



Making Sense of Scanners

BUYING AND SETTING UP A FILM SCANNER IS THE FIRST STEP IN LEARNING HOW TO USE YOUR COMPUTER TO ENHANCE AND PRINT UNDERWATER IMAGES.

■ Digital technology goes far beyond using digital cameras underwater. Many photographers who continue to use conventional film cameras are interested in learning how to transfer their images into personal computers. They also want to know about using software tools to enhance and print these images.

In order to work with your underwater photos on the computer, they must first be converted to digital data using a scanner. Scanners today are relatively inexpensive, produce sharp images quickly and are simple to set up. The software that runs these scanners has become so efficient and easy to use that it's no longer difficult to make good scans.

Some photographers use slide film and others opt for color negative (print) film. Most scanners are designed to accept both types of film. Although film scanners have slightly different features, they all do about the same job. On some scanners, the images remain stationary and a light source moves across the film, while other models have the light source remain stationary and the film moves. Several scanners also have an attachment allowing for batch scanning of slides, which can really speed up the process.

When you're looking to purchase a film scanner, the key element is resolution. Many years ago, a consortium of photographic compa-



■ SCANNERS HAVE GOTTEN SMALLER, LESS EXPENSIVE AND EASIER TO USE, AND ARE NOW SHOWING UP IN THE HOMES OF AMATEUR UNDERWATER PHOTOGRAPHERS.

nies determined that a 3,072 x 2,048 pixel image was all that was necessary to convert a traditional image to a digital file on photo CD. Your film scanner should be able to scan images that are at least photo CD resolution, which translates into an uncompressed 18-megabyte file size. Look for a scanner with 12-bit depth or higher to ensure that your detail in the darker areas will be properly captured in the scan.

As with all computer equipment, plug your scanner into a surge-protected circuit. The scanner should be placed in a location where it won't interfere with your mouse or keyboard. Keep your scanner covered when not in use and clean it often to help eliminate dust problems. You also should use a negative brush and compressed air to blow off any dust particles before placing the images in your scanner.

The computer monitor is your visual connection during the scanning process. If it is not correctly matched to both your scanner and output devices, your results will be inconsistent. Until recently, setting up a monitor was a hit-and-miss proposition. Today, most editing software programs like Photoshop offer a monitor setup program to help you quickly get your system in line. This program helps you adjust the monitor's brightness, gamma and color balance using software controls.

Once you have your monitor properly balanced, make sure no one touches the monitor controls. Someone playing computer games and



Digital meets traditional

■ Scanners allow photographers to continue to shoot traditional transparency and print films, then do advanced digital post-production manipulation quickly and simply.

adjusting the monitor can wreak havoc with your scanning process.

Eliminate excessive window light, avoid any dominant color surrounding your editing area and always make sure you let your monitor warm up before starting work. Try to use the same low-light conditions every time you edit.

If you have never used a scanner before, the software controls may be a bit overwhelming. Not to worry because the help functions will answer many nagging questions, or you could even try reading the manual. Of course, the best learning method is continual practice.



Erase flaws with Digital ICE

■ There is phenomenal technology incorporated in some of today's film scanners designed by scientists at Applied Science Fiction. Digital Image Corrective Enhancement, or Digital ICE as it is commonly called, identifies surface defects on film as it is being scanned. Through sophisticated proprietary algorithms, the defects are effectively "erased" without degrading the image. With the touch of a button, it efficiently removes years of damage to an image, including unwanted dirt, dust, fingerprints, fungus growth and scratches. Pretty incredible, huh? 