the introduction of 64X, 100X, and now, 400X, we wonder if Kodak will back up and change the remaining Ektachrome 200 slide film. That would be great, because then we would have a complete set of highly successful new Ektachrome X emulsions.

For more information, contact Eastman Kodak Company, 343 State St., Rochester, NY 14650; telephone (716) 724-4000. ❑