# The Best of *Both* Worlds

Tips for film scanning
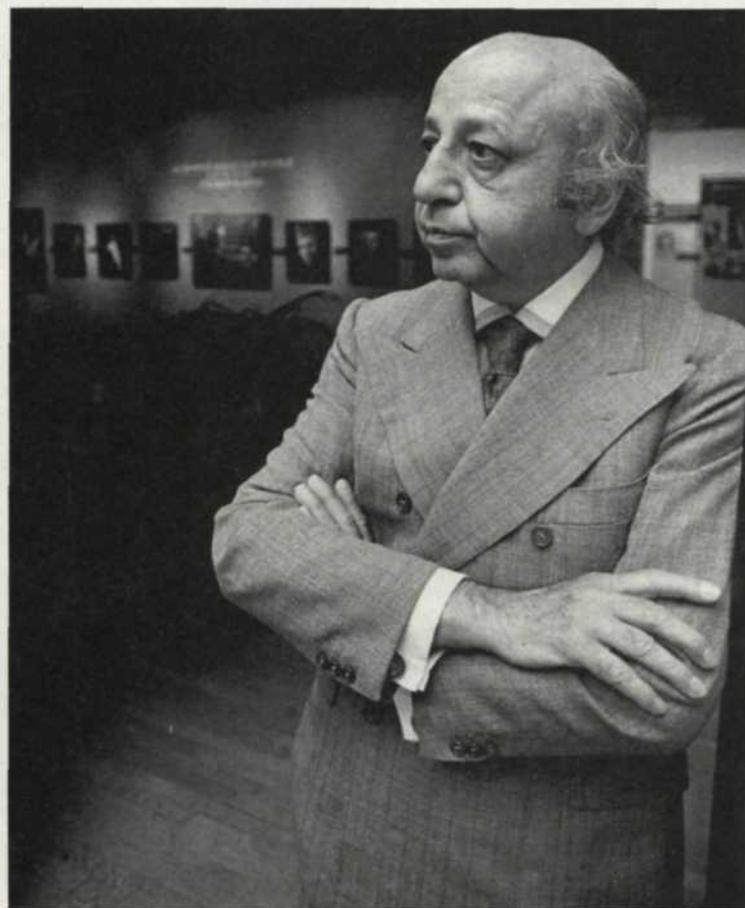
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The bridge between traditional film photography and the digital world is the film scanner. This technological marvel has changed the way photographers capture moments in time. We are now able to take images that we have recorded on film and transfer them into digital data that can

Top left: Color-slide films are harder to scan well than color negatives, due to their greater density range. But today's film scanners can do slides very well. This image was scanned from an Agfachrome CT 200 slide.
Top right: Black-and-white negatives scan very well.
Left: Fujichrome Velvia scans well at the scanner's Velvia setting or at the generic color-positive setting if the scanner doesn't have a dedicated Velvia setting.
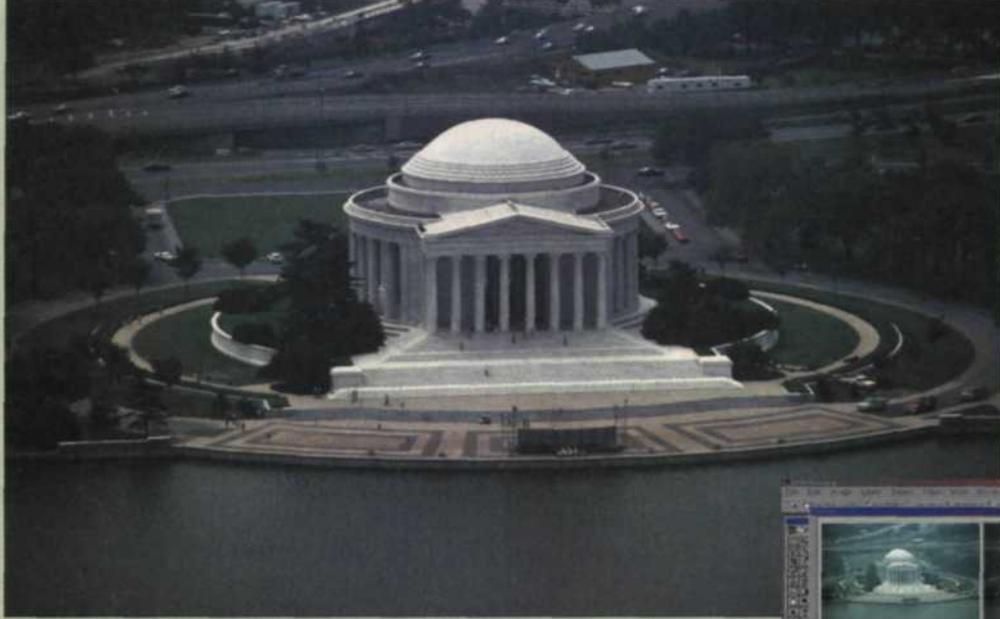
be read by any computer. Once this data is in the computer, we can use photo software tools to enhance the image, correct its errors and ultimately output the final image, all in the comfort of our homes.

To achieve the best results, you must understand how to get a good scan and then analyze which films work best. Scanning photos is still quite new to most photographers, so it is understand-able that many of the scans we see are done poorly or are often totally unacceptable. Let's take a look at the different variables in making a good scan.

You can use both slide film and negative film in your film scanner. Some scanners even have an attachment that allows you to scan your APS film. Scanners have different sets of internal specifications for scanning the various slide and negative films. Each color negative film has a different color balance when printed on traditional color paper, so it is not surprising that the same thing happens when the films are scanned.

Fortunately many of the new films belong to film families, so the color balance for each group usually can be used for all members of the film family.

Most film scanners on the market today include settings for the most popular film types that will get you close in color. You don't have to have a perfect color balance at this point, because you can make all your final color corrections using your photo-editing software program.

Color slide film is normally the traditional photographer's final product. Slides produce a positive image that can easily be analyzed to determine if you have achieved a good

exposure or correct color balance. There is little doubt as to the colors you recorded in your images when you can directly view them on a light box or with a slide projector.

When you place a color slide into a film scanner, use the positive setup for the scanner and you should be really close on the first pre-scan. The only exceptions are Kodak Kodachrome films. These films use a different type of final coating and will usually turn blue on the first pre-scan. Once you tweak your settings to achieve a balance, be sure to save them out as a special slide setting. Next time you need to scan a Kodachrome transparency, just select that setting and your color balance should be close.

The down side to scanning color slides is that their density ranges from very dense black to very clear white. For the scanner to capture the full range of the color slide, you must insure that you are in the middle of the slide's exposure range before you scan it. With most slide scanners, the default setting will lose some shadow detail in the original slide. Not to worry because this can be overcome by using the gamma control setting in the scanner. Increase the gamma value until the preview image is closer in value to the original scene.

Slides also tend to lose a little bit of image resolution during the scanning process. Although scanners do have sharpening controls to counteract this loss, we recommend using the more sophisticated sharpness control found in your photo-editing programs.

Color negative film is not the final image and must go an additional step to create a final print on paper. The colors you see on the negatives are inverted and muted by an orange mask. It is very difficult for even the most advanced photographer to determine just by looking at a processed

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color negative if correct color balance and exposure have been achieved. Usually the next step—printing—is necessary to make that determination. This lack of color reference is why it is difficult to determine correct color balance on scanned color negatives.

Color negative film has a much greater exposure range than color slide film. This makes it easier for the film scanner to capture a density range that provides smoother color gradations. The down side is that color negative film has larger grain than slide film, which becomes more pronounced as it goes through the digital process. This is especially true if you use the sharpening tools in your editing software. The key is to use films with low ISO ratings and finer grain.

You can reduce the grain in any scanned image using the smart blur, despeckle, or dust and scratch filter in your editing software. You may find that photos taken with a long lens or even a macro lens will have a grainy out-of-focus background. Using one of the various select tools in the editing program you can select the background and blur the grain until it almost gone. Then you can go back and re-sharpen the image. Be sure you don't overuse this effect, or your background editing will be very apparent.

You can remove dust and scratches from your scanned images using photo editing software. You should gently brush or blow of all the dust from your original images before you scan them into your computer to save editing time. Scratches must be removed in post production, which takes a bit more effort. Although many scanners have a dust and scratch filter that fixes both as you scan, we still recommend using the filters found in the high-end photo-editing programs instead.

Photographic scanners do have one Achilles heel. Most use a color-management system that will try to correct for exposure and color balance as each image is scanned. This system assumes that there is a black and a white somewhere in the image. When there is not, the scanner will often make

Above: Kodak Supra 800, like all Supra films, was designed with scanning in mind, and scans very well.

Right: Most scanners provide both automatic (top) and manual (bottom) control of the scanning process. In manual, you can adjust curves and histograms, select a point to be reproduced as black and one to be reproduced as white, and control brightness, darkness, color balance, mid-tone reproduction and more.

a very bad scan. The solution is to use the basic color settings for your selected type of film, but turn off the color-management system for that scan. Remember to turn the color-management system back on when you get back to images with a normal range of tones and colors.

Film manufacturers have all clamored to provide photographers with films that produce rich saturated colors. This is great when slides or traditional color prints are your final products. When you are planning to scan your film images, the lower the contrast and saturation level the better. Any and all saturation and contrast modifications can be achieved using the editing software. The lower or normal contrast films provide a much wider tonal range when scanned, allowing you to obtain maximum detail in the shadows and highlights.

Thanks to extensive emulsion research by all the film manufacturers, it is really tough to find any slide or color negative film that doesn't perform. We now have so many choices with the variety of film speeds and films offering various saturation and contrast levels. Try as we may, it would be a tough call to pick a particular film box color, as they will all work well for scanning. We do recommend that the lower ISO films exhibit the finest grain, and color negative films provide the widest tonal range for scanning. As time goes on, we are all going to be continuing to merge traditional photography and digital. The film scanner is the tool that enables us all to take advantage of the best of both worlds. ■