IMAGES

Making Your **STILL, VIDEO** *and* **DIGITAL** *Underwater Images Better*

EXIF Files

Digital cameras can do more than take a pretty picture; they can tell you how you did it

BY JACK AND SUE DRAFAHL

As underwater film photographers for more than 30 years, we have always battled to get the lighting, focus and exposure just right. Pool testing helped, but the real image assessment came from the first couple of processed rolls. Film processing on location was helpful, but was not always possible and often expensive. So, you processed your film on your return, and as time passed it became increasingly more difficult to remember which camera settings you used. Carrying a notebook around under-
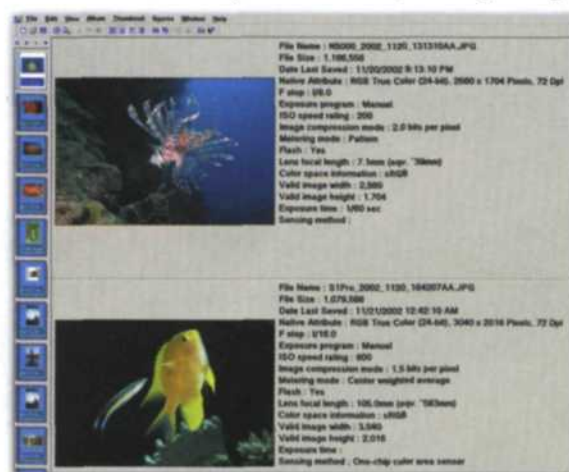
water was not practical, so quite often the same mistake was left unchecked and would recur.

When digital cameras took the plunge, all that changed. The mere fact that you can see your results as soon as you take the image speeds up the learning process. You can take a shot, and when you see that the lighting is uneven, you can adjust the strobe and try again. If the focus wasn't accurate, you can modify your position and try once more. You don't

have to wonder if you got the shot; you know the answer while you are still underwater.

Digital offers still another hidden advantage to the underwater photographer. Every time you take a digital picture, there is information hidden in the JPEG files that you take with your digital camera. Almost all digital cameras today use the EXIF (Exchange Image

HOW'D I DO THAT? Nearly all digital cameras today utilize EXIF (Exchange Image Format), which keeps track of exposure, metering, date, shutter speed and more.

Format) JPEG file format as a standard.

Although this may not sound like Earth-shattering news, it is really important. Hidden at the beginning of each JPEG file saved to your camera memory card is a metadata area. It stores all kinds of information about your camera and each image that you take on the memory card. Important data such as f-stop, shutter speed, lens focal lengths, file size, time and dates, exposure mode, flash/no flash and ISO speeds are all recorded each time you take an underwater image.

There are dozens of possible settings that can be recorded in the EXIF file header, and the complexity depends on which digi-

tal camera you use. The simpler cameras have minimal settings, and more blanks will be filled in with the professional-level cameras.

So how do you access and use this information? Most digital cameras today come with a small file-transfer, preview and sort program that simulates a professional photo database program. These programs resemble Microsoft Windows Explorer, except that besides listing folders and files, the program features thumbnails of all the images. When you select one of the thumb-

nails, a large preview image is available. Also, the EXIF information is visible either at the top or bottom of the screen or by selecting the information button.

During a recent trip to Fiji aboard the Nai'a, we tested some Ikelite, Light and Motion, and Sea & Sea systems for applications in future columns. We made more than 3,000 test exposures, challenging the systems in every possible way. At the end of each day, we would download all the images to our laptop computer for tighter scrutiny. As we sorted through our efforts, the information contained in the EXIF files allowed us to make an accurate assessment of our images and know exactly which camera system was used. We were then able to make further adjustments to the systems before diving the next day.

Many photo editing programs do not fully support the EXIF format, so that when you save an edited file, all the EXIF information is lost. For learning's sake, we recommend that you make a copy of your original camera file, archive the untouched original and then edit the copy. That will insure that you always have the valuable EXIF file information for reference.

JACK & SUE'S TRIPS AND NEW BOOKS
We have just released two new books on digital photography, Step-By-Step Basic Digital and

Advanced Digital Camera Techniques. *We are also conducting two photo trips to Fiji aboard the* Nai'a, *April 3-10, 2004, and April 10-17, 2004. Check out our Web site for more information at www.jackandsuedrafahl.com*

Essence of the Sea Photo Contest
WIN BIG PRIZES FROM SEA & SEA

Inspired by *Sport Diver*'s September "Through the Looking Glass" issue? From now through Nov. 15, try your hand at capturing images that define the essence of a dive destination and you could win the grand prize of a $1,000 gift certificate good toward purchase of Sea & Sea photo equipment. Second prize will be a certificate for $500. Two honorable mentions will be awarded certificates for $100. For details on entering, go to **www.sportdiver. com/photocontest**

Night Moves
BY CLAY WISEMAN

I was out to capture the electrifying color and behavior of the Caribbean reef squid in digital video. As you will read on www.sportdiver.com, this is no small feat! To achieve success I stuck to a few basic rules for shooting great video at night:

1 Know the site before you drop into the inky waters.

2 Focus on keeping the camera movement smooth. Don't get shaky just because the reef is dark. Your audience won't forgive you.

3 Know your critters. Be familiar with their habitat and their night behavior.

4 Know your camera housing controls like the back of your hand. You will have to control the camcorder by "feel."

5 Simplify your goal and know your objective(s). Remember, the dark may complicate the process, but the results can still "wow" the audience

Get the complete story and see stunning clips of the encounter with the flashing squids beneath the inky night waters off the Belize Barrier Reef by going to www.sportdiver.com/video. See you down there!

Sunray Mod Light

Light & Motion just released the new Sunray Mod light, which is perfect for enhancing the color on your underwater video subjects. The light is so versatile that it can also be used as a modeling light when using your underwater still camera.

The compact Sunray Mod is powered by a rechargeable, memory-free, high-capacity lithium ion battery and has three light output levels ranging from 20 watts down to about 10 watts. Burn times range from 50 minutes on the high setting to 90 minutes on low. Suggested retail is $399.

For more information, contact Light & Motion: e-mail: sales@lmindustries.com; 831-645-1525; www.uwimaging.com.